FatWire | Content Server 7

Version 7.5

Installing Content Server with Oracle Application Server

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FatWire®
S O F T W A R E

Installing Content Server with Oracle Application Server
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Chapter 1

Introduction

This document provides guidelines for installing Content Server on Oracle Application Server 10g R3, connecting to the supported database of your choice.

> **Note**
>
> Anyone using this guide is expected to have experience installing and configuring databases, web servers, and application servers. Selected information regarding the configuration of third-party products is given in this guide. For detailed information about a particular third-party product, refer to that product's documentation.

This chapter provides information that will help you prepare for the Content Server installation. It contains the following sections:

- About This Guide
- Installation Quick Reference

About This Guide

This guide covers the installation, configuration, and maintenance of Oracle Application Server 10g R3 (referred to throughout this guide as Oracle AS and OAS), as required to support Content Server. This includes configuration of one or more OAS instances and backend databases.

How This Guide Is Organized

The content of this guide is organized by function rather than the order in which installation steps are completed. For example, a function such as application deployment is associated with the application server. It is presented in Part 2 (which covers the application server), even though it is performed, later, when Content Server is installed (Part 3). Each major component of the Content Server installation is covered in its own part. A summary of the installation steps in the required order is given at the end of this chapter (see "Installation Quick Reference," on page 8).

Graphics in This Guide

Many steps in this guide include screen captures of dialog boxes and similar windows that you interact with in order to complete the steps. The screen captures are presented to help you follow the installation process. They are not intended to be sources of specific information, such as parameter values, options to select, or product version number.

Acronyms and Variables

This guide uses the following acronyms and variables:

Name used by guide	Description
OAS	Oracle Application Server
CS	Content Server
<app_name>	Name of the Content Server application. By default, this is ContentServer.
<server_instance>	Name of an Oracle AS server instance. In this guide, we assume you are using the default name, home.

Paths and Directories

This guide uses the following paths and directories:

Name used by guide	Description
`<oracle_home>`	Path to the directory where Oracle AS is installed. The path includes the name of the directory.
`<cs_install_dir>`	Path to the directory where Content Server is installed. The path includes the name of the directory.
`<cs_shared_dir>`	Path to the Content Server shared file system directory. The path includes the name of the shared directory.
`<cs_ear_file>`	The full path and file name of the CS application EAR file. By default, this is `<cs_install_dir>\ominstallinfo\app\ContentServer.ear`.
`<deployment_plan_file>`	The full path and file name of the CS deployment plan file. You must create this file in order to deploy the CS application.

Installation Quick Reference

After you install and configure the J2EE components that support Content Server, you will run the Content Server installer, which will guide you through the installation process. You will run the installer on each development, delivery, and management system on which you plan to use Content Server. During the Content Server installation, you will have the option to install sample sites and sample content.

Note

The names of the systems in your Content Server environment might differ from the names used in this document. Typically, the management system is also called "staging," and the delivery system is also called "production."

The steps below summarize the installation and configuration of Content Server and its supporting software. Keep the steps handy as a quick reference to installation procedures and to chapters that provide detailed instructions.

To install Content Server and its supporting software

Complete the steps below for each development, content management, and production environment.

I. Set Up the Database

Set up your choice of supported databases by installing the database management system, creating a database for Content Server, and configuring the database. For instructions, see our guide *Configuring Third-Party Software*.

Note

In this release, only Oracle databases are supported with Oracle Application Server. IBM DB2 and Microsoft SQL Server are not supported with Oracle AS.

II. Set Up the Application Server

Install and configure Oracle Application Server by following the steps described in Chapter 3, "Installing Oracle Application Server" and Chapter 4, "Configuring Oracle Application Server," and summarized below:

1. Complete the pre-installation steps as described in "Pre-Installation Steps," on page 18.

2. Install the Oracle Application Server software by following the steps in "Installing Oracle Application Server," on page 21.

3. Complete the post-installation steps to configure the OAS instance for Content Server, as described in "Post-Installation Steps," on page 26.

4. Configure the OAS instance for database communications, as shown in "Setting Up a Data Source," on page 34. This step requires you to:

    a. Create a database connection pool. For instructions, see "Creating a Database Connection Pool," on page 34.

b. Test the database connection pool for proper connectivity. For instructions, see "Testing the Database Connection Pool," on page 35.

c. Create a data source. For instructions, see "Creating a Data Source," on page 35.

If you are creating a Content Server cluster, perform steps a–c for each member of the cluster.

5. If you are creating a Content Server cluster, you must repeat steps 1–4 for each secondary member of the cluster, and then cluster your Oracle AS instances by following the steps in "Setting Up an Oracle AS Cluster," on page 37.

III. Install and Configure Content Server

1. Before you run the installer, make sure that:

- You have created the directory into which you are installing Content Server. The directory name and path cannot contain spaces and the application server must be able to read from and write to that directory.

- For clustered installations, you have created a shared file system directory that all cluster members can read from and write to; the directory name and path cannot contain spaces. Note the following:

  - For delivery systems, the default location of the shared file system directory is the directory containing the directory in which Content Server is installed.

  - For content management and development systems, the default location of the shared file system directory is inside the directory in which Content Server is installed.

- Your system is capable of displaying the CS installer GUI. The installer will not work in text mode.

2. Install Content Server by running the supplied installer. The installer provides online help at each screen, should you need guidance. For more information, see Chapter 5, "Installing and Configuring Content Server."

Half-way through the installation, the installer will display the "Install Actions" pop-up window. When this window appears, you will have to deploy the CS application. For instructions, see "Deploying and Undeploying Applications," on page 42.

If you will require text attributes greater than 2,000 characters, you will have to set the `cc.bigtext` property to `CLOB` before the CS application is deployed. For instructions, see step 5 in "Running the Installer," on page 50.

3. Complete the Content Server installation by performing the following steps:

a. If you installed Content Server on Unix, set the permissions for Content Server binaries by following the steps in "Setting File Permissions (Unix Only)," on page 51.

b. If you installed Content Server on Unix, add the CS binaries directory to your library path variable by following the steps in "Adding the CS Binaries Directory to the Library Path Variable (Unix only)," on page 51.

c. Verify the Content Server installation by logging in as the administrator. For instructions, see "Verifying the Installation," on page 52.

d. If you are creating a vertically clustered system, follow instructions in "Setting Up a Content Server Cluster (Optional)," on page 57.

e. Once the entire installation is completed and verified, set up Content Server for its business purpose. For instructions, see the *Content Server Administrator's Guide* and the *Content Server Developer's Guide*.

Part 1

Database

This part contains a short chapter summarizing the databases that Content Server uses. Instructions on creating and configuring the databases are given in our guide, *Configuring Third-Party Software.*

This part contains the following chapter:

- Chapter 2, "Setting Up a Database"

Chapter 2

Setting Up a Database

Content Server requires access to a database that is specifically configured for Content Server. The list of supported databases (as well as other third-party components) is given in the *Supported Platform Document (SPD)* for each Content Server version. SPDs are available on the e-docs site at:

```
http://support.fatwire.com
```

(where you can obtain a password from FatWire Technical Support, if you do not already have a password.)

Before installing any other of Content Server's supporting software, you must complete the following steps:

1. Install the database management system.
For instructions, refer to the product vendor's documentation.

2. Create and configure a database for Content Server.
For instructions, consult our guide *Configuring Third-Party Software*. Note that database configuration is identical across different application servers. Refer to the correct chapter to create and configure the database of your choice.

Part 2

Application Server

This part contains information about installing and configuring Oracle Application Server to support Content Server.

This part contains the following chapter:

- Chapter 3, "Installing Oracle Application Server"
- Chapter 4, "Configuring Oracle Application Server"

Chapter 3

Installing Oracle Application Server

The chapter shows you how to install Oracle Application Server for use with Content Server.

This chapter contains the following sections:

- Pre-Installation Steps
- Installing Oracle Application Server
- Post-Installation Steps

Pre-Installation Steps

This section shows you how to configure your operating system for Oracle AS 10g R3. Since the configuration steps vary based on your operating system, this section does not cover the steps for all operating systems (only steps for Linux are covered). For instructions specific to operating systems other than Linux, visit the following URL:

```
http://download-west.oracle.com/docs/cd/B31017_01/getstart.htm
```

To prepare your system for Oracle AS installation

1. Prepare the OAS installation files. You can either download the Oracle AS package, or use the installation media provided by Oracle.

    If you downloaded the archive from Oracle, decompress it to a temporary directory using the following command:

    ```
    cpio -ivmd < <archive_name>
    ```

2. Change to the directory containing the OAS installation files. Inside the directory, change to the `install/soa_schemas/` directory and copy the `irca` directory and its contents to your Oracle database server directory.

3. On your Oracle database system, do the following:

    > **Note**
    >
    > We suggest that you create a new database schema specifically for OAS.

    a. Log in as the Oracle DBA user (typically, `sys`).

    b. Change to the `irca` directory that you copied in step 2 and execute the `irca.sh` script.

    c. When prompted, enter the connection data for your database.

    d. When prompted, enter the `sys` user password for the database to which you are connecting.

e. When prompted for a password for each schema, enter the password you used for the Oracle DBA (`sys`) user. This will make remembering the passwords easier.

```
oracledb@oraclelinuxorcl10gr2:/u01/Downloads/install/soa_schemas/irca

File  Edit  View  Terminal  Tabs  Help

oracledb@oraclelinuxorcl10gr2:/u0...  oracledb@oraclelinuxorcl10gr2:~  root@oraclelinuxorcl10gr2:/u01/Do...

[oracledb@oraclelinuxorcl10gr2 irca]$ ./irca.sh
Integration Repository Creation Assistant (IRCA) 10.1.3.1.0
(c) Copyright 2006 Oracle Corporation. All rights reserved.

Enter database "host port serviceName" [localhost 1521 orcl]: localhost 1521 vmo
rcldb
Enter sys password:
Enter sys password: Running IRCA for all product(s):
 connection="localhost 1521 vmorcldb", , orabpelUser=ORABPEL, esbUser=ORAESB, or
awsmUser=ORAWSM

Validating database ...
Validating database character set ...


Running prerequisite checks for ORABPEL ...
Enter password for ORABPEL:
Loading ORABPEL schema (this may take a few minutes) ...


Running prerequisite checks for ORAESB ...
Enter password for ORAESB:
Enter password for ORAESB: Loading ORAESB schema (this may take a few minutes) .
..


Running prerequisite checks for ORAWSM ...
Enter password for ORAWSM:
Enter password for ORAWSM: Loading ORAWSM schema (this may take a few minutes) .
..

INFO: ORABPEL schema contains 225 valid objects.

INFO: ORAESB schema contains 180 valid objects.

INFO: ORAWSM schema contains 90 valid objects.

IRCA completed.
Please check for any ERROR message above and also check the log file
/tmp/irca2007-03-20_11-54-32AM.log for any error or other information.

[oracledb@oraclelinuxorcl10gr2 irca]$
```

4. On the system on which you are installing Oracle AS, create an Oracle user and group.

> **Note**
>
> • Throughout this guide, we assume you are using the default Oracle user name, `oracleapp`.
>
> • If you already have an Oracle user on your system (for example, one that you created when you installed the Oracle database), skip this step; you must use the existing Oracle user to complete the OAS installation.

a. Create the Oracle group:

groupadd oracleapp

b. Create the Oracle user account:

useradd -g oracleapp -m -d <user_home_dir> oracleapp

    c. When prompted, enter a password for the Oracle user. Make a record of this password.

5. Modify your system configuration to support Oracle AS:

    a. Add the following lines to the `/etc/sysctl.conf` file:

```
kernel.shmall = 2097152
kernel.shmmax = 2147483648
kernel.shmmni = 4096
kernel.msgmnb=65535
kernel.msgmni=2878
kernel.sem = 256 32000 100 142
fs.file-max=131072
net.ipv4.ip_local_port_range = 1024 65000
net.core.rmem_default=262144
net.core.wmem_default=262144
net.core.rmem_max=262144
net.core.wmem_max=262144
```

    b. Run **`sysctl -p`**.

    c. Add the following lines to the `/etc/security/limits.conf` file:

```
oracleapp soft nproc 2047
oracleapp hard nproc 16384
oracleapp soft nofile 1024
oracleapp hard nofile 65536
```

6. Log in as the Oracle user (`oracleapp` in our example) to confirm that the account works.

7. (Highly recommended) Reboot the machine.

Installing Oracle Application Server

This section shows you how to install Oracle Application Server for use with Content Server. Before you proceed, make sure you have completed the steps in "Pre-Installation Steps," on page 18.
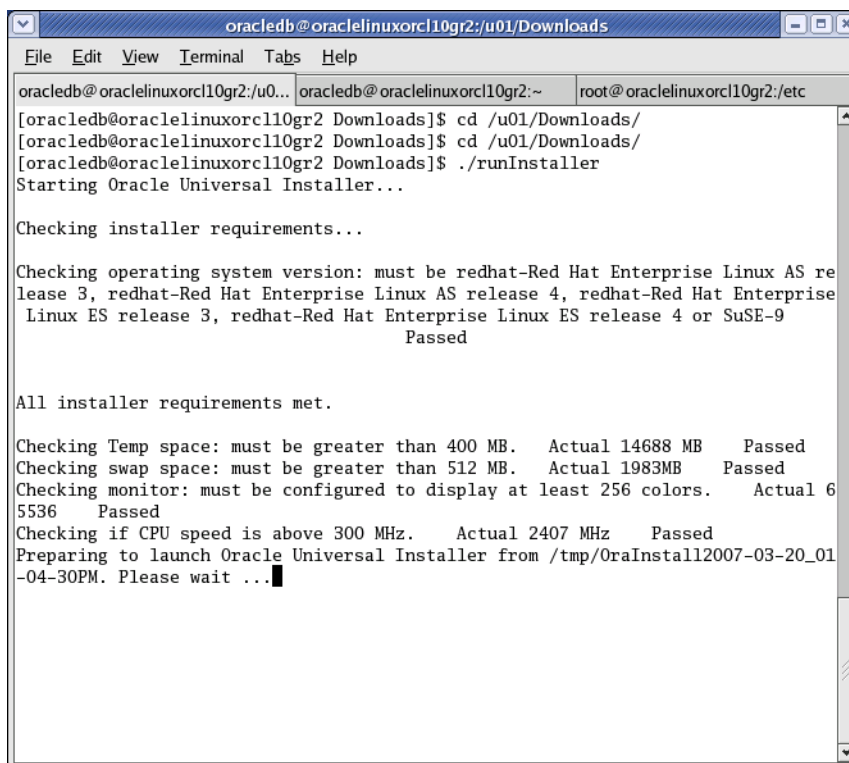

Note

- You **must** run all commands used to configure OAS as the Oracle user. Do **not** run these commands as the `root` user, as your OAS installation will be damaged.

- In this guide, we assume you are using the default Oracle user name, `oracleapp`.

To install Oracle Application Server

1. Log in as the Oracle user.

2. Change to the directory containing the Oracle AS installation files.

3. Run the Oracle AS installer:

   `./runInstaller.sh`

```
┌────────────────────────────────────────────────────────────────────────┐
│ ▼          oracledb@oraclelinuxorcl10gr2:/u01/Downloads         ─ □ ✕    │
├────────────────────────────────────────────────────────────────────────┤
│  File  Edit  View  Terminal  Tabs  Help                                  │
├─────────────────────────────┬──────────────────────────┬────────────────┤
│ oracledb@oraclelinuxorcl10gr2:/u0... │ oracledb@oraclelinuxorcl10gr2:~ │ root@oraclelinuxorcl10gr2:/etc │
├────────────────────────────────────────────────────────────────────────┤
│ [oracledb@oraclelinuxorcl10gr2 Downloads]$ cd /u01/Downloads/           │
│ [oracledb@oraclelinuxorcl10gr2 Downloads]$ cd /u01/Downloads/           │
│ [oracledb@oraclelinuxorcl10gr2 Downloads]$ ./runInstaller              │
│ Starting Oracle Universal Installer...                                   │
│                                                                          │
│ Checking installer requirements...                                       │
│                                                                          │
│ Checking operating system version: must be redhat-Red Hat Enterprise Linux AS re│
│ lease 3, redhat-Red Hat Enterprise Linux AS release 4, redhat-Red Hat Enterprise│
│  Linux ES release 3, redhat-Red Hat Enterprise Linux ES release 4 or SuSE-9     │
│                                Passed                                     │
│                                                                          │
│                                                                          │
│ All installer requirements met.                                          │
│                                                                          │
│ Checking Temp space: must be greater than 400 MB.   Actual 14688 MB    Passed│
│ Checking swap space: must be greater than 512 MB.   Actual 1983MB    Passed│
│ Checking monitor: must be configured to display at least 256 colors.   Actual 6│
│ 5536    Passed                                                           │
│ Checking if CPU speed is above 300 MHz.   Actual 2407 MHz    Passed      │
│ Preparing to launch Oracle Universal Installer from /tmp/OraInstall2007-03-20_01│
│ -04-30PM. Please wait ...█                                               │
│                                                                          │
└────────────────────────────────────────────────────────────────────────┘
```

4.   In the installer screen that appears, do the following:

a.   Specify the directory in which you want to install Oracle AS. This directory must be owned by the Oracle user.

b.   Enter a name for this instance of Oracle AS.

c.   Enter a password for the instance administrator user. Make a record of this password.

d.   Click **Next**.

5. In the next screen, do the following:

   a. Specify your database's host name, port, and SID, as follows:

      `<hostname>:<port>:<SID>`

      For example:

      `localhost:1521:vmorcldb`

   b. In the **User with DBA Privileges** field, enter `sys`.

   c. In the **Password** field, enter the password for the `sys` user.

   d. Enter the password for each schema (`ORABPEL`, `ORAESB`, `ORAWSM`).

   e. Click **Install**.

6. At the "Preparing to install" screen, wait for the process to complete.
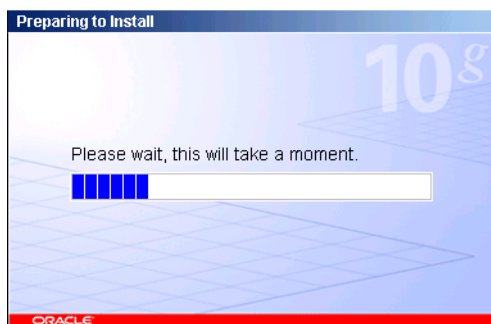
7. At the "Install" screen, wait for the installation to complete.
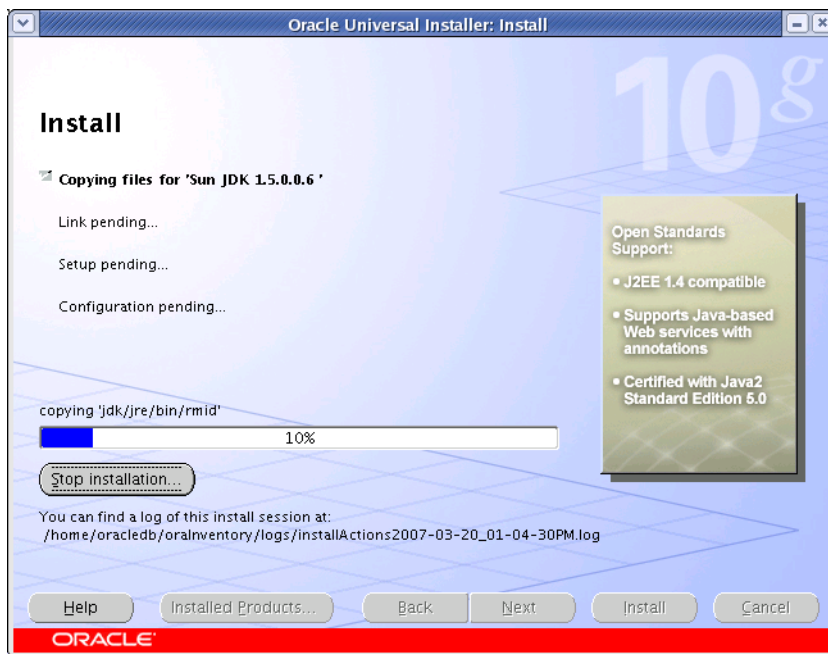
8. When the "Setup Privileges" dialog box appears, run the indicated script as the `root` user. When the script finishes execution, click **OK**.
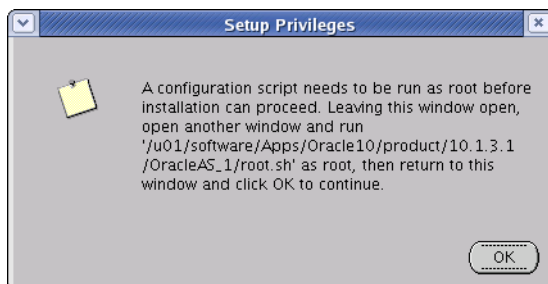
9. When the "Configuration Assistants" screen appears, allow each configuration assistant to complete, then click **Next**.
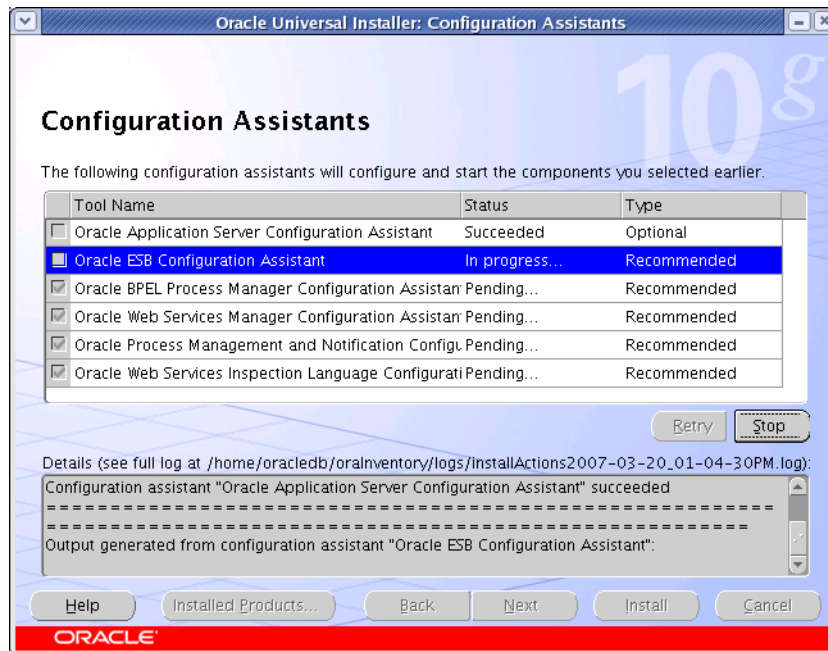
10. In the "End of Installation" screen, click **Exit**.
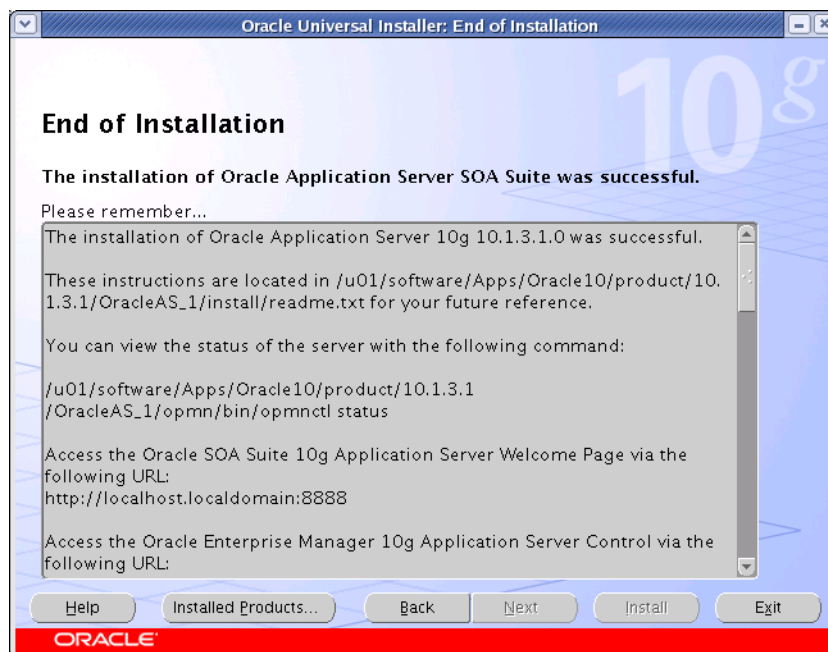
11. Make a record of the information displayed in the **Please remember** field. You will need this information in the future.

Post-Installation Steps

This section shows you how to configure Oracle AS for use with Content Server once Oracle AS has been installed.

1. Test that the Oracle Application Server is running:

    a. Access the following URL (the URL specific to your system is shown in the **Please remember** field in):

        `http://<hostname>:8888/em`

    b. Log in as the OAS administrator:

        - User name: `oc4jadmin`

        - Password: the password you entered in .

    When you log in, you will see the following page:
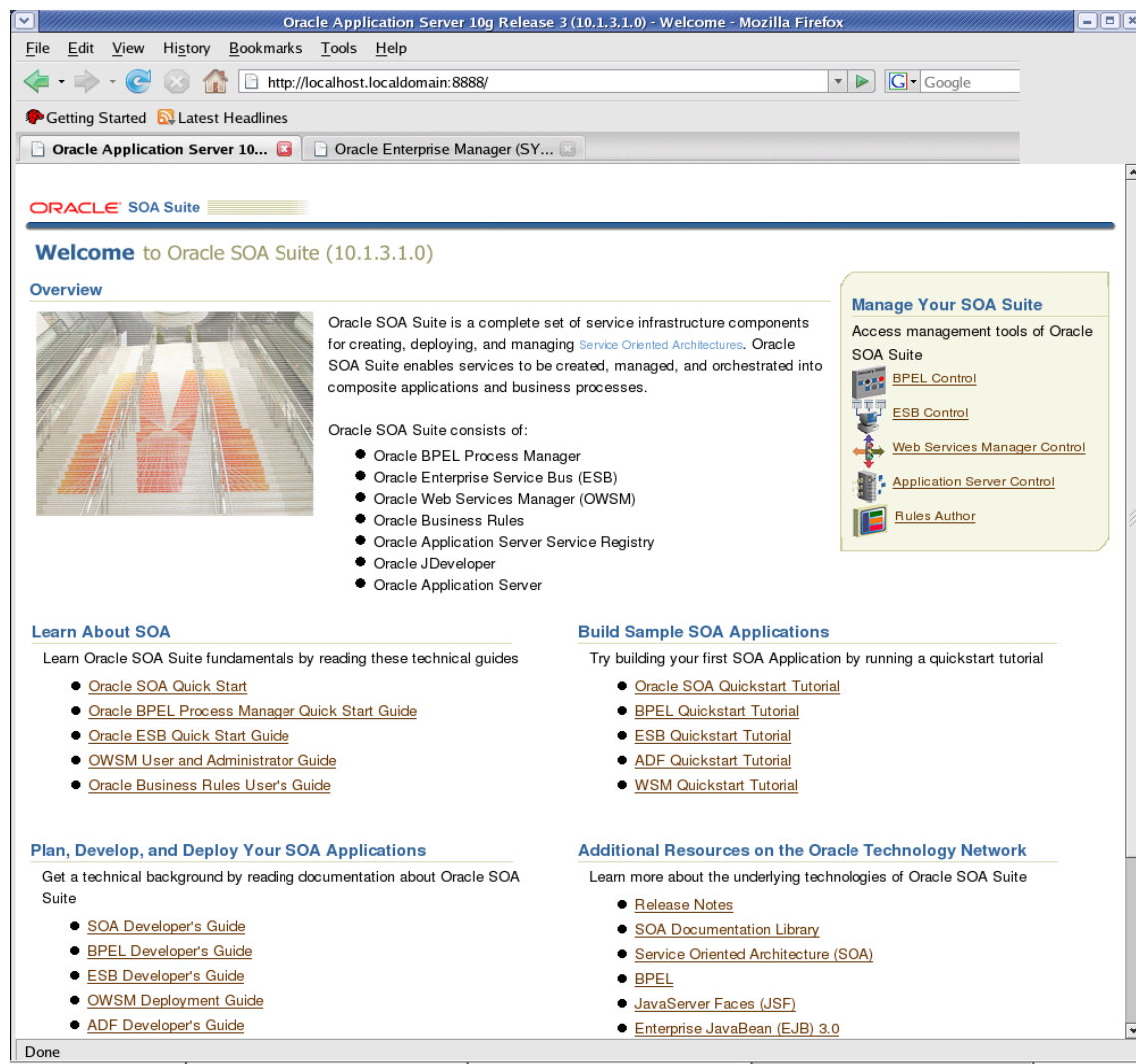
2. Stop the Oracle Application Server:

> **Note**
>
> • You **must** run all commands used to configure OAS as the Oracle user. Do **not** run these commands as the `root` user, as your OAS installation will be damaged.
>
> • Throughout this guide, we assume you are using the default Oracle user name, `oracleapp`.

```
<oracle_home>/opmn/bin/opmnctl stopall
```

3. Add the Xerces XML parsers to Oracle AS. These parsers are required for the Dash interface to function.

    a. Download the Xerces package from the following URL:

```
http://xerces.apache.org/xerces2-j/download.cgi
```

> **Note**
>
> Get the latest 2.x release of Xerces. In our example, we are using version 2.9.0.

    b. Decompress the Xerces archive to a temporary directory:

```
unzip Xerces-J-bin.2.9.0.zip
```

    c. Create the following directory

```
<oracle_home>/j2ee/home/shared-lib/apache.xml/2.7/
```

    d. Copy the following files to the `<oracle_home>/j2ee/home/shared-lib/apache.xml/2.7` directory:

       - `xercesImpl.jar`
       - `xml-apis.jar`

    e. Create a backup copy of the following file:

```
<oracle_home>/j2ee/config/server.xml
```

    f. Edit the `server.xml` file by making the following changes:

       1) Locate the following section (typically located around line 425):

```
<import-shared-library name="oracle.http.client"/>
</shared-library>
<rmi-config path="./rmi.xml" />
```

       2) Insert the following lines after `</shared-library>`:

```
<shared-library name="apache.xml" version="2.7">
<code-source path="xercesImpl.jar"/>
<code-source path="xml-apis.jar"/>
</shared-library>
```

       The modified section will look as follows:

```
<import-shared-library name="oracle.http.client"/>
</shared-library>
```

```
<shared-library name="apache.xml" version="2.7">
<code-source path="xercesImpl.jar"/>
<code-source path="xml-apis.jar"/>
</shared-library>
<rmi-config path="./rmi.xml" />
```

3) Save and close the file.

g. Make a backup copy of the following file:

`<oracle_home>/opmn/conf/opmn.xml`

h. Edit the `opmn.xml` file by making the following changes:

1) Search for the `java-options` entry. It will look as follows:

```
<data id="java-options" value="-server -mx1024M -ms512M
-XX:MaxPermSize=128M -XX:AppendRatio=3
-Djava.security.policy=$ORACLE_HOME/j2ee/home/config/
java2.policy
...
-Dhttp.proxySet=false"/>
```

2) Add the following parameter and value at the end of the entry:

`-Dfile.encoding=UTF-8`

For example:

`-Dhttp.proxySet=false -Dfile.encoding=UTF-8"/>`

3) (Optional) If you want to modify other startup parameters, such as memory utilization, make your changes now.

4) Save and close the file.

4. Configure OAS file encoding for Content Server:

a. Make a backup copy of the following file:

`<oracle_home>/j2ee/home/config/java2.policy`

b. Edit the `java2.policy` file by making the following changes:

1) Add the following code at the end of the file:

```
grant codebase "file:${oracle.home}/j2ee/home/
    applications/<app_name>/cs/WEB-INF/lib/-" {
 permission java.security.AllPermission;
};
```

2) Replace `<app_name>` with the name of your CS application (by default, `ContentServer`).

3) Save and close the file.

5. Start Oracle Application Server:

`<oracle_home>/opmn/bin/opmnctl startall`

Oracle Application Server is now ready for configuration. Proceed to Chapter 4, "Configuring Oracle Application Server."

Chapter 4

Configuring Oracle Application Server

This chapter shows you how to configure Oracle AS for use with Content Server. For reference, this chapter begins with a section on basic Oracle AS information that is used throughout this guide and is required for configuring and maintaining Content Server.

This chapter contains the following sections:

- Basic Information and Operations
- Setting Up a Data Source
- Setting Up an Oracle AS Cluster
- Deploying and Undeploying Applications

Basic Information and Operations

This section contains basic Oracle AS information that is required for configuring and maintaining Content Server. Many of the files and commands that are described in this section will be used throughout the rest of this guide. However, only the basics are covered here. Consult the Oracle Application Server product documentation for more extensive information on the topics that are covered in this guide and for topics that are not touched upon.

Important Files and Their Locations

File	Description	Path

`<app_name>`	Per-application log	`<oracle_home>/j2ee/`
		`  <server_instance>/`
		`  application-deployments/`
		`  <app_name>`

`emiasconsole.nohup`	Enterprise Management Console log	`<oracle_home>/sysman/log/` `  emiasconsole.nohup`
`portlist.ini`	Used for managing the ports on which Oracle AS is currently configured to listen	`<oracle_home>/install/` `  portlist.ini`
`setupinfo.txt`	Used for viewing and editing the ports on which Oracle AS was configured to listen during installation	`<oracle_home>/install/` `  setupinfo.txt`

deployed applications path		`<oracle_home>/j2ee/`
		`  <server_instance>/`
		`  applications/<app_name>`

third-party `jar` files, installation path		`<oracle_home>/j2ee/`
		`  <server_instance>/`
		`  applib/`

opmn (Oracle Process Manager and Notification Server) and configuration files		`<oracle_home>/opmn/conf/`
opmn (Oracle Process Manager and Notification Server) application logs		`<oracle_home>/opmn/logs/`

Setting Up the Command Line Environment

Before you can use the command line interface to configure your Oracle AS installation, you must do the following:

> **Note**
>
> - You **must** run all commands used to configure OAS as the Oracle user. Do **not** run these commands as the `root` user, as your OAS installation will be damaged.
>
> - In this guide, we assume you are using the default Oracle user name, `oracleapp`.

1. Log in as the Oracle user.

1. Set the `ORACLE_HOME` variable:

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

2. Change to the Oracle home directory:

   `cd $ORACLE_HOME/j2ee/home`

3. Construct and validate the URI for your installation:

   a. Construct the URI as follows (you recorded the information required by this step in):

   `deployer:oc4j:opmn://<hostname>:<port>/<server_instance>`

   where:

   - `<hostname>` is `localhost` if you are connecting locally. If you are connecting remotely, substitute the correct hostname.

   - `<port>` is the port on which your Oracle AS instance is listening for connections.

   - `<server_instance>` is `home` (the default instance), unless you have created another instance, in which case, substitute the correct instance name.

   b. Validate the URI:

   `java -jar admin_client.jar <uri> <admin_user_name>`
   `<admin_user_password> -validateURI`

   For example:

   `java -jar admin_client.jar deployer:oc4j:opmn://`
   `localhost:6003/home oc4jadmin password -validateURI`

   Sample response:

   `URI deployer:oc4j:opmn://localhost:6003/home is valid and`
   `connected.`

Command Syntax

The commands you use to configure your Oracle AS installation (for example, to create or delete a data source) have the following syntax:

```
java -jar admin_client.jar <URI> <admin_user_name>
   <admin_user_password> <command>
```

where:

- `<URI>` is the URI you constructed and validated in step 3 above.

- `<admin_user_name>` is the user name of the Oracle AS administrator (displayed in the installer screen in step 4 on page 22).

- `<admin_user_password>` is the password of the Oracle AS administrator (you set this password in step 4 on page 22).

- `<command>` is the Oracle AS command you want to execute.

For example:

```
java -jar admin_client.jar deployer:oc4j:opmn://localhost:6003/
   home oc4jadmin password -validateURI
```

> **Note**
>
> - You **must** run all commands used to configure OAS as the Oracle user. Do **not** run these commands as the `root` user, as your OAS installation will be damaged.
>
> - In this guide, we assume you are using the default Oracle user name, `oracleapp`.

Database URL Syntax

The Oracle database URL has the following syntax:

```
jdbc:oracle:thin:@<hostname>:<port>:<SID>
```

where:

- `<hostname>` is the host name of the Oracle database machine.

- `<port>` is the Oracle database port, typically `1521`.

- `<SID>` is the Oracle database system identifier.

For example:

```
jdbc:oracle:thin:@localhost:1521:vmorcldb
```

Start/Stop Commands

This section shows you how to start, stop, and obtain the status of Oracle AS.

Starting Oracle AS

Execute the following command to start Oracle AS on your system:

`<oracle_home>/opmn/bin/opmnctl startall`

The server instance you are starting will not be available until its status is `Alive`.

Stopping Oracle AS

Execute the following command to stop Oracle AS on your system:

`<oracle_home>/opmn/bin/opmnctl stopall`

Status

Execute the following command to obtain the status of Oracle AS on your system:

`<oracle_home>/opmn/bin/opmnctl status`

The status returned is as follows:

- If Oracle AS is not running, the command returns:

    `Unable to connect to opmn.`

    `Opmn may not be up.`

- If Oracle AS is running, the command returns a status report for all OAS instances:

```
Processes in Instance: vmsoa10.localhost.localdomain
---------------------------+-------------------+---------+-------
ias-component              | process-type      |     pid | status
---------------------------+-------------------+---------+-------
OC4JGroup:default_group    | OC4J:home         |    5575 | Alive
ASG                        | ASG               |     N/A | Down
```

Setting Up a Data Source

This section contains the steps necessary to set up and test a data source. It also shows you how to delete a data source and a database connection pool.

In order to set up a data source, you must:

1. Create a database connection. For instructions, see "Creating a Database Connection Pool."

2. Test the connection pool. For instructions, see "Testing the Database Connection Pool," on page 35.

3. Create the data source. For instructions, see "Creating a Data Source," on page 35.

Note

- Before running any of the commands below, make sure you have completed the steps in "Setting Up the Command Line Environment," on page 31.

- You **must** run all commands used to configure OAS as the Oracle user. Do **not** run these commands as the root user, as your OAS installation will be damaged.

- In this guide, we assume you are using the default Oracle user name, oracleapp.

- For Oracle AS command syntax, see "Command Syntax," on page 32.

- For Oracle database URL syntax, see "Database URL Syntax," on page 32.

Creating a Database Connection Pool

Use the following command to create a database connection pool for your data source:

To create a database connection pool

```
java -jar admin_client.jar <URI> <admin_user_name>
   <admin_user_password> -addDataSourceConectionPool -name
   <pool_name> -factoryClass oracle.jdbc.pool.OracleDataSource
   -dbUser <cs_db_user_name> -dbPassword <cs_db_user_password>
   -url <database_URL>
```

where:

- `<URI>` is the URI you constructed and validated in step 3 on page 31.

- `<admin_user_name>` is the user name of the Oracle AS administrator (displayed in the installer screen in step 4 on page 22).

- `<admin_user_password>` is the password of the Oracle AS administrator (you set this password in step 4 on page 22).

- `<pool_name>` is the name of the database connection pool.

- `<cs_db_user_name>` is the user name of the database user Content Server will use to connect to the Oracle database; typically, this is csUser.

- `<cs_db_user_password>` is the user name of the database user Content Server will use to connect to the Oracle database.

- `<database_URL>` is the URL to your Oracle database. For URL syntax, see "Database URL Syntax," on page 32.

For example:

```
java -jar admin_client.jar deployer:oc4j:opmn://localhost:6003/
   home oc4jadmin password -addDataSourceConnectionPool -name
   csConnectionPool -factoryClass
   oracle.jdbc.pool.OracleDataSource -dbUser csuser -dbPassword
   password -url jdbc:oracle:thin:@localhost:1521:vmorcldb
```

Testing the Database Connection Pool

Use the following command to test your database connection pool.

To test the database connection pool

```
java -jar admin_client.jar <URI> <admin_user_name>
   <admin_user_password> -testDataSourceConnectionPool
   -sqlStatement "select * from dual" -name <pool_name>
```

where:

- `<URI>` is the URI you constructed and validated in step 3 on page 31.

- `<admin_user_name>` is the user name of the Oracle AS administrator (displayed in the installer screen in step 4 on page 22).

- `<admin_user_password>` is the password of the Oracle AS administrator (you set this password in step 4 on page 22).

- `<pool_name>` is the name of the database connection pool.

For example:

```
java -jar admin_client.jar deployer:oc4j:opmn://localhost:6003/
   home oc4jadmin password -testDataSourceConnectionPool -
   sqlStatement "select * from dual" -name csConnectionPool
```

Sample response:

```
Test was successful.
```

Creating a Data Source

Once you have created and tested the database connection pool, use the following command to create your data source.

To create a data source

```
java -jar admin_client.jar <URI> <admin_user_name>
   <admin_user_password> -addManagedDataSource -name
   <data_source_description> -jndiLocation jdbc/<data_source_name>
   -connectionPoolName <pool_name>
```

where:

- `<URI>` is the URI you constructed and validated in step 3 on page 31.

- `<admin_user_name>` is the user name of the Oracle AS administrator (displayed in the installer screen in step 4 on page 22, typically `oc4jadmin`).

- `<admin_user_password>` is the password of the Oracle AS administrator (you set this password in step 4 on page 22).

- `<data_source_description>` is the description of the data source. This should be identical to the data source name.

- `<data_source_name>` is the name of the data source. We highly recommend using the Content Server default name, `csDataSource`.

- `<pool_name>` is the name of the database connection pool.

For example:

```
java -jar admin_client.jar deployer:oc4j:opmn://localhost:6003/
   home oc4jadmin password -addManagedDataSource -name
   csDataSource -jndiLocation jdbc/csDataSource
   -connectionPoolName csConnectionPool
```

Deleting a Data Source

Use the following command to delete a data source.

To delete a data source

```
java -jar admin_client.jar <URI> <admin_user_name>
   <admin_user_password> -removeManagedDataSource -name
   <datasource_description>
```

where:

- `<URI>` is the URI you constructed and validated in step 3 on page 31.

- `<admin_user_name>` is the user name of the Oracle AS administrator (displayed in the installer screen in step 4 on page 22).

- `<admin_user_password>` is the password of the Oracle AS administrator (you set this password in step 4 on page 22).

- `<data_source_description>` is the description of the data source. Typically, this is the same as the data source name (see "Creating a Data Source," on page 35).

For example:

```
java -jar admin_client.jar deployer:oc4j:opmn://localhost:6003/
   home oc4jadmin password -removeManagedDataSource -name
   csDataSource
```

Deleting a Database Connection Pool

Use the following command to delete a database connection pool.

To delete a database connection pool

```
java -jar admin_client.jar <URI> <admin_user_name>
   <admin_user_password> -removeDataSourceConectionPool -name
   <pool_name>
```

where:

- `<URI>` is the URI you constructed and validated in step 3 on page 31.

- `<admin_user_name>` is the user name of the Oracle AS administrator (displayed in the installer screen in step 4 on page 22).

- `<admin_user_password>` is the password of the Oracle AS administrator (you set this password in step 4 on page 22).

- `<pool_name>` is the name of the database connection pool.

For example:

```
java -jar admin_client.jar deployer:oc4j:opmn://localhost:6003/
   home oc4jadmin password -removeDataSourceConnectionPool -name
   csConnectionPool
```

Setting Up an Oracle AS Cluster

This section shows you how to cluster two or more instances of Oracle AS.

Note

In this procedure, we assume that you have already set up two or more instances of Oracle AS that you want to cluster and that each instance contains a single server instance named `home`, which is a member of a group named `default_group`.

A. Establish Communication Between Cluster Members

This section shows you how to establish communication between the members of your cluster using the Oracle Admin Console and the command line.

Using the Admin Console

1. Access the Oracle Admin Console via the following URL:

   ```
   http://<hostname>:<port>/em
   ```

2. Log in as the Oracle AS Administrator. Typically, the Administrator user name is `oc4jadmin`.

3. In the "Administration" section, click **Topology Network Configuration**.

ORACLE Enterprise Manager 10*g*
Application Server Control

Setup Logs Help Logout

Cluster Topology

Page Refreshed **Jul 25, 2007 10:51:00 AM EDT** • View Data | Manual Refresh ▾ |

Overview

Hosts	**1**	Application Servers	**1**
OC4J Instances	**1**	HTTP Server Instances	**0**

Members

View By | Application Servers ▾ |

(Start) (Stop) (Restart)

Select All | Select None | Expand All | Collapse All

⊕

Select	Focus	Name	Status	Type	Category	Host	CPU (%)	Memory (MB)
☐		▼ All Application Servers						
☐	⊕	▼ orclapp.realsun01.fatwire.com		Application Server		realsun01		
☐	⊕	▶ home (JVMs: 1)	⇧	OC4J			1.14	474.21

❖ Indicates the active ASControl instance.
☑ **TIP** If a parent topology member is selected all contained members are implicitly selected.

Groups

A group is a collection of OC4J instances. Certain common management tasks can be performed simultaneously on all OC4J instances in a group. For more information, see About Groups

(Start) (Stop) (Delete) | (Create)

Select	Name △	OC4J Instance	Status	Application Server
⊙	default_group	home	⇧	orclapp.realsun01.fatwire.com

Administration

- Cluster MBean Browser
- Routing ID Configuration
- Java SSO Configuration
- Topology Network Configuration
- Runtime Ports

4. In the "Topology" section, do the following:

   a. Select the **Configuring Dynamic Node Discovery Using Multicast** radio button.

   b. In the **Discover** field, enter the desired multicast IP address and an unused port. The syntax is `<ip_address>:<port>`.

   A multicast IP address is any address ranging from `224.0.0.1` to `239.255.255.255`. This procedure assumes you are using Oracle's default multicast IP address and port, `228.3.4.42:4242`.

   Topology
   Configure the Notification Server (ONS) topology configuration within a cluster.

   ◉ Configuring Dynamic Node Discovery Using Multicast
       Discover   `228.3.4.42:4242`
   ○ Configuring Static Discovery Servers
       Discover
   ○ Configuring Cross-Topology Gateways
       Gateway
       Discover
   ○ Configuring Static Node-to-Node Communication
       Nodes
   ○ Not participating in cluster

5. Click **Apply**.

6. Restart Oracle AS:

   a. `<oracle_home>/opmn/bin/opmnctl stopall`
   b. `<oracle_home>/opmn/bin/opmnctl startall`

7. Repeat steps 1–6 for each remaining cluster member.

Using the Command Line

> **Note**
>
> - You **must** run all commands used to configure OAS as the Oracle user. Do **not** run these commands as the `root` user, as your OAS installation will be damaged.
>
> - In this guide, we assume you are using the default Oracle user name, `oracleapp`.

1. Make a backup copy of the file, `<oracle_home>/opmn/conf/opmn.xml`.

2. Edit the `opmn.xml` file as follows:

   a. Locate the following section:

   ```
   <notification-server interface="ipv4">
   <port local="6100" remote="6200" request="6003"/>
   <ssl enabled="true" wallet-file="$ORACLE_HOME/opmn/conf/
       ssl.wlt/default"/>
   </notification-server>
   ```

   b. After the line,

   ```
   <ssl enabled="true" wallet-file="$ORACLE_HOME/opmn/conf/
   ssl.wlt/default"/>
   ```

add the following code:

```
<topology>
<discover list="*<mutlticast_IP>:<port>"/>
</topology>
```

where:

- `<multicast_IP>` is the multicast IP address for your cluster that all cluster members will use for communication. A multicast IP address is any address ranging from `224.0.0.1` to `239.255.255.255`. This procedure assumes you are using Oracle's default multicast IP address and port, `228.3.4.42:4242`.

- `<port>` is a port on which the members of your cluster will communicate with each other.

In our example, the modified section will look as follows:

```
<notification-server interface="ipv4">
<port local="6100" remote="6200" request="6003"/>
<ssl enabled="true" wallet-file="$ORACLE_HOME/opmn/conf/
    ssl.wlt/default"/>
<topology>
<discover list="*228.3.4.42:4242"/>
</topology>
</notification-server>
```

3. Save and close the file.

4. Restart Oracle AS:

   a. `<oracle_home>/opmn/bin/opmnctl stopall`

   b. `<oracle_home>/opmn/bin/opmnctl startall`

5. Repeat steps 1–4 of this procedure for each remaining cluster member.

B. Disable the ascontrol Application on Secondary Members

All secondary cluster members must be controlled via the Oracle Admin Console on the primary cluster member. This requires that you disable the `ascontrol` application on all secondary cluster members. This section shows you how to disable the `ascontrol` application using the Oracle Admin Console and the command line.

To disable the ascontrol application using the Oracle Admin Console

1. Access the Oracle Admin Console on the primary cluster member via the following URL:

   `http://<hostname>:<port>/em`

2. Log in as the Oracle AS Administrator. Typically, the Administrator user name is `oc4jadmin`.

3. In the "Members" section, locate the secondary cluster member on which you want to disable the `ascontrol` application, and click its name (**home** in our example).

4. In the screen that appears, select the **Applications** tab.

5. In the list of applications, select the check box next to the **ascontrol** application and click **Stop**.

6. Repeat steps 3–5 of this procedure for each remaining secondary cluster member.

To disable the ascontrol application using the command line

Note

- You **must** run all commands used to configure OAS as the Oracle user. Do **not** run these commands as the `root` user, as your OAS installation will be damaged.

- In this guide, we assume you are using the default Oracle user name, `oracleapp`.
---

1. Complete the steps in "Setting Up the Command Line Environment," on page 31.

2. On each secondary cluster member, undeploy the `ascontrol` application using the following command:

```
java -jar admin_client.jar <URI> <admin_user_name>
    <admin_user_password> -undeploy asconsole
```

where:

- `<URI>` is the URI you constructed and validated in step 3 on page 31.

- `<admin_user_name>` is the user name of the Oracle AS administrator (displayed in the installer screen in step 4 on page 22).

- `<admin_user_password>` is the password of the Oracle AS administrator (you set this password in step 4 on page 22).

For example:

```
java -jar admin_client.jar deployer:oc4j:opmn://
remote_clustermember:6003/home oc4jadmin demo4132 -undeploy
asconsole
```

3. Repeat step 2 of this procedure for each remaining secondary cluster member.

At this point, your Oracle AS cluster has been successfully configured. To create a Content Server cluster, you must install Content Server independently on each Oracle AS cluster member.

Deploying and Undeploying Applications

This section shows you how to create a deployment plan file, and how to deploy and undeploy the CS application on Oracle AS.

Creating a Deployment Plan File

Before you can deploy the CS application on Oracle AS, you must create a deployment plan file by following the steps below.

To create a deployment plan file

1. Create a file named `ContentServer_Plan.dat` and open it in a text editor.

2. Paste the following code into the file. In our example, we assume that your CS application name is the default, `ContentServer`. If you decided to name your application differently, substitute your application name as the value for the `applicationID` parameter:

```
moduleType=ear

applicationID=ContentServer

bindWebApp=default-web-site

webSiteBindings=

parent=default

moduleID=.

doctype=orion-application

<?xml version="1.0" encoding="UTF-8"?>

<orion-application xmlns:xsi="http://www.w3.org/2001/XMLSchema-
   instance" xsi:noNamespaceSchemaLocation="http://
   xmlns.oracle.com/oracleas/schema/orion-application-
   10_0.xsd">

<library path="../../../../jlib/commons-el.jar">

</library>

<imported-shared-libraries>

<import-shared-library name="apache.xml">

</import-shared-library>

<remove-inherited name="oracle.xml">

</remove-inherited>

</imported-shared-libraries>

</orion-application>

moduleID=cs.war

doctype=orion-web-app

<?xml version="1.0" encoding="UTF-8"?>
```

```
<orion-web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-
    instance" xsi:noNamespaceSchemaLocation="http://
    xmlns.oracle.com/oracleas/schema/orion-web-10_0.xsd"
    context-root="cs">
```

```
<web-app-class-loader>
```

```
</web-app-class-loader>
```

```
</orion-web-app>
```

3. Save and close the file.

Deploying an Application

This section shows you how to deploy the Content Server application on Oracle Application Server.

Note

- Before deploying an application, make sure you have created a deployment plan file, as described in "Creating a Deployment Plan File," on page 42.

- You **must** run all commands used to configure OAS as the Oracle user. Do **not** run these commands as the `root` user, as your OAS installation will be damaged.

- In this guide, we assume you are using the default Oracle user name, `oracleapp`.

To deploy an application

1. Complete the steps in "Setting Up the Command Line Environment," on page 31.

2. Execute the following command:

```
java -jar admin_client.jar <URI> <admin_user_name>
    <admin_user_password> -deploy -file <cs_ear_file>
    -deploymentName <app_name> -bindAllWebApps -deploymentPlan
    <deployment_plan_file>
```

where:

- `<URI>` is the URI you constructed and validated in step 3 on page 31.

- `<admin_user_name>` is the user name of the Oracle AS administrator (displayed in the installer screen in step 4 on page 22).

- `<admin_user_password>` is the password of the Oracle AS administrator (you set this password in step 4 on page 22).

- `<cs_ear_file>` is the full path and file name of the CS application EAR file. By default, this is:

  `<cs_install_dir>/ominstallinfo/app/ContentServer.ear`

- `<app_name>` is the name of the Content Server application. By default, this is `ContentServer`.

- `<deployment_plan_file>` is the full path and file name of the Content Server deployment plan file you created in "Creating a Deployment Plan File," on page 42.

For example:

```
java -jar admin_client.jar deployer:oc4j:opmn://localhost:6003/
   home oc4jadmin demo4132 -deploy -file /u01/CS/ORACLEAS/
   ominstallinfo/app/ContentServer.ear -deploymentName
   ContentServer -bindAllWebApps -deploymentP lan /u01/CS/
   ORACLEAS/installation_files/ContentServer/
   ContentServer_plan.dat
```

Sample response:

```
07/03/22 08:25:32 Notification ==>Starting application :
ContentServer


07/03/22 08:25:32 Notification ==>Initialize cs begins...


07/03/22 08:25:32 Notification ==>Initialize cs ends...


07/03/22 08:25:32 Notification ==>Started application :
ContentServer


07/03/22 08:25:32 Notification ==>Application Deployer for
ContentServer COMPLETES. Operation time: 20555 msecs
```

Undeploying an Application

This section shows you how to undeploy the CS application on Oracle AS.

To undeploy an application

Note

- You **must** run all commands used to configure OAS as the Oracle user. Do **not** run these commands as the `root` user, as your OAS installation will be damaged.

- In this guide, we assume you are using the default Oracle user name, `oracleapp`.

---

1. Complete the steps in "Setting Up the Command Line Environment," on page 31.

2. Execute the following command:

```
java -jar admin_client.jar <URI> <admin_user_name>
   <admin_user_password> -undeploy <app_name>
```

where,

- `<URI>` is the URI you constructed and validated in step 3 on page 31.

- `<admin_user_name>` is the user name of the Oracle AS administrator (displayed in the installer screen in step 4 on page 22).

- `<admin_user_password>` is the password of the Oracle AS administrator (you set this password in step 4 on page 22).

- `<app_name>` is the name of the Content Server application. By default, this is `ContentServer`.

For example:

```
java -jar admin_client.jar deployer:oc4j:opmn://localhost:6003/
   home oc4jadmin demo4132 -undeploy ContentServer
```

Sample response:

```
07/03/22 08:53:45 Notification ==>Removing all web binding(s)
for application ContentServer from all web site(s)
07/03/22 08:53:50 Notification ==>Application UnDeployer for
ContentServer COMPLETES
```

Part 3

Content Server

This part shows you how to install Content Server. It contains the following chapter:

- Chapter 5, "Installing and Configuring Content Server"

Chapter 5

Installing and Configuring Content Server

This chapter guides you through the installation of Content Server on Oracle Application Server.

This chapter contains the following sections:

- Installing Content Server
- Post-Installation Steps

Installing Content Server

After completing Steps I – III.1 in the "Installation Quick Reference," on page 8, you install Content Server using the provided installer. The installation process consists of two stages.

In the first stage, the installer gathers necessary configuration information, installs the file structure, and creates the CS application for deployment. At the end of the first stage, the installer displays an "Installation Actions" window describing the steps you must perform before proceeding to the second stage of the installation. These steps include the deployment of the CS application; for instructions, see "Deploying and Undeploying Applications," on page 42.

If you are using an Oracle database and require text attributes greater than 2000 characters, you must set the `cc.bigtext` property to `CLOB` before the CS application is deployed. (For instructions, see step 5 in the next section.)

If the first stage fails, the installer allows you to go back and modify your configuration options (except the database type), and retry the installation.

Note

If you need to change the type of database you have specified during the installation, you must delete the installed CS file structure and restart the installation.

In the second stage, the installer populates the database with the tables and data required for Content Server to function. If the second stage fails, the file structure and database tables must be deleted and the installation restarted from the beginning.

Running the Installer

To install Content Server

1. Make sure you have completed Steps I – III.1 in the "Installation Quick Reference," on page 8.

2. Extract the Content Server installer archive into a temporary directory.

3. Change to the temporary directory containing the installer files.

4. Execute the installer script:

   - On Windows: **`csInstall.bat`**

   - On Unix: **`csInstall.sh`**

   The installer provides online help at each screen. Read the online help for detailed explanations of the options that are presented in each screen. If you encounter problems during the installation process, consult the online help for possible causes and solutions.

5. If you require text attributes greater than 2,000 characters, you must set the `cc.bigtext` property to `CLOB`. When the installer displays the "Installation Actions" pop-up window, do the following:

   a. Open the Property Editor by clicking the **Property Editor** button.

   b. In the Property Editor, open the `futuretense.ini` file.

    c. Click the **Database** tab.

    d. Locate the `cc.bigtext` property and set its value to `CLOB`.

    e. Save your changes and close the Property Editor.

    f. Continue on to step 1 displayed in the "Installation Actions" window.

6. When the installation completes successfully, perform the post-installation steps in the next section as required for your installation.

Post-Installation Steps

When the Content Server installation completes successfully, perform the following steps:

A. Setting File Permissions (Unix Only)

B. Adding the CS Binaries Directory to the Library Path Variable (Unix only)

C. Verifying the Installation

D. Setting Up a Content Server Cluster (Optional)

E. Setting Up Content Server for Its Business Purpose

A. Setting File Permissions (Unix Only)

If you installed Content Server on Unix, you must grant the "executable" permission to all files in the `<cs_install_dir>/bin` directory. To do so, perform the following steps:

1. Change to the `<cs_install_dir>/bin` directory.

2. Run the following command: **`chmod +x *`**

3. Restart the CS application.

B. Adding the CS Binaries Directory to the Library Path Variable (Unix only)

If you installed Content Server on Unix, you must add the location of the CS binaries directory (`<cs_install_dir>/bin`) to your library path (`LD_LIBRARY_PATH`) variable. To do so, perform the following steps:

1. Make a backup copy of the following file:

    `<oracle_home>/opmn/conf/opmn.xml`

2. Edit the `opmn.xml` file as follows:

    a. Search for the `LD_LIBRARY_PATH` variable entry. The entry will be similar to the following example:

```
<variable id="LD_LIBRARY_PATH" value="/u01/software/Apps/
   Oracle10/product/10.1.3.1/OracleAS_1/lib" append="true"/>
```

    b. Add the following to the end of the value parameter's value, preceded by a colon:

    `<cs_install_dir>/bin`

    where `<cs_install_dir>` is the directory in which Content Server is installed.

For example:

```
<variable id="LD_LIBRARY_PATH" value="/u01/software/Apps/
    Oracle10/product/10.1.3.1/OracleAS_1/
    lib:<cs_install_dir>/bin" append="true"/>
```

3. Save and close the file.

4. Restart Oracle AS:

   a. `<oracle_home>/opmn/bin/opmnctl stopall`

   b. `<oracle_home>/opmn/bin/opmnctl startall`

C. Verifying the Installation

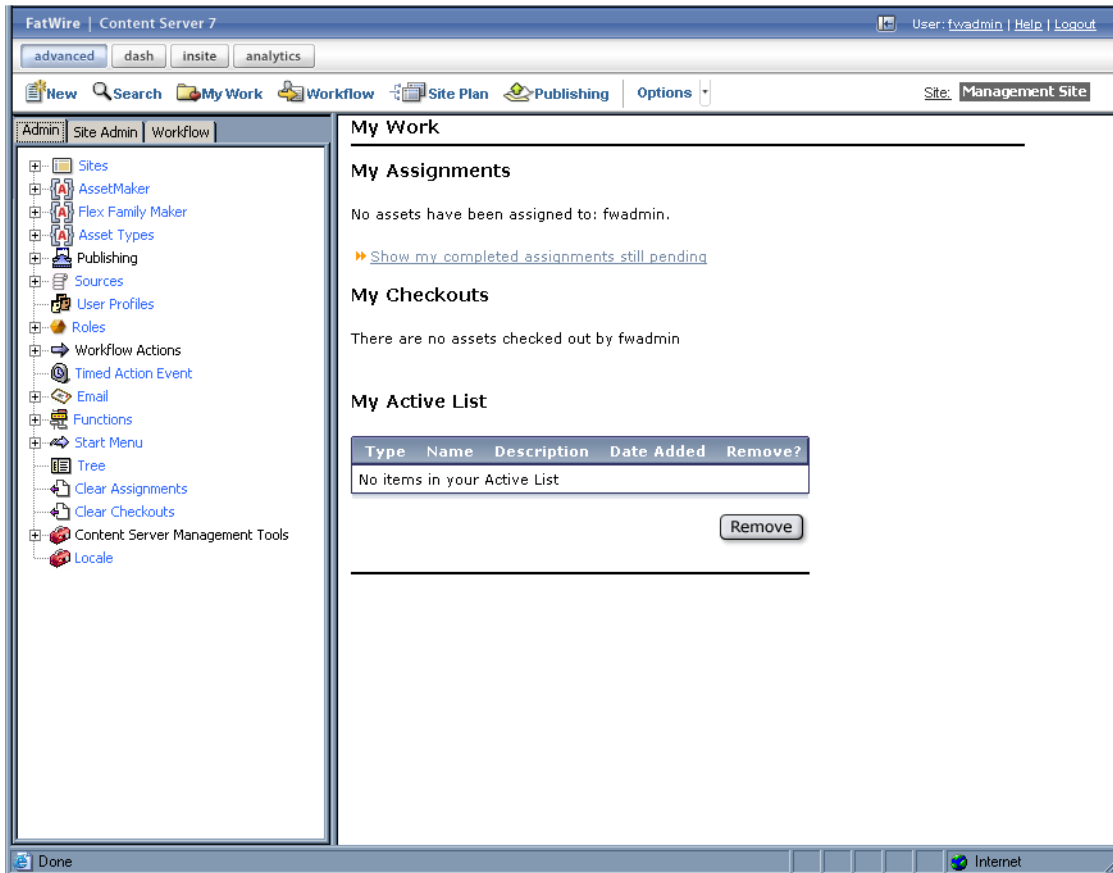Verify the installation by logging in to Content Server as the administrator.

Logging in to the Advanced Interface

1. Point your browser to the following URL:

`http://<hostname>:<port>/<context>/Xcelerate/LoginPage.html`

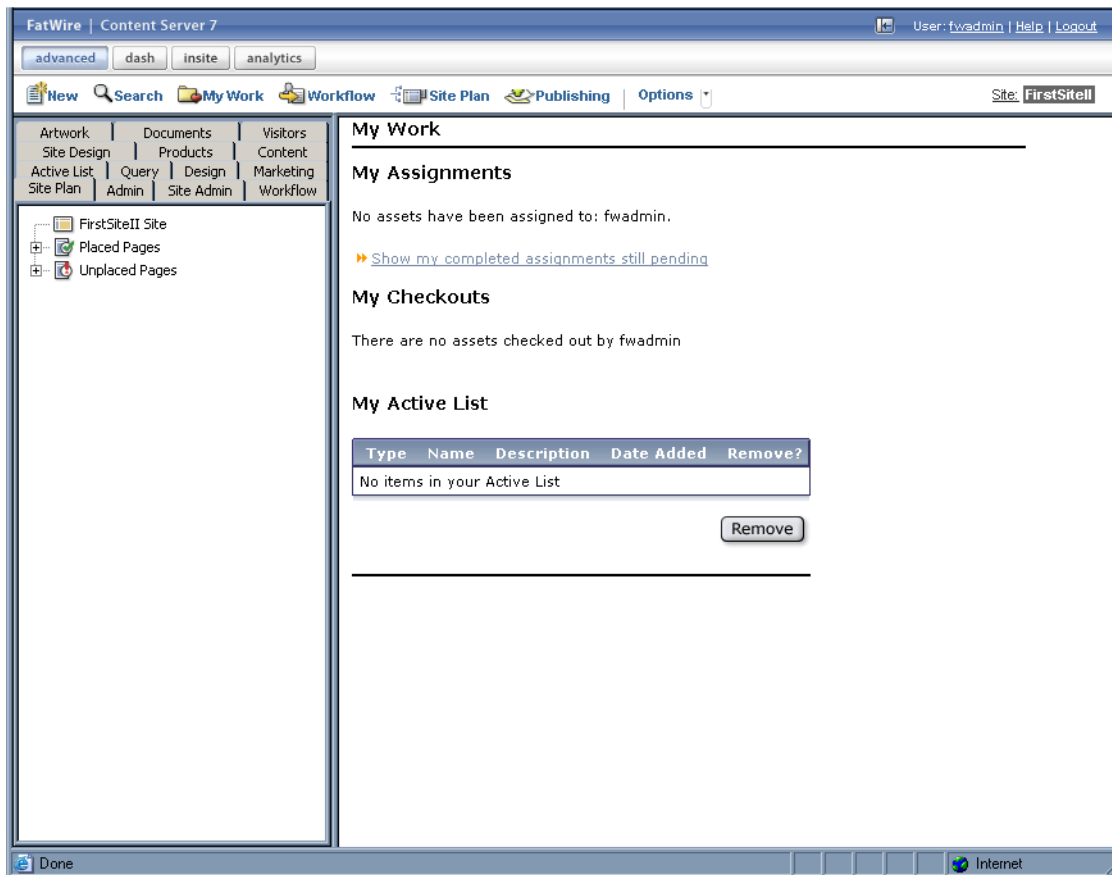Content Server displays the Advanced interface login form.

2. Enter the following credentials:

   - User name: **fwadmin**

   - Password: **xceladmin**

3. Click **Login**.

Depending on whether you installed sample sites, one of the following happens:

- If you did not install any sample sites, you are logged in to the built in Content Server management site. Only system administration functionality is available.

- If you installed one sample site, you are logged in to that site.

- If you installed more than one sample site, Content Server displays the "Select Site" screen. In such case, select the sample site you wish to log in to.
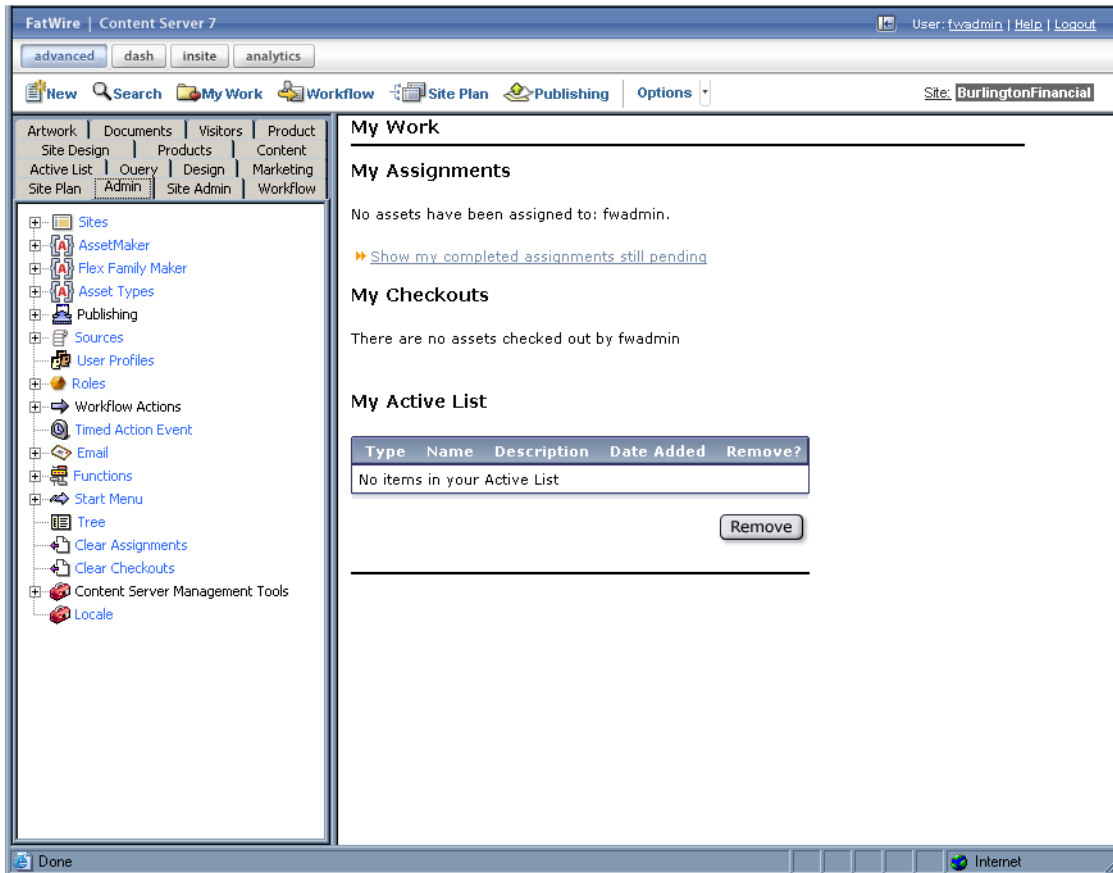
When you select a site, you are logged in to that site.

Logging in to the Dash Interface

1. Point your browser to the following URL:

```
http://<hostname>:<port>/<context>
```

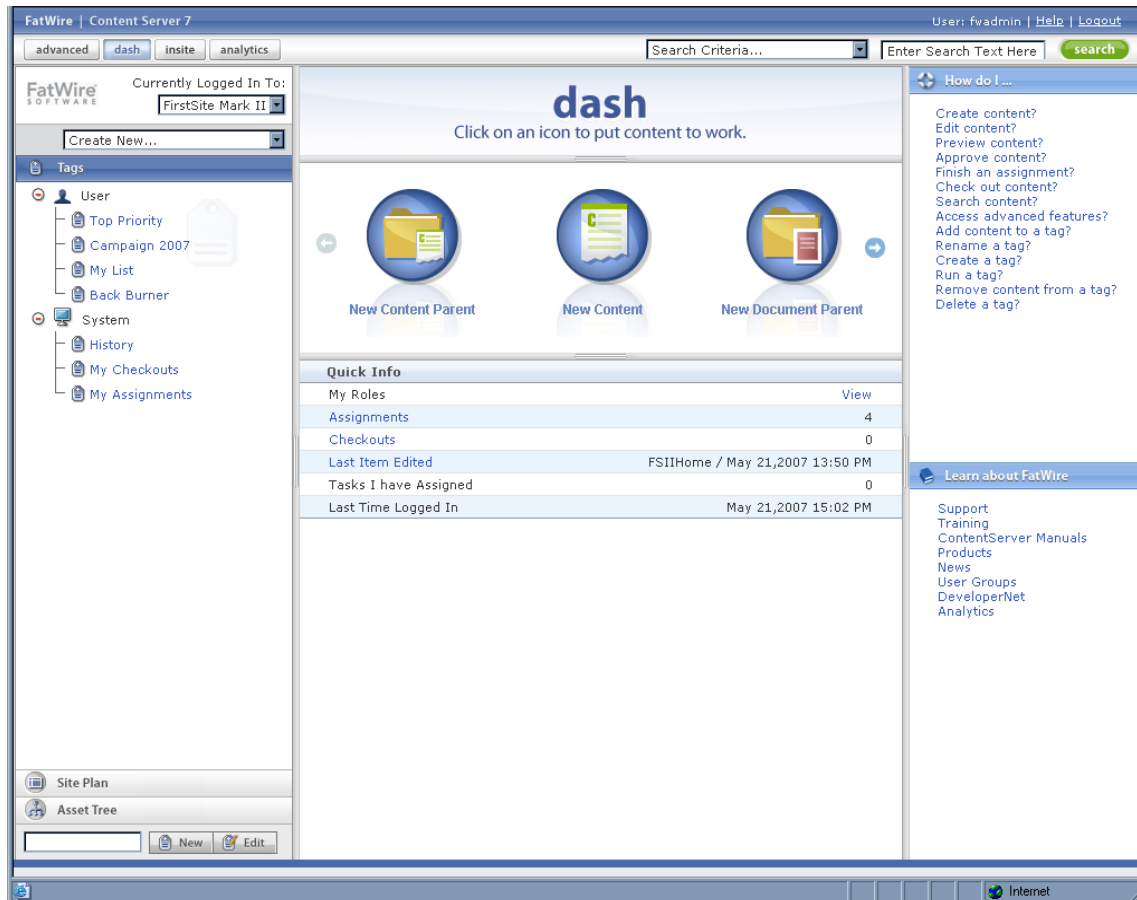Content Server displays the Dash interface login page.

2. Enter the following credentials:

- User name: **fwadmin**
- Password: **xceladmin**

3. Click **Login**.

Depending on whether you installed sample sites, one of the following happens:

- If you did not install any sample sites, Content Server displays a message notifying you of that fact. You will not be able to log in to the Dash interface until at least one site exists on your system.

- If you installed one sample site, you are logged in to that site.

- If you installed more than one sample site, Content Server displays the "Select Site" screen. In such case, select the sample site you wish to log in to.
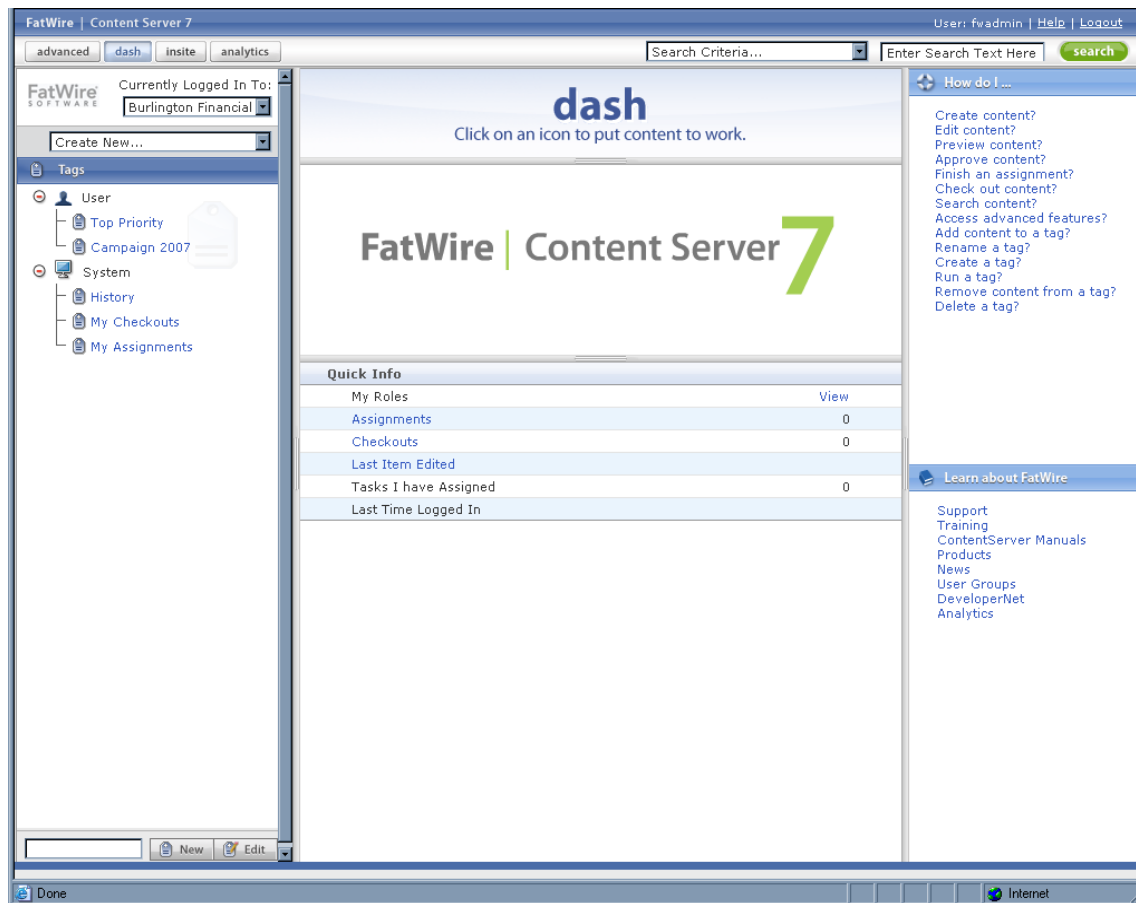
When you select a site, you are logged in to that site.

Content Server is now ready for configuration. Follow the steps in the rest of this chapter.

D. Setting Up a Content Server Cluster (Optional)

If you plan to install Content Server in a vertical cluster, follow the steps below. Before you proceed, make sure of the following:

- You are installing a vertical cluster (running OAS instances on the same machine).

- You have created a shared file system directory (referred to in this guide as `<cs_shared_dir>`) that all cluster members can read from and write to. The directory name and path cannot contain spaces.

- You have created a `sync` directory inside the shared file system directory.

- You have already set up and tested the primary cluster member.

To set up a Content Server cluster

1. For each secondary cluster member, do the following:

   a. Install Oracle AS by following the steps in Chapter 3, "Installing Oracle Application Server." (This automatically creates a server instance with the default name, `home`.)

    b. Create a unique data source for the OAS instance by following the steps in "Setting Up a Data Source," on page 34.

    c. Install Content Server by following the steps in "Running the Installer," on page 50. When you run the Content Server installer, select **Cluster Member** in the "Clustering" screen. For more information, see the online help included with the installer.

    d. Deploy the CS application, making sure it has a unique name. For instructions, see "Deploying and Undeploying Applications," on page 42.

    e. Edit the `<cs_install_dir>/futuretense.ini` file by making the following changes:

        1) Set `ft.sync` to a value that is the same for all cluster members.

        2) Set `ft.usedisksync` to `<cs_shared_dir>/sync`.

2. Cluster your Oracle AS instances by following the steps in "Setting Up an Oracle AS Cluster," on page 37.

3. Restart all cluster member instances for the changes to take effect. For a list of start and stop commands, see "Start/Stop Commands," on page 33.

4. Test each secondary cluster member by following the steps in "Verifying the Installation," on page 52.

E. Setting Up Content Server for Its Business Purpose

Once you have completed your Content Server installation, you are ready to configure it for business use. For instructions, see the *Content Server Administrator's Guide* and the *Content Server Developer's Guide*. The guides explain how to create and enable a content management environment including the data model, content management sites, site users, publishing functions, and client interfaces.

Appendices

This part contains the following appendices:

- Appendix A, "Enabling Development Mode"

Appendix A

Enabling Development Mode

The following steps show you how to enable development mode on OAS in order to obtain stack trace data for the CS application. Only enable this feature on development and management (staging) systems. Do not enable development mode on delivery (production) systems.

Note

Enabling this feature may result in unexpected errors when accessing JSPs. You should enable development mode temporarily to obtain debug information for the affected JSP(s), then disable it immediately afterwards.

---

1. Make a backup copy of the following file:

   ```
   <oracle_home>/j2ee/home/applications/<URI>/cs/orion-web.xml
   ```

2. Edit the `orion-web.xml` file and locate the following line:

   ```
   schema-major-version="10" schema-minor-version="0">
   ```

3. Add the following argument to the line:

   ```
   development="true"
   ```

   The modified line will look as follows:

   ```
   schema-major-version="10" schema-minor-version="0"
      development="true">
   ```

4. Save and close the file.

5. Make a backup copy of the following file

   ```
   <oracle_home>/j2ee/home/config/global-web-application.xml
   ```

6. Edit the `web-application.xml` file and locate the following line:

   ```
   <servlet-name>jsp</servlet-name>
   ```
   (typically located around line 28)

7. After the line, but before the next occurrence of

```
<load-on-startup>0</load-on-startup>
```

insert the following code:

```
<init-param>
    <param-name>debug</param-name>
    <param-value>true</param-value>
</init-param>
<init-param>
    <param-name>developer_mode</param-name>
    <param-value>true</param-value>
</init-param>
<init-param>
    <param-name>encode_to_java</param-name>
    <param-value>true</param-value>
</init-param>
<init-param>
    <param-name>reduce_tag_code</param-name>
    <param-value>false</param-value>
</init-param>
<init-param>
    <param-name>extra_imports</param-name>
    <param-value></param-value>
</init-param>
<init-param>
    <param-name>main_mode</param-name>
    <param-value>recompile</param-value>
</init-param>
<init-param>
    <param-name>debug_mode</param-name>
    <param-value>true</param-value>
</init-param>
```

8. Save and close the file.
9. Restart the affected OAS instance.