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# Solution-in-a-box: Best practices for deploying JD Edwards EnterpriseOne on Oracle Database Appliance

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## Executive Overview

Oracle's JD Edwards EnterpriseOne is an integrated software suite of enterprise resource planning applications that combine business value, standards-based technology, and deep industry experience to offer comprehensive business solutions with low total cost of ownership. It helps integrate all aspects of a business—including financial management, customer relationship management, enterprise asset management, enterprise resource planning, supply chain management, and supplier relationship management while also providing the business intelligence and performance management tools necessary to measure the value that it delivers.

Oracle Database Appliance is a simple, reliable, and affordable Engineered System from Oracle. It saves customers time and money by simplifying deployment, maintenance, and support of high availability database solutions. Oracle Database Appliance Virtualized Platform, based on Oracle VM, enables customers to quickly deploy both database and application workloads in a single virtualized appliance platform. Through virtualization, the benefits of simplifying deployment, maintenance, and support of high availability database solutions are extended to the application tier to provide customers a comprehensive solution-in-a-box.

Combining the advantages of Oracle's Engineered Systems with JD Edwards EnterpriseOne, Oracle Database Appliance provides JD Edwards EnterpriseOne customers an ERP solution-in-a-box running on a complete Oracle technology stack that is simple, low-cost, and performs well. Customers benefit from a fully integrated system from a single vendor that delivers high availability database and application services, efficiently utilizes system resources, provides performance advantages associated with Oracle's Engineered Systems, and takes advantage of capacity-on-demand licensing for multiple workloads by leveraging Oracle VM hard partitioning.

## System Architecture and Concepts

This white paper outlines the process of setting up Oracle JD Edwards EnterpriseOne on Oracle Database Appliance Virtualized Platform. Oracle Database Appliance Virtualized Platform utilizes Oracle VM to establish a dedicated management domain (Domain-0), a dedicated database domain (ODA\_BASE) and optional additional domains (virtual machines) on each server node. The additional domains can be used for different tiers of the application architecture such as the application (logic) tier, web tier and so forth. The system topology for deploying Oracle JD Edwards EnterpriseOne on Oracle Database Appliance is illustrated in Figure 1. The Domain-0 and ODA\_BASE domains are setup when Oracle Database Appliance Virtualized Platform is deployed. In addition to the Domain-0

and ODA\_BASE domains, the topology includes dedicated domains for EnterpriseOne logic server and EnterpriseOne web (HTML) server that are configured separately using Oracle Appliance Manager (*oakcli*). More details about Oracle Database Appliance Virtualized Platform are covered in the next sub-section.

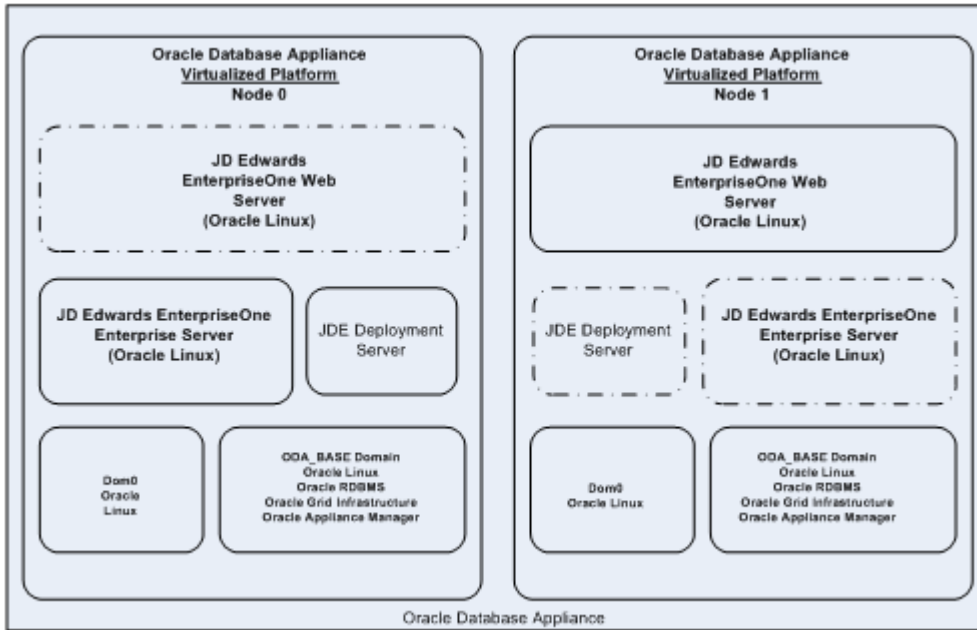


Figure 1 - Solution-in-a-box: Oracle JD Edwards EnterpriseOne on Oracle Database Appliance System Topology

Oracle Database Appliance has two server nodes. The configuration in Figure 1 shows the ODA\_BASE domain running on each server node, while a JD Edwards EnterpriseOne Enterprise Server (and optionally the Deployment Server domain) running on server node 0 and JD Edwards Web Server running on server node 1 of the Oracle Database Appliance. In practice, the JD Edwards EnterpriseOne system will function with the EnterpriseOne Server, the Web Server (and the Deployment Server) running on a single (either) server node. The distribution of the VMs across server nodes may be desirable for optimizing performance and resource allocation.

*Note: It is recommended to store all virtual machines in a shared repository on shared storage. The Oracle JD Edwards Deployment Server is deployed on Oracle Database Appliance within a separate, dedicated Microsoft Windows VM.*

## System Components

The Solution-in-a-box: JD Edwards EnterpriseOne on Oracle Database Appliance system architecture comprises of the following components.



### **Oracle Database Appliance System Hardware**

Oracle Database Appliance hardware consists of two Intel-based servers and a direct-attached shared storage shelf along with high performance, redundant network capabilities.

### **Oracle Database Appliance System Software**

Oracle Database Appliance system software consists of firmware, operating system, and Oracle Appliance Manager.

### **Oracle Grid Infrastructure**

Oracle Grid Infrastructure software consists of Oracle Clusterware (OCW) and Oracle Automatic Storage Management (ASM).

### **Oracle Database Release 12g Release 2**

Oracle Database 12g Release 2 is an object-relational database management system. The database server for JD Edwards EnterpriseOne applications is deployed on Oracle Database Appliance in a dedicated domain called ODA\_BASE domain.

### **JD Edwards EnterpriseOne 9.1**

JD Edwards EnterpriseOne is an integrated application suite of comprehensive enterprise resource planning software.

### **Oracle WebLogic Server 12.1.2 Standard Edition**

Oracle WebLogic Server Standard Edition is application server software designed for building and running enterprise applications and services. It implements the latest Java Platform, Enterprise Edition (Java EE) standards and provides comprehensive management and administration capabilities.

### **JD Edwards EnterpriseOne Deployment Server**

The deployment server provides administrative functions such as distributing electronic software updates (ESUs) and custom modifications to the JD Edwards EnterpriseOne servers. The Deployment Server must be installed using a separate stand-alone installer on a Microsoft Windows machine. While some customers may choose to deploy the Deployment Server outside of the Oracle Database Appliance, it is possible to deploy it as a virtual machine on Oracle Database Appliance Virtualized Platform itself. More information about the Deployment Server is provided in the Appendix section.

## Deploying JD Edwards EnterpriseOne on Oracle Database Appliance

### Step 1: Plan network configuration

Before starting the deployment, you need to identify the network where Oracle Database Appliance will be installed. You must also provision IP addresses and hostnames in the DNS server for Domain-0 as well as the Database Server, the Enterprise Server, and the HTML (web) Server, and optionally the Deployment Server, if you are deploying it on Oracle Database Appliance.

The following matrix can be helpful in capturing the network information and planning your Solution-in-a-box Oracle JD Edwards EnterpriseOne on Oracle Database Appliance configuration.


Type	Hostname	IP Address
Domain-0 (node 0) Public Network		
Domain-0 (node 1) Public Network		
Database Server (node 0) Public Network		
Database Server (node 1) Public Network		
Enterprise Server		
HTML (web) Server		
Deployment Server (optional)		
Database SCAN (1 hostname, 2 IP Addresses)		
Database Virtual IP 1 Public Network		
Database Virtual IP 2 Public Network		
Public Network Netmask		
Public Network Gateway		
ILOM Interface (node 0)		
ILOM Interface (node 0)		
ILOM Network Netmask		
ILOM Network Gateway		
ASR Proxy Server Name		
ASR Proxy Server Port		
ASR Proxy Username		
ASR Proxy Password		
ASR External ASR Manager IP Address (optional)		
ASR External ASR Manager Port (optional)		
Domain Name		
DNS Server IP Address(es)		
NTP Server IP Address		

**Table 1: Network requirements for Solution-in-a-box: JD Edwards EnterpriseOne on Oracle Database Appliance**

### Step 2: Plan database size

When setting up Oracle Database Appliance Virtualized Platform, one of the key inputs is database size. This affects how the ODA\_BASE domain is sized and the database parameters are set. Oracle Appliance Manager provides pre-built templates for different database sizes (Small, Medium, Large, etc.). Refer to Administration and Reference Guide at [http://docs.oracle.com/cd/E22693\\_01/index.htm](http://docs.oracle.com/cd/E22693_01/index.htm) for database sizing information and how resources are allocated to the ODA\_BASE domain based on





your selection of database size. However, refer to the sizing recommendations later in this white paper for suggestions and guidance.

When estimating the database size and resource requirements, you should also take into account the resource requirements for the JD Edwards Enterprise Server and HTML Server virtual machines, and optionally the Deployment Server size. Refer to Appendix section for performance testing details for the three different implementation sizes.

*Note: Once deployment is complete, you must allocate CPUs to ODA\_BASE and each JD Edwards EnterpriseOne Application VM based on the number of CPUs you have licensed. This can be done easily and dynamically using Oracle Appliance Manager command line interface (oakcli).*

### **Step 3: Unpack and cable Oracle Database Appliance hardware**


Follow instructions included in the Oracle Database Appliance Setup Poster to setup and install Oracle Database Appliance hardware. This includes cabling of servers and storage, and powering up the two server nodes. The Oracle Database Appliance Setup Poster which can be viewed and downloaded from [http://docs.oracle.com/cd/E22693\\_01/doc.12/e41668.pdf](http://docs.oracle.com/cd/E22693_01/doc.12/e41668.pdf). Additional Oracle Database Appliance documentation, including the Getting Started Guide is available at [http://docs.oracle.com/cd/E22693\\_01/index.htm](http://docs.oracle.com/cd/E22693_01/index.htm).

### **Step 4: Setup ILOM on each Oracle Database Appliance server node**

Connect Keyboard, Video, and Mouse (KVM) to Oracle Database Appliance server node 0 and boot the server by pressing the power button on the front of the server. As the server starts to boot, press the F2 key to enter the BIOS setup menu and then configure ILOM network. Refer to My Oracle Support note [1393191.1](#) for instructions on how to setup ILOM using the BIOS menu or [1395445.1](#) to configure ILOM via Serial port.

### **Step 5: Setup Oracle Database Appliance Virtualized Platform**

Before Oracle JD Edwards EnterpriseOne is deployed, Oracle Database Appliance Virtualized Platform setup must be completed. Detailed step-by-step instructions for deploying Oracle Database Appliance Virtualized Platform are beyond the scope of this white paper. However, Oracle Database Appliance Setup Poster is available at [http://docs.oracle.com/cd/E22693\\_01/doc.12/e41668.pdf](http://docs.oracle.com/cd/E22693_01/doc.12/e41668.pdf) and illustrates the setup process of Oracle Database Appliance Virtualized Platform in detail.



The high level process outlined below can be useful in understanding the setup after you have setup Oracle Database Appliance hardware.

Download the latest Oracle Database Appliance Virtualized Platform ISO image (patch [16186163](#)) from the link provided in My Oracle Support note [888888.1](#). The README file accompanying this ISO image patch includes detailed instructions on re-imaging the server nodes with the ISO image. You must follow the instructions in the README file and re-image both server nodes to create Oracle Database Appliance Virtualized Platform. Upon re-imaging the server nodes with the Oracle Database Appliance Virtualized Platform ISO image, Oracle VM Server is installed on each server node and the Domain-0 domain is created on each re-imaged server. Domain-0 is the initial administrative domain and is used to connect to the system to setup other domains, such as the database domain (ODA\_BASE) and the application domains. The database domain is where the database is created. Application domains host the Enterprise Servers, the HTML (web) Servers, and optionally the Deployment Server.

Once Domain-0 is created, you can setup the public network on this domain and make it accessible to the external network.

```
# oakcli configure firstnet
```

Setting up the initial public network on Domain-0 allows you to copy software for other domains to it and setup those domains. As you setup the public network on Domain-0 domain, be prepared to provide the IP addresses and hostnames for Domain-0 on each server node.

### **Step 6: Download ODA\_BASE template**

Once Domain-0 has been setup, the database domain (ODA\_BASE) must be setup next. The ODA\_BASE software comes as a bundle containing a template that is used to create the database domain (ODA\_BASE) from within Domain-0. This ODA\_BASE template is provided as a patch (patch [16186172](#)) and can be downloaded from the link provided in My Oracle Support note [888888.1](#). Make sure you download the ODA\_BASE bundle that is consistent with the OAK version that you have deployed.

Once ODA\_BASE patch is downloaded, copy it to Domain-0 of server node 0 on Oracle Database Appliance and place it in the /OVS directory. You may do so using a copy tool such as WinSCP. Note that you only need to copy the downloaded patch to Domain-0 on server node 0 and not to both server nodes.

## Step 7: Deploy database domain (ODA\_BASE)

The ODA\_BASE template contains the latest version of Oracle Grid Infrastructure and Oracle Database software. As a result it is relatively large and it comes in two parts that must be merged after downloading. When you download this template also download and read the README file. The README file includes instructions for deploying ODA\_BASE template.

*Note: See the Oracle Database Appliance Administration and Reference Guide section “Installing ODA\_BASE on Oracle Database Appliance Virtualized Platform” for more details on how to install and configure ODA\_BASE.*

ODA\_BASE deployment is performed from Domain-0 using the oakcli command-line utility.

```
# /opt/oracle/oak/bin/oakcli deploy oda_base
```

You have to choose the desired level of CPU and memory resources for the ODA\_BASE domain when deploying it. Refer to sizing guidelines in this white paper for configuring ODA\_BASE.

Once ODA\_BASE configuration is complete, you can verify ODA\_BASE settings on each server node using the “oakcli show oda\_base” command from Domain-0.

```
# /opt/oracle/oak/bin/oakcli show oda_base
```

## Step 8: Deploy Oracle GI and RDBMS stack inside ODA\_BASE

The End-User Bundle contains the Oracle Grid Infrastructure and RDBMS software and is included in the ODA\_BASE template. The End-User Bundle must be deployed within ODA\_BASE before the database can be created.

```
# /opt/oracle/oak/bin/oakcli deploy
```

Or, if you are using a pre-created configuration file, then issue the command:

```
# /opt/oracle/oak/bin/oakcli deploy -conf <config-file>
```

*Note: See the Oracle Database Appliance Administration and Reference Guide section “Deploying Your Configuration on Oracle Database Appliance Virtualized Platform” for more details on how to install and configure Oracle database within ODA\_BASE and use pre-configured parameter files.*

During database deployment the Oracle Appliance Manager Configurator gives you the option to create the database after the Grid Infrastructure and Database software installation and configuration

is completed. It is recommended that you choose not to create the database at this time. This is because the JD Edwards EnterpriseOne database needs to be created with non-default parameters as outlined in the next section.

### Step 9: Setup JD Edwards EnterpriseOne database

Note: The information in this section provides general guidance about setting up the Oracle Database in preparation for JD Edwards EnterpriseOne. Refer to the [JD Edwards EnterpriseOne Applications Installation Guide for Oracle on UNIX](#) for more detailed information about preparing the Oracle Database for a JD Edwards EnterpriseOne installation. Once the Oracle Database Appliance End-User Bundle has been deployed, the database can then be created. A standard database on Oracle Database Appliance is created with certain default database configuration settings. You can check these default settings using the “`oakcli show db_config_params -conf default`” command as the root user from within the ODA\_BASE domain. For example, the following default settings may currently exist on new database creation on Oracle Database Appliance.

```
DATABASE_BLOCK_SIZE      =      8192
DATABASE_LANGUAGE        =      AMERICAN
DATABASE_CHARACTERSET    =      AL32UTF8
DATABASE_TERRITORY       =      AMERICA
COMPONENT_LANGUAGES      =      en
```


Some of the default parameters may need to be changed for the JD Edwards EnterpriseOne environment before the database is created. Specifically, the `AL32UTF8` database character set used by default on Oracle Database Appliance is not supported by JD Edwards EnterpriseOne. Also, as per the JD Edwards EnterpriseOne documentation, you must change the database character set according to your preferred language. For example, set the database character set to `WE8MSWIN1252` for English and most western European languages. Therefore, before you deploy the database, you must change the above settings by creating a custom configuration parameter file using the `oakcli` command shown next. This allows you to create a new configuration file (`myjdefile`, in this example) that includes the new set of parameter values.

```
# oakcli create db_config_params -conf myjdefile
```

Specify the required values when prompted. For example,

Database Configuration Parameter	Value (examples)
Database Block Size	8192
Database Language	English
Database Characterset	WE8MSWIN1252
Database Territory	AMERICA
Component Language	English (en)

**Table 2: Modified default database configuration parameters for JD Edwards EnterpriseOne**



*Note: You may choose the appropriate combination of Database Language and Database Character set values as outlined in the JD Edwards EnterpriseOne Applications Installation Guide for UNIX with Oracle.*

When you issue the “`oakcli create db_config_params <file-name>`” command, the new database configuration parameter file thus created is appended with an extension of “.dbconf” and is placed in the `/opt/oracle/oak/install/dbconf` directory. Do not edit this file manually. You can, however, check a given file’s contents using the “`oakcli show db_config_params -conf <filename>`” command.

Once the new configuration parameter file is created, you can create an Oracle database on Oracle Database Appliance as your JD Edwards EnterpriseOne database using Oracle Appliance Manager as follows:

```
# oakcli create database -db ovsorc1 -params <myjdefile> -oh <Oracle Home Name>
```

You can check the existing Oracle Homes on your server using the “`oakcli show dbhomes`” command and you can use the previously created db home. If you do not specify the “-oh” option, then the “`oakcli create database`” command creates a new Oracle Home on the server.

*NOTE: When setting up the JD Edwards EnterpriseOne Database Server that is to be used with JD Edwards EnterpriseOne Oracle VM templates, currently the connect string must be **ovsorc1**. This is required to match the database definition in the OVM templates for Enterprise and HTML servers. You can create the database with this name or you can setup only the connect string manually to be ovsorc1. This white paper assumes that you are setting up the database with the name `ovsorc1`.*

By default the database is created using the latest version of database software included with the ODA\_BASE domain software bundle. If you need to create the database with an earlier version of database software, then you can use the “`oakcli create database -db <database name> -version <version number>`” command and specify the older version number.

Note that if older version of the database needs to be created, you may have to download the corresponding db clone file first (links to db clone files for available db versions are provided in My Oracle Support note [888888.1](#)) and then unpack it within ODA\_BASE (using `oakcli unpack`

command) before you can attempt to create an older database version using the “`oakcli create database`” command.

When you issue the `oakcli create database` command you are asked for the ‘root’, ‘oracle’, `SYSASM`, and `ASMSNMP` passwords. During initial deployments the default password for each of these accounts is ‘welcome1’. It is recommended that you change the default passwords after the deployment has been completed.

During database deployment, you also have to make choices for your database configuration and size. Table 3 shows the choices offered by Oracle Appliance Manager. Make the correct choices based on your decided configuration and database size. A sample sizing matrix is also provided later in this white paper.

Option	Available choices
<b>Database Architecture</b>	<ul style="list-style-type: none"><li>• 1 =&gt; EE: Enterprise Edition (Single Instance)</li><li>• 2 =&gt; RAC One (Active Passive)</li><li>• 3 =&gt; RAC (Active Active)</li></ul>
<b>Database Size</b>	<ul style="list-style-type: none"><li>• 1 =&gt; Very Very Small</li><li>• 2 =&gt; Very Small</li><li>• 3 =&gt; Small</li><li>• 4 =&gt; Medium</li><li>• 5 =&gt; Large</li><li>• 6 =&gt; Extra Large</li><li>• 7 =&gt; Extra Extra Large</li><li>• 8 =&gt; Extra Extra Extra Large</li></ul>

**Table 3: Database configuration options using Oracle Appliance Manager**

Once the database is created and started you can verify that it is running by using the `srvctl status database -d <db-name>` command while connected as the oracle user, where db-name is the database name, for example `ovsorcl`.

```
$ srvctl status database -d ovsorcl
Instance ovsorcl1 is running on node odanode1db1
Instance ovsorcl2 is running on node odanode1db2
```

*Note: JD Edwards EnterpriseOne requires your `NLS_NCHAR_CHARACTERSET` be set to `AL16UTF16`. This is the default setting for the Database templates on Oracle Database Appliance.*

## Step 10: Set up database parameters after database deployment

It is recommended that you change the `PROCESSES` and `OPEN_CURSORS` parameters from the default value (the default values vary depending on the database size template you choose) to at least a value of 1200 and 1200 respectively after creating your JD Edwards EnterpriseOne database. You can make this change as follows.

```
SQL> alter system set processes=1200 scope=spfile sid='*';
SQL> alter system set open_cursors=1200 scope=both sid='*';
```

*Note: You must restart the database after changing the `PROCESSES` parameter for it to take effect.*

If you have a pre-existing Oracle Enterprise Manager Cloud Control infrastructure you may use it to manage the new database or you may setup the Oracle Enterprise Manager Database Control.

## Step 11: Download Oracle VM Templates for JD Edwards EnterpriseOne

The latest Oracle VM templates for JD Edwards EnterpriseOne can be downloaded from Oracle software cloud at <https://edelivery.oracle.com/linux>. Select “Oracle VM Templates” as the Product Pack and “x86 64 bit” as the Platform. Then click on the latest version of Oracle VM Templates for JD Edwards EnterpriseOne and Tools for Exalogic Media Pack for x86 64 bit. Oracle recommends that you use the latest versions of the VM templates.

*Note: Oracle may have released newer versions of JD Edwards EnterpriseOne template since this paper was last released. You are advised to always use the latest versions of the JD Edwards EnterpriseOne application templates when doing new deployments.*

At the time of the writing of this white paper the latest JDE VM Template bundle is [Oracle VM Templates for JD Edwards EnterpriseOne 9.1.2 and Tools 9.1.4.4 \(7.0.0\) for Exalogic Media Pack for x86 64 bit](#)

Image Name	Part Number	Size
Oracle VM Templates for JD Edwards EnterpriseOne 9.1.2 and Tools 9.1.4.4 - Configuration Utility and Manifest	V43875-01	14K
Oracle VM Template for JD Edwards EnterpriseOne 9.1.2 and Tools 9.1.4.4 Enterprise Server 1 of 2	V43852-01	1.8G
Oracle VM Template for JD Edwards EnterpriseOne 9.1.2 and Tools 9.1.4.4 Enterprise Server 2 of 2	V43853-01	1.5G
Oracle VM Template for JD Edwards EnterpriseOne 9.1.2 and Tools 9.1.4.4 - HTML Server (WebLogic Server 12.1.2.0)	V43854-01	1.7G
Oracle VM Template for JD Edwards EnterpriseOne 9.1.2 and tools 9.1.4.4 - Oracle Linux 5.8 System	V43861-01	398M
Oracle VM Template for JD Edwards EnterpriseOne 9.1.2 and Tools 9.1.4.4 - Non Virtualized Database Server (Oracle Database 12.1.0.1) [*JDE Platform Pack]	V45708-01	965M

**Table 4: Oracle VM templates for JD Edwards EnterpriseOne**

Download the above zip files into the "/cloudfs" directory on ODA\_BASE on Oracle Database Appliance server node 0.

### Step 12: Sizing Enterprise Server and HTML Server VMs

The following table outlines the CPU and Memory availability on the three Oracle Database Appliance models that exist in the market as of the writing of this white paper.

Oracle Database Appliance Model	CPU	Memory
Oracle Database Appliance	2 x 12 Cores	192 GB
Oracle Database Appliance X3-2	2 x 16 Cores	512 GB
Oracle Database Appliance X4-2	2 x 24 Cores	512 GB
Oracle Database Appliance X5-2	2 x 36 Cores	512 GB

**Table 5: CPU and memory resources available on different Oracle Database Appliance hardware models**

For JD Edwards EnterpriseOne on Oracle Database Appliance solution-in-a-box architecture, the available memory and CPU resources are divided amongst the database domain (ODA\_BASE), the Enterprise Server (ENT) domain, and the HTML Server (WB) domain. If you decide to also deploy the JDE Deployment Server on the platform then due consideration is required to allocate the resources needed for the Deployment Server.


*Note: You chose the ODA\_BASE configuration when deploying ODA\_BASE domain earlier.*

There is no default configuration and you must make a selection on ODA\_BASE size, typically in line with your planned database deployment size and any provision for growth or spikes in workload. However, the default configuration of the Enterprise server and HTML server VMs is 2 vCPUs (1 Hyper-threaded CPU Core = 2 vCPUs) and 4GB of memory. You can modify the size of these VMs as outlined below based on your requirements.

Workload	DB template	Enterprise (E1) Server	HTML (Web) Server
< 250 users	Small	<ul style="list-style-type: none"> <li>4 VCPU</li> <li>8 GB RAM</li> <li>30 call object kernels</li> </ul>	<ul style="list-style-type: none"> <li>2 VCPUs</li> <li>8 GB RAM</li> <li>2 JVMS with 2 GB each</li> </ul>
500 users	Small	<ul style="list-style-type: none"> <li>6 VCPUs</li> <li>12 GB RAM</li> <li>50 call object kernels</li> </ul>	<ul style="list-style-type: none"> <li>2 VCPUs</li> <li>8 GB RAM</li> <li>2 JVMS with 2 GB each</li> </ul>
1000 users	Small/Medium	<ul style="list-style-type: none"> <li>6 VCPUs</li> <li>24 GB RAM</li> <li>100 call object kernels</li> </ul>	<ul style="list-style-type: none"> <li>4 VCPUs</li> <li>16 GB RAM</li> <li>4 JVMS with 2 GB each</li> </ul>

**Table 6: Recommended sizing for creating Solution-in-a-box: JD Edwards EnterpriseOne on Oracle Database Appliance configuration**





The above recommendations are based on performance observations made when testing was conducted during the course of the writing of this white paper.

*Note: Performance testing was performed using JD Edwards Day-in-the-life (DIL) kit workload. The Oracle JD Edwards EnterpriseOne DIL kit is a suite of scripts that exercises most common transactions of Oracle's JD Edwards EnterpriseOne applications. The detailed performance test results are documented in Appendix section of this white paper.*

We propose that you consider allocating the CPU and memory resources to the Database Server, Enterprise Server, and HTML Server based on the sizing matrix presented above.

*Note: If needed, you can resize the ODA\_BASE domain using the “oakcli configure oda\_base” command. ODA\_BASE is configured identically on both Oracle Database Appliance nodes. For more information, refer to “oakcli configure oda\_base” details in Oracle Database Appliance documentation.*

The above sizing guidelines can be applied to all current models of Oracle Database Appliance. The size of ODA\_BASE domain and the VMs can be dynamically adjusted if necessary after the initial configuration.


### **Step 13: Prepare the “ready-to-use” Templates**

This section describes how to prepare the “ready-to-use” template for JD Edwards EnterpriseOne for deployment on Oracle Database Appliance. The 7.0.0.0.0 release of Oracle VM Templates for JD Edwards EnterpriseOne includes a set of tools (V43875-01 - Oracle VM Templates for JD Edwards EnterpriseOne 9.1.2 and Tools 9.1.4.4 - Configuration Utility and Manifest) to help with the configuration of the VM images in zip files that you downloaded as listed in the preceding section. Following the step-by-step MOS note: **ODAVP: How to get the "ready-to-use" Templates 9.1.4.4 to deploy JDE** (Doc ID [1902042.1](#)), at the end of the process you will get the ready-to-use templates as

- /cloudfs/OVS/configTest/JDE\_ENT/E1\_ENT\_VM.tgz
- /cloudfs/OVS/configTest/JDE\_WEB/E1\_WEB\_VM.tgz

### **Step 14: Create shared repository**

Oracle Database Appliance Virtualized Platform enables you to create one or more shared repositories for the storage of virtual machine (VM) files. A VM shared repository provides high availability support. A VM can be configured to fail over from one node to another node in case of node failure, and a VM



can auto-restart on the preferred node or failover to another node if the preferred node is not available. Once the newly configured templates are available, their deployment on the respective nodes can begin. Oracle Appliance Manager requires the templates to be first imported into the template shared repository that must be created. This is done from the ODA\_BASE domain

```
# oakcli create repo jderepo -size 500G -dg DATA
```

You can check the existence/status of the shared repositories using the following command executed from ODA\_BASE domain.

```
# oakcli show repo
```

NAME	TYPE	NODENUM	STATE
odarepo1	local	0	N/A
odarepo2	local	1	N/A
jderepo	shared	0	ONLINE
jderepo	shared	1	ONLINE

*Note: You can see the physical location of the created shared repository on dom0 as /OVS/Repositories/jderepo and on oda\_base as /u01/app/sharedrepo/jderepo*

---

You can check the storage allocated and available in the shared repository using standard Linux df command.

```
# df -h
```

Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/asm/jderepo-74	500G	83G	418G	17%	/u01/app/sharedrepo/jderepo

You can check the contents of the shared repository using the acfsutil command and also by looking into the corresponding directory structures.

```
# acfsutil info fs /u01/app/sharedrepo/jderepo
```

You can check which snapshots exist in the repository by using the acfsutil command.

```
# acfsutil snap info /u01/app/sharedrepo/jderepo
```

You can delete a snapshot by using the “acfsutil snap delete <snap\_name> <mountpoint>” command.

---

## EnterpriseOne Enterprise server and HTML server deployment

Once the newly configured templates are available on each server node, their deployment on the respective nodes can begin. Oracle Appliance Manager requires the templates to be first imported into the template repository. This is done from the ODA\_BASE domain and for each template the import must be done for each server node as the root user.

### Step 15: Import templates into the shared VM repository

When you deploy Oracle Database Appliance Virtualized Platform, a local repository is created on each Oracle Database Appliance server node. The physical location of the repository is the /OVS/Repository directory. You can check the existence of the local and shared repositories using the following command executed from ODA\_BASE domain.

```
# oakcli show repo
```

NAME	TYPE	NODENUM	STATE
odarepo1	local	0	N/A
odarepo2	local	1	N/A
jderepo	shared	0	ONLINE
jderepo	shared	1	ONLINE

The local repository is always available (online) from the respective node and therefore the state displays as "N/A". Note that the JD Edwards EnterpriseOne template files currently reside respectively in the /cloudfs/OVS/configTest/JDE\_ENT and the /cloudfs/OVS/configTest/JDE\_WEB directories on ODA\_BASE.

Each template import may take several minutes. You may run the VM template imports in parallel to save time.

```
oakcli import vmtemplate <vmtemplatename> -files <image files> -repo <repo_name> [ -node <0|1> ]
```

#### example 1:

in the following example you have moved the "ready-to-use" template on ODA VP "dom0" under '/OVS/staging' folder

```
# oakcli import vmtemplate E1_ENT -files /OVS/staging/E1_ENT_VM.tgz -repo jderepo -node 0
# oakcli import vmtemplate E1_WEB -files /OVS/staging/E1_WEB_VM.tgz -repo jderepo -node 0
```

#### example 2:

in the following example you have the "ready-to-use" template available from an HTTP server

```
# oakcli import vmtemplate E1_ENT -files
http://192.168.1.200:8000/JDE_ENT/E1_ENT_VM.tgz -repo jderepo -node 0
# oakcli import vmtemplate E1_WEB -files
http://192.168.1.200:8000/JDE_WEB/E1_WEB_VM.tgz -repo jderepo -node 1
```

*TIP: If you have no proper http/server setup in the environment, the following single python command will start an HTTP server which will serve all files from the current directory and all subdirectories (this can be executed from ODA\_BASE as well):*

```
cd /cloudfs/OVS/configTest
python -m SimpleHTTPServer 8000
```

The “oakcli show vmtemplate” command may not respond while the import is taking place or may proceed in the background. However, once the imports are complete you can check the successful existence of the imported templates.

```
# oakcli show vmtemplate
```

NAME	MEMORY	VCPU	REPOSITORY
E1_ENT_TEMPLATE	4096	2	jderepo
E1_WEB_TEMPLATE	4096	2	jderepo

When you check the default properties of the imported templates using the “oakcli show vmtemplate <template-name>” command, you will notice the network for the above templates is not yet configured.

#### **Step 16: Setup network configuration for VM templates**

As the ‘root’ user connected to ODA\_BASE domain execute “oakcli configure vmtemplate” command to setup the network configuration for the templates. If you configured a single public network during Oracle Database Appliance deployment, then you can specify that network interface as a shared network interface for all domains. For example,

```
# oakcli configure vmtemplate E1_ENT_TEMPLATE -network "['type=netfront,bridge=net1']"
# oakcli configure vmtemplate E1_WEB_TEMPLATE -network "['type=netfront,bridge=net1']"
```

You may perform the above configuration from the ODA\_BASE of either node. Once the configuration is complete, you can verify template settings using the “oakcli show vmtemplate [<template\_name>” command.

*Note: Starting with Oracle Appliance Manager 2.8, a VLAN (Virtual LAN) implementation is available on Oracle Database Appliance. Using this feature, multiple VLANs can be created on Oracle Database Appliance that can then be used by different Virtual Machines. The implementation used in this white paper does not use VLANs. For more information about implementing VLANs on Oracle Database Appliance, refer to Oracle Database Appliance Getting Started Guide.*

## Step 17: Clone Virtual Machines from Templates

As the 'root' user connected to ODA\_BASE domain execute "oakcli clone vm" command to clone the JD EnterpriseOne VM templates to virtual machines.

```
# oakcli clone vm E1_ENT -vmtemplate E1_ENT_TEMPLATE -snap
# oakcli clone vm E1_WEB -vmtemplate E1_WEB_TEMPLATE -snap
```

The `-snap` clause is a new feature of the "oakcli clone vm" command and it is available starting with Oracle Database Appliance version 12.1.2.0.0. It leverages ACFS snapshot to clone a VM template into a VM. For more details, see the "oakcli clone vm" command in the Oracle Database Appliance Administration and Reference Guide.

## Step 18: Check VM repository contents and status

After the templates are imported and cloned to virtual machines, check the status of your VM repository.

```
# oakcli show repo
# oakcli show vmtemplate
# oakcli show vm
```

The two VM templates will be shown along with their memory, VCPU, and repository information.

Check the status of VMs using the "oakcli show vm" command:

```
# oakcli show vm
```

NAME	NODENUM	MEMORY	VCPU	STATE	REPOSITORY
E1_ENT	0	4096	2	OFFLINE	jderepo
E1_WEB	1	4096	2	OFFLINE	jderepo

You can check the storage usage within the shared repository using "oakcli show repo jderepo -node 0" utility. For example,

```
# oakcli show repo jderepo -node 0
Resource: jderepo_0
  AutoStart      :      restore
  DG             :      DATA
  Device         :      /dev/asm/jderepo-74
  ExpectedState  :      Online
  FreeSpace      :      435356.003906M
  MountPoint     :      /u01/app/sharedrepo/jderepo
  Name           :      jderepo_0
  Node           :      all
  PFreeSpace     :      85.03
  RepoType       :      shared
  Size           :      512000.0M
  State          :      Online
  Version        :      UNKNOWN
```

## Step 19: Setup failover capability for Enterprise Server and HTML Server VMs

Use the “`oakcli configure vm`” command to set failover attributes for the Enterprise Server and HTML Server virtual machines. The node where the virtual machine would normally start automatically when the shared repository is started is set as “`prefnode`”. The node where the virtual machine is started when the default node (`prefnode`) is not available is set as the “`failover`” node. For example,

```
# oakcli configure vm E1_ENT -prefnode 0 -failover true
# oakcli configure vm E1_WEB -prefnode 1 -failover true
```

## Step 20: Creating CPU pools for JD Edwards EnterpriseOne VMs

Besides ODA\_BASE being a well-defined domain, Oracle Database Appliance Virtualized Platform provides the ability to isolate workloads among the various application domains. This also reduces licensing exposure for the system components. The functionality is enabled by the concept of CPU pools. A CPU Pool comprises of two or more Virtual CPUs (vCPUs). Virtual machines are pinned to a specific CPU pool. When you assign (pin) a virtual machine to a CPU pool, you ensure that the VM will use CPUs in that pool and only in that pool.

When Oracle Database Appliance Virtualized Platform is deployed, a default-unpinned-pool, with all available vCPUs is created on each node. When the ODA\_BASE domain is created, a new CPU pool, named `odaBaseCpuPool`, is created on both server nodes.

The ODA\_BASE domain is pinned to the `odaBaseCpuPool` which has the number of cores that selected during the initial ODA\_BASE deployment. For example, if you selected 8 vCPUs with 32GB RAM for ODA\_BASE, then your `odaBaseCpuPool` is allocated vCPUs 0, 1, 2, 3, 4, 5, 6, and 7 and 32GB of memory. The remaining vCPUs are retained by the default-unpinned-pool. When a virtual machine is imported into the VM Storage Repository, by default it is assigned to the default-unpinned-pool. This ensures that the cores allocated to ODA\_BASE are not used by other virtual machines.

You can create specific additional CPU pools using the Oracle Appliance Manager “`oakcli create cpupool`” command. Once you have created one more CPU pools, you can use the `-cpupool` option of the “`oakcli configure vm`” command to pin a virtual machine to a specific CPU pool. Note that you can pin multiple virtual machines to the same CPU pool. The CPU pools on each node can be different and the number of cores allocated to a CPU pool can be changed using the Oracle Appliance Manager “`oakcli configure cpupool`” command at any time.

You can check the default CPUPool status by using the “`oakcli show cpupool`” command.

```
# oakcli show cpupool -node 0
```

```
# oakcli show cpupool -node 1
```

You can create a CPU Pool using the “oakcli create cpupool” command.

```
# oakcli create cpupool <POOL-NAME> -numcpu <num_CPU> -node 0
# oakcli create cpupool <POOL-NAME> -numcpu <num_CPU> -node 1
```

For example, to create CPU pools for the ENT and WEB domains on each server node, run the following commands on the respective server nodes as the root user.

```
# oakcli create cpupool E1_ENT -numcpu 8 -node 0
# oakcli create cpupool E1_ENT -numcpu 8 -node 1
# oakcli create cpupool E1_WEB -numcpu 8 -node 0
# oakcli create cpupool E1_WEB -numcpu 8 -node 1
```

The CPU pools should be created on each server node in a symmetric manner to facilitate transparent failover. You can verify the configuration of the new CPU pools using the “oakcli show cpupool” command, as mentioned previously.

### Step 21: Assign CPU pools to JD Edwards EnterpriseOne VMs

The previously created JD Edwards EnterpriseOne VMs can now be assigned to the newly created CPU pools. This is done while connected as the root user to the ODA\_BASE domain.

```
# oakcli configure vm E1_ENT -cpupool E1_ENT
# oakcli configure vm E1_WEB -cpupool E1_WEB
```

You can then verify the configuration of the VMs and their CPU pool using the “oakcli show vm” command.

### Step 22: Start JD Edwards EnterpriseOne Application VMs

You can now startup the JDE EnterpriseOne Server VM systems. The VMs are automatically started on their respective nodes as needed. Note that the procedure (“oakcli start vm” command) for starting a VM is the same for different VMs.

Server node	Domain to start	Command to execute from ODA_BASE
Server node 0	E1_ENT	# oakcli start vm E1_ENT
Server node 1	E1_WEB	# oakcli start vm E1_WEB

**Table 7: Starting JD Edwards EnterpriseOne virtual machines on Oracle Database Appliance**

When the above commands (to startup the ENT and WEB VMs) return without an error it indicates the domains are now starting. Note that it may take several minutes for a virtual machine to fully start up. The VMs are subsequently automatically started at system boot time as long as the “on\_reboot=restart” attribute value is specified in their vm.cfg configuration file.



You can login to the console of ODA\_BASE (oakDom1) domain on an Oracle Database Appliance server node using **ssh**. You can use the private interconnect IP address, 192.168.16.27 on node 0 and 192.168.16.28 on node 1 to connect from Dom-0 to ODA\_BASE.

```
[root@odan1dom0 ~]# ssh 192.168.16.27
root@192.168.16.27's password:
Last login: Wed Mar 12 18:33:16 2014 from xxx.example.com
[root@odan1oakDom1 ~]#
```

Once you are logged on to the ODA\_BASE domain, you can start the VNC Server by executing the **vncserver** command. For example,

```
# vncserver

New 'odanode1db1:1 (root)' desktop is odanode1db1:1
Starting applications specified in /root/.vnc/xstartup
Log file is /root/.vnc/ odanode1db1:1.log
```

Make sure you also set the password for VNC connections.

```
# vncpasswd
```

When the VNC Server is running on ODA\_BASE, you can connect to it using a VNC Client, e.g., **vncviewer**. From the VNC session established with ODA\_BASE, run the graphical environment and redirect the as display follows:

```
# startx
# xhost +
# export DISPLAY=localhost:0.0
```

You can run “**oakcli show vmconsole <vm-name>**” command to connect to other VMs from within the same VNC client session connected to ODA\_BASE domain.

### **Step 23: Customize Oracle JD Edwards EnterpriseOne Architecture**

The deployment process covered so far only describes the Database Server, Enterprise Server, and HTML Server. However, you can deploy additional JD Edwards EnterpriseOne servers using VM templates and change the overall setup and configuration to include these additional servers (as VMs). For example, your configuration may include OneView Reporting Server (also called BIP server) and Mobile Server (also called BSSV Server) in addition to the Enterprise E1 Server and Web Server. The “/u01/jdedwards/vmScripts/EOne\_cfg.ksh” configuration script is designed to allow the changes to the configuration of JD Edwards deployed architecture after the initial install.

For adding BIP and Mobile Servers after the initial deployment has completed, you must re-run the **EOne\_cfg.ksh** script. Note that you have to run this script twice, first to add the new virtual machines





to the configuration and then to synchronizing the architectural layout by running “EOne\_cfg.ksh -syn” on both Enterprise Server VMs and HTML Server VMs.

#### **Step 24: Install Platform Pack**

Once the Database server, Enterprise server, and HTML server domains are setup, Platform Pack is used to install database metadata (database server components inside the JD Edwards EnterpriseOne database running on ODA\_BASE). This is done using Oracle Universal Installer (in silent mode) and supplying a response file for inputs.

When setting up the JD Edwards EnterpriseOne Database Server components on database servers running on ODA\_BASE the connect string must be `ovsorcl`. This is required so as to match the database definition in the OVM templates for Enterprise and HTML servers.

The Platform Pack installer needs to be run on ODA\_BASE where the JD Edwards EnterpriseOne database is installed. To determine the name of Oracle database instances running on ODA\_BASE on Node 0 and Node 1, run the following command as oracle user from either node:

```
# srvctl status database -d ovsorcl
```

For example, the output may look similar to this:

```
Instance ovsorcl1 is running on node mymachine1  
Instance ovsorcl2 is running on node mymachine2
```

For JD Edwards EnterpriseOne deployment on Oracle Database Appliance, the database is created in the pre-configured ODA\_BASE domain and not on a separate virtual machine. Thus the installation procedure is similar to that when using a non-virtualized database environment. The zip file for the Platform Pack Installer for a non-virtualized database server is included in the Media Pack for JD Edwards EnterpriseOne VM Templates (V45708-01 Oracle VM Template for JD Edwards EnterpriseOne 9.1.2 and Tools 9.1.4.4 - Non Virtualized Database Server (Oracle Database 12.1.0.1), which is available from the Oracle Software Delivery Cloud: <https://edelivery.oracle.com/>

In this example, if your session is running on mymachine1, you need to set your environment variable ORACLE\_SID (e.g., ovsorcl1) to connect to the database. If you do not set your ORACLE\_SID appropriately the data pump commands (`impdp`) in the database load scripts will fail. However, when you are editing the silent install response file (discussed later), you should supply the connect string `ovsorcl` so that EnterpriseOne Services can take advantage of the RAC cluster services.

Create a directory on the ODA\_BASE domain where the oracle user can unzip the JDE platform pack.

For example:

```
# su - oracle
$ mkdir -p /home/oracle/JDE_PP
$ unzip /tmp/V45708-01.zip -d /home/oracle/JDE_PP
```

Set appropriate permissions on the created directory:

```
$ chmod -R 775 /home/oracle/JDE_PP
```

### Step 25: Prepare the response file for Platform Pack installation

Prepare response file to supply to Oracle Universal Installer silent mode installation. This section describes the appropriate settings that you must set within this response file.

Use an editor such as *vi* to open the `OVMDB.rsp` file that is located inside the `/home/oracle/JDE_PP` directory that is created when the Platform Pack installer zip file is unzipped.

Edit the `/home/oracle/JDE_PP/OVMDB.rsp` response file to set parameters for the installation. Each section of the response file has comments that describe valid, expected values. Several default values are specified that may not need editing. The values that must be customized for the Oracle Database Appliance environment are described in Table 9.

OVMDB.rsp		
Section Name	Value	Comments
ACCEPT_LICENSE_AGREEMENT		You must accept a license agreement for the Platform Pack installation to proceed. Valid values are <b>true</b> or <b>false</b> ; The shipped version of OVMDB.rsp has this value set to <b>false</b> . You must change this to <b>true</b> in order for the installation to be able to proceed
ORACLE_HOME	/cloudfs/JDEOVM/e910	Specify the path, preferably a shared location, where you want the installer to place the scripts and dump the files. For example, a valid home name might be: /cloudfs/JDEOVM/e910
ORACLE_HOME_NAME	JDEOVM6_E910	Provide a tag for the Oracle Home Name, for example, JDEOVM6_E910
sysadmPwd	welcome1	Specify the password for the oracle system administrator account. The default system administrator account password on Oracle Database Appliance is "welcome1".
sIOVMvalues		For your planned architecture and configuration, prepare a specific string list of location, machine names, and password values that are required for use with JD Edwards EnterpriseOne VM Templates. The syntax for the string is:  <b>sIOVMvalues={"Location of Deployment","Deployment Server Name","HTML Server Name","Enterprise Server Name","ASM Usage - YES or No","Load Oracle BI Publisher Server Repository - Yes or No","BI Publisher Server Name","Password for SYS user"}</b>

		<p>where,</p> <ul style="list-style-type: none"> <li>• Location of Deployment - A string name for deployment location (for example, Corporate). This is the location in your installation plan.</li> <li>• Deployment Server Host Name – Name of deployment server (for example, jodavmdep).</li> <li>• HTML Server Host Name – Name of HTML (Web) Server (for example, jodavmwb1)</li> <li>• Enterprise Server Host Name – Name of Enterprise Server (for example, jodavment1)</li> <li>• ASM Usage Flag – Indicator whether Oracle Automatic Storage Management (ASM) is used for database storage or not. Valid values are YES or NO. For deployment on Oracle Database Appliance until v. 2.10, choose YES. <b>Starting with ODA v. 12.1.2.0.0 choose NO</b></li> <li>• Load Oracle BI Publisher Server Repository Flag – Indicator whether BI Publisher Server Repository is to be loaded. Valid values are YES or NO.</li> <li>• BI Publisher Server Host Name – Name of BI Publisher Server (for example, joda-vm-bip1). The BI Publisher Server Name is only required if Load BI Publisher Flag is set to YES.</li> <li>• Password for Database SYS User – Password string for Database SYS user (for example, welcome1). Note that the password for the Database Sys user in only required to be specified if Load BI Publisher Server Repository is set to YES.</li> </ul> <p><b>Note: The machine names should not be qualified.</b></p> <p>For example, your prepared sIOVMvalues string might look as follows:  sIOVMvalues={"Corporate","JODAVMDEP","jodavmwb1","jodavment1","YES","NO","NULL","welcome1"}</p>
orclTblDir	DATA	Starting with ODA v. 12.1.2.0.0 you should provide the path for the datafile to be stored on ACFs: <b>/u02/app/oracle/oradata/datastore/.ACFS/snaps/ovsorcl/OVSORCL/datafile</b>
orclIdxDir	DATA	Starting with ODA v. 12.1.2.0.0 you should provide the path for the datafile to be stored on ACFs: <b>/u02/app/oracle/oradata/datastore/.ACFS/snaps/ovsorcl/OVSORCL/datafile</b>
dbMach		Database Server SCAN (Single Client Access Name) Name – SCAN Name configured for Oracle Database Appliance ODA_BASE domain. For example, joda-scan

**Table 9: JD Edwards EnterpriseOne Platform Pack Deployment – Customizing Response File**

### Step 26: Run the Platform Pack Installer

You must connect to ODA\_BASE server and set your environment before you can run the installer.

Verify that the following environment variables are set correctly.

- ORACLE\_SID (may be set to ovsorcl1 or ovsorcl2 on node0 and node1 respectively for the RAC instances)



```
$ export ORACLE_SID=ovsorcl1
```

- ORACLE\_HOME (check your Oracle Home location in /etc/oratab file or using “oakcli show dbhomes” command)

```
$ export ORACLE_HOME=<Oracle Home Path>
```

- ORACLE\_BASE (Name of base directory where different versions of Oracle software are installed as per Oracle Flexible Architecture. For example, the ORACLE\_BASE on Oracle Database Appliance is /u01/app/oracle)

```
$ export ORACLE_BASE=/u01/app/oracle
```

- Ensure the value \$ORACLE\_HOME/bin is in the PATH environment variable in your shell

```
$ echo $PATH
```

```
$ export PATH=$PATH:$ORACLE_HOME/bin
```

Run the installer from the /home/oracle/JDE\_PP/install directory. For the response file, you must specify the full path to the location of the Platform Pack response file prepared previously. For example:

```
$ cd /home/oracle/JDE_PP/install
```

```
$ export ORACLE_SID=ovsorcl1
```

```
$ ./runInstaller -silent -responseFile /home/oracle/JDE_PP/OVMDB.rsp
```

Upon completion the installer reports success or failure to indicate if the Oracle database scripts were successfully run. To verify the status of the install, you can also check the logs in your install location, e.g., /cloudfs/JDEOVM/e910/ORCL/logs. It is important that you check and verify the logs. Also check for any errors in the logs in Oracle inventory location, which by default is /u01/app/orainventory/logs.

## De-installing Platform Pack

In the event that it becomes necessary, you can de-install the Platform Pack using the steps outlined below.

1. From the ORCL directory within your install location, for example /cloudfs/JDEOVM/e910/ORCL, run the drop\_db.sh script as the Oracle user.

```
$ drop_db.sh
```

2. From the install folder within your install location (/home/oracle/JDE\_PP/install) run command to run the OUI installer in silent mode and de-install the Platform Pack.

```
# ./runInstaller -deinstall -silent REMOVE_HOMES = { "/cloudfs/JDEOVM/e910" }
ORACLE_HOME_NAME={"JDEOVM_E910_1"}
```

## Step 27: Start JD Edwards EnterpriseOne Server

Starting and shutting down Network Services on the Enterprise Server

The JD Edwards Enterprise Server Network Services are started using the `RunOneWorld.sh` startup script.

1. Log on to the Enterprise Server as the `jde910` user and navigate to the binaries directory as follows.


```
# su - jde910
$ cd $SYSTEM/bin32
```

2. Execute the `RunOneWorld.sh` script. The `RunOneWorld.sh` script is run to start Oracle JD Edwards EnterpriseOne server processes. This script will not run if the server processes are already running.

```
$ ./RunOneWorld.sh
Thu Mar 28 09:20:19 EDT 2013 Starting JD Edwards OneWorld on
denodavment1.us.oracle.com
Thu Mar 28 09:20:21 EDT 2013 JD Edwards OneWorld startup complete.
```

3. Check the status of the services by running the `netwm` program.

```
$ netwm
Initializing JDEIPC
About to setupWorkManagementStruct
setupWorkManagementStruct ok
getJDENetWorkManagement ok
*****
1 net processes
*****
pid-15531      start-Sat Dec 21 17:27:07 2013  dport-6016      sport-6016
in-0    out-0    total-0
*****
7 kernel processes
*****
pid-15532      parent-15531      start-Sat Dec 21 17:27:08 2013  kdef-13
requests-0    outstanding-0      UserCount-0
pid-15533      parent-15531      start-Sat Dec 21 17:27:08 2013  kdef-30
requests-0    outstanding-0      UserCount-0
pid-15540      parent-15531      start-Sat Dec 21 17:27:09 2013  kdef-32
requests-0    outstanding-0      UserCount-0
pid-15542      parent-15531      start-Sat Dec 21 17:27:10 2013  kdef-34
requests-0    outstanding-0      UserCount-0
pid-15559      parent-15531      start-Sat Dec 21 17:27:11 2013  kdef-4   requests-0
outstanding-0  UserCount-0
pid-15576      parent-15531      start-Sat Dec 21 17:27:12 2013  kdef-4   requests-0
outstanding-0  UserCount-0
pid-15583      parent-15531      start-Sat Dec 21 17:27:13 2013  kdef-4   requests-0
outstanding-0  UserCount-0
```



*Note: You should always shutdown services before shutting down a VM Guest. When a VM Guest is shutdown and restarted, the Server Manager Agent may need to be manually restarted by logging in as jde910 and running the Restart Agent script. To shutdown services, repeat the above steps substituting EndOneWorld.sh for RunOneWorld.sh*

## **Step 28: Verify Enterprise Server Installation Using PORTTEST**

You can verify your Enterprise Server installation using PORTTEST. Please refer to Chapter 6 section 6.2 of JD Edwards EnterpriseOne Oracle VM Templates Express Installation Guide Release 9.1.3 for Linux x86-64 Platforms available at [http://docs.oracle.com/cd/E24902\\_01/doc.91/e37833.pdf](http://docs.oracle.com/cd/E24902_01/doc.91/e37833.pdf) for details about running PORTTEST on Oracle JD Edwards EnterpriseOne Enterprise Server.

*Note: When running PORTTEST after installing the Enterprise Server, the test returns a failure message. This is because it is not able to access the F0902 table at this time, (the format of the F0902 table changes during Table Conversion Workbench). Ignore any errors such as -- Select all on table F0902 failed - rcode=0 -- relating to accessing the F0902 table.*

Once the Workbench tasks are all complete, and the Enterprise Server is configured, rerun PORTTEST to verify the Enterprise Server installation as follows.

1. Log on to the Enterprise Server as jde910 user.
2. To verify that Release 9.1 is installed correctly on the Enterprise Server, enter these commands:

```
$ cd $SYSTEM/bin32
$ porttest userid password environment
```

Where, userid is a valid Release 9.1 user ID, password is the user password, and environment is the environment you want to verify. For example:

```
$ porttest JDE JDE DV910
```

Note that these parameters are case-sensitive. Enter this command for each environment and review output.

*Tip: If PORTTEST fails to run, for diagnostic assistance refer to the chapter entitled: "Using the PORTTEST Checklist" in the JD Edwards EnterpriseOne Applications Release 9.1 Installation Guide for Oracle on Unix.*

## Step 29: Starting the JD Edwards EnterpriseOne HTML Server

Once the Enterprise Server is started, you can start the HTML Server. You can do that using the WebLogic Administration Console or from Server Manager. Alternatively, the HTML Server can be started using the following scripts executed in a sequential order.

```
startNodeManager.sh
startWebLogic.sh
startManagedWebLogic.sh
```

For example, while logged on to the HTML Server as the *oracle* user, start the HTML Server components by submitting these commands.

### Start the Node Manager

```
$ cd /u01/Oracle/Middleware/user_projects/domains/base_domain/bin
$ nohup ./startNodeManager.sh &
$ tail -f nohup.out
```

Watch this log until you see this message: `INFO: Plain socket Listener started on port <port number>`. After this you may press CTRL-C to break out of the tail command.

### Start WebLogic Server

```
$ cd /u01/Oracle/Middleware/user_projects/domains/base_domain/bin
$ startWebLogic.sh
```

### Start the HTML Server

You can start the HTML Server by executing the following command.

```
$ ./startManagedWebLogic.sh html_server
```

The log will display on the screen and prompt you to enter the username and password. Specify the default username and password values of 'weblogic' and 'ovsadminE1'. Once WebLogic has been configured with a new password you can update the `boot.properties` file. For instructions on changing and setting up `boot.properties` files, refer to the JD Edwards EnterpriseOne HTML Server on WebLogic Reference Guide Release 9.1 for UNIX, Section 4.4 at the following link: [http://docs.oracle.com/cd/E24902\\_01/doc.91/e23434/toc.htm](http://docs.oracle.com/cd/E24902_01/doc.91/e23434/toc.htm)

The `boot.properties` file contains two fields:

boot.properties attribute	Description
Username	The default value for username is <b>weblogic</b> . You should change this value in this file to a valid value for your Admin Server.
Password	The default value for password is <i>welcome1</i> . You should change this value in this file to a valid value for your Admin Server.

The information entered in this file is encrypted after the first access. This file must be located in the `"/u01/Oracle/Middleware/user_projects/domains/base_domain/servers/html_server/security"` directory.

Monitor the log until you see this message: `INFO: Successfully stated the management agent listener on port 14502.`

As noted earlier, you should always shut down services before shutting down a VM Guest. When a VM Guest is shutdown and restarted, the Server Manager Agent may need to be manually restarted by logging in as the oracle user and running the startup steps.

To shutdown services, log in as oracle and cd to the bin directory as above, and run the following scripts:

```
$ ./stopManagedWebLogic.sh html_server
$ ./stopWebLogic.sh
```

For more information on using WebLogic with EnterpriseOne see JD Edwards EnterpriseOne HTML Server on WebLogic Reference Guide Release 9.1 for UNIX, at the following link:

[http://docs.oracle.com/cd/E24902\\_01/doc.91/e23434/toc.htm](http://docs.oracle.com/cd/E24902_01/doc.91/e23434/toc.htm)

### Step 30: Testing the JD Edwards HTML Web Server Connection

Once the Database Server, the HTML Server and the Enterprise Server are up, you can test application connection by starting a web browser and pointing it to the following URL.

```
http://<your-web-server-name>:8080/jde/owhtml
```

Where, `<Web Server Name>` is the name of the JD Edwards HTML web server. For example, `joda-vm-wb1`.



Note: Network connectivity is required between the PC or workstation where the web browser is started and the HTML Web Server.

Once you are successfully connected, the login screen for JD Edwards EnterpriseOne appears as follows. You can use the default USERID `JDE`, and default password `JDE` to connect. By default, the only environment available is `JDV910`.

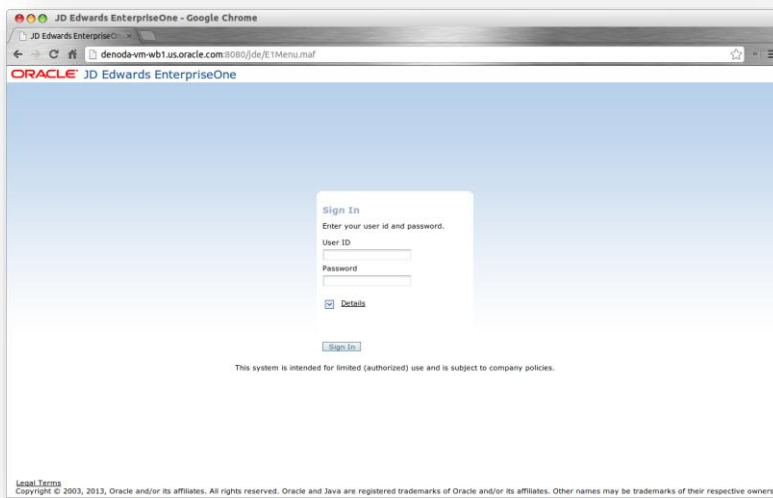


Figure 2: Oracle JD EdwardsOne Login Screen

You can now use Oracle JD Edwards EnterpriseOne documentation to operate and manage your environment.

### **Step 33: Operate the JD Edwards EnterpriseOne environment**

The rest of the tasks such as populating EnterpriseOne metadata in the data server, starting and stopping of Enterprise Server, HTML Server, and so forth are standard processes. Please refer to JD Edwards EnterpriseOne Oracle VM Templates Express Installation Guide Release 9.1.3 for Linux x86-64 Platforms available at [http://docs.oracle.com/cd/E24902\\_01/doc.91/e37833.pdf](http://docs.oracle.com/cd/E24902_01/doc.91/e37833.pdf)

For operating and managing Oracle Database Appliance, please refer to Oracle Database Appliance Getting Started Guide available at [http://docs.oracle.com/cd/E22693\\_01/doc.21/e22692.pdf](http://docs.oracle.com/cd/E22693_01/doc.21/e22692.pdf)



## Conclusion

This whitepaper outlines the steps necessary to deploy Oracle JD Edwards EnterpriseOne on Oracle Database Appliance Virtualized Platform using Oracle VM Templates and create the entire solution in a single Oracle Database Appliance environment. With this solution, customers benefit from a fully integrated ERP solution-in-a-box that delivers high availability database and application services, efficiently utilizes system resources, provides performance advantages of Oracle's Engineered Systems, and takes advantage of capacity-on-demand licensing for multiple workloads by leveraging Oracle VM hard partitioning.

## Reference

### Oracle Documentation

	Title	URL
<b>Oracle Database Appliance</b>	Oracle Database Appliance Documentation	<a href="http://docs.oracle.com/cd/E22693_01/index.htm">http://docs.oracle.com/cd/E22693_01/index.htm</a>
	ODA - Getting Started Guide	<a href="http://docs.oracle.com/cd/E22693_01/doc.12/e22692/toc.htm">http://docs.oracle.com/cd/E22693_01/doc.12/e22692/toc.htm</a>
	ODA - Administration and Reference Guide	<a href="http://docs.oracle.com/cd/E22693_01/doc.12/e55580/toc.html">http://docs.oracle.com/cd/E22693_01/doc.12/e55580/toc.html</a>
	Oracle Database Appliance Setup Poster	<a href="http://docs.oracle.com/cd/E22693_01/doc.12/e41668.pdf">http://docs.oracle.com/cd/E22693_01/doc.12/e41668.pdf</a>
<b>JD Edwards EnterpriseOne</b>	Installation and Upgrade Documentation	<a href="http://docs.oracle.com/cd/E24902_01/nav/installation.htm">http://docs.oracle.com/cd/E24902_01/nav/installation.htm</a>
	Application Installation with Oracle Database Guide	<a href="http://docs.oracle.com/cd/E24902_01/doc.91/e23313/toc.htm">http://docs.oracle.com/cd/E24902_01/doc.91/e23313/toc.htm</a>
	Oracle VM Templates Express Installation Guide	<a href="http://docs.oracle.com/cd/E24902_01/doc.91/e54942/toc.htm">http://docs.oracle.com/cd/E24902_01/doc.91/e54942/toc.htm</a>

### My Oracle Support Notes

My Oracle Support Note	My Oracle Support Note Number
Oracle Database Appliance - 12.1.2 and 2.X Supported ODA Versions & Known Issues	<a href="#">888888.1</a>
ODAVP: How to get the "ready-to-use" Templates 9.1.4.4 to deploy JDE	<a href="#">1902042.1</a>
ODAVP: How to bring JDE Deployment Server on ODA Virtualized Platform	<a href="#">1684316.1</a>
ODA - Oracle Database Appliance - How to Setup ILOM	<a href="#">1393191.1</a>
ODA (Oracle Database Appliance) : ILOM configuration via Serial port	<a href="#">1395445.1</a>

Software

	Component Name ( <a href="https://support.oracle.com">https://support.oracle.com</a> )	Patch Number	Size
<b>Oracle Database Appliance</b>	Oracle Database Appliance 12.1.2.X.0 VM ISO Image. (DOM0)	<a href="#">16186163</a>	279M
	Oracle Database Appliance 12.1.2.X.0 VM Template (ODA_BASE)	<a href="#">16186172</a>	5.7G
	Image Name ( <a href="https://edelivery.oracle.com/EPD/GetUserInfo/get_form?caller=LinuxWelcome">https://edelivery.oracle.com/EPD/GetUserInfo/get_form?caller=LinuxWelcome</a> )	Part Number	Size
<b>JD Edwards EnterpriseOne</b>	Oracle VM Templates for JD Edwards EnterpriseOne 9.1.2 and Tools 9.1.4.4 - Configuration Utility and Manifest	V43875-01	14K
	Oracle VM Template for JD Edwards EnterpriseOne 9.1.2 and Tools 9.1.4.4 Enterprise Server 1 of 2	V43852-01	1.8G
	Oracle VM Template for JD Edwards EnterpriseOne 9.1.2 and Tools 9.1.4.4 Enterprise Server 2 of 2	V43853-01	1.5G
	Oracle VM Template for JD Edwards EnterpriseOne 9.1.2 and Tools 9.1.4.4 - HTML Server (WebLogic Server 12.1.2.0)	V43854-01	1.7G
	Oracle VM Template for JD Edwards EnterpriseOne 9.1.2 and tools 9.1.4.4 - Oracle Linux 5.8 System	V43861-01	398M
	Oracle VM Template for JD Edwards EnterpriseOne 9.1.2 and Tools 9.1.4.4 - Non Virtualized Database Server (Oracle Database 12.1.0.1) [*JDE Platform Pack]	V45708-01	965M



## Appendix

### JD Edwards EnterpriseOne Deployment Server

The Deployment Server for JD Edwards EnterpriseOne must reside on an X86-based computer running Microsoft Windows. Optionally, you can choose to install the Deployment Server into a Microsoft Windows virtual machine. The installation package is downloadable from the Oracle E-delivery website.

For non-production use of JD Edwards EnterpriseOne environment deployed using Oracle VM Templates, a Deployment Server is not required. You must have a Deployment Server in production environments or any environment in which you want to apply ESUs or perform Package Builds.

For more information about setting up the deployment server, refer to JD Edwards EnterpriseOne Oracle VM Templates Express Installation Guide for Linux x86-64 Platforms available at [http://docs.oracle.com/cd/E24902\\_01/doc.91/e37833.pdf](http://docs.oracle.com/cd/E24902_01/doc.91/e37833.pdf)

You could bring the Deployment Server on ODA VP (Oracle Database Appliance Virtualized Platform) keeping it running into a Guest Virtual Machine following the MOS note ***ODAVP: How to bring JDE Deployment Server on ODA Virtualized Platform*** (Doc ID [1684316.1](#))



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Solution-in-a-box: Best practices for deploying JD Edwards EnterpriseOne on Oracle Database Appliance

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