Setting up an OracleAS® "myPortal" Enterprise Deployment Architecture with the CAI Networks®, Inc WebMux[™] Load Balancer

A Step-by-Step Guide

Version 1.2

Oracle® Corporation CAI Networks®, Inc.

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1. INTRODUCTION

The CAI Networks[®], Inc WebMux[™] is a high performance network appliance designed for easy deployment of Layer 2-7 load balancing with built-in SSL Termination. This document describes in detail how a basic OracleAS[®] myPortal Deployment Architecture was set up using the Oracle Application Server[®] 10g software on Windows 2003 servers and utilizing the WebMux[™] as the load balancer, firewall, and SSL accelerator. This document assumes that you are not installing over any existing Oracle[®] installations (a fresh install) or utilizing any existing Oracle[®] directory servers or databases. Because of several assumed prerequisites and wrong server references in the original Oracle[®] documentation, we have decided to include the detailed step by step instructions for setting up each Oracle[®] server to eliminate the confusion and frustration that may be encountered by the novice user. Our examples will be using a fictitious domain "mycompany.com". Please substitute the appropriate domain name for your setup.

2. NETWORK AND SERVER CONFIGURATION

There will be a total of eight separate servers used in the example setup: IDMHOST1 and IDMHOST2, APPHOST1 and APPHOST2, OIDHOST1 and OIDHOST2, INFRADBHOST1 and APPDBHOST1. This is a slight variation from the example found in the Oracle® documentation at: http://download-west.oracle.com/docs/cd/B14099_17/core.1012/b13998/selecting.htm#CJACHBBC



The difference is that no actual Real Application Clusters (RAC) database was configured for this deployment example. The databases used in this document are only single node and not recommended for an actual deployment. Setting up an RAC is beyond the scope of this documentation, but we urge you to refer to Oracle®'s extensive documentation repository for further details on that subject. This document will only walk your though setting up the bare minimum number of databases necessary for OracleAS® to work properly.

Here is a simplified topology diagram of the setup we will be doing:



SERVER CONFIGURATION

Server Name	IP Address	Subnet Mask	Routing	Function
INFRADBHOST1	192.168.4.225	255.255.255.0	Default gw192.168.4.1	DB for infrastructure
APPDBHOST1	192.168.4.227	255.255.255.0	Default gw 192.168.4.1	DB for application servers
OIDHOST1	192.168.4.229	255.255.255.0	Default gw 192.168.4.1	LDAP server 1
			Add route for hosts	
			192.168.4.225 and	
			192.168.4.227 to use	
			192.168.4.1 as gateway.	
OIDHOST2	192.168.4.230	255.255.255.0	Default gw 192.168.4.1	LDAP server 2
			Add route for hosts	
			192.168.4.225 and	
			192.168.4.227 to use	
			192.168.4.1 as gateway.	
IDMHOST1	192.168.3.231	255.255.255.0	Default gw 192.168.3.1	SSO server 1
IDMHOST2	192.168.3.232	255.255.255.0	Default gw 192.168.3.1	SSO server 2
APPHOST1	192.168.3.233	255.255.255.0	Default gw 192.168.3.1	Portal and WebCache 1
			Add route for hosts	
			192.168.3.233 and	
			192.168.3.234 to use	
			192.168.3.1 as gateway.	
APPHOST2	192.168.3.234	255.255.255.0	Default gw 192.168.3.1	Portal and WebCache 2
			Add route for hosts	
			192.168.3.233 and	
			192.168.3.234 to use	
			192.168.3.1 as gateway.	

The following is a list of the servers' network configurations:

EXPLAINATION OF SPECIAL ROUTING RULES

Special routing considerations must be taken because of the way some of the servers communicate with other local servers using IP addresses outside of the local network. As will be detailed later in this document, OIDHOST 1 and 2 are listed under a farm on the WebMux using an IP address outside of their local network. When INFRADBHOST1 queries OIDHOST 1 and 2 via their farm IP on the WebMuxTM, the WebMuxTM will direct the traffic to the OIDHOSTs. Since the WebMuxTM does not change the originating IP address, the OIDHOSTs will see that the request came from a client IP that is local. So, it will try reply back to INFRADBHOST1 directly. This will cause a communication breakdown because INFRADBHOST1 is expecting a reply from the external farm IP on the WebMuxTM not a local host and, thus, reject the reply. Therefore, it is necessary to force the OIDHOST servers to send their replies back to their default gateway (the WebMuxTM) so that the WebMuxTM will proxy the reply back to INFRADBHOST1. The similar process occurs with APPHOST 1 and 2. As with the way OracleAS® is designed, these servers query themselves and each other using the external farm IP. Likewise, the WebMuxTM must proxy the replies back to the servers so that the replies back to itself).

HOST FILE AND DNS

Be sure to list the IP addresses with the proper host names of the servers in the host file of EACH server, including the portal, login, and oid farm IPs and names. Alternately, you can use a DNS for a more centralized control of the names and associated IP addresses.

WEBMUX SETTINGS

Two WebMuxTMes are required the for the OracleAS® deployment. One in front of the Application/Identity Management Tier (WebMux1) and the other in front of the Data Tier (WebMux2), load balancing OIDHOST1 and OIDHOST2. The firewalls in the diagram have been eliminated since the WebMuxTM will act as the firewall for this network.

The WebMuxTM settings are as follows (we will start at the bottom tier with WebMux2):

wEDWOA2 (see section o for more details)		
Mode	NAT	
Router LAN IP	192.168.3.21	
Router LAN mask	255.255.255.0	
External GW	192.168.3.1	
Server LAN IP	192.168.4.21	
Server LAN mask	255.255.255.0	
Server LAN gateway	192.168.4.1	
oid.mycompany.com farm	192.168.3.12	
servers under "oid" farm		
OIDHOST1	192.168.4.229	
OIDHOST2	192.168.4.230	

WEBMUX2 (see section 6 for more details)

SPECIAL ROUTING CONSIDERATIONS

For proper communication to occur between the different subnets, you must change the WebMuxTM's forwarding policy to "accept".

WEB	MUX1
Mode	NAT
Router LAN IP	Your public IP for the WebMux TM (can be
	the same as one of your farms)
Router LAN mask	refer to your ISP or net admin
External gateway	refer to your ISP or net admin
Server LAN IP	192.168.3.2
Server LAN mask	255.255.255.0
Server LAN gateway	192.168.3.1
login.mycompany.com farm	The public IP for this host.
Servers under the "login" farm	
IDMHOST1	192.168.3.231
IDMHOST2	192.168.3.232
portal.mycompany.com farm	The public IP for this host.
Servers under the "portal" farm	
APPHOST1	192.168.3.233
APPHOST2	192.168.3.234

SPECIAL ROUTING RULES

For proper communication to occur between the different subnets, you must change the WebMuxTM's forwarding policy to "accept". You must add a route on WebMux1 to the 192.168.4.0 network in order for communication between the APPHOST servers and the APPDBHOST1 server to complete. The graphical interface for adding route is through /cgi-bin/route or superuser command line (87 for telnet or 77 for ssh by default) and issue a route command:

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route add -net 192.168.4.0/24 gw 192.168.3.12 dev ethb0

As you might notice, 192.168.3.12 is the farm IP for oid.mycompany.com. You can use any IP address on the WebMux2's front network. But it is recommended that you use a farm IP as the gateway because in a redundant WebMuxTM set up each WebMuxTM will have its own unique device IP, but the farm IPs will float between the two. So, should one WebMuxTM go down, your gateway IP will still be valid. You can also create an empty farm so that you have an IP on the front interface of WebMux2, but not actually load balancing any servers for extra security.

The reason why this route needs to be added is because the APPHOST servers point to WebMux1 as its gateway and in turn WebMux1 will continue out to the public internet. The problem comes when APPDBHOST1 on the 192.168.4.0 network tries to query the APPHOST servers using the public IP associated with the portal.mycompany.com name. WebMux1 will correctly send the communication to the APPHOST servers. However, a problem is encountered when the APPHOST servers try to reply back. It sees that the 192.168.4.0 network is not local and will send the reply through it default gateway, WebMux1. WebMux1 will in turn see that 192.168.4.0 network is not in its local network. So, it will continue sending the reply out to its default GW which would be the ISP. Adding the static route for the 192.168.4.0 network pointing to 192.168.3.12 (an IP on WebMux2 which WebMux1 can reach) solves this problem. Once WebMux1 routes the reply to WebMux2, WebMux2 in turn routes the reply back to APPDBHOST1.

Although the WebMuxTM is not primarily designed to be a firewall, you can manually issue *iptables* rules from the command line interface to create the desired firewall rules to block unused ports. There are many documentations available on the internet regarding the use of the *iptables* command.

3. SETTING UP INFRADBHOST1 (OracleAS® Metadata Repository)

- 1. Start the Oracle® Universal Installer (double-click *setup.exe*) The **Welcome** screen appears.
- 2. Click Next.

4.

3. The **Specify File Locations** screen appears with default locations. (we will be using the default locations). Click **Next**.

Oracle Universal Installer: Select a Product to Install	
Select a Product to Install	
C Oracle Application Server 10g	
This option is known as the "Oracle Application Server Middle-Tier" and installs components use deployment. Included components are Oracle HTTP Server, Oracle Application Server Container Cache, Portal, Wireless, Reports Services, Forms Services, Discoverer, and others.	ed for application s for J2EE (OC4J), Web
Oracle Application Server Infrastructure 10g	
This option installs Identity Management services and Metadata Repository for Oracle Application Servers. This selection includes an option to create a new Oracle Internet Directory. Included co Database, Oracle Internet Directory, Oracle Application Server Single Sign-On, Oracle Application Authority and others.	n Server Middle-Tier omponents are Oracle on Server Certificate
C Oracle Application Server Developer Kits 10g	
This option installs API's and simple developer kits. This selection includes the Oracle Application does not include Oracle Developer Suite products.	n Server Middle-Tier. This
	Product Languages)
Help) Installed Products) Back Next)	Install) (<u>C</u> ancel)
ORACLE	

Select Oracle® Application Server Infrastructure 10g. Click Next.

Oracle Universal	Installer: Select Installat	ion Type		2
Select Ins	tallation Type			
Oracle Appli	ication Server Infras	structure 10g 10.	1.2.0.2	
What type of ir	nstallation do you want?	,		
C Identity Man	agement and Metadata	Repository (3.03GE	3)	
This option install Administration Se containing the Or	s and configures Identity Mana ervice, Directory Integration Pla acle Application Server Metad	agement services (Oracle tform, and Certificate Auth ata Repository. (Requires	Internet Directory, Single Sig hority) and an Oracle 10.1.0. 1024 MB RAM configured or	in-On, Delegated 4.2 database n your machine)
⊂ Identity Man	agement (1.03GB)			
This option install Internet Directory 1024 MB RAM co	s and configures Identity Mana vor Certificate Authority, you n infigured on your machine)	agement services (see abo eed an existing Oracle Ap	ove for component list). To c plication Server Metadata Re	configure Oracle epository. (Requires
Metadata Re	epository (3.03GB)			
This option install Repository can b RAM configured	s a new Oracle 10.1.0.4.2 dat e used by Oracle Application S on your machine)	abase containing the Orac Server Instances and/or Id	le Application Server Metada entity Management services	ata Repository. This . (Requires 1024 MB

Select Metadata Repository. Click Next.

	I Installer: Confirm Pre-Installation	n Requirements	-
Confirm P	Pre-Installation Requi	rements	
Verify that you ha the checkboxes.	we met all of the minimum pre-insta For details on performing these cho	illation requirements listed below, and the ecks, click the Help button.	n select all of
lf your computer you run Oracle Aj	does not meet the minimum requir pplication Server Infrastructure.	ements, you will get errors later in the inst	allation or whe
	Requirement	Description	
Mathematical Administrat	tor privileges	You must have administrator privile	eges on this h

Confirm that you have Administrator privileges and click Next.

7. The **Select Configuration Options** screen appears. The Oracle Application Server® Metadata Repository should already be selected and cannot be unselected. Click **Next**.

Oracle Universal Installer: Register Oracle Applic	ation Server Metadata Repository	
12		
Register Oracle Application S	Server Metadata Repository	
Before Oracle Application Server instances can us Oracle Internet Directory. You can register it now, o Assistant, which is located on the Repository Crea Repository if you are using it only for DCM-Manage Repository or Central Management.	e a Repository, you must register the Repositor or you can do it later using the Repository Creati ation Assistant CD. You do not need to register t ed Oracle Application Server Clusters using Date	y with an on he abase
Do you want to register the Repository with an Ora	cle Internet Directory?	
⊂ <u>Y</u> es		
Oracle Internet Directory Hostname:		
Oracle Internet Directory Port:		1
• No		
Use only SSL connections with this Oracle Inte	ernet Directory	
		>

Since there are currently no Oracle® Internet Directories installed, select No, and then click **Next**. (When the first OIDHOST is installed INFRADBHOST1 will be automatically registered).

Specify Database Configuration Options Database Name, A Global Database Name, typically of the form "name.domain", uniquely identifier (SID). Specify the Global Database Name and SID for this database. @lobal Database Name: infradb.mycompany.com SID: infradb Database Character Set SiD: infradb The number of language groups to be stored determine which database character set to use. See "Hithe definition of language groups. For the Unicode database character set, select "Unicode Standard OAL32UTF8" Select Database Character Set Unicode standard UTF-8 AL32UTF8 Database File Location Unicode standard UTF-8 AL32UTF8 Specify Database File Location: C:toradata	Oracle Universal Installer: 9	Specify Databa	se Configuration O	ptions	-	
Specify Database Configuration Options Database Naming A Global Database Name, typically of the form "name.domain", uniquely identifies an Oracle database addition, each database is referenced by at least one Oracle System Identifier (SID). Specify the Global Database Name and SID for this database. Global Database Name: Infradb.mycompany.com SID: Infradb Database Character Set Infradb Database character set to use. See "H the definition of language groups. For the Unicode database character set, select "Unicode Standard CAL32UTF8" Select Database Character set: Unicode standard UTF-8 AL32UTF8 Database File Location Use the file system for database storage. For best database organization and performance, Oracle recommends installing database files and Oracle software on separate disks. Specify Database File Location: C.toradata Browst						
A Global Database Name, typically of the form "name.domain", uniquely identifies an Oracle database addition, each database is referenced by at least one Oracle System Identifier (SID). Specify the Global Database Name and SID for this database.	Specify Databas	e Config	uration Opt	tions		
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addition, each database is referenced by at least one Oracle System Identifier (SID). Specify the Globa Database Name and SID for this database. Global Database Name: infradb.mycompany.com SID: infradb - Database Character Set The number of language groups to be stored determine which database character set to use. See "H the definition of language groups. For the Unicode database character set, select "Unicode Standard I AL32UTF8" Select Database Character set: Unicode standard UTF-8 AL32UTF8 - Database File Location Use the file system for database storage. For best database organization and performance, Oracle recommends installing database files and Oracle software on separate disks. Specify Database File Location: C:toradata Browst	A Global Database Name, t	ypically of the fo	irm "name.domain	", uniquely	identifies an Orac	le database.
Global Database Name: infradb.mycompany.com SID: infradb Database Character Set Infradb Infradb Infradb The number of language groups to be stored determine which database character set to use. See "H Select Database Character Set Unicode database character set, select "Unicode Standard I AL32UTF8" Select Database Character set: Unicode standard UTF-8 AL32UTF8 Database File Location Use the file system for database storage. For best database organization and performance, Oracle recommends installing database files and Oracle software on separate disks. Specify Database File Location: C:toradata Browster	addition, each database is i Database Name and SID fo	referenced by a pr this database	t least one Oracle :	System Ide	ntifier (SID). Speci	fy the Global
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The number of language groups to be stored determine which database character set to use. See "H the definition of language groups. For the Unicode database character set, select "Unicode Standard I AL32UTF8" Select Database Character set: Unicode standard UTF-8 AL32UTF8 Database File Location Use the file system for database storage. For best database organization and performance, Oracle recommends installing database files and Oracle software on separate disks. Specify Database File Location: C:toradata	- Database Character Set		1	10 -		
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Database File Location Use the file system for database storage. For best database organization and performance, Oracle recommends installing database files and Oracle software on separate disks. Specify Database File Location: C:toradata	Select Database Characte	er set: 🛛 🔍	Inicode standard U	TF-8 AL32	UTF8	
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Specify Database File Location: C:toradata Brows	recommends installing dat	abase mes and	Uracle software o	n separate	disks.	
Specity Database File Location: Citoradata Brows			Co de una de da			D
	Service March 1	cation:	Citoradata			Browse.
Holp Installed Products Back Next I Install (Specify Database File Loo					

Fill out the appropriate Global Database Name. The SID will be automatically filled out. Click Next.

racle Universal Insta	men speent bacabase sei	ieina Passwur	us	the second se
	13			
Specify Data	base Schema P	assword	s	
he Starter Database (incked at the end of inc	contains pre-loaded schen stallation. After the installat	nas, most of w	hich have passwords that will ex	xpire and be
ockeu al me enu orms	stallation. Alter the installat	ion is complete	e, you must unlock and set new	nooeworde for
iose accounts you wi	sh to use. Schemas used '	for the databas	se management and post-instal	passwords for I functions are
iose accounts you wi aft unlocked, and pas	sh to use. Schemas used swords for these accounts	for the databas will not expire.	se management and post-instal Specify the passwords for thes	passwords for I functions are e accounts.
iose accounts you wi aft unlocked, and pas:	sh to use. Schemas used swords for these accounts	for the databas will not expire	e management and post-instal Specify the passwords for thes	passwords for I functions are e accounts.
iose accounts you wi ift unlocked, and pas:	sh to use. Schemas used swords for these accounts	for the databas will not expire	e management and post-instal Specify the passwords for thes	passwords for I functions are e accounts.
nose accounts you wi off unlocked, and pas: - C Use different pas	sh to use. Schemas used swords for these accounts swords for these accounts	for the databas will not expire	e management and post-instal Specify the passwords for thes	passwords for I functions are e accounts.
nose accounts you wi off unlocked, and pas: - ← Use different pas User Name	sh to use. Schemas used swords for these accounts swords for these accounts Enter Passwo	for the databas will not expire 	e management and post-instal Specify the passwords for thes Confirm Password	passwords for I functions are e accounts.
nose accounts you wi aft unlocked, and pase - ← <u>U</u> se different pase User Name SYS	sh to use. Schemas used swords for these accounts swords for these accounts Enter Passwi	for the databas will not expire.	e management and post-instal Specify the passwords for thes Confirm Password	passwords for I functions are e accounts.
Inose accounts you wi off unlocked, and pass - C Use different pas User Name SYS SYSTEM	sh to use. Schemas used swords for these accounts swords for these accounts Enter Passwi	for the databas will not expire ord	e management and post-instal Specify the passwords for thes Confirm Password	passwords for I functions are e accounts.
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C Use different pas User Name SYS SYSTEM CYSMAN	sh to use. Schemas used swords for these accounts swords for these accounts Enter Passwi essword for all the accounts	for the databas will not expire.	e management and post-instal Specify the passwords for thes Confirm Password	passwords for I functions are e accounts.

You can chose different passwords for each account or use the same password for all accounts. Click **Next**. (We chose to use the same password for all the accounts in our test setup to make things less confusing).

- 11. The Summary screen appears. Click Install to begin installation.
- 12. When the software installation completes the **Configuration Assistants** screen appears and will automatically go through each process. When it completes, the **End of Installation** screen appears.
- 13. Click **Exit**, and confirm your choice to exit.

4. SETTING UP OIDHOST1 (Oracle® Internet Directory)

- 1. Make sure that there are no other services using port 389 and 636 on the computer.
- 2. Start the Oracle® Universal Installer by double clicking on setup.exe
- 3. The Welcome screen appears. Click Next.
- 4. The Specify File Locations screen appears with default locations for:
 - The product files for the installation (Source)
 - The name and path to an Oracle® home (Destination)
 - *C*:*OraHome_1* will be the default destination on all the servers we will be setting up.
- 5. Click Next.
- 6. At this point, go to the *Disk1\stage\Response* directory of the installation package and copy the staticport.ini file and paste in the *C:\OraHome_1* directory.
- 7. In the C:\OraHome_1 directory edit the staticport.ini file with the following values: Oracle Internet Directory port = 389 Oracle Internet Directory (SSL) port = 636
- 8. The **Select a Product to Install** screen appears:

Oracle Universal Installer: Select a Product to Install	<u>-□×</u>
Select a Product to Install	
C Oracle Application Server 10g	
This option is known as the "Oracle Application Server Middle-Tier" and installs components used for applicatio deployment. Included components are Oracle HTTP Server, Oracle Application Server Containers for J2EE (OC Cache, Portal, Wireless, Reports Services, Forms Services, Discoverer, and others.	on 4J), Web
Oracle Application Server Infrastructure 10g	
This option installs Identity Management services and Metadata Repository for Oracle Application Server Middle Servers. This selection includes an option to create a new Oracle Internet Directory. Included components are Database, Oracle Internet Directory, Oracle Application Server Single Sign-On, Oracle Application Server Certi Authority and others.	e-Tier Oracle ficate
C Oracle Application Server Developer Kits 10g	
This option installs API's and simple developer kits. This selection includes the Oracle Application Server Middle does not include Oracle Developer Suite products.	-Tier. This
Product Lan	guages)
Help) Installed Products) Back Next) (Install)	<u>Cancel</u>
ORACLE'	

Select Oracle Application Server Infrastructure 10g. Click Next.

Oracle Universa	I Installer: Select Installation Type	-
Select Ins	stallation Type	
Oracle Appl	lication Server Infrastructure 10g 10.1.2.0.2	
What type of i	nstallation do you want?	
C Identity Mar	agement and Metadata Repository (3.03GB)	
This option insta Administration S containing the O	Ils and configures Identity Management services (Oracle Internet D ervice, Directory Integration Platform, and Certificate Authority) and racle Application Server Metadata Repository. (Requires 1024 MB I	irectory, Single Sign-On, Delegated 3 an Oracle 10.1.0.4.2 database RAM configured on your machine)
Identity Mar	nagement (1.03GB)	
This option insta Internet Director 1024 MB RAM c	lls and configures Identity Management services (see above for co y or Certificate Authority, you need an existing Oracle Application S onfigured on your machine)	imponent list). To configure Oracle Server Metadata Repository. (Requir
C Metadata R	epository (3.03GB)	
This option insta Repository can RAM configured	lls a new Oracle 10.1.0.4.2 database containing the Oracle Applica be used by Oracle Application Server Instances and/or Identity Mar on your machine)	ition Server Metadata Repository. Th nagement services. (Requires 1024

Select Identity Management and click Next.

10. The **Confirm Pre-Installation Requirements** screen appears:

Confirm	Pre-Installation Require	ements	
		P	
enty that you r he checkboxes	have met all of the minimum pre-installat s. For details on performing these check	tion requirements listed below, and the s, click the Help button.	n select all of
vour compute	er does not meet the minimum requirem	ents, you will get errors later in the inst:	allation or whe
ou run Oracle	Application Server Infrastructure.	onio, you nin ger on ord failer in the mon	
	Requirement	Description	
Mathematical Administration	rator privileges	You must have administrator privile	ges on this h
4			

Confirm that you have Administrator privileges and click Next.

11. The Select Configuration Options screen appears:

Select Configuration Options

Select the components that you would like to configure and automatically start at the end of the installation.

If you want to use an existing Oracle Internet Directory, deselect it. The installer will then prompt you to enter the location of the existing Oracle Internet Directory.

	Available Components:	Description
	Oracle HTTP Server	Serves static and dynamic Web content.
	OracleAS Containers for J2EE	Runs Enterprise Java applications.
	Oracle Internet Directory	Configures an LDAP server for identity and securit
	OracleAS Single Sign-On	Configures a directory-enabled single sign-on for
	OracleAS Delegated Administration Service	Provides web-based identity and security adminis
	OracleAS Directory Integration and Provisioning	Enables directory synchronization and user and gr.
	OracleAS Certificate Authority (OCA)	Creates and manages security certificates.
	High Availability and Replication	Displays HA and/or Replication configuration opti
		D
Ц	elp Installed <u>Products</u>	Back Next (nstall Cancel
0	RACLE	

Select Oracle Internet Directory, OracleAS Directory Integration and Provisioning, and High Availability and Replication. Click Next.

12. The **Specify Port Configuration Options** screen appears:

Specify Port Configuration Options
Select the method which you want to use to configure the ports for Oracle10g Application Server. If you decide to manually configure the ports, then you must specify the port numbers for each port in a text file and enter the filename below.
Configure Ports
C Automatic
Manual:
C:\OraHome_2\staticports.ini Browse
Help Installed Products Back Next Install Qancel

Select manual and select the location of the edited staticports.ini file which should be in $C:\OraHome_1$. Click Next.

13. The **Specify Repository** screen appears:

Specify Rep	ository
Provide a DBA login to you want to use.	o the database containing the Oracle Application Server Metadata Repository that
Username:	sys
Pass <u>w</u> ord:	*****
Hostname <u>a</u> nd Port:	infradbhost1-vip.mycompany.com: 1521^ infradbhost2-vip.mycompany.com: 1521
	Example for a single instance database: Host: 1521
	Example for a 10g Real Application Clusters database or above: Virtual_hostname_on_node1:1521^Virtual_hostname_on_node2:1521
	Example for a 9i Real Application Clusters database: Host1:1521^Host2:152
Service Name:	infradb.mycompany.com
	Example: asdb.mydomain.com

Enter *sys* as the username and enter the password you assigned to it when you set up INFRADBHOST1. In the hostname and port enter only *infradbhost1:1521* since there is only a single instance database. Enter the Global Database Name you assigned when you set up INFRADBHOST1 in the Service Name section. Click **Next**.

14. The Select High Availability or Replication Option screen appears:

⊂ ⊻irtual host Select this option to configure all co	components in this installation to use a virtual hostname.
OracleAS Cluster (Identity Network)	Management)
Enables multiple Identity Manageme	ent installations against the same Metadata Repository.
C Replication	
Select this option to configure Orac	cle Internet Directory as a Replica Node against an existing Master Node
Select this option to configure Orac	cle Internet Directory as a Replica Node against an existing Master Node
Select this option to configure Orac	cle Internet Directory as a Replica Node against an existing Master Node
Select this option to configure Orac	cle Internet Directory as a Replica Node against an existing Master Node
Select this option to configure Orac	cle Internet Directory as a Replica Node against an existing Master Node
Select this option to configure Orac	cle Internet Directory as a Replica Node against an existing Master Node
Select this option to configure Orac	cle Internet Directory as a Replica Node against an existing Master Node
Select this option to configure Orac	cle Internet Directory as a Replica Node against an existing Master Node
Select this option to configure Orac	cle Internet Directory as a Replica Node against an existing Master Node
Select this option to configure Orac	cle Internet Directory as a Replica Node against an existing Master Node

Select OracleAS Cluster (Identity Management). Click Next.

15. The **Specify Namespace in Internet Directory** screen appears:

Specify Namespa	ce in Internet Directory
Specify a location, or namesp Management policies. This na	ace, in Oracle Internet Directory to contain users, groups, and Identity amespace will be the default Identity Management Realm.
Suggested Namespace:	dc=us,dc=oracle,dc=com
C Custom Namespace:	
C Custom Namespace:	Example: dc=acme,dc=com
C Custom Namespace:	Example: dc=acme,dc=com
← Custom Namespace:	Example: dc=acme,dc=com
← Custom Namespace:	Example: dc=acme,dc=com
C Custom Namespace:	Example: dc=acme,dc=com

Select the **Suggested Namespace** and click **Next**.

- 16. The **Specify Instance Name and ias_admin Password** screen appears. We will assign **oidhost1** as the instance name for this server. Assign your desired password of the ias_admin user for this instance. Click **Next**.
- 17. The **Summary** screen appears. Click **Install** to begin installation.
- 18. When the software installation completes the **Configuration Assistants** screen appears and will automatically go through each process. When it completes, the **End of Installation** screen appears.
- 19. Click **Exit**, and confirm your choice to exit.

5. SETTING UP OIDHOST2 (Oracle® Internet Directory)

- 1. Follow instructions 1 through 13 in section 4 of setting up OIDHOST1.
- 2. After clicking **Next** on step 13 a dialog box opens, prompting you to synchronize the system time of the primary Oracle® Internet Directory computer and the system time on the computer on which you are installing. Synchronize the system time on the computers and click **OK**.
- 3. The Specify ODS Password screen appears:

Specify	ODS Password			
Specify the p	assword for the ODS Schema for this M	etadata Repos	sitory:	
Pass <u>w</u> ord:	*****			
~				
		\geq		
Help	Installed Products	Back		Install <u>C</u> ancel

By default it is the ias_admin password. Click Next.

4. Since there is no existing Oracle® Internet Directories other than the one just installed in the previous section, the installer automatically detects it and asks you for the password:

Specify	OID Login
Enter your use stada19.us.or: Use cn=orclac on username	rname and password to connect/login to the Oracle Internet Directory at the hostname and port acle.com:389. You need to be the Oracle Internet Directory Superuser or a Single Sign-On user. Imin as the username if you are the Oracle Internet Directory Superuser. Use your Single Sign- if you are a Single Sign-On user with the appropriate install privileges.
<u>U</u> semame:	cn=orcladmin
Password:	*******
Help	Installed Products Back Next Install Cancel
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The password is the same that you assigned for the SYS user. Click Next.

- 5. The **Specify Instance Name and ias_admin Password** screen appears. We will assign **oidhost2** as the instance name for this server. Assign your desired password of the ias_admin user for this instance. Click **Next**.
- 6. The **Summary** screen appears. Click **Install** to begin installation.
- 7. When the software installation completes the **Configuration Assistants** screen appears and will automatically go through each process. When it completes, the **End of Installation** screen appears.
- 8. Click **Exit**, and confirm your choice to exit.

6. CREATING THE OID FARM ON WEBMUX2

- 1. Login the WebMuxTM web admin as superuser.
- 2. Click on the Add Farm button at the bottom of the status screen.
- 3. In the Add Farm screen, enter 192.168.3.12 as the IP address. Optionally, you can enter oid.mycompany.com in the Label field.
- 4. In the port number field enter 389.
- 5. For the service, select LDAP lightweight directory access protocol.
- 6. Select Round Robin in the scheduling method.
- 7. Select NONE for SSL termination.
- 8. Leave the SSL port field blank.
- 9. Select NO for the block non-SSL access and NO for the tag-SSL terminated HTTP requests.

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- 10. Click Confirm.
- 11. Back at the status screen, click on the IP address of the OID farm you just created.
- 12. In the Modify Farm screen, click on the Add Addr. Port button.
- 13. In the Add IP address/port screen enter 192.168.3.12 as the IP address.
- 14. In the port number field enter 636. Optionally, in the Label field you can enter a label to remind yourself such as "secure port".
- 15. Click confirm and you will be back in the status screen.
- 16. You will notice that the OID farm has another 192.168.3.12 address listed with port 636.
- 17. This allows the OID farm to serve both ports 389 and 636 for the OIDHOST servers.
- 18. Click on the TOP farm IP link and this time click the Add Server button in the Modify Farm screen.
- 19. In the IP address field enter 192.168.4.229 for OIDHOST1. Optionally, you can enter OIDHOST1 in the Label field. Click confirm.
- 20. Repeat step 18 and this time enter 192.168.4.230 for OIDHOST2. Optionally, you can enter OIDHOST2 in the Label field. Click confirm.
- 21. You should now have a farm with the IP address 192.168.3.12 and the two Oracle® Internet Directories listed under them.

		G	A7 Net	works, Inc	Apr 26 10:	03:01 2007 up :	since Apr 26 09:	oserver lo 39:58 2007	adbalan	cer		
		IP 19	2.168.3.21 service	webmu MAC 00:e0	x2. XXXXX.com):81:71:d0:f9 IP address	cpu: 0%	6, mem: 6% 8.4.21 MA	6 C 00:e0: status	81:71:0 conn	d0:f8 conn/s	ſ	okt/s
- 1		RR farm	Idap		192.168.3.12	389	2 servers	ALIVE	()	0	
2					192.168.3.12	TCP 636						
3		server		OIDHOST1	192.168.4.229	same	weight 1	ALIVE	0)	0	-
4		server		OIDHOST2	192.168.4.230	same	weight 1	ALIVE	()	0	(
Irand	d t	otals:)	0	

7. TESTING THE OID FARM

- 1. From INFRADBHOST1 open a command prompt and go to C:\OraHome_1\bin
- 2. Ensure that you can connect to each Oracle® Internet Directory using this command:

ldapbind -p 389 -h oidhost1

ldapbind –p 389 –h oidhost2

If you are unable to connect be sure that your host file or DNS has the proper entries to resolve those host names.

3. Ensure that you can connect to the oid farm using this command:

ldapbind -p 389 -h oid.mycompany.com

If you are unable to connect be sure that your host file or DNS has the proper entries to resolve the host name. Be sure that you have added the proper routing rules as stated in the SERVER CONFIGURATION of Section 2 for the OIDHOSTs.

8. SETTING UP IDMHOST1 (Identity Management)

- 1. Start the Oracle® Universal Installer by double clicking on setup.exe
- 2. The Welcome screen appears. Click Next.
- 3. The Specify File Locations screen appears with default locations for:
 - The product files for the installation (Source)
 - The name and path to an Oracle® home (Destination) *C:\OraHome 1* will be the default destinations on all the servers we will be setting up.
- 4. Click Next.
- 5. At this point, go to the *Disk1\stage\Response* directory of the installation package and copy the staticport.ini file and paste in the *C:\OraHome_1* directory.
- 6. In the *C*:*OraHome_1* directory edit the *staticport.ini* file with the following values:

```
Oracle HTTP Server port = 7777
Oracle HTTP Server Listen port = 7777
Application Server Control port = 1810
```

7. The **Select a Product to Install** screen appears:

Oracle Universal Installer: Select a Product to Install	<u>-0×</u>
Select a Product to Install	
C Oracle Application Server 10g	
This option is known as the "Oracle Application Server Middle-Tier" and installs components used deployment. Included components are Oracle HTTP Server, Oracle Application Server Containers f Cache, Portal, Wireless, Reports Services, Forms Services, Discoverer, and others.	for application for J2EE (OC4J), Web
Oracle Application Server Infrastructure 10g	
This option installs Identity Management services and Metadata Repository for Oracle Application S Servers. This selection includes an option to create a new Oracle Internet Directory. Included com Database, Oracle Internet Directory, Oracle Application Server Single Sign-On, Oracle Application Authority and others.	Server Middle-Tier ponents are Oracle Server Certificate
C Oracle Application Server Developer Kits 10g	
This option installs API's and simple developer kits. This selection includes the Oracle Application S does not include Oracle Developer Suite products.	erver Middle-Tier. This
e e e e e e e e e e e e e e e e e e e	roduct Languages)
Help (Installed Products) Back Next (Installed Products)	stall) <u>C</u> ancel
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Select Oracle Application Server Infrastructure 10g. Click Next.

	Installer: Select Installation Type	
Select Ins	tallation Type	
Oracle Appl	cation Server Infrastructure 10g 10.1.2.0.2	
What type of in	nstallation do you want?	
C Identity Man	agement and Metadata Repository (3.03GB)	
This option instal Administration Se containing the Or	s and configures Identity Management services (Oracle Internet Dir ervice, Directory Integration Platform, and Certificate Authority) and acle Application Server Metadata Repository. (Requires 1024 MB R	rectory, Single Sign-On, Delegated an Oracle 10.1.0.4.2 database XAM configured on your machine)
Identity Man	agement (1.03GB)	
This option instal Internet Directory 1024 MB RAM co	s and configures Identity Management services (see above for cor or Certificate Authority, you need an existing Oracle Application S nfigured on your machine)	mponent list). To configure Oracle erver Metadata Repository. (Requires
C Metadata Re	epository (3.03GB)	
This option instal Repository can b RAM configured	s a new Oracle 10.1.0.4.2 database containing the Oracle Applicat e used by Oracle Application Server Instances and/or Identity Man on your machine)	ion Server Metadata Repository. This agement services. (Requires 1024 MB
	-	

Select Identity Management and click Next.

Oracle Univer	sal Installer: Confirm Pre-Installatio	n Requirements	-
Confirm	Pre-Installation Requ	irements	
Verify that you the checkboxe	have met all of the minimum pre-ins s. For details on performing these cf	allation requirements listed below, and the necks, click the Help button.	n select all
lf your comput you run Oracle	er does not meet the minimum requi Application Server Infrastructure.	rements, you will get errors later in the insta	allation or w
	Requirement	Description	
Adminis	trator privileges	You must have administrator privile	ges on this
(1)			

Confirm that you have Administrator privileges and click Next.

Sele Selec	lect Configuration Options	and automatically start at the end of the
lf you ente	u want to use an existing Oracle Internet Directory, r the location of the existing Oracle Internet Direct	, deselect it. The installer will then prompt you to ory.
	Available Components:	Description
	Oracle HTTP Server	Serves static and dynamic Web content.
	OracleAS Containers for J2EE	Runs Enterprise Java applications.
	Oracle Internet Directory	Configures an LDAP server for identity and sec
	OracleAS Single Sign-On	Configures a directory-enabled single sign-on
	OracleAS Delegated Administration Service	Provides web-based identity and security adm
	OracleAS Directory Integration and Provisioning	Enables directory synchronization and user an
	OracleAS Certificate Authority (OCA)	Creates and manages security certificates.
	High Availability and Replication	Displays HA and/or Replication configuration o
1		
Ē	elp Installed Products Back	Next (Install Cancel
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Select OracleAS Single Sign-On, Oracle Delegated Administration Services, and High Availability and Replication. Click Next.

11. The **Specify Port Configuration Options** screen appears:

Specify Port Configuration Options	
Select the method which you want to use to configure the ports for decide to manually configure the ports, then you must specify the enter the filename below.	or Oracle10g Application Server. If you e port numbers for each port in a text file and
Configure Ports	
C Automatic	
Manual:	
C:\OraHome_2\staticports.ini	Browse
Help Installed Products Back	Next (Install Cancel

Select manual and select the location of the edited staticports.ini file which should be in $C:\OraHome_1$ (not correctly shown in the image). Click **Next**.

12. The Select High Availability Option screen appears:



Select OracleAS Cluster (Identity Management) and click Next.

13. The Create or Join an OracleAS Cluster (Identity Management) screen appears:

Create or Join an OracleAS Cluster (Identity Management)
Select Create or Join an OracleAS Cluster (Identity Management) OJoin an Existing OracleAS Cluster
© Create a New OracleAS Cluster
For the Oracle Delegated Administration Services or the Oracle AS Single Sign_On components to work
properly in a highly available (HA) environment, you need to cluster the instances that are running these components. If this is the first instance for these components, you need to create a new OracleAS Cluster (Identity Management). If you have created an OracleAS Cluster (Identity Management) during previous identical installation, you need to join the existing OracleAS Cluster (Identity Management).
Help Installed Products Back Next Install Cancel
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Select Create a New OracleAS Cluster and click Next.

14. The Specify New OracleAS Cluster Name screen appears:

Spe cur wh	ecify the name of a new O rrent instance. Provide a u en you are installing addit	racleAS Cluster (Identity Management) for the installer to create with the nique name for the new cluster and write it down so that you can use it ional instances of these components.
lf t the	the new cluster name is no installation process	ot unique, then errors will be generated during the configuration phase of
Ne	ew OracleAS Cluster Name	e [imcluster

Enter **imcluster** and click **Next**.
Specify the virtual server host and ports to manage LDAP connections made by Oracle Delegated Administration Services and OracleAS Single Sign-On to Oracle Internet Directory (OID). The virtual host must already be configured to accept and route LDAP connections through the virtual server name and ports specified below. If your virtual server is not configured to manage LDAP connection to OID, please specify OID host and ports information.				
Both Ports are n	equired.			
Hostna <u>m</u> e:	oid.mycompany.com			
SSL Port:	636			
Non-SSL Port:	389			
Help	Installed Products Back Next Install Cancel			

Enter the farm name of the OID servers (oid.mycompany.com) and the ports as shown. Click **Next**.

16. The **Specify OID Login** screen appears:

Specify	OID Login
Enter your us stada19.us.oi Use cn=orcla on username	ername and password to connect/login to the Oracle Internet Directory at the hostname and port racle.com:389. You need to be the Oracle Internet Directory Superuser or a Single Sign-On user. dmin as the username if you are the Oracle Internet Directory Superuser. Use your Single Sign- if you are a Single Sign-On user with the appropriate install privileges.
Username:	
	[cn=orcladmin
– Pass <u>w</u> ord:	cn=orcladmin
– Pass <u>w</u> ord:	cn=orcladmin
_ Pass <u>w</u> ord:	cn=orcladmin
_ Pass <u>w</u> ord:	cn=orcladmin
Pass <u>w</u> ord:	cn=orcladmin
Password:	cn=orcladmin
Password:	cn=orcladmin

Enter the password for cn=orcladmin and click **Next**.

17.	The S	pecify H'	TTP Loa	d Balancer	and L	listen F	Ports	screen	appears:
-----	-------	-----------	---------	------------	-------	----------	-------	--------	----------

Specify HTTP Load Balancer Host and Listen Ports
Specify HTTP Load Balancer Host and Listen Ports to to manage HTTP connections made by client applications to Oracle Delegated Administration Services and OracleAS Single Sign-On. Note that when you enable SSL (Secure Socket Layer) for the HTTP Listen port, the HTTP load balancer port will also be automatically SSL enabled.
HTTP Listener:
Port: 7777
Enable SSL
HTTP Load Balancer:
Hostname: login.mycompany.com
Port: 443
✓ Enable SSL
Help Installed Products Back Next Install Cancel
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Enter the fields as shown. Click Next.

- 18. The Specify Instance Name and ias_admin Password screen appears. We will assign idmhost1 as the instance name for this server. Assign your desired password of the ias_admin user for this instance. Click Next.
- 19. The Summary screen appears. Click Install to begin installation.
- 20. When the software installation completes the **Configuration Assistants** screen appears and will automatically go through each process. When it completes, the **End of Installation** screen appears.
- 21. Click **Exit**, and confirm your choice to exit.

9. SETTING UP (login.mycompany.com) FARM ON WEBMUX1

- 1. Log in WebMux1 web admin as "superuser"
- 2. Click on the Add Farm button at the bottom of the status screen.
- 3. In the Add Farm screen enter the public IP you are using for login.mycompany.com. Optionally, you can enter login.mycompany.com in the Label field. In the port number field enter 7777. Select "HTTP – hypertext transfer protocol (TCP)". Select Round Robin for the scheduling method. Select the certificate you want to you use in the SSL termination field. Ensure that the SSL port field shows 443. Select NO for "block non-SSL access" and NO for "tag-SSL terminated HTTP requests". Click Confirm.
- 4. Back at the status screen click on the IP address of the newly created farm.
- 5. In the Modify Farm screen, click on Add Server.
- 6. In the IP address field enter 192.168.3.231 for IDMHOST1. Optionally, you can enter IDMHOST1 in the Label field. Click confirm.

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- 7. Repeat step 4 and this time enter 192.168.3.232 for IDMHOST2. Optionally, you can enter IDMHOST2 in the Label field. Click confirm.
- 8. You should now have the login.mycompany.com farm with the two IDMHOSTs listed under them. (IDMHOST2 would be showing dead because the server is not yet up).
- 9. The port (SSL) column should be showing 7777 (443).



10. TESTING THE IDENTITY MANAGEMENT COMPONENTS WITH ORACLE® INTERNET DIRECTORY

1. Stop all components on OIDHOST1, using this command:

C:\OraHome_1\opmn\bin\opmnctl stopall

2. Ensure that all components on OIDHOST2 are running:

C:\OraHome_1\opmn\bin\opmnctl status

3. Access the following URLs:

https://login.mycompany.com/pls/orasso

https://login.mycompany.com/oiddas

11. SETTING UP IDMHOST2 (Identity Management)

- 1. Start the Oracle® Universal Installer by double clicking on setup.exe
- 2. The Welcome screen appears. Click Next.
- 3. The Specify File Locations screen appears with default locations for:
 - The product files for the installation (Source)
 - The name and path to an Oracle® home (Destination) *C:\OraHome 1* will be the default destinations on all the servers we will be setting up.
- 4. Click Next.
- 5. At this point, go to the *Disk1/stage/Response* directory of the installation package and copy the staticport.ini file and paste in the *C:\OraHome_1* directory.
- 6. In the *C*:*OraHome_1* directory edit the *staticport.ini* file with the following values:

```
Oracle HTTP Server port = 7777
Oracle HTTP Server Listen port = 7777
Application Server Control port = 1810
```

7. The **Select a Product to Install** screen appears:

Oracle Universal Installer: Select a Product to Install	<u>_</u> _×
Select a Product to Install	
C Oracle Application Server 10g	
This option is known as the "Oracle Application Server Middle-Tier" and installs components used for ap deployment. Included components are Oracle HTTP Server, Oracle Application Server Containers for J2 Cache, Portal, Wireless, Reports Services, Forms Services, Discoverer, and others.	pplication EE (OC4J), Web
Oracle Application Server Infrastructure 10g	
This option installs Identity Management services and Metadata Repository for Oracle Application Serve Servers. This selection includes an option to create a new Oracle Internet Directory. Included componen Database, Oracle Internet Directory, Oracle Application Server Single Sign-On, Oracle Application Serve Authority and others.	er Middle-Tier nts are Oracle er Certificate
C Oracle Application Server Developer Kits 10g	
This option installs API's and simple developer kits. This selection includes the Oracle Application Server does not include Oracle Developer Suite products.	r Middle-Tier. This
Produ	ict Languages)
Help) Installed Products) Back Next) Install) (<u>C</u> ancel)
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Select Oracle Application Server Infrastructure 10g. Click Next.

	l Installer: Select Installation Type	
Select Ins	stallation Type	
Oracle Appl	ication Server Infrastructure 10g 10.1.2.0.2	
What type of i	nstallation do you want?	
C Identity Man	agement and Metadata Repository (3.03GB)	
This option instal Administration Se containing the Or	Is and configures Identity Management services (Oracle Internet Dir ervice, Directory Integration Platform, and Certificate Authority) and racle Application Server Metadata Repository. (Requires 1024 MB R	ectory, Single Sign-On, Delegated an Oracle 10.1.0.4.2 database AM configured on your machine)
Identity Man	agement (1.03GB)	
This option instal Internet Directory 1024 MB RAM co	Is and configures Identity Management services (see above for con / or Certificate Authority, you need an existing Oracle Application Se onfigured on your machine)	nponent list). To configure Oracle erver Metadata Repository. (Requires
C Metadata Re	epository (3.03GB)	
This option instal Repository can b RAM configured	Is a new Oracle 10.1.0.4.2 database containing the Oracle Applicati be used by Oracle Application Server Instances and/or Identity Mana on your machine)	on Server Metadata Repository. This agement services. (Requires 1024 MB

Select Identity Management and click Next.

oracle only c	rsal Installer: Confirm Pre-Installatio	n Requirements	-
Confirn	n Pre-Installation Requ	irements	
Verify that yo the checkbo)	u have met all of the minimum pre-inst (es. For details on performing these ch	allation requirements listed below, and t ecks, click the Help button.	hen select all
lf your compi you run Orac	uter does not meet the minimum requir le Application Server Infrastructure.	ements, you will get errors later in the in	stallation or w
	Requirement	Description	
🗹 Admini	strator privileges	You must have administrator priv	leges on this
1			
(4)	11111111111111111		

Confirm that you have Administrator privileges and click Next.

Sele Selec	Select Configuration Options Select the components that you would like to configure and automatically start at the end of the installation.				
lf you ente	If you want to use an existing Oracle Internet Directory, deselect it. The installer will then prompt you to enter the location of the existing Oracle Internet Directory.				
	Available Components:	Description			
	Oracle HTTP Server	Serves static and dynamic Web content.			
	OracleAS Containers for J2EE	Runs Enterprise Java applications.			
	Oracle Internet Directory	Configures an LDAP server for identity and sec			
	OracleAS Single Sign-On	Configures a directory-enabled single sign-on			
	OracleAS Delegated Administration Service	Provides web-based identity and security adm			
	OracleAS Directory Integration and Provisioning	Enables directory synchronization and user an			
	OracleAS Certificate Authority (OCA)	Creates and manages security certificates.			
	High Availability and Replication	Displays HA and/or Replication configuration o			
1					
	elp Installed Products Back	Next (Install Cancel			
0	ORACLE				

Select OracleAS Single Sign-On, Oracle Delegated Administration Services, and High Availability and Replication. Click Next.

11. The **Specify Port Configuration Options** screen appears:

Specify Port Configuration Options	
Select the method which you want to use to configure the ports fo decide to manually configure the ports, then you must specify the enter the filename below.	or Oracle10g Application Server. If you e port numbers for each port in a text file and
Configure Ports	
C Automatic	
Manual:	
C:\OraHome_2\staticports.ini	Browse
Help Installed Products Back	Next (Install Cancel

Select manual and select the location of the edited staticports.ini file which should be in $C:\OraHome_1$ (not correctly shown in the image). Click **Next**.

12. The Select High Availability Option screen appears:



Select OracleAS Cluster (Identity Management) and click Next.

13. The Create or Join an OracleAS Cluster (Identity Management) screen appears:

Create or Join an OracleAS Cluster (Identity Management)
Select Create or Join an OracleAS Cluster (Identity Management)
O Create a New OracleAS Cluster
For the Oracle Delegated Administration Services or the OracleAS Single Sign-On components to work properly in a highly available (HA) environment, you need to cluster the instances that are running these components. If this is the first instance for these components, you need to create a new OracleAS Cluster (Identity Management). If you have created an OracleAS Cluster (Identity Management) during previous identical installation, you need to join the existing OracleAS Cluster (Identity Management).
Help Installed Products Back Next Install Cancel
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Select Join an Existing OracleAS Cluster and click Next.

Specify Exis	sting OracleAS Cluster Name
Specify an existing O was created during a	racleAS Cluster (Identity Management) for the current instance to join. The cluster a previous identical installation.
If the existing cluster phase of the installat	r name is not accurate then, errors will be generated during the configuration ion process.
Existing OracleAS CI	uster Name imcluster
Help	talled <u>Products</u> <u>Back</u> <u>Next</u> (nstall <u>C</u> ancel
ORACLE [®]	

Enter imcluster. Click Next.

Specify the virtua Administration So must already be ports specified b please specify O	DAP Virtual Host and Ports al server host and ports to manage LDAP connections made by Oracle Delegated ervices and OracleAS Single Sign-On to Oracle Internet Directory (OID). The virtual host configured to accept and route LDAP connections through the virtual server name and below. If your virtual server is not configured to manage LDAP connection to OID, ID host and ports information.
Both Ports are n	equired.
Hostna <u>m</u> e:	oid.mycompany.com
SSL Port:	636
Non-SSL Port:	389
Help	Installed Products Back Next Install Cancel

Enter the farm name of the OID servers (oid.mycompany.com) and the ports as shown. Click **Next**.

16. The **Specify OID Login** screen appears:

Specify	OID Login
Enter your us stada19.us.oi Use cn=orcla on username	ername and password to connect/login to the Oracle Internet Directory at the hostname and port racle.com:389. You need to be the Oracle Internet Directory Superuser or a Single Sign-On user. dmin as the username if you are the Oracle Internet Directory Superuser. Use your Single Sign- if you are a Single Sign-On user with the appropriate install privileges.
Username:	
	[cn=orcladmin
– Pass <u>w</u> ord:	cn=orcladmin
– Pass <u>w</u> ord:	cn=orcladmin
_ Pass <u>w</u> ord:	cn=orcladmin
_ Pass <u>w</u> ord:	cn=orcladmin
Pass <u>w</u> ord:	cn=orcladmin
Password:	cn=orcladmin
Password:	cn=orcladmin

Enter the password for cn=orcladmin and click **Next**.

The Specify	HTTP Lo	ad Balancer	and Listen	Ports screen	appears:
	Гhe Specify	The Specify HTTP Lo	The Specify HTTP Load Balancer	The Specify HTTP Load Balancer and Listen	The Specify HTTP Load Balancer and Listen Ports screen

Specify H ⁻	TTP Load Balancer Host and Listen Ports
Specify HTTP Loa applications to Or you enable SSL (Se automatically SSL	d Balancer Host and Listen Ports to to manage HTTP connections made by client acle Delegated Administration Services and OracleAS Single Sign-On. Note that when ecure Socket Layer) for the HTTP Listen port, the HTTP load balancer port will also be enabled.
HTTP Listener:	
Po <u>r</u> t:	7777
Enable SSL	
HTTP Load Balan	cer:
Hosţname:	login.mycompany.com
Port:	443
Enable SSL	
Help	Installed Products Back Next Install Cancel
ORACLE	

Enter the fields as shown. Click **Next**.

- 18. The Specify Instance Name and ias_admin Password screen appears. We will assign idmhost2 as the instance name for this server. Assign your desired password of the ias_admin user for this instance. Click Next.
- 19. The Summary screen appears. Click Install to begin installation.
- 20. When the software installation completes the **Configuration Assistants** screen appears and will automatically go through each process. When it completes, the **End of Installation** screen appears.
- 21. Click **Exit**, and confirm your choice to exit.

12. TESTING THE IDENTITY MANAGEMENT COMPONENTS

1. Stop all components on IDMHOST1, using this command:

C:\OraHome_1\opmn\bin\opmnctl stopall

2. Ensure that all components on IDMHOST2 are running, using this command:

C:\OraHome_1\opmn\bin\opmnctl status

3. Access the following URLs from two browsers:

https://login.mycompany.com/pls/orasso

https://login.mycompany.com/oiddas

- Start all components from IDMHOST1, using this command:
 C:\ORAHOME_1\opmn\bin\opmnctl startall
- 5. Stop all components on IDMHOST2, using this command: C:\ORAHOME_1\opmn\bin\opmnctl stopall
- 6. Ensure that the login session is still valid for the orasso and oiddas logins.

13. SETTING UP APPDBHOST1 (Application Metadata Repository)

- 1. Follow steps 1 through 7 in Section 3 (Setting up Infradbhost1).
- 2. After step 7, the **Register Oracle Application Server Metadata Repository** screen appears:

Register Oracle Application Se	erver Metadata Repository
Before Oracle Application Server instances can use Oracle Internet Directory. You can register it now, or Assistant, which is located on the Repository Creati Repository if you are using it only for DCM-Managed Repository or Central Management.	a Repository, you must register the Repository with an you can do it later using the Repository Creation ion Assistant CD. You do not need to register the I Oracle Application Server Clusters using Database
Do you want to register the Repository with an Oracl	le Internet Directory?
● Yes	
Oracle Internet Directory Hostname:	oid.mycompany.com
Oracle Internet Directory Port:	389
CND	
Use only SSL connections with this Oracle Intern	net Directory
Help Installed Products)	Back Next Install Cancel

This time you will be registering the installation in the Oracle Internet Directory. Select **Yes**. Enter the OID farm name (oid.mycompany.com) and port 389. Click **Next**.

ordere oniversar installer i	Specify Database (Configuration Op	tions	1	
Creatify Databas	o Configur	otion Onti			
Specify Databas	e coningui	ation Opti	UNS		
- Database Naming					- Flores
A Global Database Name, t	ypically of the form	"name.domain",	uniquely i	identifies an O	racle database. In
addition, each database is	referenced by at lea	ast one Oracle Sy	ystem Idei	ntifier (SID). Sp	becify the Global
Database Name and SID fo	or this database.				
and all all and a					
<u>G</u> lobal Database Name:	appdb.mycompa	any.com	SID:	appdb	
B		and the second second	es an hin		
- Database Character Set					
The number of language gr	oups to be stored (determine which	database	charaker set	to use. See "Help" fi
The number of language gr the definition of language g	oups to be stored (roups. For the Unic	determine which ode database ch	database haracter si	charaker set et, select "Unic	to use. See "Help" fi ode Standard UTF-8
The number of language gr the definition of language gr AL32UTF8"	oups to be stored (roups. For the Unic	determine which ode database ch	database haracter si	charaker set et, select "Unic	to use. See "Help" f code Standard UTF-8
The number of language gr the definition of language g AL32UTF8" Select Database Characte	oups to be stored or roups. For the Unic	determine which ode database ch ode standard UT	database haracter si 'F-8 AL321	chara er set et, select "Unic JTF8	to use. See "Help" f code Standard UTF-8
The number of language gr the definition of language g AL32UTF8" Select Database Charact	roups to be stored o roups. For the Unic er set: Unic	determine which ode database ch ode standard UT	database naracter si F-8 AL321	chara er set et, select "Unic UTF8	to use. See "Help" fi code Standard UTF-8
Database Character Set The number of language gr the definition of language g AL32UTF8" Select Database Character Database File Location	roups to be stored o roups. For the Unic er set: Unic	determine which ode database ch ode standard UT	database haracter si F-8 AL321	charaker set et, select"Unic JTF8	to use. See "Help" f code Standard UTF-8
Database Character Set The number of language gr the definition of language g AL32UTF8" Select Database Characte Database File Location Use the file system for data recommends installing dat	roups to be stored o roups. For the Unic er set: base storage. For abase files and Or	determine which ode database ch ode standard UT best database or acle software on	database haracter si F-8 AL32 rganization separate	charal er set et, select "Unic JTF8 n and perform: disks.	to use. See "Help" f code Standard UTF-8 • • ance, Oracle
Database Character Set The number of language gr the definition of language g AL32UTF8" Select Database Charact Database File Location Use the file system for data recommends installing dat	roups to be stored o roups. For the Unic er set: Unic abase storage. For abase files and Or	determine which ode database ch ode standard UT best database oi acle software on	database haracter si F-8 AL320 rganization separate	charaker set et, select "Unic UTF8 n and perform: disks.	to use. See "Help" f code Standard UTF-8 ance, Oracle
Database Character Set The number of language gr the definition of language g AL32UTF8" Select Database Charact Database File Location Use the file system for data recommends installing dat	roups to be stored o roups. For the Unic er set: Unic abase storage. For abase files and Or	determine which ode database ch ode standard UT best database of acle software on	database haracter si F-8 AL321 rganization separate	charaker set et, select "Unic UTF8 n and perform disks.	to use. See "Help" fi code Standard UTF-8 ance, Oracle
Database Character Set The number of language gr the definition of language g AL32UTF8" Select Database Charach Use the file system for data recommends installing dat Specify Database File Loc	roups to be stored o roups. For the Unic er set: Unic abase storage. For abase files and Or cation:	determine which ode database ch ode standard UT best database of acle software on C:\oradata	database haracter si F-8 AL321 rganization separate	charaker set et, select"Unic JTF8 n and perform: disks.	to use. See "Help" f code Standard UTF-8 ance, Oracle Browse
Database Character Set The number of language gr the definition of language gr AL32UTF8" Select Database Character Database File Location Use the file system for data recommends installing data Specify Database File Loc	roups to be stored o roups. For the Unic er set: Unic abase storage. For abase files and Or cation:	determine which ode database ch ode standard UT best database of acle software on C:\oradata	database haracter si F-8 AL320 rganization separate	charaker set et, select "Unic JTF8 n and perform: disks.	to use. See "Help" f code Standard UTF-8 ance, Oracle Browse

Fill out the appropriate Global Database Name. The SID will be automatically filled out. Click Next.

racle Universal Insta	aller: Specify Database S	chema Password	5	_ 🗆 🗙
	4			
pecify Data	base Schema I	Passwords		
he Starter Database cked at the end of ins ose accounts you wi	contains pre-loaded schi stallation. After the install sh to use. Schemas use	emas, most of wh ation is complete, d for the database	ich have passwords that will exp you must unlock and set new p management and post-install t	bire and be asswords for functions are
ft unlocked, and pas	swords for these accoun	is will not expire. (specily life passwords for lifese	accounts.
ft unlocked, and pas C Use different pas User Name	swords for these accoun swords for these accour Enter Pass	ts	Confirm Password	accounts.
ft unlocked, and pass	swords for these accoun swords for these accour Enter Pass	ts	Confirm Password	accounts.
ft unlocked, and pas <u>Use</u> different pas <u>User Name</u> SYS SYSTEM	swords for these accoun swords for these accour Enter Pass	ts will not expire. a	Confirm Password	accounts.
ft unlocked, and pass <u>User Name</u> SYS SYSTEM SYSMAN	swords for these accoun swords for these accour Enter Pass	ts will not expire. s	Confirm Password	accounts.
ft unlocked, and pass	swords for these accoun swords for these accour Enter Pass	ts	Confirm Password	accounts.
ft unlocked, and pass C Use different pass User Name SYS SYSTEM SYSMAN C Use the same pa	swords for these accoun swords for these accour Enter Pass	ts will not expire. t	Confirm Password	accounts

You can chose different passwords for each account or use the same password for all accounts. Click **Next**. (We chose the same password for all the accounts in our test setup).

- 5. The **Summary** screen appears. Click **Install** to begin installation.
- 6. When the software installation completes the **Configuration Assistants** screen appears and will automatically go through each process. When it completes, the **End of Installation** screen appears.
- 7. Click **Exit**, and confirm your choice to exit.

14. SETTING UP APPHOST1 (Application Server, Portal, Web Cache)

- 1. Start the Oracle® Universal Installer by double clicking on *setup.exe*
- 2. The Welcome screen appears. Click Next.
- 3. The Specify File Locations screen appears with default locations for:
 - The product files for the installation (Source)
 - The name and path to an Oracle® home (Destination) *C:\OraHome_1* will be the default destinations on all the servers we will be setting up.
- 4. Click Next.
- 5. At this point, go to the *Disk1\stage\Response* directory of the installation package and copy the staticport.ini file and paste in the *C:\OraHome_1* directory.
- 6. In the *C*:*OraHome_1* directory edit the *staticport.ini* file with the following values:
 - Oracle HTTP Server port = 7777 Oracle HTTP Server Listen port = 7778 Web Cache HTTP Listen port = 7777 Web Cache Administration port = 9400 Web Cache Invalidation port = 9401 Web Cache Statistics port = 9402 Application Server Control port = 1810
- 7. The Select a Product to Install screen appears:

Oracle Universal Installer: Select a Product to Install	
Select a Product to Install	
Oracle Application Server 10g	
This option is known as the "Oracle Application Server Middle-Tier" and installs compo deployment. Included components are Oracle HTTP Server, Oracle Application Server Cache, Portal, Wireless, Reports Services, Forms Services, Discoverer, and others.	onents used for application Containers for J2EE (OC4J), Web
C Oracle Application Server Infrastructure 10g	
This option installs Identity Management services and Metadata Repository for Oracle , Servers. This selection includes an option to create a new Oracle Internet Directory. In Database, Oracle Internet Directory, Oracle Application Server Single Sign-On, Oracle Authority and others.	Application Server Middle-Tier ncluded components are Oracle Application Server Certificate
C Oracle Application Server Developer Kits 10g	
This option installs API's and simple developer kits. This selection includes the Oracle A does not include Oracle Developer Suite products.	Application Server Middle-Tier. This
	Product Languages)
Help Installed Products Back Next) Install <u>C</u> ancel
ORACLE	

Select Oracle Application Server 10g and click Next.

8. The Select Installation Type screen appears:

Select Installation Type
Oracle Application Server 10g (10.1.2.0.1) 10.1.2.0.1
What type of installation do you want?
C J2EE and Web Cache (1.11GB)
Installs and Configures Oracle HTTP Server, Oracle Application Server Containers for J2EE with J2EE 1.3 and Web Services features, and Web Cache. (Requires 512 MB RAM configured on your machine)
Portal and Wireless (1.44GB)
Installs and configures Portal and Wireless components. Also installs and configures the J2EE and Web Cache components. This middle tier type requires Oracle Application Server Infrastructure (Identity Management and Metadata Repository). (Requires 1024 MB RAM configured on your machine)
C Business Intelligence and Eorms (2.32GB)
Installs and configures Discoverer, Personalization, Reports Services and Forms Services components. Also installs and configures the Portal and Wireless and the J2EE and Web Cache components. This middle tier type requires Oracle Application Server Infrastructure (Identity Management and Metadata Repository). (Requires 1024 MB RAM configured on your machine)
Help Installed Products Back Next Install Cancel
ORACLE

Select Portal and Wireless. Click Next.

Oracle Univer	sal Installer: Confirm Pre-Installatio	n Requirements	-
Confirm	Pre-Installation Requ	irements	
Verify that you the checkboxe	have met all of the minimum pre-ins s. For details on performing these cf	allation requirements listed below, and the necks, click the Help button.	n select all
lf your comput you run Oracle	er does not meet the minimum requi Application Server Infrastructure.	rements, you will get errors later in the insta	allation or w
	Requirement	Description	
Adminis	trator privileges	You must have administrator privile	ges on this
(1)			

Confirm that you have Administrator privileges and click Next.

10. The **Select Configuration Options** screen appears:

Oracle Universal Installer: Select Configuration Options

- 🗆 ×

Select Configuration Options

Select the components that you would like to configure and automatically start at the end of the installation.

If you do not want to configure these components at this time, you can do so after installation by following the configuration steps in the documentation of each component.

Oracle HTTP Server, Oracle Application Server 10g Web Cache, and Oracle Application Server 10g Containers for J2EE are always configured.

	Available Components	Description
	Oracle HTTP Server	Serves both static and dynamic web content.
	Oracle Application Server 10g Containers for J2EE	Runs enterprise JAVA applications:
[d]	Oracle Application Server 10g Web Cache	Accelerates the delivery of both static and dynamic
•	Oracle Application Server 10g Portal	Provides a single point of access to all information
Γ	Oracle Application Server 10g Wireless	Delivers any content to any device over any networ
ain.		
۰ H	elp) Installed <u>P</u> roducts)	Back Next Install Cancel

Select Oracle Application Server 10g Portal. Click Next.

11. The **Specify Port Configuration Options** screen appears:

Specify Port Configuration Options
Select the method which you want to use to configure the ports for Oracle10g Application Server. If you decide to manually configure the ports, then you must specify the port numbers for each port in a text file and enter the filename below.
Configure Ports
CAutomatic
Manual:
C:\OraHome_2\staticports.ini
Help Installed Products Back Next Install Cancel

Select manual and select the location of the edited staticports.ini file which should be in $C:\OraHome_1$. Click Next.

12.	The Register	with Oracle	Internet	Directory	screen appears:
					sereen appears.

er this instance of Oracle Applica e and port where Oracle Internet	ation Server 10g with an existing Oracle Internet Directory, enter the t Directory is located.
	oid.mycompany.com
	389
only SSL connections with this Or	racle Internet Directory

Enter the OID farm name and port 389. Click Next.

13. The **Specify OID Login** screen appears:

Specify	OID Login
Enter your us stada19.us.o Use cn=orcla on username	ername and password to connect/login to the Oracle Internet Directory at the hostname and port racle.com:389. You need to be the Oracle Internet Directory Superuser or a Single Sign-On user. dmin as the username if you are the Oracle Internet Directory Superuser. Use your Single Sign- if you are a Single Sign-On user with the appropriate install privileges.
<u>U</u> sername:	cn=orcladmin
Password:	*******
Help	Installed Products Back Next Install Cancel
ORACL	E.

Enter the password for cn=orcladmin and click **Next**.

14. The **Select OracleAS 10g Metadata Repository** screen appears, displaying a drop-down list of connect strings that the installer detected:



Select the connect string for the application Metadata Repository database (on APPDBHOST1) and click **Next**.

- 15. The **Specify Instance Name and ias_admin Password** screen appears. We will assign **apphost1** as the instance name for this server. Assign your desired password of the ias_admin user for this instance. Click **Next**.
- 16. The Summary screen appears. Click Install to begin installation.
- 17. When the software installation completes the **Configuration Assistants** screen appears and will automatically go through each process. When it completes, the **End of Installation** screen appears.
- 18. Click **Exit**, and confirm your choice to exit.
- 19. Verify that the installation was successful by accessing the OracleAS Portal page at:

http://apphostl.mycompany.com:7777/pls/portal

15. SETTING UP (portal.mycompany.com) FARM ON WEBMUX1

- 1. Log in to the WebMux1 web interface as "superuser".
- 2. Click on the Add Farm button at the bottom of the status screen.
- 3. Enter the public IP address you assigned for the portal.mycompany.com host. Optionally, you can enter portal.mycompany.com in the Label field.
- 4. Enter 7777 in the port number field.
- 5. Select "HTTP hypertext transfer protocol (TCP)" for service.

- 6. Select "Round Robin" for the scheduling method.
- 7. Select your imported certificate in the SSL termination field.
- 8. Verify that SSL port shows 443.
- 9. Select NO for Block non-SSL access to farm.
- 10. Select no for tag SSL-terminated HTTP requests.
- 11. Click Confirm.
- 12. Back at the status screen, click on the farm IP for portal.mycompany.com.
- 13. Click Add Server.
- 14. Enter 192.168.3.233 in the IP field.
- 15. Optionally, you can enter APPHOST1 in the Label Field.
- 16. Click Confirm.
- 17. Repeat step 12 to 16 for APPHOST2.
- 18. Back at the status screen, click on the farm IP for portal.mycompany.com.
- 19. Click Add Addr.Port.
- 20. In the IP field enter the same IP for portal.mycompany.com.
- 21. Enter 7778 in the port number field.
- 22. You can leave the rest of the fields with their default settings
- 23. Click confirm.
- 24. Repeat steps 18 through 23 for ports 9400, 9401, and 9402.



16. Executing the SSL Configuration Tool on APPHOST1

Follow these steps to use the SSL Configuration Tool to configure SSL on APPHOST1:

1. Set the ORACLE_HOME environment variable to the Oracle home in which OracleAS Portal resides.

2. Verify that the Oracle Internet Directory server is running by issuing this command in *ORACLE_HOME*\bin:

ldapbind -h oid.mycompany.com

3. Create a file, *ORACLE_HOME*\configMyPortal.xml file to include the following:

```
<sslconfig>
<mid_tier>
<virtual_address ssl="on" host="portal.mycompany.com" port="443" inv_port="9401"
ssl_terminate="lbr"/>
<lbr loopback_port="7777"/>
</mid_tier>
</sslconfig>
```

4. Issue this command in *ORACLE_HOME*/bin:

SSLConfigTools -config_w_file *ORACLE_HOME*\configMyPortal.xml -opwd *orcladmin password* -ptl_inv_pwd *webcache invalidation password*

In the preceding command, *orcladmin password* is the EXISTING Oracle administrator password, and *webcache invalidation password* is the "ias_admin" password by default.

- 5. Log in to the OracleAS Single Sign-On Administration page as the Administrator, and use the Administer Partner Applications page to delete the entry for the partner application apphost1.apphost1:7777.
- 6. Configure the OmniPortlet and Web Clipping Provider registration URLs to go through the HTTP port of the Load Balancing Router:
 - a. Access the OracleAS Portal page at https://portal.mycompany.com/pls/portal and log in as the portal administrator.
 - b. Click the Navigator link.
 - c. Click the Providers tab.
 - d. Click the Registered Providers link.
 - e. Click the Edit Registration link.
 - f. Click the Connection tab and change the beginning of the provider registration URL from https://portal.mycompany.com/ to http://portal.mycompany.com:7777/.
 - g. Perform steps e and f for the Web Clipping Provider.
- 7. To prevent access to Oracle Enterprise Manager 10g from the outside, the link provided by OracleAS Portal must be changed back to point to the internal server. To do this, on APPHOST1, issue the following command in ORACLE_HOME/portal/conf:

ptlconfig -dad portal -em

8. Configure OmniPortlet to use a shared preference store. (By default, the OmniPortlet provider uses the file-based preference store. However, in a multiple middle tier environment, you must use a shared preference store, such as the database preference store DBPreferenceStore.) To configure OmniPortlet to use DBPreferenceStore, perform the following steps:

a. Navigate to the directory:

 $ORACLE_HOME \ j2ee \ OC4J_Portal \ applications \ jpdk \ jpdk \ doc \ dbPreferenceStore.$

b. Create a user on the database containing the PORTAL schema, and grant create resource and connect privileges, using the create user and grant connect commands in SQL*Plus.

You will be using the *sqlplus* command to access the appdb database. Open a command prompt and type:

sqlplus sys/password@appdb as sysdba

"password" being the password that you set up for the sys user account on appdb.

Once connected, create the prefstore user and substitute an actual password you want to use in the following command. Do not use the default password of welcome, as this poses a security risk.

create user prefstore identified by password;

grant connect, resource to prefstore;

c. Connect as user prefstore (*sqlplus prefstore/password@appdb*) and execute the jpdk_preference_store2.sql script by issuing this command:

@jpdk_preference_store2

d. Edit the ORACLE_HOME j2ee OC4J_Portal config data-sources.xml file to add the entry in the subsequent example:

<data-source

```
class="com.evermind.sql.DriverManagerDataSource"
name="omniPortletprefStore"
location="jdbc/UnPooledConnection"
xa-location="jdbc/xa/XAConnection"
ejb-location="jdbc/PooledConnection"
connection-driver="oracle.jdbc.driver.OracleDriver"
username="prefstore"
password="password"
url="jdbc:oracle:thin:@(description=(address_list=
(address=(host=appdbhost1.mycompany.com)(protocol=tcp)(port=1521))
(address=(host=appdbhost2.mycompany.com)(protocol=tcp)(port=1521))
(load_balance=yes)(failover=yes))(connect_data=(service_name=db9i)))"
inactivity-timeout="30"
```

/>

Substitute "password" with the password you assigned to the prefstore user. The service name is the SID you assigned when you set up the APPDBHOST1 metadata repository.

In the setup specific to this documentation, there is only a single database node. So, in the "url" section, you will have:

url="jdbc:oracle:thin:@(description=(address_list= (address=(host=appdbhost1.mycompany.com)(protocol=tcp)(port=1521)) (load_balance=no)(failover=no))(connect_data=(service_name=appdb))" inactivity-timeout="30"

e. Edit the ORACLE_HOME\j2ee $OC4J_Portal\applications\portalTools\omniPortlet\WEB-INF\providers\omniPortlet\provider.xml file to edit the preferenceStore tag as shown in the subsequent example:$

<provider class="oracle.webdb.reformlet.ReformletProvider"> <vaultId>0</vaultId> <session>true</session> <preferenceStore class="oracle.portal.provider.v2.preference.DBPreferenceStore"> <name>omniPortletprefStore</name> <connection>jdbc/PooledConnection</connection> </preferenceStore>

- f. Restart the OC4J_Portal instance.
- 1. Verify that OmniPortlet and the Web Clipping Provider work properly through the HTTP port of the Load Balancing Router, by accessing the test pages at the following URLs:

OmniPortlet Provider:

http://portal.mycompany.com:7777/portalTools/omniPortlet/providers/omniPortlet

Note:

If the "No Portlets Available" message appears under the **Portlet** Information section in the **OmniPortlet Provider** test page, then the provider may not be configured correctly. Review Step 1 to ensure correct configuration. The **Portlet Information** section should list the following: OmniPortlet Simple Parameter Form

Web Clipping Provider:

http://portal.mycompany.com:7777/portalTools/webClipping/providers/webClipping

Note:

If, while accessing the test pages, you are prompted to examine the site's certificate, accept the certificate.

17. RE-REGISTERING mod_osso ON APPHOST1

1. Access the following URL:

© 2007, 2008 Oracle® Corporation, © 2007, 2008 CAI Networks®, Inc

https://portal.mycompany.com/pls/portal

- 2. Refresh the Portlet Repository so that the Portal Tools portlets appear in the Portlet Builders folder in the Portlet Repository:
 - a. Log in as the portal administrator (**orcladmin** or **portal_admin**), and click the **Builder** link.
 - b. Click the **Administrator** tab.
 - c. Click the **Portlets** sub-tab.
 - d. Click the **Refresh Portlet Repository** link in the Portlet Repository portlet.
 - e. The refresh operation continues in the background.

18. Verifying Connectivity for Invalidation Messages from the Database to the OracleAS® Web Cache on APPHOST1 through the Load Balancing Router

When a cached OracleAS® Portal object is modified, the OracleAS® Portal metadata repository database sends an invalidation message to OracleAS® Web Cache to invalidate that object. Since the target configuration has two instances of OracleAS® Web Cache, the invalidation message must be load balanced across both OracleAS® Web Cache instances. This is an example of component level load balancing.

Before you proceed with this verification, ensure that messages can be sent from the computer hosting the database to the Load Balancing Router. To do this, issue the following command from APPDBHOST1:

telnet portal.mycompany.com 9401

Verify that no connection failure message is returned.

If you are not able to get a connection, check that you have entered the correct routing rules in WebMux1 and in APPHOST1 (See Section 2).

19. TESTING THE CONFIGURATION ON APPHOST1

- 1. Perform the following tests:
 - a. Access OracleAS® Web Cache and Oracle® HTTP Server through the Load Balancing Router with following URL:

https://portal.mycompany.com

b. Test the connection to the Oracle Application Server® Metadata Repository through the Load Balancing Router, by accessing the following URL:

https://portal.mycompany.com/pls/portal/htp.p?cbuf=test

The response should be test. If this is the result, the Oracle Application Server® middle-tier was able to connect to the OracleAS® Metadata Repository. If it is not, review *APPHOST1_ORACLE_HOME*\Apache\Apache\logs\error_log and *APPHOST1_ORACLE_HOME*\j2ee\OC4J_Portal\application-deployments\portal\OC4J_Portal_default_island_1\application.log for information on how to resolve the error.

c. Test the Oracle AS® Portal using following URL (ensure that you can log in):

https://portal.mycompany.com/pls/portal

d. Verify that content is being cached in OracleAS® Web Cache on APPHOST1, using Web Cache Administrator. Under **Monitoring**, click **Popular Requests**. Select **Cached** from the **Filtered Objects** drop-down list, and click **Update**.

If you accessed OracleAS® Portal, portal content (for example, URLs that contain /pls/portal) will appear. If there is no portal content, open another browser and log in to OracleAS® Portal. Return to the **Popular Requests** page, and click **Update** to refresh the page content.

e. Add a portlet to a page, and then verify that the new content is present. If the new content does not display properly, or if errors occur, then the OracleAS® Web Cache invalidation is not configured correctly.

20. SETTING UP APPHOST2 (Application Server, Portal, Web Cache)

- 1. Follow steps 1 through 9 in Section 14 "Setting up APPHOST1"
- 2. Continue to next page...

3. The Select Configuration Options screen appears:

Select Configuration Options

Select the components that you would like to configure and automatically start at the end of the installation.

If you do not want to configure these components at this time, you can do so after installation by following the configuration steps in the documentation of each component.

Oracle HTTP Server, OracleAS 10g Web Cache, and OracleAS 10g Containers for J2EE are always configured.

		Available Components:	Description
>		Oracle HTTP Server	Serves both static and dynamic web content.
		OracleAS 10g Containers for J2EE	Runs enterprise JAVA applications.
		OracleAS 10g Web Cache	Accelerates the delivery of both static and dyn
		OracleAS 10g Portal	Provides a single point of access to all informa
		OracleAS 10g Wireless	Delivers any content to any device over any ne
			D
-	-		
	H	elp Installed Products Back	Next (Install) (Cancel
	0	DACLC	

Do not select any configuration options and click Next.

Note:

Selecting the Oracle Application Server® 10g Portal option in this screen now will overwrite the previously created configuration entries. For more information, refer to the *Oracle Application Server*® *Portal Configuration Guide*, section titled "Configuring OracleAS® Portal During and After Installation".

4. The specify I of Comiguration Options select appear	4.	The Spe	cify Port	Configurat	ion Options	screen appear
--	----	---------	-----------	------------	-------------	---------------

Specify Port Configuration Options
Select the method which you want to use to configure the ports for Oracle10g Application Server. If you decide to manually configure the ports, then you must specify the port numbers for each port in a text file and enter the filename below.
Configure Ports
C Automatic
Manual:
C:\OraHome_2\staticports.ini
Help Installed Products Back Next Install Qancel

Select manual and select the location of the edited staticports.ini file which should be in $C:\OraHome_1$ (not correctly shown in the image). Click **Next**.

5.	The Register with	Oracle Internet	Directory screen appears:

Register with Orac	cle Internet Directory
To register this instance of Oracl hostname and port where Oracle	e Application Server 10g with an existing Oracle Internet Directory, enter the e Internet Directory is located.
Host:	bid.mycompany.com
Use only SSL connections w	ith this Oracle Internet Directory

Enter the OID farm name and port 389. Click Next.
6. The **Specify OID Login** screen appears:

Specify	OID Login
Enter your us stada19.us.o Use cn=orcla on username	ername and password to connect/login to the Oracle Internet Directory at the hostname and port racle.com:389. You need to be the Oracle Internet Directory Superuser or a Single Sign-On user. dmin as the username if you are the Oracle Internet Directory Superuser. Use your Single Sign- if you are a Single Sign-On user with the appropriate install privileges.
Username:	cn=orcladmin
<u>U</u> sername: Pass <u>w</u> ord:	cn=orcladmin
<u>U</u> sername: Pass <u>w</u> ord:	cn=orcladmin *******
Username: Pass <u>w</u> ord:	cn=orcladmin ********
Username: Pass <u>w</u> ord:	cn=orcladmin ********
Username: Pass <u>w</u> ord:	cn=orcladmin *******
Username: Pass <u>w</u> ord:	cn=orcladmin ********.
Username: Password:	cn=orcladmin ******

Enter the password for cn=orcladmin and click **Next**.

7. The **Select OracleAS 10***g* **Metadata Repository** screen appears, displaying a drop-down list of connect strings that the installer detected:



Select the connect string for the application Metadata Repository database (on APPDBHOST1) and click **Next**.

- 8. The **Specify Instance Name and ias_admin Password** screen appears. We will assign **apphost2** as the instance name for this server. Assign your desired password of the ias_admin user for this instance. Click **Next**.
- 9. The **Summary** screen appears. Click **Install** to begin installation.
- 10. When the software installation completes the **Configuration Assistants** screen appears and will automatically go through each process. When it completes, the **End of Installation** screen appears.
- 11. Click **Exit**, and confirm your choice to exit.

21. Enabling Portal on APPHOST2

The first task is to configure OracleAS® Portal, using the Oracle® Enterprise Manager 10*g* Application Server Control Console. Follow these steps to configure OracleAS® Portal, beginning on the Application Server page:

- 1. Click **Configure Component**. The **Select Component** page appears.
- 2. Select **Portal** from the drop-down list. The **Login** page appears.
- 3. Enter the ias_admin password and click **Finish**.

The configuration process may take 10-20 minutes to complete. Before you continue with the OracleAS® Portal application server configuration, ensure that the following is configured:

- You are able to resolve portal.mycompany.com from APPHOST2, either with DNS or with an entry in the hosts file, such that it contacts the Load Balancing Router. To ensure you can resolve portal.mycompany.com:
 - Issue this command from APPHOST2:

nslookup portal.mycompany.com

The IP address for the Load Balancing Router should be returned.

• You are able to contact port 7777 on portal.mycompany.com from APPHOST2. Issue this command on APPHOST2:

telnet portal.mycompany.com 7777

Verify that no connection failure message is returned.

It is important that you have the proper routing rules in APPHOST1 and 2 as specified in the SERVER CONFIGURATIONS of Section 2. Otherwise, communication will break and you will will get random errors or the portal page will not load up at all.

22. Configuring the Oracle® HTTP Server with the Load Balancing Router on APPHOST2

This step associates the components on which OracleAS® Portal depends with the Load Balancing Router, portal.mycompany.com on port 443.

- 1. Access the Oracle® Enterprise Manager 10g Application Server Control Console.
- 2. Click the link for the APPHOST2 installation.
- 3. Click the **HTTP Server** link.
- 4. Click the **Administration** link.
- 5. Click Advanced Server Properties.
- 6. Open the httpd.conf file.
- 7. Go to the very end of the file.
- 8. Perform the following steps:
 - a. Add the LoadModule certheaders_module directive:

LoadModule certheaders_module modules/ApacheModuleCertHeaders.dll

b. Add the following lines to create a NameVirtualHost directive and a VirtualHost container for **portal.mycompany.com** and port **443**.

NameVirtualHost *:7778 <VirtualHost *:7778> ServerName portal.mycompany.com Port 443 ServerAdmin *you@your.address* RewriteEngine On RewriteOptions inherit SimulateHttps On </VirtualHost>

Notes:

The LoadModule directives (in particular, the LoadModule rewrite_module directive) must appear in the httpd.conf file at a location preceding the VirtualHost directives. The server must load all modules before it can execute the directives in the VirtualHost container.

It is a good idea to create the VirtualHost directives at the end of the httpd.conf file.

c. Create a second NameVirtualHost directive and a VirtualHost container for apphost2.mycompany.com and port 7777.

NameVirtualHost *:7778 <VirtualHost *:7778> ServerName apphost2.mycompany.com Port 7777 ServerAdmin *you@your.address* RewriteEngine On RewriteOptions inherit </VirtualHost>

- 9. Save the httpd.conf file, and restart the Oracle® HTTP Server when prompted.
- 10. Copy the *APPHOST1_ORACLE_HOME*\Apache\modplsql\conf\dads.conf file to *APPHOST2_ORACLE_HOME*\Apache\modplsql\conf\.
- 11. Copy the *APPHOST1_ORACLE_HOME*\Apache\oradav\conf\oradav.conf file to *APPHOST2_ORACLE_HOME*\Apache\oradav\conf\.
- 12. Copy the *APPHOST1_ORACLE_HOME*\Apache\modplsql\conf\cache.conf file to *APPHOST2_ORACLE_HOME*\Apache\modplsql\conf\cache.conf.
- 13. Save the manual configuration changes to the DCM repository by issuing this command in *APPHOST2_ORACLE_HOME*\dcm\bin:

dcmctl updateconfig -ct ohs

- 14. Use the Application Server Control Console to access the mod_plsql configuration pages:
 - a. Click on the **HTTP Server** link.
 - b. Click on Administration
 - c. Click on PL/SQL Properties
- 15. Scroll to the bottom and click on the /pls/portal link under the DAD section click Edit.
- 16. Click Apply.

The required mod_rewrite and mod_oc4j directives are added.

23. Configuring the Parallel Page Engine Loop-Back with the Load Balancing Router on APPHOST2

In this step, you enable (non-SSL) loop-back communication between the Load Balancing Router and the Parallel Page Engines on APPHOST1 and APPHOST2. If the OracleAS® Web Cache on APPHOST1 is down, the Parallel Page Engine can loop back to the OracleAS® Web Cache on APPHOST2 through the Load Balancing Router to reach Portal Services. This is an example of component-level high availability.

Follow these steps to create the loop-back configuration:

- 1. Open the *APPHOST2_ORACLE_HOME*\j2ee\OC4J_Portal\applications\portal\portalWEB-INF\web.xml file.
- 2. Locate the Page servlet section and add the lines shown in bold:

```
<servlet>
<servlet-name>page</servlet-name>
 <servlet-class>oracle.webdb.page.ParallelServlet</servlet-class>
     <init-param>
       <param-name>useScheme</param-name>
      <param-value>http</param-value>
     </init-param>
     <init-param>
      <param-name>usePort</param-name>
      <param-value>7777</param-value>
     </init-param>
     <init-param>
       <param-name>httpsports</param-name>
       <param-value>443</param-value>
     </init-param>
</servlet>
```

3. Save the web.xml file.

The configuration now provides component-level high availability, since if the OracleAS® Web Cache on APPHOST1 is down, the Parallel Page Engine can loop back to the OracleAS® Web Cache on APPHOST2, through the Load Balancing Router, to reach Portal Services.

4. Save the manual configuration changes in the Distributed Configuration Management repository by issuing the following command on APPHOST2 in *ORACLE_HOME*/dcm/bin:

dcmctl updateconfig

- 5. Restart all components on APPHOST2 by issuing the following command in *ORACLE_HOME*\opmn\bin:
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opmnctl stopall opmnctl startall

24. Modifying the Portal Dependency Settings (iasconfig.xml) File on APPHOST2

The Portal Dependency Settings file iasconfig.xml must contain the correct host, port and farm name to enable access to OracleAS® Portal and perform OracleAS® Web Cache invalidation.

- 1. Copy the *APPHOST1_ORACLE_HOME*\portal\conf\iasconfig.xml file to *APPHOST2_ORACLE_HOME*\portal\conf\.
- 2. Overwrite the file on APPHOST2 when prompted.

25. Configuring the Portal Tools Providers on APPHOST2

You must propagate the configuration changes made to Portal Tools providers on APPHOST1 to APPHOST2 by following these steps:

1. Copy the

 $\label{eq:approx} APPHOST1_ORACLE_HOME \ j2ee \ OC4J_Portal \ portal \ portal \ vertex \ ve$

 $\label{eq:approx} APPHOST2_ORACLE_HOME \ j2ee \ OC4J_Portal \ portal \ vertex \ ve$

- $INF\providers\omniPortlet\provider.xml$
 - 2. Copy the

APPHOST1_ORACLE_HOME/j2ee/OC4J_Portal/applications/portalTools/webClipping/WEB-INF/providers/webClipping/provider.xml file to:

APPHOST2_ORACLE_HOME/j2ee/OC4J_Portal/applications/portalTools/webClipping/WEB-INF/providers/webClipping/provider.xml

3. Copy the *APPHOST1_ORACLE_HOME*/j2ee/OC4J_Portal/config/data-sources.xml file to: *APPHOST2_ORACLE_HOME*/j2ee/OC4J_Portal/config/data-sources.xml.

4. Copy the *APPHOST1_ORACLE_HOME*/j2ee/OC4J_Portal/config/jazn-data.xml file to: *APPHOST2_ORACLE_HOME*/j2ee/OC4J_Portal/config/jazn-data.xml

5. Restart the OC4J_Portal instance.

26. Re-registering mod_osso on APPHOST2

- 1. Back up the $APPHOST2_ORACLE_HOME \ Apache \ conf \ osso \ osso \ conf \ file.$
- 2. Use FTP binary mode to copy the

APPHOST1_ORACLE_HOME\Apache\Apache\conf\osso\osso.conf file to *APPHOST2_ORACLE_HOME*\Apache\Apache\conf\osso.

3. Synchronize the DCM repository with the values in the obfuscated osso.conf file by issuing the following command:

 $ORACLE_HOME \ A pache \ bin \ so transfer \ SORACLE_HOME \ A pache \ conf \ osso \ osso \ osso \ osso \ conf \ osso \$

Note: This does not create any new partner applications; it enables the partner application **portal.mycompany.com** for APPHOST1 and APPHOST2.

4. Issue this command in *ORACLE_HOME*/dcm/bin:

dcmctl updateconfig

5. Restart the components on APPHOST2 by issuing these commands in *APPHOST2_ORACLE_HOME*/opmn/bin:

opmnctl stopall opmnctl startall

6. Access the following URL:

https://login.mycompany.com/pls/orasso

7. Log in to the OracleAS Single Sign-On Administration page as the Administrator, and use the Administer Partner Applications page to delete the entry for the partner application apphost2.mycompany.com.

27. Configuring OracleAS® Web Cache Clusters

To cluster the OracleAS® Web Cache instances, you will perform the configuration steps on APPHOST1 and propagate them to APPHOST2.

From the Oracle® Enterprise Manager Application Server Control, you can access the Web Cache Manager, the graphical user interface provided for editing the configuration stored in the webcache.xml file. Start the Oracle Application Server® instance on APPHOST1, then follow these steps to access the Web Cache Manager from the **System Components** page:

1. Access the Web Cache Administrator at:

http://apphost1.mycompany.com:9400/webcacheadmin

The Web Cache Administrator password dialog appears.

2. For the user name, enter ias_admin or administrator, and enter the OracleAS® Web Cache administrator password.

Note:

At installation time, The OracleAS® Web Cache administrator password is set to the same password as the ias_admin password. The OracleAS® Web Cache administrator password must be identical for all cache cluster members.

- 3. The **Web Cache Manager** page appears. A scrollable frame on the left side of the window contains groups of configuration elements. To access an element, click its link. The content area of the page is then populated with the values for that element.
- 4. Click **Clustering** in the **Properties** section.

The **Clustering** page appears.

5. In the **Cluster Members** table, click **Add**.

The Add Cache to Cluster page appears.

- 6. Enter the following information for APPHOST2:
 - Host Name: apphost2.mycompany.com
 - Admin. Port: **9400**
 - Protocol for Admin. Port: **HTTP**
 - Cache Name: apphost2.mycompany.com-Webcache
 - Capacity: 20
- 7. Click **Submit**.
- 8. Click the Origin Server link in the Origin Servers, Sites, and Load Balancing section.

The **Origin Server** page appears.

9. Click Add under the Application Web Servers table.

The Add Application Web Server page appears.

- 10. Enter the following information:
 - Hostname: apphost2.mycompany.com
 - Port: **7778**
 - Routing: ENABLED
 - Capacity: **30**
 - Failover Threshold: **5**
 - Ping URL: /
 - Ping Interval: 10
 - Protocol: HTTP
- 11. Click **Submit**.
- 12. Click the **Site-to-Server Mapping** link in the **Origin Servers**, **Sites**, and **Load Balancing** section.

The Site-to-Server Mapping page appears.

13. Select the mapping for the Load Balancing Router site (portal.mycompany.com) from the table and click **Edit Selected**.

The Edit/Add Site-to-Server Mapping page appears.

- 14. In the **Select Application Web Servers** section, select an application Web server specified in the Origin Servers page for **apphost2.mycompany.com** (**apphost1.mycompany.com** is already mapped).
- 15. Click Submit.
- 16. Click Apply Changes.
- 17. In the Cache Operations page, click Propagate.

The changes are propagated to apphost2.mycompany.com.

18. Click Restart.

OracleAS[®] Web Cache is restarted on APPHOST1 and APPHOST2. OracleAS[®] Web Cache on APPHOST1 begins to balance requests to the Oracle HTTP Server and OC4J_Portal instances on APPHOST2.

After the clustering operation is completed, OracleAS® Web Cache on APPHOST1 will start balancing requests to the Oracle HTTP Server and OC4J_Portal instances running on APPHOST2. Repeat the steps in **Section 18 ''Testing the Configuration on APPHOST1''** to confirm that the Oracle® HTTP Server and OC4J_Portal instances on APPHOST2 were configured properly.

Tip:

If these tests yield unsatisfactory or unexpected results, revisit the configuration steps performed to identify the cause. If the site is accepting live traffic, you might find it useful to temporarily remove the new OracleAS® Web Cache instance from the cluster, revisiting the configuration while the new middle tier is completely off-line. After the problem is resolved, you can redo the clustering operation and perform the validation again.

28. Enabling Session Binding on OracleAS Web Cache Clusters

The Session Binding feature in OracleAS® Web Cache is used to bind user sessions to a given origin server to maintain state for a period of time. Although almost all components running in a default OracleAS® Portal middle tier are stateless, session binding is required for two reasons:

- The Web Clipping Studio, used by both the OracleAS® Web Clipping Portlet and the Web Page Data Source of OmniPortlet, uses HTTP session to maintain state, for which session binding must be enabled.
- Enabling session binding forces all the user requests to go to a specific OracleAS® Portal middle-tier, resulting in a better cache hit ratio for the portal cache.

Follow these steps on APPHOST1 or APPHOST2 to enable session binding in OracleAS® Web Cache:

1. Access the Web Cache Administrator at:

http://apphost1.mycompany.com:9400

The Web Cache Administrator password dialog appears.

2. Enter the OracleAS® Web Cache administrator password.

Note:

At installation time, The OracleAS® Web Cache administrator password is set to the same password as the ias_admin password. The OracleAS® Web Cache administrator password must be identical for all cache cluster members.

- 3. The **Web Cache Manager** page appears. A scrollable frame on the left side of the window contains groups of configuration elements. To access an element, click its link. The content area of the page is then populated with the values for that element.
- 4. Click the Session Binding link in the Origin Servers, Sites, and Load Balancing section.

The Session Binding page appears.

5. Select the Load Balancing Router site, portal.mycompany.com:443, from the table and click **Edit Selected**.

The Edit Session Binding window opens.

- 6. Select Any Set-Cookie from the Please select a session drop-down list.
- 7. Select Cookie-based from the Please select a session binding mechanism drop-down list.
- 8. Click Submit.
- 9. Click Apply Changes.
- 10. On the **Cache Options** page, click **Propagate**. The changes are propagated to the OracleAS® Web Cache instance on the other computer.
- 11. Click **Restart**. OracleAS® Web Cache is restarted on APPHOST1 and APPHOST2.

29. CONCLUSION

At this point you should have a working portal page at https://portal.mycompany.com/pls/portal. If you enter http://portal.mycompany.com:7777/pls/portal, you should be automatically redirected to the https address.

You can log in as "orcladmin" or "portal_admin".

We hope that this document allowed you to have a basic but clear understanding as to how the OracleAS® deployment interacts and to be able to advance from this point. Please keep in mind that this document does not discuss any security precaution issues. For greater detail about the OracleAS® myPortal architecture and security measures, please refer to http://download-west.oracle.com/docs/cd/B14099_17/core.1012/b13998/selecting.htm