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How to Deploy Oracle WebCenter Content on the Oracle ZFS Storage Appliance



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Overview

Oracle WebCenter Content is a highly integrated Enterprise Content Management (ECM) platform allowing the consolidation of unstructured content in a flexible and secure management system. Oracle WebCenter Content allows the management of content as a strategic asset and the integration of enterprise applications and business processes.

The basic architectural features of Oracle ZFS Storage Appliance are designed to provide high performance, flexibility and scalability. Besides its easy-to-use interface and detailed metrics using its DTrace Analytics tool, Oracle ZFS Storage Appliance features a unique Oracle integration with Hybrid Columnar Compression that delivers 3x to 5x better storage efficiency for Oracle databases with in-database archiving.

By using the features of Oracle Database, Oracle Grid Infrastructure and Oracle ZFS Storage Appliance, a rapid deployment of a secure ECM environment is made possible.

This document describes the minimum steps required to deploy Oracle WebCenter Content using the Oracle ZFS Storage Appliance as the infrastructure for holding the back-end database.

NOTE: References to Sun ZFS Storage Appliance, Sun ZFS Storage 7000, and ZFS Storage Appliance all refer to the same family of Oracle ZFS Storage Appliance products. Some cited documentation or screen code may still carry these legacy naming conventions.

Oracle WebCenter Content is built on and integrates with Oracle Fusion Middleware components. Oracle WebCenter Content provides all the tools needed to create the back-end schema required to support the middleware applications.

Oracle WebLogic is the Oracle Fusion Middleware component set that controls and monitors Oracle WebCenter Content component applications. Oracle WebLogic also provides access to the back-end database through Open Database Connectivity (ODBC) libraries. Oracle WebLogic is built on the concept of Oracle WebLogic server domains which contain one administration server and one or more managed servers (such as Oracle WebCenter.)

The steps to deploy Oracle WebCenter Content with an Oracle ZFS Storage Appliance infrastructure involve creating these middleware building blocks, as seen in the basic architecture shown in Figure 1.



Figure 1. Logical architecture

The database and Oracle WebLogic hosts may be located on the server or, for performance or administration reasons, they may also be hosted on different hosts. In the example shown in this document, they are installed on the same host but their logical functions are still distinct.

Installing the correct versions of the individual components is very important. In order to ensure smooth deployment, the Oracle web site has the necessary links for the correct component version downloads at:

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http://www.oracle.com/technetwork/middleware/webcenter/content/downloads/index.html

Prerequisite Setup

Note the following assumptions regarding existing setup upon which the WebCenter Content deployment steps depend:

- A known root password for the Oracle ZFS Storage Appliance exists.
- A known IP address or hostname of the Oracle ZFS Storage Appliance exists.
- A network used by the Oracle ZFS Storage Appliance that is already configured exists.
- Configured pools with sufficient free space available on the Oracle ZFS Storage Appliance exist.
- A known root password for the database and Oracle WebLogic server exists.
- Oracle Grid Infrastructure has been installed on the database server.
- Oracle Database has been installed on the database server.

Overview of Required Tasks

Deploying WebCenter Content requires configuration of four primary components of the architecture shown in figure 1: the Oracle ZFS Storage Appliance, the Oracle Database backend, and the Oracle Fusion Middleware components – Oracle WebLogic management software, and within that, Oracle WebCenter Content. The following tasks are required to install and/or configure the components:

- Configuring the storage network infrastructure
 - Configuring the Oracle ZFS Storage Appliance

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- · Presenting the required storage resources to the database server
- Configuring the back-end Oracle Database Creating the database for backend storage on the database server
- Configuring the Oracle WebLogic Repository
- Installing and configuring the Oracle Fusion Middleware components
 - Installing WebCenter Content
 - Configuring the Oracle WebLogic domain
 - Creating and assigning the middleware application servers
 - Starting the middleware application servers
- Performing the WebCenter Content configuration

Configuring the Storage Network Infrastructure

The choice of which block-level protocol and infrastructure to use depends on local policy and any existing connections between the Oracle ZFS Storage Appliance and the database host.

The Oracle ZFS Storage Appliance supports all major protocols, including CIFS (Common Internet File System), NFS (Network File System), FC (Fibre Channel), iSCSI (Internet Small Computer System Interface) and IB (Infiniband). The choice of storage network infrastructure is outside the scope of this document.

For the purposes of this document, the storage network infrastructure is assumed to be Fibre Channel and all the necessary zoning has been performed on the fabric switches.

Tutorials on creating iSCSI LUNs and Fibre Channel LUNs for use in Oracle Solaris, Oracle Linux or Microsoft Windows Server 2008 R2 environments are available at the Oracle Technology Network information web site, under Sun NAS Storage Documentation at:

http://www.oracle.com/technetwork/server-storage/sun-unifiedstorage/documentation/index.html

Configuring the Oracle ZFS Storage Appliance

The following tasks, depending on the implementation category, are required to configure the Oracle ZFS Storage Appliance. These steps need only be carried out once and can be omitted if successfully completed beforehand:

- Configure the FC targets.
- Configure the FC target group.

If no LUNs are being or have been presented to the database host, the following tasks are necessary:

- Determine the FC initiator Host Bus Adapter (HBA) World Wide Names (WWN).
- Configure the FC initiators.
- Configure the FC initiator group.

Perform the following steps whenever a new storage allocation will be made:

1. Create the LUN with the required attributes.

2. Present the LUN to the FC initiator group through the FC target group.

Configuring the Oracle ZFS Storage Appliance FC Targets

The FC targets are configured on the Oracle ZFS Storage Appliance to identify the appliance to the fabrics to which it will be attached.

The FC targets are defined by the HBA WWNs installed in the Oracle ZFS Storage Appliance. These FC targets are used not only within the Oracle ZFS Storage Appliance but also in any FC switches to provide the correct zoning information to ensure that only the appropriate devices can communicate. The method of zoning depends on the switch manufacturer. Reference the documentation provided by the manufacturer for details on required operations.

To configure the FC target, first establish a management session with the Oracle ZFS Storage Appliance.

1. Enter an address in the address field of a web browser that includes the IP address or hostname of the Oracle ZFS Storage Appliance:

https://<ip-address or hostname>:215

The login dialog window shown in Figure 2 is displayed.

Sun ORACLE		zfssa
	Username root	
	Password .	

Figure 2. Oracle ZFS Storage Appliance BUI login

2. Enter a **Username** and **Password** and click **LOGIN**.

Once you have successfully logged in to the BUI, identify the FC Target WWNs by navigating through the Configuration > SAN > FC Channel > Ports tabs, as highlighted in figure 3.

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	SERVICES	STORAGE	NETWORK	SAN	CLUSTER	USERS	PREFERI	ENCES	ALERTS
Storage Area Network (SAN	N)				1	Fibre C	hannel	iscsi	SRF
share LUNs only via particular targets or t spectively. To create a group or add to an	to particular initiators, build Targ existing one, drag the entity fro	get Groups and I om the left to the	nitiator Groups, table on the right.				REVER	RT /	APPLY
			-						
orts Initiators			Target G	roups					
Ports Initiators			Target G	roups	GETS				
Ports Initiators 'Cle 1 1 OTE Port 1 4 Gbps 21:00:00:e0:8b:92:a1:cf		Target	Target G	TARC [ALI	GETS L PORTS]				
Ports Initiators *Cle 1 * ************************************		Target Target	Target G	TARC TARC [ALI	GETS L PORTS]				
Ports Initiators *Cie 1 ************************************		Target Target	Target G	TAR(GETS L PORTS J				
Ports Initiators *Cle 1 ************************************		Target Target	Target G	TAR(GETS L PORTS]				

Figure 3. Identifying FC HBA WWNs in the Oracle ZFS Storage Appliance BUI

In the example, port 1 has the WWN 21:00:00:e0:8b:92:a1:cf and port 2 has the WWN 21:01:00:e0:8b:b2:a1:cf.

The FC channel ports should be set to Target in the dropdown box to the right of the individual FC port box. If this is not the case, the FC port may be in use for another purpose; do not change this setting until it has been investigated (a possible additional purpose may be for NDMP backups).

Configuring the Oracle ZFS Storage Appliance FC Target Group

The FC target group's purpose is to define upon which protocol and which interfaces LUNs will be presented and accessed. In order to create the FC target group, follow these steps:

- While still in the Configuration > SAN > FC Channel > Ports display as shown in Figure 3, place the mouse pointer on one of the FC target ports. A 'move' icon appears to the left of the port box.
- 2. Click and hold the mouse button on the 'move' icon and drag the box to the Fibre Channel Target Groups area as shown in Figure 4.

ψ.	Configu	uration	Mainter	nance	Shar	es St	atus A	nalytics
	SERVICES	STORAGE	NETWORK	SAN	CLUSTER	USERS	PREFERENCES	ALERTS
Storage Area Network (SA	N)					Fibre Cha	nnel iSCS	SI SRP
To share LUNs only via particular targets or respectively. To create a group or add to an	to particular initiators, build Targ existing one, drag the entity fro	et Groups and I m the left to the	nitiator Groups, table on the right.			1	REVERT	APPLY
			-					
Ports Initiators			Target G	roups				
Course of the second se			NAME					
PCIe 1			IN PAINIE	IARC	GETS			
PCIe 1 Port 1 4 Gbps 21:00:00:e0:8b:92:a1:cf		Target •	default	[ALI	ETS PORTS]			

Figure 4. Creating an FC target group in the Oracle ZFS Storage Appliance BUI

3. Drop the entry in the orange box to create a new target group. The group is created automatically and is given a name like 'targets-n' where 'n' is an integer. An example is shown in Figure 5.

Target Gr	oups		
NAME	TARGETS		
default	[ALL PORTS]		
targets-0	21:00:00:e0:8b:92:a1:cf	PCle 1: Port 1	2

Figure 5. Creating a target group in the Oracle ZFS Storage Appliance

Move the cursor over the entry for the new target group. Two icons appear to the right of the target group box as shown in Figure 5.

4. Click the Edit icon (\mathbb{A}) to display the dialog in Figure 6.

			CANCEL	ок
	EC Disto			
Nar Fib	ne FC-PortGroup			
Nar Fib	ne FC-PortGroup re Channel Ports 21:00:00:e0:8b:92:a1:cf	PCIe 1: Port 1		

Figure 6. Renaming the FC target group in the Oracle ZFS Storage Appliance

5. Enter the name for the FC target group in the **Name** box. The example in figure 6 shows the newly entered name FC-PortGroup. At this point, you can also add any

additional FC target ports by selecting the checkbox to the left of the appropriate WWN. The FC port is added to the target group. In the example, the port PCIe 1: Port 2 will be added to FC-PortGroup.

- 6. Click OK to save the changes.
- 7. Click **Apply** to commit all the changes made. Once the entries are successfully committed, the screen will resemble Figure 7.

ل	Configure	ation	Maintena	ince	Share	s s	Status	An	nalytics
	SERVICES ST	ORAGE	NETWORK	SAN	CLUSTER	USERS	PREFER	ENCES	ALERTS
Storage Area Network (SAN	1)					Fibre C	hannel	iscsi	SRP
	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	A second s							
To share LUNs only via particular targets or to respectively. To create a group or add to an e	o particular initiators, build Target C existing one, drag the entity from th	Groups and Initia he left to the tab	ator Groups, le on the right.				REVE	RT	APPLY
To share LUNs only via particular targets or to respectively. To create a group or add to an e Ports : Initiators	o particular initiators, build Target C existing one, drag the entity from th	Groups and Initia ne left to the tab	ator Groups, ale on the right. Target Gro	oups			REVE	RT	APPLY
To share LUNs only via particular targets or to respectively. To create a group or add to an e	particular initiators, build Target C existing one, drag the entity from the entity from the entity of the entity from the	Groups and Initia ne left to the tab	ator Groups, le on the right. Target Gro NAME	ups TARG	GETS		REVE	RI	APPLY
To share LUNs only via particular targets or to respectively. To create a group or add to an e Ports Initiators PCIe 1 Port 1 4 Gbps 2100-00-00-00-00-00-00-00-00-00-00-00-00-	particular initiators, build Target C existing one, drag the entity from the particular of the entity from the entity from the particular of the entity o	Torups and Initia Torups and I	Target Groups, le on the right. NAME default	TARG	SETS - PORTS]		REVE	RI	APPLY

Figure 7. Completed FC target group in the Oracle ZFS Storage Appliance

Determining the FC Initiator HBA WWNs

In order to properly configure the Oracle ZFS Storage Appliance FC initiators and initiator groups, you must know the HBA WWNs that will represent the database host.

The FC initiator HBA WWNs are used to define which hosts have access to volumes presented by the Oracle ZFS Storage Appliance. These HBA WWNs are also used in the fabric zoning to define which host can access the Oracle ZFS Storage Appliance at all.

SAN Best Practices state that the security model deployed should be the 'Least Access' one – that is, the least number of devices able to communicate. This is done not only to maintain data security and data integrity but also to reduce the amount of unnecessary FC traffic. In terms of data integrity, unless a clusterable (or shared) filesystem or volume manager is being used (such as Oracle ASM), if more than one host writes to a given volume concurrently, inconsistencies may occur in the in-core filesystem caches in the hosts. Those inconsistencies may ultimately lead to corruption of the on-disk image or a server crash.

The method for gathering the WWNs depends on the operating system of the database host. The following shows methods for Oracle Solaris and Oracle Linux.

Determining the FC Initiator HBA WWNs under Oracle Solaris 11

Logging on under a terminal session to the Oracle Solaris 11 host, become root and issue the following command:

```
soll1host # fcinfo hba-port
HBA Port WWN: 230000144fb8130c
       OS Device Name: /dev/cfg/c1
       Manufacturer: QLogic Corp.
       Model: 2200
       Firmware Version: 02.01.145
       FCode/BIOS Version: ISP2200 FC-AL Host Adapter Driver: 1.15
       Serial Number: not available
       Driver Name: qlc
       Driver Version: 20090929-2.32
       Type: L-port
       State: online
       Supported Speeds: 1Gb
       Current Speed: 1Gb
       Node WWN: 220000144fb8130c
HBA Port WWN: 210000e08a91bf8e
       OS Device Name: /dev/cfg/c12
       Manufacturer: QLogic Corp.
       Model: 375-3294-01
       Firmware Version: 05.01.02
       FCode/BIOS Version: BIOS: 1.04; fcode: 1.11; EFI: 1.00;
       Serial Number: 0402R00-0633171958
       Driver Name: glc
       Driver Version: 20090929-2.32
       Type: N-port
       State: online
       Supported Speeds: 1Gb 2Gb 4Gb
       Current Speed: 4Gb
       Node WWN: 200000e08a91bf8e
HBA Port WWN: 210100e08a91bf8e
       OS Device Name: /dev/cfg/c13
       Manufacturer: QLogic Corp.
       Model: 375-3294-01
       Firmware Version: 05.01.02
       FCode/BIOS Version: BIOS: 1.04; fcode: 1.11; EFI: 1.00;
       Serial Number: 0402R00-0633171958
       Driver Name: qlc
       Driver Version: 20090929-2.32
       Type: N-port
       State: online
       Supported Speeds: 1Gb 2Gb 4Gb
       Current Speed: 4Gb
       Node WWN: 200100e08a91bf8e
```

As can be seen from the previous code, there are three FC ports available. The first is the embedded FC controller. The remaining two FC ports are the ones of interest – port

WWNs 210000e08a91bf8e and 210100e08a91bf8e. These are the WWNs that will be needed for zoning and for defining the FC initiators in the Oracle ZFS Storage Appliance.

Determining the FC Initiator HBA WWNs under Oracle Linux

Logging on under a terminal session to the Oracle Linux host, become root and issue the following command:

```
[root@x4450-1 ~]# sysinfo -c fc_host -A port_name
Class = "fc_host"
Class Device = "host10"
   port_name = "0x2101001b322b5eb6"
   Device = "host10"
Class Device = "host9"
   port_name = "0x2100001b320b5eb6"
   Device = "host9"
```

Here, the WWNs of interest are 0x2101001b322b5eb6 and 0x2100001b320b5eb6. These WWNs will be used to define the zoning on the FC switches and the FC initiators in the Oracle ZFS Storage Appliance.

Configuring the FC Initiators

The FC initiator serves to define the "host" to the Oracle ZFS Storage Appliance. In a traditional dual-fabric SAN, the host will be defined by at least two FC initiators. The FC initiator definition contains the host WWNs.

Using the example, identify the database host to the Oracle ZFS Storage Appliance by way of the FC initiator HBA WWNs discovered in the previous section.

- 1. Click Configuration>SAN>Fibre Channel to display the Storage Area Network (SAN) screen shown in Figure 8.
- 2. Select Initiators on the left panel as shown in Figure 8.

ERVICES	STORAGE	NETWORK	SAN	CLUSTER	USERS	PREFERE	NCES	ALERTS
					Fibre C	hannel	iscsi	SRP
nitiators, build T drag the entity	arget Groups and Ir from the left to the	itiator Groups, table on the right.				REVER	T	APPLY
		Initiator	Groups					
		NAME	INITI	ATORS				
		default	[ALI	INITIATORS	1			
	ifiators, build T drag the entity	itiators, build Target Groups and Ir drag the entity from the left to the f	itiators, build Target Groups and Initiator Groups, drag the entity from the left to the table on the right. Initiator NAME	itiators, build Target Groups and Initiator Groups, drag the entity from the left to the table on the right. Initiator Groups NAME INITI default [A1]	itiators, build Target Groups and Initiator Groups, drag the entity from the left to the table on the right. Initiator Groups NAME INITIATORS default INITIATORS	Itiators, build Target Groups and Initiator Groups, drag the entity from the left to the table on the right. Initiator Groups NAME INITIATORS default I ALL INITIATORS 1	Itiators, build Target Groups and Initiator Groups, drag the entity from the left to the table on the right. REVER Initiator Groups NAME INITIATORS default I ALL INITIATORS 1	Fibre Channel iSCSI itiators, build Target Groups and Initiator Groups, drag the entity from the left to the table on the right. Initiator Groups NAME INITIATORS default LALL INITIATORS 1

Figure 8. Selecting the SAN Configuration panel

- Click the o icon to the left of Initiators to display the New Fibre Channel Initiator dialog shown in Figure 9.
- 4. If the zoning has been configured on the FC switches, the WWNs of the Oracle Solaris host should be displayed (assuming they have not been assigned to an alias already).
- 5. Click on one of the WWNs (if displayed at the bottom of the dialog box) to prepopulate the World Wide Name or type the appropriate WWN in to the World Wide Name box.
- 6. Enter a more meaningful symbolic name as the Alias.

	CANCELOK
World Wide Name	21:01:00:1b:32:2b:5e:b6
Alias	X4450-0-0
Unaliased ports 4 Total	an dh
WWN A	VENDOR
10:00:00:00:c9:55:a8:7c	Emulex Corporation
21:01:00:1b:32:2b:5e:b6	QLogic Corporation
21:01:00:e0:8b:a9:bf:8e	QLogic Corp.
21:01:00:e0:8b:a9:bf:8e 21:01:00:e0:8b:b1:3d:a6	QLogic Corp. QLogic Corp.

Figure 9. Creating the FC initiator group

7.Click OK.

8. Repeat steps 3 - 7 for the other WWNs that refer to the database host.

Configuring the FC Initiator Group

Related FC initiators are combined into logical groups to allow single commands to be executed on multiple FC initiators, such as assigning LUN access to all FC initiators in a group. For this example, the FC initiator group will contain two initiators. In a cluster,

where multiple servers are treated as a single logical entity, the initiator group may contain many more initiators.

To create an FC initiator group, complete these steps:

- 1. Select Configuration > SAN to display the Storage Area Network (SAN) screen.
- 2. Select the Fibre Channel tab at the right and then click **Initiators** on the left panel.
- 3. Place the cursor over the entry for one of the FC initiators created in the previous section. The Move icon \oplus appears to the left of the entry as shown in Figure 10.

X4450-0-0		NAME	INITIATORS	
21:01:00:1b:32:2b:5e:b6		default	FALL INITIATORS 1	
X4450-0-1 21:00:00:1b:32:0b:5e:b6			· Country provide the provide ·	

Figure 10. Displaying the Move icon for the new FC initiator

Click the

 icon and drag it to the Initiator Groups panel on the right. A new entry appears at the bottom of the Initiator Groups panel as shown in Figure 11 (highlighted in yellow).

U U	SERVICES	iguration STORAGE	Mainte NETWORK	nance san	Shar	USERS	Status PREFER		ALERTS
Storage Area Network (SAN)						Fibre C	hannel	iSCSI	SRP
To share LUNs only via particular targets or to pa	articular initiators, build T	arget Groups and	Initiator Groups,				REVE	RT A	PPLY
To share LUNs only via particular targets or to pa respectively. To create a group or add to an exis	articular initiators, build T ting one, drag the entity	arget Groups and from the left to the	Initiator Groups, table on the right.				REVE	RT A	PPLY
To share LUNs only via particular targets or to parespectively. To create a group or add to an exis	articular initiators, build T ting one, drag the entity	arget Groups and from the left to the	Initiator Groups, table on the right	Groups			REVE	RT A	PPLY
To share LUNs only via particular targets or to parespectively. To create a group or add to an exis Ports Collinitiators X4450-0-0 21.01.00.1b.32.2b.5a.bb	articular initiators, build T ting one, drag the entity	arget Groups and from the left to the	Initiator Groups, table on the right.	Groups INITI	ATORS		REVE	RTA	PPLY
To share LUNs only via particular targets or to parespectively. To create a group or add to an exis Ports Olimitators X4450-0-0 21:01:00:1b:32:2b:5e:b6 X4450-0-1 21:00:01:b:32:0b:5e:b6	articular initiators, build T	arget Groups and from the left to the	Initiator Groups, table on the right. Initiator NAME default	Groups INITI [ALI	ATORS L INITIATORS]	REVE	RT A	PPLY

Figure 11. Creating the FC initiator group

- 5. Move the cursor over the new entry box and release the mouse button. A new FC initiator group is created with a name initiators-*n*, where *n* is an integer as shown in Figure 12.
- 6. Move the cursor over the entry for the new initiator group. Several icons appear to the right of the target group box as shown in Figure 12.

	SERVICES	STORAGE	NETWORK	SAN CI	LUSTER	USERS	PREFER	ENCES	ALERTS
Storage Area Network (SAN)						Fibre Cl	hannel	iSCSI	SRP
o share LUNs only via particular targets or to parti spectively. To create a group or add to an existin	icular initiators, build 1 ig one, drag the entity	arget Groups and I from the left to the	nitiator Groups, table on the right.				REVE	RT A	PPLY
o share LUNs only via particular targets or to parti espectively. To create a group or add to an existin	icular initiators, build 1 Ig one, drag the entity	arget Groups and from the left to the	nitiator Groups, table on the right.				REVE	RT A	PPLY
o share LUNs only via particular targets or to part spectively. To create a group or add to an existin	icular initiators, build 1 ig one, drag the entity	arget Groups and from the left to the	initiator Groups, table on the right.	roups			REVE	RT A	PPLY
o share LUNs only via particular targets or to part spectively. To create a group or add to an existin Ports O Initiators	icular initiators, build 1 ig one, drag the entity	arget Groups and from the left to the	Initiator Groups, table on the right.	roups INITIATO	DRS		REVE	RTA	PPLY
o share LUNs only via particular targets or to part spectively. To create a group or add to an existin Ports O Initiators X4450-0-0 21:01:00:1b:32:2b:5e:b6 X4450-0.1	icular initiators, build i g one, drag the entity	arget Groups and i from the left to the	Initiator Groups, table on the right.	roups INITIATO [ALL INI	DRS ITIATORS]		REVE	RT	VPPLY

Figure 12. Selecting the FC initiator group

- 7. Click the Edit icon (\mathbb{A}) to display the dialog in Figure 12.
- 8. In the **Name** field, replace the default name with the name to be used for the FC initiator group and click **OK**. For this example, the name ucm-dbserver is used.
- 9. Additionally, the other FC initiator(s) can be added to the group at this time by clicking in the check box to the left of the WWN as seen in Figure 13.

-	-		CANCEL	OK
Name	ucm-dbserver]		
Fibre	Channel Initiators			
21	:00:00:e0:8b:89:bf:8e	X4450-0-0		
21	:01:00:e0:8b:a9:bf:8e	X4450-0-1		

Figure 13. Renaming and completing the FC initiator group

10. Click APPLY on the SAN configuration screen to confirm all the modifications as shown in Figure 14.

ف ا		Confi	iguration	Maintena	nce	Share	s	Status	An	alytics
		SERVICES	STORAGE	NETWORK	SAN CL	USTER	USERS	PREFER	ENCES	ALERTS
Stora	ige Area Network (SAN)						Fibre C	hannel	iscsi	SRP
T	TTRE SET IS SHOWN IN A SECOND SECOND	o de la Marka por Jacobil 7	Course and	In Western Oreguna a				L DOWN		
To share respecti	ELUNS only via particular targets or to partic vely. To create a group or add to an existing	cular initiators, build 1 g one, drag the entity	Farget Groups and from the left to the	Initiator Groups, table on the right.				REVE	RT	APPLY
To share respecti	LUNs only via particular targets or to partic vely. To create a group or add to an existing	cular initiators, build T g one, drag the entity	Farget Groups and from the left to the	Initiator Groups, table on the right.	oups			REVE	RT	APPLY
To share respecti Ports	LUNs only via particular targets or to partic vely. To create a group or add to an existing O Initiators X4450-0-0	cular initiators, build T g one, drag the entity	Farget Groups and from the left to the	Initiator Groups, table on the right.	oups INITIATO	RS		REVE	RT	APPLY
To share respecti Ports	LUNs only via particular targets or to partic vely. To create a group or add to an existing Initiators X4450-0-0 21:01:00:1b:32:2b:Se:b6	cular initiators, build T g one, drag the entity	Farget Groups and from the left to the	Initiator Groups, table on the right. Initiator Groups NAME default	INITIATO	RS TIATORS]		REVE	RT	APPLY

Figure 14. FC initiator configuration complete

Configuring the Required Storage for the Database

Still logged in to the Oracle ZFS Storage Appliance BUI, you now create the LUNs that will be presented to the database host. The first step for this operation is to create a project. Projects are used to group related filesystem and/or block-access LUNs for administrative purposes such as space management and common settings. Once the project is created, the storage required for the database host use will be allocated.

Defining an Oracle ZFS Storage Appliance Project

To create a project, complete the following steps:

1. Select Shares > Projects to display the Projects screen as shown in Figure 15.

U \$	Configuration	Maintenance	Shares	Status Ar	nalytics
			SHARES	PROJECTS	SCHEMA
Projects	► All Projects				
3 Total					
🕀 ALL : LOCAL : REPLICA 🛛 🗇	OProjects 3 Total				Q
default	SHOW ALL ! LOCAL ! REPLICA				
	NAME +		SIZE	CREATION	
	default		31K	2012-5-17 15:35:55	

Figure 15. Viewing a project

Click the + icon to the left of Projects at the top of the left panel to display the Create Project dialog window shown in Figure 16.

Create Project			CANCEL	APPLY
	Name	UCM		

Figure 16. Create Project dialog window

2. To create a new project, enter a Name for the project and click APPLY. A new project appears in the Projects list in the left panel.

Select the new project to view the components that comprise the project, as shown in Figure 17.

U 49	Co	nfiguration	Mainter	nance	Shares	Status	Analytics
					SHA	RES PROJEC	TS SCHEMA
Projects	► UCMI	Shares	General	Protocols	Access	Snapshots	Replication
3 Total	SATApooVlocaVUCM						
🗘 ALL : LOCAL : REPLICA 🛛 🕥	Filesystems OLUN	S 0 Total					
default							
UCM		No. 111Min					
		NO LUNS C	letined. Click th	e 😡 button abov	e to add a LUN		

Figure 17. Displaying the new project UCM

Creating the LUNs for the Database Host

LUNs will now be created from the existing pool of storage resources. These LUNs will hold not only the data files for the WebCenter Content Manager backend database but also a flash recovery area (FRA) as required by Oracle Database configuration best practices.

To obtain optimal performance for the database access, the LUNs should be created with a block size of 64K and provisioned from a RAID-1 pool, as the database serving WebCenter Content Manager can be viewed as a general purpose database.

One difference from the recommendations provided in the listed document is that there will be no segregation of redo and archive logs; Oracle Automatic Storage Management (ASM) will provide the volume and placement management of the database components.

To create the LUNs, follow these steps:

- Select the Shares > Projects tabs and click the 'UCM' project name as shown in Figure 18.
- 2. Click on the LUNs title.

ဖ မ		nfiguration	Maintenance		shares	Status	Analytics
POOLS RAID10					RES PROJECT	ECTS SCHEMA	
Projects	► UCMI	Shares	General	Protocols	Access	Snapshots	Replication
5 Total CALL : LOCAL : REPLICA Exchange SAMFS UCM av default	RAID10//oca/UCM	√s o ⊤otal No LUNs d	lefined. Click th	e 🗘 button above	e to add a LUN	2	

Figure 18. Selecting the project to add a LUN

3. Click the o icon to display the Create LUN dialog window shown in Figure 19.

4. Enter the values appropriate for the data LUN. In the example, the Name is set to data01, the Volume size to 64GB, and the check box next to 'Thin-provisioned' is not checked. The Target Group should be set to FC-PortGroup and the Initiator Group to ucm-dbserver.

The Volume block size should be set to 64K as described for the example.

Create LUN	CANCEL
P	roject UCM -
1	Name data01
Volume	e size 64 G 👻
Thin provis	ioned 🔲
Volume block	size 64k 💌
Target (Group FC-PortGroup -
Initiator C	Group ucm-dbserver -
LU Nu	mber © 0
Operational S	tatus Online 🔻

Figure 19. New LUN dialog window

Click Apply to create the LUN and to make it available to the database host. The BUI panel should look similar to Figure 20.

U \$		Configuration	Maintena	ince 🧯	Shares	Status	Analytics
POOLS RAID10					SHA	RES PROJEC	TS SCHEMA
Projects	► UCMI	Shares	General	Protocols	Access	Snapshots	Replication
	RAID10/local/UCM						
🗘 ALL LOCAL REPLICA 🛛 🔊	Filesustana	011IN					0
Exchange	Fliesystems	GLUNS 1 Total					~
SAMFS							
UCM	• NAME A		SIZE	GUI	ID		
av	o data01		64G	600	144F0F05E906C0	0005006A1CD0001	
default							

Figure 20. Newly created data LUN

5. Repeat steps 2 – 4 for the FRA LUN. In this example, the Name is fra01, and the Volume size is 128GB. All the other details should be the same.

Once completed, the LUNs panel should look like Figure 21.

0 #	C	onfiguration	Maintena	ance	Shares	Status	Analytics
POOLS RAID10					SHA	RES PROJEC	TS SCHEMA
Projects	► UCMI	Shares	General	Protocols	Access	Snapshots	Replication
	RAID10/local/UCM						
🗘 ALL LOCAL REPLICA 🕥	-						0
Exchange	Filesystems OL	UNS 2 Total					<u> </u>
SAMFS							
UCM	O NAME A		SIZ	E GU	ID		
	data01		640	G 600	144F0F05E906C0	0005006A1CD0001	
default	fra01		128	IG 600	144F0F05E906C0	0005006A2280002	
ueraun							

Figure 21. Newly created FRA and data LUNs

Creating the Oracle WebLogic Repository on the Database Host

Once the necessary system administration tasks have been completed to access the allocated LUNs on the database host (enabling access for the oracle user, for example), the next step is to configure the LUNs as ASM disk groups and then create the database on the ASM disk groups.

Creating the ASM Disk Groups

- 1. Log on to the database host as the user oracle in a GUI session capable of running the GUI-based ASM Configuration wizard 'asmca'.
- 2. Set the Oracle SID by running `. oraenv' as seen in the following example. Typically you will use '+ASM' to access the ASM utilities.

{oracle!x4450 }\$. oraenv
ORACLE_SID = [oracle] ? +ASM

3. Run 'asmca'. The ASM configuration wizard will be displayed as shown in Figure 22.

	ASM Configur ASM Instance: +ASM Disk Groups Volume You can choose to creat groups with 11.2 ASM cc Tip: To perform operatio Disk Groups	ation Assist ASM Cluster e a new disk grou ompatibility. Ins on a disk grou	ant: Configur Flie Systems up or add disks to up, right mouse c	re ASM: Disk (an existing disk gr lick on the row.	iroups oup. To create dynam	ic volumes, you need	disk
	Disk Group Name	Size (GB)	Free (GB)	Usable (GB)	Redundancy	State	
		×					
	Create Mount All	Dismount All					
Help							Ex

Figure 22. ASM configuration wizard

4. Click Create. The 'Create Disk Group' wizard will be shown as in Figure 23.

	oup Name	ICMDATA				
Redu	undancy					
Redu two d	ndancy is achieved by stor ifferent failure groups, and ligh () Normal ()Externa	ing multiple copies of the dat I high redundancy from atlea al (None)	a on different fi Ist three differen	ailure groups nt failure groi	. Normal redu ups.	ndancy needs disks from atleas
Sele	ct Member Disks					
() St	iow Eligible 🔿 Show All					
() SI						
Ouor	um failure groups are used	l to store voting files in exter	nded clusters ar	nd do not con	tain anv user	data. It requires ASM
comp	atibility of 11.2 or higher.	,				
	1			-		
	Disk Path	Header Status	Disk Name	Size (MB)	Quorum	
	/dev/dm-5	CANDIDATE		65536		
	/dev/dm-6	CANDIDATE		131072		
					h and read he	rite normissions on the disks
Nata	Musu da pat ess tha diska	which you believe are supila	hla, ahaak Diak I	11.0.0.00000000000000000000000000000000	n anu reauviu	rice permissions on the uisks.
Note: The E	If you do not see the disks Jisk Discovery Path limits s	which you believe are availa et of disks considered for dis	ble, check Disk l scoverv.	Discovery Pat		
Note: The D	If you do not see the disks)isk Discovery Path limits s	which you believe are availa et of disks considered for di:	ble, check Disk I scovery.	Jiscovery Pat		(
Note: The E Disk I	If you do not see the disks bisk Discovery Path limits s Discovery Path:/dev	which you believe are availa et of disks considered for dis	ble, check Disk I scovery.	Jiscovery Pat		Change Disk Discovery Path
Note: The E Disk I	If you do not see the disks Sisk Discovery Path limits s Discovery Path:/dev	which you believe are availa et of disks considered for dis	ble, check Disk l scovery.	Jiscovery Pat		Change Disk Discovery Path

Figure 23. ASM Create Disk Group wizard

- 5. Enter the Disk Group Name, which in the example is 'UCMDATA'. Ensure that the Redundancy check box is set at 'External (None)', as the data protection will be carried out by the Oracle ZFS Storage Appliance RAID-1 pool. Since a 64GB LUN was allocated for data, choose that volume (shown in the example as '/dev/dm-5') by selecting the check box to the left of that volume, as shown in Figure 23.
- 6. Click **OK**. A "DiskGroup: Creation" progress bar will be shown, followed quickly by a successful creation notification.
- 7. Click OK.
- 8. Repeat steps 4 7 for the disk group UCMFRA which will contain the Flash Recovery Area for the UCM database using the 128GB volume (/dev/dm-6 in the example).

Once these steps are completed, the initial ASM Configuration Assistant screen will once again be displayed, with the disk groups UCMDATA and UCMFRA listed.

	ASM Configura	ation Assista	nt: Configu	e ASM: Disk 0	iroups	_ = >
	ASM Instance: +ASM					
	Disk Groups Volumes	s ASM Cluster	File Systems			
	You can choose to create groups with 11.2 ASM co Tip: To perform operatio Disk Groups	e a new disk grou Impatibility. ns on a disk grou	o or add disks to p, right mouse c	an existing disk gri ick on the row.	oup. To create dynam	ic volumes, you need disk
	Disk Group Name	Size (GB)	Free (GB)	Usable (GB)	Redundancy	State
	UCMDATA	64.00	63.95	63.95	EXTERN	MOUNTED
	UCMFRA	128.00	127.95	127.95	EXTERN	MOUNTED
	Create Mount All	Dismount All				
Han						Evit
Treip						EXIT

Figure 24. ASM disk groups completed

Creating the Database on the ASM Disk Groups

Now that the ASM disk groups are in place, you can create the Oracle Database using the standard Oracle tools.

The next steps will create the database to allow the WebLogic Repository Configuration Utility to create the necessary structures for WebCenter Content Manager.

- 1. Log on to the database host as the user oracle in an X session.
- 2. Change directory to the Oracle Database home directory and run 'bin/dbca'. The Database Configuration Assistant (DBCA) will be displayed as shown in Figure 25.

01	Database Configuration Assistant : Welcome	×
	Welcome to Database Configuration Assistant for Oracle database. The Database Configuration Assistant enables you to create a database, or options in an existing database, delete a database, and manage database	onfigure database : templates.
Cancel	Help Sack Next	»]

Figure 25. DBCA Welcome screen

- 3. Click Next.
- 4. Ensure 'Create a Database' is selected and click Next. The Database Identification dialog will be shown as in Figure 26.
- 5. Enter the Global Database Name. In the example, it is UCMDATA.example.com.

The SID will be automatically populated from the Global Database Name, as seen in Figure 26.

Database C	onfiguration Assistant,	, Step 3 of 12 : Database Identification
	An Oracle database is ur "name.domain".	iquely identified by a Global Database Name, typically of the form
	Global Database Name:	UCM.example.com
	A database is referenced any other instance on thi	by at least one Oracle instance which is uniquely identified from s computer by an Oracle System Identifier (SID).
	SID:	UCM
Cancel Help)	< Back Naxt ≫

Figure 26. DBCA Database Identification screen

7. The DBCA Management Options dialog will now be shown. In the example, in order to enable a daily disk backup to the FRA at 02:00 AM, the 'Enable Daily Disk Backup to Recovery Area' checkbox is checked and the 'oracle' username and password are entered, as shown in Figure 27.

	Enterprise Manager	Automatic Maintenance Tasks
	Configure Enterprise Manag	jer
-	C Register with Grid Control	for centralized management
	Management Service	No Agents Found
	Configure Database Contr	ol for local management
	Enable Alert Notification	s
1	Outgoing Mail (SMTP) Ser	ver.
	Recipient Email Address	. [
	🔽 Enable Daily Disk Backu	p to Recovery Area
S	Backup Start Time:	
	OS Username:	oracle
	OS Password:	*****
	-	

Figure 27. DBCA Management Options screen

- 9. The Database Credentials dialog window is shown. The allocation of passwords is usually defined by local security policy but in the example, the same password is used for all accounts. This is not recommended for a production installation.
- 10. Enter the Password and re-enter in the Confirm Password field as shown in Figure 28.
- 11. Click Next.

User Name	Password	Confirm Password
SYSTEM		
DBSNMP		
SYSMAN		
Confirm Password:	******	
	SYS SYSTEM DBSNMP SYSMAN © Use the Same Adm Password: Confirm Password:	SYS SYSTEM DBSNMP SYSMAN © Use the Same Administrative Password for All Password: Confirm Password:

Figure 28. DBCA Database Credentials

12. Next, define the Database File Locations. Since Oracle-managed files will be used, select Automatic Storage Management (ASM) from the Storage Type drop-down menu, and ensure that the radio-button beside Use Oracle-Managed Files is selected. Enter the data ASM Disk Group name in the Database Area field – in this example, it is +UCMDATA. Figure 29 shows these settings.

	Specify storage type a	nd locations for database files.	
	Storage Type: Storage Locations: © Use Database File	File System Automatic Storage Management (ASM Locations from Template	
	C Use Common Loca	ation for All Database Files	
Naparagalawian Naparagalawian Managalawian	Database Files Loc	ation:	Browse
Havened Alexandra Havened Alexandra Marcel Schemer Marcel Schemer Marcel Schemer Marcel Havened Marcel Havened	Se Oracle-Manaj Database Area:	ed Files	Browse
Marchallename Marchallename Marchallename Marchallename Marchallename	If you want to options except each file locati the names for	specify different locations for any database fil Oracle-Managed Files and use the Storage p on. If you use Oracle-Managed Files, Oracle a database files, which can not be changed on	es, pick any of the abow age later to customize utomatically generates the Storage page.

Figure 29. DBCA Database File Locations screen

14. The Wizard will then prompt for the password specific to ASM, as shown in Figure 30. Enter the password and click **OK**.

ASM Credentia	×
Specify ASMSNMP password specific to ASM:	***)
OK Cancel	

Figure 30. DBCA ASM Credentials

15. The Recovery Configuration dialog will then be shown, as in Figure 31. Since the FRA is defined in the example, you can specify the Flash Recovery Area by selecting the checkbox to the left and entering the FRA ASM Disk Group name in the Flash Recovery Area. In the example, this is +UCMFRA.

It is good practice to have Archiving enabled to archive Redo Log files, so ensure that the Enable Archiving checkbox is set.

	Specify Elach Receivery Area	ne database.	
	This is used as the default for also required for automatic d recommends that the databa disks for data protection and	all disk based backup an isk based backup using Er se files and recovery files I performance.	d recovery operations, and is iterprise Manager. Oracle be located on physically differ
Navergalanter Navergalanter Navergalanter	Flash Recovery Area: Flash Recovery Area Size:	+UCMFRA 3882	Browse)
Hundhammer Wardingkammer Handler Handler Handler Hundhammer Hundhammer Hundhammer Hundhammer Hundhammer	Enable Archiving	Edit Archive Mode P	arameters)
			File Location Variable

Figure 31. DBCA Recovery Configuration

- 17. The Wizard will prompt for whether you want to add sample schemas to the database content. Since you will use the WebLogic Repository Configuration Utility to ensure that the database content is as required for WebCenter Content Management, you do not want sample schemas in the database content. Click Next.
- 18. The Database Initialization Parameters dialog will then be shown as in Figure 32. Local Database Policy should define what memory size to allocate to the UCM repository. The example accepts the suggested SGA and PGA combined size and uses Automatic Memory Management. For this example, all default settings except the Character Sets setting, which will be changed in the next step, are unchanged.
- 19. Click the Character Sets tab.

	Memory Siz	ting Charac	ter Sets Connection Mode	
	Typical			
1	Memory Size (SGA and F	PGA): 9256 MB	. ▼	
	Percentage:	40 % 2	250 MB	23140 MB
	🔽 Use Automatic Memor	ry Management	Show Memory Distribution))
0	Custom			
	Memory Management	Automatic Shared	Memory Management	
	SGA Size:	1536	M Bytes	
	PGA Size:	7720	M Bytes	
	Total Memory for Oracle	e: 9256 M Bytes		
All	Initialization Parameters.)]

Figure 32. DBCA Initialization Parameters

- 20. Set the default database character set to Unicode (AL32UTF8) for the Repository Creation Utility, as shown in Figure 33.
- 21. Click Next.

	Memory S	izing Character Sets Connection Mode
	- Database Character Set -	
market D	C Use the default	
· ·····	The default character s operating system: WE8	et for this database is based on the language setting of this MSWIN1252.
	Use Unicode (AL32UTF8	0
	Setting character set to groups.	Unicode (AL32UTF8) enables you to store multiple language
	C Choose from the list of	character sets
	Database Character Set	t: AL32UTF8 - Unicode UTF-8 Universal character set
		\blacksquare Show recommended character sets only
	National Character Set:	AL16UTF16 - Unicode UTF-16 Universal character set
9 1 5	Default Language:	English
	Default Territory.	United Kingdom
	All Initialization Parameters)

Figure 33. Defining the database character set in DBCA Initialization Parameters

22. The Database Storage dialog is then shown as depicted in Figure 34. Click **Next**.

- 법) Controlfile	Database Storage
Datafiles	 From the Database Storage page, you can specify storage parameters for database creation. This page displays a tree listing and summary view (multi-column lists) to enable you to change and view the following objects: Control files Tablespaces Datafiles Redo Log Groups From any object type folder, click Create to create a new object. To delete an object, select the specific object from within the object type folder and click Delete. Important: If you select a database template including data files, then you will not be able to add or remove data files, tablespaces, or rollback segments. Selecting this type of template enables you to change the following: Destination of the datafiles Control files or log groups. For more information, refer to the Oracle Database Storage Administrator's Guide.
Create Delete	File Location Variables

Figure 34. DBCA Database Storage screen

23. Finally, the last screen is shown with the option to Save as a Database Template and/or generate Database Creation Scripts. Local administration policy should dictate if these are required. None of these options are selected in the example. Click **Finish** as shown in Figure 35.

Database Co	nfiguration Assistant, Step 11 of 11 : Creation Options	×
	elect the database creation options:	
	Generate Database Creation Scripts Destination J/u01/app/oracle/admin/UCM/scripts	Browse]
Cancel Help	(<u> Back</u> Next >)	Einish

Figure 35. DBCA Creation Options screen

- 24. A Confirmation dialog is displayed with the option to save the configuration information as an HTML file. Click **OK**.
- A progress dialog is then shown as seen in Figure 36.

Ideal Platform for Grid Computing Low cost servers and storage	Copying database files Creating and starting Oracle Instance Registering database with Oracle Restart Completing Database Creation
Highest availability	Clone database creation in progress
Best scalability	2% Log files for the current operation are located at: /u01/app/oracle/cfgtoollogs/dbca/UCM
	Step

Figure 36. DBCA progress dialog screen

On successful completion of the tasks, the completion screen shown in Figure 37 will be displayed.

<u></u>		Repository Creation Utility - Welcome	_ - ×
We	lcome		EUSION MIDDLEWARE
Ģ	Welcome		
*	Create Repository	Welcome to Repository Creation Litility for Oracle Eusion Middleware	
Ý	Database Connection Details		
Ý	Select Components	Oracle Fusion Middleware.	ient schemas that are part of
Ý	Schema Passwords		
Ý	Map Tablespaces		
Ý	Summary		
9	Completion Summary		
		Ski <u>p</u> this Page Next Time	
		Messages:	
-	Help	- Back	Next > Finish Cancel
_	Traile 1	- Luce	Curcer

Figure 37. DBCA Completion screen

The database is now in place and ready to be set up for the WebCenter Content management application.

Installing the Oracle Fusion Middleware Components

The tasks required to install the Oracle Fusion Middleware components include creating the Oracle Fusion Middleware Repository, then installing Oracle WebLogic and WebCenter Content management software.

Creating the Oracle Fusion Middleware Repository

The Oracle Fusion Middleware Repository Creation Utility (RCU) is used to create the appropriate structures in the nominated database to ensure that the Oracle Fusion Middleware components are able to install and configure their own particular data and settings. The RCU can be downloaded from the Oracle web site.

Follow these steps to create the repository in the database:

- 1. Log on to the WebLogic host as the user 'oracle' in an X-based session.
- 2. Change directory to where the Oracle Fusion Middleware RCU has been unzipped. In the example, this is /stage/rcu.
- 3. Run rcuHome/bin/rcu.
- 4. The screen as shown in Figure 38 will be displayed. Click Next.



Figure 38. RCU Welcome screen

5. Ensure the 'Create' option is chosen by clicking on the radio-button, as shown in Figure 39, and Click **Next**.

Cre	eate Repository		
Ψ	Welcome		
R	Create Repository	Create Create and load component schemas into a database.	
Ļ	Database Connection Details		
Ş.	Select Components	ODrop	
þ.	Schema Passwords	Remove component schemas from a database.	
Ş.	Map Tablespaces		
2	Summary		
9	Completion Summary		
		Messages:	
-	Help	- Rack	Nues Course Course

Figure 39. Repository creation

6. In the next step, specify the details for the database just created in the previous section, and apply by clicking on **Next**.

In the example shown in Figure 40, the database host is x4450-1 and the database listener is sitting on port 1521. The service name (the full name of the database) is UCM.example.com. The user with 'sysdba' privileges is 'sys' and the example uses the SYSDBA role.

atabase Connection Detai	ls	FUSION MIDDLEWARE
Welcome	<u>D</u> atabase Type:	Oracle Database
Database Connection Details		Inclusion
Select Components	Hos <u>t</u> Name:	x4450-1 Fae DAC database, specify V/D some or one of the Node some as Hest some
Schema Passwords		For SCAN enabled RAC database, specify SCAN host as Host name.
Map Tablespaces	P <u>o</u> rt:	1521
Summary	<u>S</u> ervice Name:	UCM.example.com
Completion Summary		A
	<u>U</u> sername:	sys
		User with DBA or SYSDBA privileges. Example:sys
	Password:	•••••
	<u>R</u> ole:	SYSDBA
	<u>M</u> essages:	One or more components may require SYSDBA role for the operation to succeed.

Figure 40. RCU Database Connection Details screen

7. The RCU will then perform a check for prerequisite conditions and will display a progress dialog, like the example in Figure 41. Click **OK**.

	Initializing repository configuration metadata	00:01.516(sec)
	Obtain properties of the specified database	00:00.202(ms)
1	Check requirement for specified database	0:00.302(ms)
1	Execute pre create operations	00:04.022(sec)

Figure 41. RCU prerequisite checks

8. Next, select the components that will be installed. During this step, you can change the prefix for the schema owners if required by local administration policy. In this example, no changes are made.

9. Ensure that WebCenter Content is selected by clicking in the checkbox to the left of the title as shown in Figure 42, and then select **Next**.

			_11
2 Welcome	A Prefix groups the components associated with one deployment.		
) Create Renository	Select an existing Prefix		
Database Connection Details	Create a new Prefix DEV		
Select Components	Prefix can contain only alpha start with a number and shou	-numeric characters. Prefix uld not contain any special c	should n haracters
Map Tablespaces	Component	Schema Owner	
	Oracle AS Repository Components		
Summary	Image: Barbar Barba		
Completion Summary	⊞ Identity Management		
	E WebCenter Content		
	Oracle Information Rights Management	DEV_ORAIRM	
	Oracle WebCenter Content Server – Complete	DEV_OCS	1
	☑ Oracle WebCenter Content Server – Search …	DEV_OCSSEARCH	
	☑ Oracle WebCenter Content: Records	DEV_URMSERVER	
	☑ Oracle WebCenter Content: Imaging	DEV_IPM	
	⊡ Oracle Data Integrator		
	H Oracle Business Intelligence		
	WebLogic Communication Services		
	B Web Center Portal		
		lie-	

Figure 42. RCU component selection screen

10. The utility will perform a further check for component-specific prerequisites and display the results in a progress dialog window, as shown in Figure 43. Click **OK** to proceed.

1	Oracle Information Rights Management	00:00.100(ms)
1	Oracle WebCenter Content Server - Complete	00:00.100(ms)
P	Oracle WebCenter Content Server - Search Only	00:00.101(ms)
1	Oracle WebCenter Content: Records	00:00.100(ms)
1	Oracle WebCenter Content: Imaging	00:00.101(ms)
De	ration completed. Click OK to continue to next page.	*

Figure 43. RCU component prerequisite check

The RCU will prompt for the schema passwords. In the example, the same password is used for all schemas, but the choice should be defined in the local database security policy.

11. Enter the password and re-enter in the Confirm Password field, if using the same password for all schemas, or fill in the details appropriate to local security policy, and Click **Next**.

Schema Passwords	يفعر			LE 118			
Welcome Create Repository Database Connection Details <u>Select Components</u> Schema Pass words Map Tablespaces	Please enter the passwords for the main and add alphabets, numbers and the following special ch or a special character. Use same passwords for all schemas Password Confirm Password Confirm Password Confi	itional (auxiliary) sc aracters: \$, # ,Pa:	chema users. Passw ssword should not :	ord can contain start with a numbe			
Summary	O use main scrienta passwords for auxiliary scr	iemas					
Completion Summary	○ Specify different passwords for all schemas						
	Component	Schema Owner	Schema Password	Confirm Passwor			
	Oracle Information Rights Management	DEV_ORAIRM					
	Oracle WebCenter Content Server - Complete	DEV_OCS					
	Oracle WebCenter Content Server - Search Only	DEV_OCSSEARCH					
	Oracle WebCenter Content: Records	DEV_URMSERVER					
	Oracle WebCenter Content: Imaging	DEV_IPM					
	Messanes						

Figure 44. RCU Schema Passwords screen

12. The tablespace map can then be customized to conform to local administration policy. In the example, the default mappings are accepted as shown in Figure 45 by clicking **Next**.

Repos	sitory Creation Utility	y - Step 5 of 7 :	Map Tablespaces	_ 0
lap Tablespaces		, ma	FL	
Welcome Create Repository	Choose tablespaces for th the table below. To create new tablespaces	e selected components or modify existing tab	5. The default and temporar lespaces click the 'Manage	y tablespaces are specified ii Tablespaces' button.
Database Connection Details	Component	Schema Owner	Default Tablespace	Temp Tablespace
Damenae Connection Details	Oracle Information Ri	DEV ORAIRM	*DEV ORAIRM	*DEV ORAIRM TEMP
Select Components	Oracle WebCenter Co.	DEV OCS	*DEV OCS	*DEV OCS TEMP
Schema Passwords	Oracle WebCenter Co	DEV_OCSSEARCH	*DEV_OCSSEARCH	*DEV_OCSSEARCH_TE
<u>serielina rassitionas</u>	Oracle WebCenter Co	DEV_URMSERVER	*DEV_URMSERVER	*DEV_URMSERVER_TE
Map Tablespaces	Oracle WebCenter Co	DEV IPM	*DEV IPM	*DEV IPM TEMP
	* Default tablespaces (spe	cified in the configurat	ion files) are to be created u	pon confirmation.
				<u>M</u> anage Tablespac
	<u>M</u> essages:			<u>M</u> anage Tablespac

Figure 45. RCU Map Tablespaces displayed

13. A confirmation screen to indicate you want to proceed provides the option to return to the wizard and amend the tablespace map, as seen in Figure 46. Assuming you wish to continue with the tablespace creation, click **OK**.



Figure 46. RCU Confirmation screen

14. The RCU wizard will then create and validate the tablespaces in the nominated database. A progress dialog window, seen in Figure 47, will be displayed. Once the tablespaces have been created, click **OK** to continue.

10	heck tablespace requirements for selected components	00:00.100(ms)
10	Freate tablespaces in the repository database	00:33.186(sec)
10	reate tablespaces in the repository database	00:33.186(

Figure 47. RCU Tablespace Creation

ummary	بغعر		FUSION	
Welcome Create Repository Database Connection Details Select Components Schema Passwords Map Tablespaces	Database details: Host Name: x4450-1 Port: 1521 Service Name: UCM.DXAMPLE.COM Connected As: sys Operation: Create Prefix for (prefixable) Schema Owners:DEV			
Summary	Component	Schema Owner	Tablespace Tv	Tablespace Name
Completion Summary	Oracle Information Rights Management Oracle WebCenter Content Server – Complete Oracle WebCenter Content Server – Search O	DEV_ORAIRM DEV_OCS DEV_OCSSEAR	Default Temp Additional Default Temp Additional Default Temp Additional	DEV_ORAIRM DEV_ORAIRM_TEMP None DEV_OCS DEV_OCS_TEMP None DEV_OCSSEARCH DEV_OCSSEARCH_TE
	Oracle WebCenter Content: Records	DEV_URMSERVER	Default Temp Additional	DEV_URMSERVER DEV_URMSERVER_TEM
	Oracle WebCenter Content: Imaging	DEV_IPM	Default Temp Additional	DEV_IPM DEV_IPM_TEMP None

15. Next a summary screen like the one shown in Figure 48 will be displayed. Click **Create** to continue the operation.

Figure 48. RCU Summary

Finally, a completion summary will be displayed. Click **Close** to finish.

Completion Summary	ory Creation Utility - S	step 7 of 7 : Co			LE 118
V Welcome Create Repository Database Connection Details Select Components Schema Passwords Map Tablespaces Summary	Database details: Host Name: Port: Service Name: Connected As: Operation: RCU Logfile: Component Log Directory: Execution Time: Prefix for (prefixable) Schen	x4450-1 1521 UCM.EXAMPLE.COM sys Create /u01/app/oracle/lo 1 minute 31 secon na Owners:DEV	l gdir.2012 gdir.2012 ds	1-07-18_19-50/rcu.log -07-18_19-50	
Completion Summary	Compon Oracle Information Rights M Oracle WebCenter Content Oracle WebCenter Content Oracle WebCenter Content: Oracle WebCenter Content:	ent Management Server - Complete Server - Search Only Records Imaging	Status Success Success Success Success Success	Logfile irm.log contentserverll.log contentserverllsearch.log urm.log ipm.log	Time 00:07.559(set) 00:13.464(set) 00:02.175(set) 00:08.312(set) 00:04.150(set)
Help				< <u>Back</u> <u>N</u> ext > <u>C</u> re	ate Close

Figure 49. RCU Completion Summary

The RCU has successfully completed at this point, so the database contains all the necessary components that Oracle Fusion Middleware requires for WebCenter Content management.

Installing Oracle WebLogic

The next step is installation of Oracle Fusion Middleware WebLogic Server, which has been downloaded as a 'bin' file and stored on the WebLogic host.

- 1. Log on to the WebLogic host.
- Change directory to the download area where the WebLogic Server package has been stored. Figure 50 shows the /stage directory, which in this example contains the downloaded packages. Click Next to continue.



Figure 50. WebLogic installation welcome screen

The Installer will then prompt for whether you are using an existing Middleware Home or creating a new one. In the example, this is the first WebLogic installation, so the Installer will show the steps for creating a new one.

3. Choose the Home Directory, either by clicking on an existing installation directory or creating a new one, as seen in Figure 51, and click **Next** to continue.

In the example, the new Middleware Home Directory is /u01/middleware.

Proose Middleware Home Direct pecify the Middleware Home where you wis /ebLogic 10.3.6.0.	f ory h to install	ORACLE
 Use an existing Middleware Home Create a new Middleware Home 	k	
Middleware Home Directory /u01/middleware Browse Reset		

Figure 51. WebLogic new or existing home directory

4. The Installer provides the option to Register for Security Updates in the next screen. It is highly recommended that you take this option and enter your pre-registered email address for My Oracle Support and your Password in the appropriate fields. Figure 52 shows an example. Click **Next** to continue.

Oracle Installer - WebLogic 10.3	.6.0
Register for Security Updates Provide your email address for security updates and to initiate configuration manager.	ORACLE
Email: <mark>andrew.ness@oracle.com</mark> Use My Oracle Support email ad	Idress/username
Vish to receive security updates via My Oracle Support Support Password:	
	A.
E _X it	Previous Next

Figure 52. WebLogic Register For Security Updates screen

5. Next, choose an install type. If you are unfamiliar with WebLogic installations, choosing the Typical option is recommended. Do so by clicking the radio button and click **Next** to continue.



Figure 53. Choosing a WebLogic installation type

- 6. The Oracle Installer will then display a dialog showing the installation directories of the products being installed. It is highly recommended that these directories be left at the default values. Click **Next** to continue.
- 7. The Oracle Installer will then provide a summary of installations to be carried out. Click **Next** to continue.



Figure 54. WebLogic Installation Summary screen

8. The Oracle Installer will show a progress screen, and upon successful completion, a confirmation screen, as seen in Figure 55. The example shows a highlighted checkbox next to Run Quickstart which, in this example, will not be run. Clicking the checkbox ensures that it is unset. Click **Done** to end the installation procedure.

o Oracle	Installer - WebLogic 10.3.6.0	
Installation Complete Click the Done button to exit the ins	staller.	ORACLE
	Message Congratulations! Installation is compl	lete.
ORACLE	Run Quickstart	
Exit		Previous Done

Figure 55. WebLogic Installation Complete screen

With the installation of WebLogic Server completed, you can now move on to installing WebCenter Content.

Installing WebCenter Content

Like the WebLogic server, WebCenter Content will have been downloaded and unpacked on the WebLogic host already. The following steps show how this application is installed.

- 1. Log on to the WebLogic host as the oracle user and change directory to the place where WebCenter Content has been unpacked. In the example, this is /stage.
- 2. Run the installer by changing to the directory Disk1.
- 3. The Installer will then prompt for the JRE or JDK location. In the example, highlighted in a red box, /usr/java is typed.

4. The Installation welcome screen will appear, as shown in Figure 56. Click **Next** to continue.



Figure 56. WebCenter Content Installation window

5. The Installer will then prompt for whether you want to search for any software updates on My Oracle Support. It is recommended that you run this check by selecting the Search My Oracle Support for Updates radio button, entering your MOS User Name, your MOS Password and clicking Search For Updates.

An example of this search result is shown in Figure 57.

6	Welcome	Skip Software Updat	es	
	My Oracle Support Upda	Search My Oracle Search	upport for Updates	
5	Prerequisite Checks	Us <u>e</u> r Name:	andrew.ness@ora	cle.com
b.	Installation Location	Password:		
5	Application Server		P <u>r</u> oxy Settings	Test Connection
5	Installation Summary	Search <u>L</u> ocal Direct	ory for Updates	
5	Installation Progress	Search For Updates		
l,	Installation Complete	🛕 0 updates found (fr	om My Oracle Support ac	count: andrew.ness@or.
	instantion complexe	Upd	ate Name	Update Type
		Software Updates foun	d on My Oracle Support d	irectory will be

Figure 57. Results for WebCenter Content update search

- 6. Click **Next**. The installer will then run prerequisite update checks. If any checks fail, you must take the suggested remedial action and re-run the checks until all pass.
- 7. An example of a clean check run is shown in Figure 58. Click Next to continue.

Prerequisite Che	cks			
Welcome	Selecti.	Check	Progress	Status
My Oracle Support Update	1	Checking operating system certi	100%	1
Prerequisite Checks	V	Checking recommended operati	100%	1
Installation Location	V	Checking kernel parameters	100%	1
Application Server	1	Checking Recommended glibc ve	100%	1
Installation Summary	V	Checking physical memory	100%	1
Installation Complete				
	the second se			
	•			
	•	Abort	<u>R</u> etry	<u>C</u> ontinue
		Abort Checking operating system certificati Checking recommended operating sy Checking kernel parameters Checking Recommended glibc versior Checking networks	Betry on stem packages	Continue

Figure 58. WebCenter Content Prerequisite Checks showing a clean run

8. The Installer will then prompt for the Oracle Middleware Home where the WebCenter Content application will be installed. Choose the Home from the dropdown box and enter the Home Directory if the populated entries need modification. The example Oracle Middleware Home and Oracle Home Directory are shown in Figure 59. Click **Next** to continue.

Specify Installa	tion Location	FUS	
Welcome Skip Software Updates Prerequisite Checks Installation Location Application Server Installation Summary Installation Complete	Oracle Middleware Home: Oracle Home Directory: — An Application Serve	/u01/middleware Oracle_ECM1	Browse
Hala	ſ	c Pack Novta	Finish

Figure 59. Specifying installation location for WebCenter Content

9. The Installer will then determine which application server installations are available and, if appropriate, prompt for which one will be hosting WebCenter Content – either WebLogic Server or WebSphere. Select the appropriate application server by clicking the radio button next to the name. Click **Next** to continue.

In the example, only WebLogic Server is available, so WebSphere is not selectable, as seen in Figure 60.

Application Ser	ver
Welcome Skip Software Updates Prerequisite Checks Installation Location Application Server Installation Summary Installation Progress Installation Complete	WebLogic Server WebSphere Application Server Location /u01/middleware Browse
	WLS installation detected. WebLogic Server support available in this Middleware Home.

Figure 60. Choosing a WebCenter Content Application Server

10. The Installer will then show an Installation Summary screen. The details can be saved in a response file should it be required for administrative purposes. Click **Install** to continue. The example installation summary is shown in Figure 61.

Installation Sum	mary CRACLE FUSION MIDDLEWARE
Welcome Skip Software Updates Prerequisite Checks Installation Location Application Server Installation Server Installation Progress Installation Complete	
Неір	Save Response File: Save Click Install to accept this configuration and start the installation. If you want to make any changes to the configuration before starting the installation, use the navigation pane and select the topic you want to edit. Egack

Figure 61. WebCenter Content Installation Summary

11. The Installer now shows an Installation Progress screen which, when complete, will allow you to click **Next** to continue. The example Installation Progress screen is shown in Figure 62.

Installation Pro	gress
My Oracle Support Up	Progress
Prerequisite Checks	Completed Install Log /u01/app/oralnventory/logs/install2012-07-19 03-49-42PM.log
Application Server	Installation Successful. Starting execution of post install scripts Execution of post install scripts
Installation Progress	
Oracle F	usion Middleware More Flexibility

Figure 62. WebCenter Content Installation Progress display

12. The Installer will then show the Installation Complete confirmation and provide the option to save Installation Details as seen in Figure 63. Click **Finish** to exit the Installer.

Installation Com	plete
Welcome My Oracle Support Update Prerequisite Checks Installation Location Application Server Installation Summary Installation Progress Installation Complete	
<u>H</u> elp	Save Installation Details: Save Oracle WebCenter Content Installation completed successfully

Figure 63. WebCenter Content Installation Complete screen

Configuring the Oracle WebLogic Domain

Now that the installation of the components is completed, you must perform some basic configuration.

Log on to the Oracle WebLogic host in an X-session as the oracle user and change directory to the Middleware Home Directory. In the example, this is /u01/middleware. Under this directory, you should find the WebCenter Content home directory specified in Figure 59 which, in the example, is Oracle ECM1.

Change to this directory and then change to the directory common/bin. (In the provided example, the full directory is /u01/middleware/Oracle_ECM1/common/bin.)

The following steps will now configure the Oracle WebLogic domain.

- 1. Run ./config.sh to start the Fusion Middleware Configuration Wizard.
- 2. After a brief splash screen, you are given the option of creating a new WebLogic domain or extending an existing WebLogic domain. Choose the appropriate option by clicking the corresponding radio button and click **Next** to continue.

Continuing with the example, this is a new installation, so 'Create a new WebLogic domain' is selected, as seen in Figure 64.

	Fusion Middleware Configuration Wizard	
Welcome	*	ORACLE
	Create a new WebLogic domain Create a Weblogic domain in your projects directory.	
	O Extend an existing WebLogic domain	ings
	use this option to add new components to an existing domain and modify comparation set	ings.
E <u>×</u> it	Help	Previous <u>N</u> ext

Figure 64. Choosing the WebCenter Content domain

3. The Configuration Wizard then provides a list of the products that will be supported by this domain. Click the checkbox next to the products you require. Click **Next** to continue.

The example in Figure 65 shows the following chosen:

- Oracle Universal Content Management Inbound Refinery
- Oracle Universal Content Management Content Server

Note that the Wizard may automatically choose other options (such as Oracle JRF) that are required to support the products you choose.

omain Source	ORACL
Generate a domain configured automatically to support the following A support A supp	g products:
🗹 Basic WebLogic Server Domain ~ 12:1.1.0 [wiserver_12:1] *	
Oracle WebCenter Content: Imaging - 11.1.1.0 [Oracle_ECM1]	
Oracle Universal Records Management - 11.1.1.0 [Oracle_ECM1]	
🔽 Oracle Universal Content Management - Inbound Refinery - 11.1.1.0 [Oracle_ECM1]]
🔽 Oracle Universal Content Management - Content Server - 11.1.1.0 [Oracle_ECM1]	
Oracle Information Rights Management - 11.1.1.0 [Oracle_ECM1]	
Oracle Enterprise Manager - 11.1.1.0 [oracle_common]	
Oracle Universal Content Management - SSXA Server - 11.1.1.0 [Oracle_ECM1]	
Oracle WSM Policy Manager - 11.1.1.0 [oracle_common]	
Oracle JRF WebServices Asynchronous services - 11.1.1.0 [oracle_common]	
Oracle JRF - 11.1.1.0 [oracle_common]	
Basic WebLogic SIP Server Domain - 12.1.1.0 [Wserver_12.1]	
WebLogic Advanced Web Services for JAX-RPC Extension - 12.1.1.0 [w/server_12.1]	
WebLogic Advanced Web Services for JAX-WS Extension - 12.1.1.0 [w/server_12.1]	
O Base this domain on an existing template	
Template location: /u01/middleware	Browse

Figure 65. WebCenter Content product selection

4. The Wizard will now prompt for a domain name, location, and the location for the applications within the domain. In the example, shown in Figure 66, the default choices will be kept for simplicity. Click **Next** to continue.

, F	ision Middleware Configuration Wizard	
ecify Domain Name and Loca	tion	ORACLE
Enter the n	ame and location for the domain and its ap	plications:
Domain name:	base_domain	Results
Application location:	/u01/middleware/user_projects/uomains	Browse
E <u>x</u> it <u>H</u> elp		Previous Next

Figure 66. WebCenter Content domain details

5. The Wizard then prompts for the WebCenter Content administrator name and user password. After entering them, click **Next** to continue.

Local administration policy may determine what the username and passwords should be set to. In the example in figure 67, the default name is weblogic and user password is oracle4u. The same password is entered in the Confirm user password.

	Fusion Middleware Configuration Wizard	
nfigure Administrator	ORACLE	
🖔 Disgard Changes		
*Name:	weblogic	
*User password:	*****	
*Confirm user password:	*****	
Description:	This user is the default administrator.	
E <u>x</u> it <u>H</u> elp		Previous Next

Figure 67. Entering the WebCenter Content administrator user name and password

6. The Configuration Wizard then prompts for which JDK and Development mode you wish to use. If this is a development installation, then startup performance may be the priority. If so, choose the Sun SDK that is supplied in the window. Conversely, the

WebLogic JRockit SDK provides better performance for runtime and management, so it is better suited to Production mode.

Choose the deployment mode by clicking the radio button next to either Development Mode or Production Mode, and the JDK by selecting the appropriate option from the list of Available JDKs. Then click **Next** to continue.

The example is a development deployment, so the default Sun SDK is chosen, as seen in Figure 68.

ORACLE
e production environment is secure. For more information, see the topic icumentation.
K Selection
Available JDKs JRockit SDK 1.6.0_29 @ /u01/middleware/jrockit_160 Gun SDK 1.6.0_29 @ /u01/middleware/jdk160_29
Other JDK Location:

Figure 68. WebCenter Content deployment mode and selected JDK

7. The Configuration Wizard will now prompt for the JDBC Component Schema details. This will require the database details as specified in Figure 40 when creating the RCU. Select each component entry pane in turn and enter the appropriate details for DBMS, Host Name, Port, Schema Owner and Schema Password, as seen in Figure 69, and click **Next**.

	Driver: *Oracle's Driver							
		(Thin) for Service conn	ections; Versions:9.0.	Driver: *Oracle's Driver (Thin) for Service connections; Versions:9.0.1 + Host Name: ×4450-				
Schema	a Owner: DEV_OCS				Port: 1521			
:hema Pa	assword:							
	Component Schema	DBMS/Service	Host Name	Port	Schema Owner	Schema Passwori		
IOCI	M Schema	UCM.example.com	×4450-1	1521	DEV_OCS	******		

Figure 69. WebCenter JDBC Component Schema screen

8. The wizard will then run a connection test to ensure that the details are correct. This is shown in Figure 70. Once you have reviewed the results, click **Next** to continue.

Fusio	n Middleware Configuration Wizard 🛛 🗕
st JDBC Component Schema	ORACLE
Status Component Schema	JDBC Connection URL
UCM Schema	jdbc:oraclethin:@x4450-1:1521/UCM.example.com
Select All Unselect All Test Connect	ons
Driver=oracle.jdbc.OracleDriver URL=jdbc:oraclethin:@x4450-1:1521/UCN User=DEV_OCS Password=******** SQL.Test=select 1 from schema_version_re	Lexample.com

Figure 70. WebCenter Content Connection test and result log

9. Next, you are prompted for the Optional Configuration details, where you can create deployment servers, clusters and hosts. At a minimum, you must define a WebCenter Content host, which will also have the Administration Server attached to it. You will then deploy the applications to these hosts (or host). Click **Next** to continue with these operations.

The example in Figure 71 shows the 'Managed Servers, Clusters and Machines' and 'Deployments and Services' checkboxes marked.

	Fusion Middleware Configuration Wizard	
Select Optional Configuration		ORACLE
	 Administration Server Modify Settings Managed Servers, Clusters and Machines Add or Delete Modify Settings Deployments and Services Target to Servers or Clusters RDEMS Security Store Modify Settings 	
Exit Help		Previous Next

Figure 71. WebCenter Content Optional Configuration screen

At this point, your configuration may vary from the example, depending on which configuration options you chose. You should, however, see the following steps among those presented to you by the Configuration Wizard.

10. The wizard now presents the Configure Managed Servers screen, where you provide the Application Server instances' names as well as define IP addresses on which the applications will listen, the Listen port and, if SSL is enabled, the SSL listen port. After making your entries, click **Next** to continue.

The example in Figure 72 shows the following choices: keeping the default server names, responding to all local IP addresses, setting the Listen port to the default of 16200 for UCM and 16250 for IBR, and SSL enabled with the default SSL listen ports selected.

Fusion Middleware Configuration Wizard						
nfig	ure Managed So	ervers				ORACLE
🛃 🛓 🖞 Delete 🖉 Discard Changes					Switch Disp	
	Name*	Listen address*		Listen port	SSL listen port	SSL enabled
1	UCM_server1	All Local Addresses		16200	16201	
→ 2	IBR_server1	All Local Addresses		16250	16251	

Figure 72. Configuring managed servers for WebCenter Content

11. The Configuration Wizard now prompts for any clustering configuration. Needed entries include: the cluster name, cluster messaging mode, if appropriate, multicast address and multicast port, and cluster address, should a cluster be deployed. After providing these entries, click **Next** to continue.

There are no clusters in the example deployment, so no entries are made in the Configure Clusters screen in Figure 73.

Fusion Middlev	vare Configuration	Wizard	
s			ORACLE
💍 Discard Changes			Switch Display
Cluster messaging mode	Multicast address	Multicast port	Cluster address
	Fusion Middley S Discard Changes Cluster messaging mode	Fusion Middleware Configuration	

Figure 73. Configuring a cluster in the WebCenter Content Configuration Wizard

The next window is the Configure Machines screen, in which you define the machine that will host the applications.

In the example, a Linux server will be deployed, so in Figure 74, the Unix Machine tab is chosen.

12. After selecting your appropriate tab (Machine or Unix Machine), click on the Add menu item. Supply the Name of the Machine, and change any details that will differ from the defaults.

You can set the application to run as any nominated user by selecting the 'Post bind UID enabled' checkbox and entering the username in the 'Post bind UID' field.

Similarly, you can designate the application to run with a specific group ID by selecting 'Post bind GID enabled' and entering the group name in the 'Post bind GID' field.

The Node Manager can restrict application access from the lost host only or from any network address by selecting the 'Node Manager Listen address'.

Once this configuration is properly set up, click Next to continue.

In the example, the defaults are accepted and only the name of the Unix machine needs to be changed, to WCCmachine as seen in Figure 74.

	Fu	ision Middle	ware Configu	ration Wiza	rd		
nfigure Machir	Jes						ORACLE
Machine U	nix Machine						
📮 <u>A</u> dd 🗙 <u>D</u> ele	te 💍 Dis <u>c</u> ard Chanı	ges					
Name*	Post bind GID en	. Post bind G	Post bind UID e	Post bind U	Node manager	liste	Node manager list
→ 1 (CCmachine		nobody		nobody	localhost	-	555
	r						
4							

Figure 74. WebCenter Content Configure Machines window

13. The Configuration Wizard now presents the option to assign servers to machines. To do so, control-click on each server in turn and click the right-facing arrow in the middle of the display to assign each application to the machine. Click **Next** to continue.

In the example in Figure 75, all the applications are assigned to the machine WCCmachine created in the previous step.

- elect a machine in the right pane. Then sele	ct the server(s) in the left pane and assign them to the machine by clic	king the right arrow
itton. erver	Machine	
	Unix Machine	WCCmachine

Figure 75. WebCenter Content Assign Servers to Machines window

14. The Configuration Wizard now presents a window to modify deployments for each application server. The application server runs multiple "serverlets" – seen in Figure 75 under WCCmachine. The deployments shown in Figure 76 for the example show the Admin server (AdminServer), a UCM server (UCM_server1) and an inbound repository server (IBR_server1). Unless there is a specific reason for doing so, do not modify these values. Click **Next** to continue.

rget Deployments to	Clusters or Servers	ORACL
elect clusters or servers in th	e left pane. Then check applications in the right pane to target them t	o the selected clusters or servers
Target	AdminServer	
Server	Deployments	Target
- to AdminServer	😑 🗹 🚞 Application	
UCM_server1	FMW Welcome Page Application#11.1.0.0.0	AdminServer
- 18R_server1	DMS Application#11.1.1.1.0	AdminServer,UCM_server1,IB
	visil-vids	AdminServer,UCM_server1,IB
	🗹 em	AdminServer
	Oracle UCM Help	UCM_server1,IBR_server1
	Oracle UCM Web Services	UCM_server1,IBR_server1
	Oracle UCM Native Web Services	UCM_server1,IBR_server1
	Oracle WebCenter Content - Content Server	UCM_server1
	Oracle WebCenter Content - Inbound Refinery	IBR_server1
	😑 🗹 🚞 Library	
	✓ oracle.bijbips#11.1.1@0.1	AdminServer,UCM_server1,IB
	✓ oracle.bi.composer#11.1.1@0.1	AdminServer,UCM_server1,IB
	✓ oracle.wsm.seedpolicies#11.1.1@11.1.1	AdminServer,UCM_server1,IB
	4	•
	Select <u>A</u> II Unselect All Disgard Changes	

Figure 76. WebCenter Content deployment targeting window

15. Similarly to the previous step, the Configuration Wizard next provides the option of targeting services to clusters or servers. Again, unless there is a compelling reason to change these, leave the default values in place and click **Next** to continue.

Figure 77 shows the example default values.

	- 140 mm - Than shart and in the visit and a state	
Target	AdminServer	
Server	Service	Target
- Ⴆ AdminServer	🖃 🗹 🚞 Shutdown Class	
- 🔊 UCM_server1	JOC-Shutdown	AdminServer,UCM_server1,IBR_server1
- 🐌 IBR_server1	DMSShutdown	AdminServer,UCM_server1,IBR_server1
	😑 🗹 🚞 Startup Class	
	☑ JRF Startup Class	AdminServer,UCM_server1,IBR_server1
	JPS Startup Class	AdminServer,UCM_server1,IBR_server1
	ODL-Startup	AdminServer,UCM_server1,IBR_server1
	AWT Application Context Startup Class	AdminServer,UCM_server1,IBR_server1
	☑ JMX Framework Startup Class	AdminServer,UCM_server1,IBR_server1
	Web Services Startup Class	AdminServer,UCM_server1,IBR_server1
	JOC-Startup	AdminServer,UCM_server1,IBR_server1
	DMS-Startup	AdminServer,UCM_server1,IBR_server1
	😑 🔲 🛅 JDBC	
	🖃 🔲 🛄 JDBC System Resource	
		UCM_server1
	Colors and Electrication and Electrical	

Figure 77. Configuration for WebCenter Content service deployment

16. The Configuration Wizard now displays the configuration summary, as seen in Figure 78. Click **Create** to continue.

Domain Summary	Click on an ite	m in the Domain Summary pane on the left to inspect its
Summary View: Deployment +	attributes in ti clicking Previo	he Details pane below. You can make limited adjustments by ous to return to a prior panel. If everything is satisfactory, click
base_domain (/u01/middleware/user_projects,	Create.	
🗄 🛅 Server	Details	
🖻 🛅 AdminServer	Attribute	Value
😑 🛅 Service	Name	Basic Webl ogic Server Domain
😑 🛅 Shutdown Class	Description	Create a basic WebLogic Server domain without installing sam
- JOC-Shutdown	Author	Oracle Corporation
DMSShutdown	Location	/u01/middleware/wiserver_12.1/common/templates/domai
E Cass		
IRE Startun Class	Name	Oracle Universal Content Management - Inbound Refinery
IPS Startup Class	Description	This selection configures Oracle UCM Inbound Refinery
ODL Starture	Author	Oracle Corporation
ODE-startup	Location	/u01/middleware/Oracle_ECM1/common/templates/applica
AWT Application Context stal	10.0	
JMX Framework Startup Class	Name	Oracle Universal Content Management - Content Server
web Services Startup Class	Description	This selection configures Oracle UCM - Content Server
JOC-Startup	Author	Oracle Corporation
DMS-Startup	Location	/UU1/middleware/Oracle_ECM1/common/templates/applica
🖻 🛅 WLDF System Resource	Name	Ownels UCM Come Templete
Module-FMWDFW	ivame	Oracle OCM Core remplate
K	•	

Figure 78. WebCenter Content Configuration Summary screen

17. The progress screen will then be shown. Upon completion, click the **Done** button, highlighted in Figure 79, to exit the Wizard.

	Fusion Middleware Configuration Wizard	_ × _
Creating Domain		ORACLE
	Progress:	
ORACLE	Preparing Extracting Domain Contents Creating Domain Information Saving the Domain Information String Subarian Infles Performing Oost Domain Files Performing Post Domain Creation Tasks Domain Created Successfully! Domain Location: /u01/middleware/user_projects/domains/base_domain Admin Server URL: http://x4450-1.7001 , https://x4450-1.7002	
Exit Help	[]	Previous Done

Figure 79. WebCenter Content configuration completed

Now that the configuration is completed, the next task is starting the necessary servers.

Starting the Administration Server / Oracle WebLogic

To start up WebCenter Content, it is necessary to start the Oracle WebLogic server first.

Change directory to the Middleware Home and locate the user_projects/domains directory. Within this directory will be a further directory named after the domain you created earlier – in the example, it is base domain.

[oracle@x4450-1 ~]\$ cd /u01/middleware/user_projects/domains/base_domain

Locate the script called startWebLogic.sh in this directory and execute it. The script only returns when the WebLogic server is shut down so you may want to run this script as a background job.

```
[oracle@x4450-1 base_domain]$ ./startWebLogic.sh &
```

After a lengthy display of logging information, the screen will display the string "<Server started in RUNNING mode>." Once this message is displayed, you can perform the next step in the configuration/startup procedure.

Starting the Node Manager

To avoid log messages becoming mixed together, open another window to start the Node Manager.

In the new window, change directory to the Oracle Fusion Middleware home directory, within which there is a directory tree oracle_common/common/bin. Change directory to this directory tree, find the script setNMProps.sh and execute it.

This script only needs to be run once but it does check that the work it needs to carry out is actually needed before performing any changes.

```
[oracle@x4450-1 middleware]$ cd /u01/middleware/oracle_common/common/bin
[oracle@x4450-1 bin]$ ./setNMProps.sh
Required properties already set. File nodemanager.properties not modified.
```

Now start the Node Manager process by changing to the Oracle WebLogic server installation directory (in the example, /u01/middleware/wlserver 10.3/server/bin).

```
[oracle@x4450-1 bin]$ cd /u01/middleware/wlserver_10.3/server/bin
[oracle@x4450-1 bin]$ ls
international setWLSEnv.sh startNodeManager.sh
{
CLASSPATH=/u01/middleware/patch_wls1035/profiles/default/sys_manifest_classpa
th/weblogic_patch.jar:/u01/middleware/jrockit_160_24_D1.1.2-
4/lib/tools.jar:/u01/middleware/wlserver_10.3/server/lib/weblogic_sp.jar:/u01
/middleware/wlserver_10.3/server/lib/weblogic.jar:/u01/middleware/modules/fea
tures/weblogic.server.modules_10.3.5.0.jar:/u01/middleware/wlserver_10.3/serv
er/lib/webservices.jar:/u01/middleware/modules/org.apache.ant_1.7.1/lib/ant-
all.jar:/u01/middleware/modules/net. sf.antcontrib_1.1.0.0_1-0b2/lib/ant-
contrib.jar::/u01/middleware
+ export CLASSPATH
+ export PATH
+ cd /u01/middleware/wlserver_10.3/common/nodemanager
```

```
+ set -x
```

[Logging output deleted]

---<Jul 30, 2012 8:33:15 PM BST> <Info> <Security> <BEA-090906> <Changing the
default Random Number Generator in RSA CryptoJ from ECDRBG to FIPS186PRNG. To
disable this change, specify Dweblogic.security.allowCryptoJDefaultPRNG=true>
<Jul 30, 2012 8:33:16 PM> <INFO> <Secure socket listener started on port
5556>
Jul 30, 2012 8:33:16 PM weblogic.nodemanager.server.SSLListener run
INFO: Secure socket listener started on port 5556

Once the server displays the string "Secure socket listener started on port 5556", you can open a Web browser instance to start up the WebCenter Content servers.

 Open a Web browser to http://<ip-address>:7001/console to show the WebLogic Server login screen as shown in Figure 80. The default administrator name specified earlier and the associated password should be entered in the Username and Password fields. Click Login to continue.





2. In the Domain Structure box on the left of the web page, expand the Environment tree by clicking on the + icon and click Servers as highlighted in Figure 81.



Figure 81. Expanding the Environment / Servers tree

- 3. The Summary of Servers table should appear to the right of the Domain Structure table. Click on the 'Control' tab and then select the check box to the right of UCM_server1 and IBR server1 as shown in Figure 82.
- 4. Click Start to bring the servers online.

Contraction of the local division of the loc			
Jse this page to change the stat Manager. Starting Managed Serv	e of the servers in this WebLogic Se ers in Standby mode requires the d	erver domain. Control oper Iomain-wide administration	ations on Managed Servers require starting the Node port.
2			
Customize this table			
Customize this table Servers (Filtered - More Col Stat Resume Suspen	d v Shutdown v Restart S: Machine	SL State	Showing 1 to 3 of 3 Previous Ne
Customize this table Servers (Filtered - More Col Start Resume Suspen Server AdminServer(admin)	umns Exist) d v Shutdown v Restart S Machine WCCmachine	SL State RUNNING	Showing 1 to 3 of 3 Previous Ne Status of Last Action None
Customize this table Servers (Filtered - More Col Start Resume Suspen Server AdminServer(admin) IBR_server1	d v Shutdown v Restart Si Machine WCCmachine WCCmachine	SL State RUNNING SHUTDOWN	Showing 1 to 3 of 3 Previous Ne Status of Last Action None None

Figure 82. Starting the WebCenter Content servers

5. The servers will then begin their startup procedures, as shown in the Summary of Servers table. Initially, the Server table will appear as in Figure 83 with the state STARTING displayed.

Server 🐟	Machine	State	Status of Last Action	
AdminServer(admin)	WCCmachine	RUNNING	None	
IBR_server1	WCCmachine	STARTING	TASK IN PROGRESS	
UCM_server1	WCCmachine	STARTING	TASK IN PROGRESS	

Figure 83. Servers starting

Clicking the '^O' icon will cause the table to automatically refresh. After the servers have started, the table will appear as in Figure 84 with the server states set to RUNNING.

Server 🚳	Machine	State	Status of Last Action	
AdminServer(admin)	WCCmachine	RUNNING	None	
IBR_server1	WCCmachine	RUNNING	TASK COMPLETED	
UCM_server1	WCCmachine	RUNNING	TASK COMPLETED	

Figure 84. Servers started

Performing Runtime Configuration of WebCenter Content

With the successful start of the UCM and IBR servers, it is necessary to perform one last configuration before you can start using WebCenter Content.

1.Open a web browser to the URL https://<ip-addr>:16201/cs/ and enter the administrator username and password (in the example, weblogic and oracle4u respectively, as seen in Figure 85). Click **Sign In** to continue.

ORACLE WebCenter	Content	9
A		
	Login User Name weblogic Password ••••••• Sign In	

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Figure 85. WebCenter Content console

2.The next screen will show the configuration options that can be set to customize this WebCenter Content server. Carefully consider the values for these parameters before making any changes to them. Click **Submit** to continue. The continued example's parameters are shown in Figure 86.

Node Int	formation
Cluster Node Identifier:	UCM_server1
* Content Server Instance Folder: 🤇	/u01/middleware/user_projects/domains/base_
* Native File Repository Location:	/u01/middleware/user_projects/domains/base_
* Weblayout Folder: 🤇	/u01/middleware/user_projects/domains/base_
* User Profile Folder: 🤇	/u01/middleware/user_projects/domains/base_
Content Server URL Prefix: (/cs/
Instance 1	Information
Is New Content Server Instance:	
Server Socket Port:	D
ming Socket Connection Address Security Filter:	127.0.0.1 0:0:0:0:0:0:0:1
* Web Server HTTP/HTTPS Address:	x4450-1:16200
Web Address Is HTTPS:	DE
Company Mail Server:) mail
Administrator E-Mail Address:	sysadmin@example.com
* Server Instance Name:	x 4450-1
* Server Instance Label:) x4450-1
* Server Instance Description:	X4450 Instance
Is Auto Number Enabled: 🤇	
Auto Number Prefix: 🤇) repos
Search Ir	nformation
FullText Search Option: 🧃	i) None 🔻
External DataSource:	D

Figure 86. WebCenter Content parameters displayed

The WebCenter Content server will then display a page, seen in Figure 87, requesting that the node be restarted.

ORACLE	
WebC	enter Content Configuration
Post-instal	configuration complete. Please restart this node.
Figure 87. WebCenter	Content parameter settings completed

3.Back in the Web browser opened earlier in Figure 82, select UCM_server1 from the Summary of Servers table and click **Shutdown** and select **Force Shutdown Now**.

The example is shown in Figure 88.

	ervers				
onfiguration	Control				
Use this page Managed Serv	to change the state vers in Standby mod	of the servers e requires the	s in this WebLogic Server dom domain-wide administration po	ain. Control operations on rt.	Managed Servers require starting the Node Manager. Startin
Last R	efreshed: Jul 30, 20	12 9:08:06 PM			
Servers (Fil	tered - More Colu	imns Exist)			
Servers (Fil	itered - More Colu lesume Suspend	imns Exist) i v Shutda	wn v Restart SSL Machine	State	Showing 1 to 3 of 3 Previous 1
Servers (Fil Start R Server AdminS	itered - More Colu Resume Suspend r 🊕 ierver(admin)	imns Exist) I -> Shutdo	wn v Restart SSL Machine WCCmachine	State RUNNING	Showing 1 to 3 of 3 Previous 1 Status of Last Action None
Servers (Fil Start R Server AdminS IBR_ser	Itered - More Colu Itesume Suspend Ir ierver(admin) rver 1	imns Exist)	Win V Restart SSL Machine WCCmachine WCCmachine	State RUNNING RUNNING	Showing 1 to 3 of 3 Previous 1 Status of Last Action None TASK COMPLETED
Servers (Fil Start R Server AdminS IBR_ser UCM_se	Itered - More Colu Resume Suspend r rerver(admin) rver1 erver1	imns Exist) I ✓ Shutdo	WIN V Restart SSL Machine WCCmachine WCCmachine WCCmachine	State RUNNING RUNNING RUNNING	Showing 1 to 3 of 3 Previous 1 Status of Last Action None TASK COMPLETED TASK COMPLETED TASK COMPLETED

Figure 88. Stopping the WebCenter Content server

4.Once the State has changed to SHUTDOWN as seen in Figure 89, select the check box to the left of UCM_server1 and click the **Start** button to restart the WebCenter Content server, as seen in Figure 90.

Server 💫	Machine	State	Status of Last Action
AdminServer (admin)	WCCmachine	RUNNING	None
IBR_server1	WCCmachine	RUNNING	TASK COMPLETED
UCM_server1	WCCmachine	SHUTDOWN	TASK COMPLETED

Figure 89. Waiting until the WebCenter Content server has shut down

onfiguration	Control				
Jse this pag Aanaged Se	e to change the state of the rvers in Standby mode requir	servers in this WebLogic Server d es the domain-wide administration	omain. Control operations on I o port.	Managed Servers require starting the Node Man	ager. Starting
) Lact	Refreshed: Jul 30, 2012 9:3	5:08 PM			
Customiz	e this table				
Customiz Servers (f	e this table Filtered - More Columns E Resume Suspend v	xist) Shutdown ∽ Restart SSL		Showing 1 to 3 of 3	Previous N
Customiz Servers (F Start	e this table Filtered - More Columns E Resume Suspend ~	xist) Shutdown v Restart SSL Machine	State	Showing 1 to 3 of 3 Status of Last Action	Previous N
Customiz Servers (F Start Start Admir	e this table Filtered - More Columns E Resume Suspend ~ rer & nserver(admin)	xist) Shutdown ~ Restart SSL Machine WCCmachine	State RUNNING	Showing 1 to 3 of 3 Status of Last Action None	Previous N
Customiz Servers (f Start Start Admir	e this table Filtered - More Columns E Resume Suspend ~ Fer & InServer(admin) Server1	xist) Shutdown v Restart SSL Machine WCCmachine	State RUNNING RUNNING	Showing 1 to 3 of 3 Status of Last Action None TASK COMPLETED	Previous N

Figure 90. Restarting the WebCenter Content server

5.Wait until the server state changes to RUNNING. Then reopen the web browser to https://<ip-addr>:16201/cs. The WebCenter Content screen will now look different, as the WebCenter Content server is now fully installed and ready for local customizations. An example of the new layout is shown in Figure 91.

FULL ACCESS	
Log in to use the content server with your full access privileges	
<u>A</u>	
Login	
GUEST ACCESS	
Use the navigation items below to access public content only.	
A	
Home	
Library	
Library	
Search	

Figure 91. The WebCenter Content server welcome screen

WebCenter Content is now available to serve your business content needs.

Conclusion

WebCenter Content provides a highly customizable content management environment. It is highly extensible and allows the creation of content-enabled applications while maintaining the necessary content security and accessibility.

When WebCenter Content is deployed with Oracle Database on the Oracle ZFS Storage Appliance, the advanced performance features of the Oracle ZFS Storage Appliance are leveraged to provide a highly scalable platform on which to perform fileserver consolidation or sophisticated multisite web content management.

Together, these Oracle products provide a robust and secure platform on which to build, grow and utilize your business content.

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on the Oracle ZFS Storage Appliance

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