

# Content Server

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Version: 7.0

## Installing Content Server with JBoss Application Server

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SOFTWARE

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*Installing Content Server with JBoss Application Server*

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Table of

## Contents

<b>1 Introduction</b> .....	<b>5</b>
About This Guide .....	6
How This Guide Is Organized .....	6
Terms and Acronyms .....	6
Graphics in This Guide .....	6
Installation Quick Reference .....	7

### Part 1. Database

<b>2 Setting Up a Database</b> .....	<b>13</b>
--------------------------------------	-----------

### Part 2. Application Server

<b>3 Installing JBoss Application Server</b> .....	<b>17</b>
Start/Stop Commands .....	18
Step I. Installing JBoss .....	18
Step II. Setting Up the Environment .....	19
Step III. Setting Up Multiple Instances of JBoss to Run Simultaneously .....	22

### Part 3. Web Server

<b>4 Installing and Configuring Apache Web Server</b> .....	<b>27</b>
Integrating JBoss with Apache 2.0.x .....	28
Configuring JBoss for SSL through Apache 2.0.x .....	29

## Part 4. Content Server

<b>5</b>	<b>Installing and Configuring Content Server</b>	<b>35</b>
	Installing Content Server	36
	Running the Installer	36
	Post-Installation Steps	37
	A. Setting File Permissions (Unix Only)	37
	B. Verifying the Installation	37
	C. Integrating with LDAP (Required for Portal Installations)	43
	D. Configuring JBoss Portal for Content Server (Required for Portal Installations)	44
	E. Setting Up a Content Server Cluster (Optional)	56
	F. Setting Up Content Server for Its Business Purpose	58

## Chapter 1

# Introduction

This document provides guidelines for installing Content Server on JBoss Application Server version 4.0.5 and higher, connecting to a 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 JBoss Application Server, as required to support Content Server. This includes the configuration of one or more JBoss instances, clustering, SSL, 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 II (which covers the application server), even though it is performed later, when Content Server is installed (Part IV). 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 the section, “[Installation Quick Reference](#),” on page 7).

## Terms and Acronyms

<code>&lt;jboss_install_dir&gt;</code>	Path to the JBoss installation directory.
<code>&lt;cs_install_dir&gt;</code>	Path to the Content Server installation directory.

## 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. These 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.

# 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 following steps summarize the installation and configuration of Content Server and its supporting software. Keep the steps handy as a quick reference to the installation procedure and to the chapters that provide more detailed instructions.

## I. Set Up the Database

Install, create, and configure your choice of supported databases. For instructions on creating and configuring the database, see *Configuring Third-Party Software*.

## II. Set Up the Application Server

Set up JBoss Application Server, as shown in [Chapter 3](#), “[Installing JBoss Application Server](#).” The steps you will complete are the following:

1. [Installing JBoss](#) (page 18).
2. [Setting Up the Environment](#) (page 19). This means creating a directory for Content Server, creating a JBoss instance, and testing the JBoss instance.

## Notes

If you plan to install a vertical cluster, you will repeat this step to create a JBoss instance for each cluster member. Before creating multiple JBoss instances, however, it is best to first create one instance (as done in this guide), install Content Server, and verify that it is functional.

If you are installing the JBoss portal, you must install and configure a supported LDAP server (OpenLDAP in this guide). You can do so in the current step, or after the first instance of Content Server is installed (as done in this guide). Instructions for installing and configuring LDAP servers are given in *Configuring Third-Party Software*.

3. If you are already running one or more instances of JBoss on your system (regardless of the application they are serving), or if you are planning to set up a Content Server cluster, ensure that each JBoss instance runs on a unique port number. For instructions, see “[Setting Up Multiple Instances of JBoss to Run Simultaneously](#),” on page 22.

### III. Set Up the Web Server

This step is required if:

- You wish to use Apache web server
- You are creating a vertical cluster that will be load balanced through Apache web server
- You are planning to configure JBoss to run over SSL through Apache Web Server

To set up the web server, complete the following steps (in [Chapter 4](#)):

1. [Integrating JBoss with Apache 2.0.x](#) (page 28).
2. For SSL support, also complete the steps in “[Configuring JBoss for SSL through Apache 2.0.x](#),” on page 29.

#### Note

For single-server installations, installing a web server is optional. You can install the web server at any time prior to or following the Content Server installation.

### IV. Install and Configure Content Server

In this step, you will first make sure that the listed pre-requisites for installing Content Server are satisfied. You will then install Content Server, verify the installation, and complete any additional post-installation steps that apply to your system (for example, set up a vertical cluster or configure the JBoss portal).

1. Before installing Content Server, do the following:
  - a. Start the JBoss instance.
  - b. Create a valid directory into which you will install Content Server. A valid directory is one that does not contain spaces in its name and has write permissions.
  - c. For clustered installations, create 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.
2. Install and deploy Content Server by running the supplied installer. The installer provides online help at each screen, should you need guidance. For more information, see “[Installing Content Server](#),” on page 36.

If you are using an Oracle database and will require text attributes greater than 2000 characters, you will have to the `cc.bigtext` property to CLOB after the CS application is deployed half-way through the installation. For instructions, see [step 5](#) in “[Running the Installer](#),” on page 36.

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 37](#).
  - b. Verify the Content Server installation by logging in as the administrator. For instructions, see “[Verifying the Installation](#),” on [page 37](#).
  - c. If you need to perform LDAP integration, follow the steps in “[Integrating with LDAP \(Required for Portal Installations\)](#),” on [page 43](#). LDAP integration is mandatory for portal installations, and optional for web installations.
  - d. If you are creating a portal installation, set up the JBoss portal by following the steps in “[Configuring JBoss Portal for Content Server \(Required for Portal Installations\)](#),” on [page 44](#).
  - e. If you are creating a vertically clustered system, follow instructions in “[Setting Up a Content Server Cluster \(Optional\)](#),” on [page 56](#).
  - f. 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 *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*, accessible from:

<http://e-docs.fatwire.com/CS>

(Click the Content Server version number, and on the Content Server page, click the **Supported Platform Document** link.)

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 JBoss Application Server. This part contains the following chapter:

- [Chapter 3, “Installing JBoss Application Server”](#)



## Chapter 3

# Installing JBoss Application Server

This chapter provides instructions for installing JBoss Application Server so far as needed to install and run Content Server as a single instance or in a vertical cluster. For more information about the JBoss installation process, see the documentation that comes with JBoss.

This chapter contains the following sections:

- [Start/Stop Commands](#)
- [Step I. Installing JBoss](#)
- [Step II. Setting Up the Environment](#)
- [Step III. Setting Up Multiple Instances of JBoss to Run Simultaneously](#)

## Start/Stop Commands

### Note

All commands are based on the assumption that `JAVA_HOME` is set to the proper directory.

- To start the JBoss instance:  
`<jboss_install_dir>/bin/run.sh -c <instance name>`
- To shut down the JBoss instance:  
`<jboss_install_dir>/bin/shutdown.sh -s jnp://<hostname>:  
<jnp port>:`

**Table 1:** Port Configurations and Numbers

Port Configuration	Web Service Port	JNP Port
ports-default	8080	1099
ports-01	8180	1199
ports-02	8280	1299
ports-03	8380	1399

## Step I. Installing JBoss

### To install JBoss Application Server

- Create a JBoss installation directory.
- Decompress JBoss into the JBoss installation directory. Follow the examples below, but replace the file names with names that correspond to your version of JBoss:
  - For JBoss Application Server, decompress the `jboss-4.0.5.tar.gz` file into the JBoss installation directory as follows:
 

```
gzip -d jboss-4.0.5.tar.gz
tar -xvf jboss-4.0.5.tar
```
  - For JBoss Portal Server, decompress the `jboss-2.4.0.tar.gz` file into the JBoss installation directory as follows:
 

```
gzip -d jboss-portal-2.4.0-CR3.tar.gz
tar -xvf jboss-portal-2.4.0-CR3.tar
```
- Set `JAVA_HOME` to the `jdk` folder of the version of Java that will be used. The Java version must be 1.5 or higher.

Ex: `export JAVA_HOME=/opt/jdk1.5.0_06`

4. Start the application server by running the startup command from the `bin` directory:  

```
cd <jboss_install_dir>/bin
./run.sh
```

This will start the default JBoss instance on port 8080.
5. Enter the following URL into a browser: `http://<hostname>:8080/`  
When the default “JBoss Application Server” home page is displayed, click **JBoss Web Console** to display the “JBoss Management Console.”
6. Shut down the application server by doing one of the following:
  - From the JBoss Web Console, right-click in the “JBoss Management Console” and when the pop-menu appears, click **Shutdown JBoss instance**.
  - From the terminal, run the shutdown command:  

```
<jboss_install_dir>/bin/shutdown.sh -s jnp://<hostname>:1099
```

where the `-s` option allows you to specify which instance of JBoss to shut down. Port 1099 is the jnp port for the default instance, where `jnp` is the socket/RMI-based protocol used by JBoss.
7. When JBoss is successfully installed, continue with “[Step II. Setting Up the Environment](#).”

## Step II. Setting Up the Environment

In this section, you will create a directory for Content Server, create a new JBoss instance, and test the new instance.

### Note

If you are installing a cluster, complete the steps below for each cluster member. The cluster must be vertical.

1. Create a directory for Content Server (for example `CS70`):  

```
mkdir CS70
```
2. Create a new JBoss instance:  

```
cd <jboss_install_dir>/server/
```

As this instance has all the properties of a JBoss **all** instance, copy the **all** instance folder:  

```
cp -R all fatwire
```

In this guide, we will call the new instance `fatwire`. However, you may name the instance as you wish.
3. In [Table 2, on page 20](#), find the data source information for the database you will be using, and place the required files in:  

```
<jboss_install_dir>/server/<instance name>/lib
```

**Table 2:** Data Source Information

Database Driver	Parameter	Value
JTDS (third-party driver)	DriverClass	net.sourceforge.jtds.jdbcx. JtdsDataSource
	Required .jar files	jtds-1.2.jar
	URL	jdbc:jtds:sqlserver:// <server>:<dbport>/<dbname>  <b>Ex:</b> jdbc:jtds:sqlserver:// 10.120.14.22:1433/CS70
DB2	DriverClass	com.ibm.db2.jcc.DB2Driver
	Required .jar files	db2jcc.jar, db2cc_license_cu.jar
	URL	jdbc:db2://<hostname>:<dbport>/ <dbname>  <b>Ex:</b> jdbc:db2://10.120.16.30:50001/ CS70
Oracle	DriverClass	oracle.jdbc.driver.OracleDriver
	Required .jar files	ojdbc14.jar
	URL	jdbc:oracle:thin:@// <hostname>:1521/<dbname>  <b>Ex:</b> jdbc:oracle:thin:@// godzilla.fatwire.com:1521/CS70

**Note**

If you are using an Oracle database and require text attributes greater than 2000 characters, you will have to set `cc.bigtext` to CLOB. To support CLOB, use Oracle database 9.2.0.6 (or a higher supported version). Also use Oracle 10g drivers. (CLOB is not supported for lower database versions and for Oracle drivers 9x [thin, type 4].)

You will set `cc.bigtext` to CLOB when you run the Content Server installer (as explained in [“Running the Installer,”](#) on page 36.)

4. Create a new data source file:
  - a. Create a new data source file named `<database_type>-ds.xml` in `<jboss_install_dir>/server/<instance_name>/deploy`
  - b. Paste in the XML code shown below:
 

```
<?xml version="1.0" encoding="UTF-8"?>
<datasources>
  <local-tx-datasource>
    <jndi-name>jdbc/csDataSource</jndi-name>
    <connection-url><URL> </connection-url>
    <driver-class><Driver Class></driver-class>
    <user-name><User></user-name>
    <password><Password></password>
  </local-tx-datasource>
</datasources>
```
  - c. Replace the `<URL>` and the `<Driver Class>` text fragments with the URL and driver class selected from [Table 2, on page 20](#).
  - d. Replace the `<User>` and `<Password>` text fragments with the user information that you connect to your database with.
5. Open the file `<your_server_name>\deploy\jbossweb-tomcat55.sar\conf\web.xml`, and uncomment the following section (that is, delete the two comment lines shown in bold type below):
 

```
<!-- Uncomment to use jdk1.5 features in jsp pages
<init-param>
  <param-name>compilerSourceVM</param-name>
  <param-value>1.5</param-value>
</init-param>
-->
```
6. Test the new instance by starting it and connecting to the “JBoss Management Console.” Do the following:
  - a. Ensure that the default instance is shut down before trying to start the new one. The instance needs to be shut down if you can view `http://<hostname>/web-console/` in your browser. Use the following command to shut down the default instance:
 

```
<jboss_install_dir>/bin/shutdown.sh -s jnp://<hostname>:1099
```
  - b. Start the new instance with the following command:
 

```
<jboss_install_dir>/bin/run.sh -c fatwire
```
  - c. Access the “JBoss Management Console” using a web browser to confirm that JBoss is running:
 

```
http://<hostname>:8080/web-console/
```
7. (Optional) If you wish to run multiple instances of JBoss simultaneously, continue with [“Step III. Setting Up Multiple Instances of JBoss to Run Simultaneously,” on page 22](#).

## Step III. Setting Up Multiple Instances of JBoss to Run Simultaneously

### Note

If multiple JBoss instances will be run simultaneously, you must ensure that no two instances are using the same port. Complete the steps below for all JBoss instances that must run simultaneously—**regardless of the applications they serve**.

1. Shut down all JBoss instances:

```
<jboss_install_dir>/bin/shutdown.sh -s jnp://<hostname>:1099
```

2. No two JBoss instances can use the same ports. Change the ports as follows:

- a. Change to the `/conf` directory of your instance:

```
cd <jboss_install_dir>/server/<instance_name>/conf
```

- b. Open the `jboss-service.xml` file in a text editor and find the “Service Binding” section. Look for the following XML code:

```
<mbean
  code="org.jboss.services.binding.ServiceBindingManager"
  name="jboss.system:service=ServiceBindingManager">
  <attribute name="ServerName">ports-01</attribute>
  <attribute name="StoreURL">${jboss.home.url}/docs/
    examples/binding-manager/sample-bindings.xml</attribute>
  <attribute name="StoreFactoryClassName">
    org.jboss.services.binding.XMLServicesStoreFactory
  </attribute>
</mbean>

-->
```

The `StoreURL` attribute holds the path to a file, which by default contains four different port configurations. These configurations are named `ports-default`, `ports-01`, `ports-02`, and `ports-03`.

- To access these configurations, uncomment the code above (by deleting the “close comment” tag `-->`) at the end of the code and inserting it above the opening `<mbean` tag).
- The `ServerName` attribute holds the value of the port configuration that this instance will be using. To use a configuration other than `ports-01`, change the value according to the table in [Table 1, on page 18](#).
- To view which ports each configuration uses, view the `<jboss_install_dir>/docs/examples/binding-manager/sample-binding.xml` file.

3. If the instances are not already running, start them with the command:

```
<jboss_install_dir>/bin/run.sh -c <instance_name>
```

4. Test that two instances can be run simultaneously by connecting your browser to `http://<hostname>:<new_instance_port>/web-console/` to display the “JBoss Management Console.” If the `ports-01` configuration is being used, the port will be `8180`.



## Part 3

# Web Server

This part shows you how to integrate Apache Web Server with JBoss, a requirement if you are creating a clustered installation or using SSL.

This part contains the following chapter:

- [Chapter 4, “Installing and Configuring Apache Web Server”](#)



## Chapter 4

# Installing and Configuring Apache Web Server

This chapter contains information about integrating JBoss with Apache 2.0.x and configuring JBoss to run over SSL through Apache Web Server. It contains the following sections:

- [Integrating JBoss with Apache 2.0.x](#)
- [Configuring JBoss for SSL through Apache 2.0.x](#)

### Note

The steps in this chapter are required only if you are creating a clustered installation or you are planning to use SSL through Apache Web Server.

## Integrating JBoss with Apache 2.0.x

This section shows you how to configure Apache 2.0.x to integrate with JBoss.

### Note

Complete this section if you are setting up a Content Server cluster or using SSL through Apache Web Server.

- For clustered installations, this section is a pre-requisite for the load balancing procedure you will perform (“[Balancing Load with mod\\_jk](#),” on page 57).
- For SSL, this section is also a pre-requisite for the next section, “[Configuring JBoss for SSL through Apache 2.0.x](#),” on page 29.

1. Install Apache 2.0.x.
2. Set `$APACHE2_HOME` to the directory in which Apache was installed.
3. Download and compile the newest release of `mod_jk`.
4. After downloading `mod_jk`, untar it using the commands:
 

```
gunzip jakarta-tomcat-connectors-1.2.14.1-src.tar.gz
tar -xvf jakarta-tomcat-connectors-1.2.14.1-src.tar
```
5. Go to the directory `jakarta-tomcat-connectors-<version>-src/jk/native`:
 

```
cd jakarata-tomcat-connectors-1.2.14.1-src/jk/native
```
6. Configure and compile the `mod_jk.so` file:
 

```
./configure --with-apxs=$APACHE2_HOME/bin/apxs
make
cd apache-2.0
$APACHE2_HOME/bin/apxs -n jk -i mod_jk.so
```

The last command will automatically place the `mod_jk.so` file into your `$APACHE2_HOME/modules` directory.
7. Create `workers.properties` in `$APACHE2_HOME/conf` with the following contents:
 

```
ps=/
worker.list=jboss

worker.jboss.port=<ajp port>
worker.jboss.host=<hostname>
worker.jboss.type=ajp13
worker.jboss.lbfactor=1
```

(The `ajp port` can be found in `<jboss_install_dir>/server/<instance name>/deploy/jbossweb-tomcat55.sar/server.xml` under AJP 1.3 Connector. The default value is 8009.)
8. Edit `$APACHE2_HOME/conf/httpd.conf` by adding the following to the `LoadModules` section:
 

```
LoadModule jk_module modules/mod_jk.so
```

```

Before Section 3:
#
# Mod_jk settings
#

    JkWorkersFile "conf/workers.properties"
    JkLogFile "logs/mod_jk.log"
    JkLogLevel info
    JkMount /cs/* jboss

# End of mod_jk settings

```

9. Test `httpd.conf` with the following:

```

cd $APACHE2_HOME/bin
apachectl configtest

```

You will see a warning message and then “Syntax OK”. Ignore the warning.

10. Start JBoss:

```

<jboss_install_dir>/bin/run.sh -c <instance name>

```

11. Start Apache:

```

$APACHE2_HOME/bin/apachectl start

```

12. Load `http://<hostname>/cs/` to verify that the `/cs` directory is displayed.

## Configuring JBoss for SSL through Apache 2.0.x

1. Generate a self-signed certificate:

- a. Edit `openssl.cnf` (usually in `/etc/ssl/`) by adding the following line:

```

dir = $APACHE2_HOME/demoCA

```

- b. Set up the environment for the certificate authority certificate:

```

cd $APACHE2_HOME
mkdir demoCA
cd demoCA
mkdir certs
mkdir crl
touch index.txt
mkdir newcerts
echo "01" > serial
mkdir private
cd ..

```

- c. Generate the certificate authority key (must be done only the first time the certificate is created):

```

openssl genrsa -out ca.key 1024

```

- d. Create a self-signed certificate authority certificate:

```

1) Enter the command:
openssl req -new -x509 -key ca.key -out demoCA/cacert.pem

```

- 2) You will be prompted to fill in the following fields:
- Country Name (2 letter code):**  
**State or Province Name (full name):**  
**Locality Name (eg, city):**  
**Organization Name (eg, company):**  
**Organizational Unit Name (eg, section):**  
**Common Name (eg, your name or your server's hostname):**  
**Email Address:**
- e. Create the keystore by entering the following commands (shown in bold type) and filling in the fields (in quotes) with the information you used in the previous step:
- ```
keytool -genkey -alias serverapp -dname "cn=<common name>,
ou=<organizational unit>, o=<organization>, L=<locality>,
S=<state>, C=<country>" -storepass fatwire -keypass fatwire
-keystore newcerts
```
- f. Export the keys for the keystore:
- ```
keytool -keystore newcerts -certreq -alias serverapp
-keypass fatwire -storepass fatwire -file serverapp.crs
```
- g. Sign the exported key:
- 1) Enter the command:

```
openssl ca -in serverapp.crs -out serverapp.pem -keyfile
ca.key
```
  - 2) When prompted to confirm the information you entered in the previous steps, enter “y” in the following fields:

```
Sign the certificate?
1 out of 1 certificate requests certified, commit?
```
- h. Convert the keys to DER format:
- ```
openssl x509 -in serverapp.pem -out serverapp.der -outform
DER
```
- i. Import the certificate authority certificate and the keys into the keystore:
- 1) Enter the command:

```
keytool -keystore newcerts -alias fatwirecs -keypass
fatwire -storepass fatwire -import -file demoCA/
cacert.pem
```
  - 2) The certificate is displayed. Type **yes** next to “Trust this certificate?”

```
Valid from: Mon Apr 11 04:58:46 PDT 2005 until: Wed May
11 04:58:46 PDT 2005
Certificate fingerprints:
MD5: 80:B1:67:7A:46:17:3A:31:4D:23:38:57:47:19:2B:C5
SHA1:C7:AB:55:B3:9D:8F:DF:4A:BE:C2:48:11:8D:51:F8:17:
35:2E:4C:B3
Trust this certificate?:
```

2. Edit the `ssl.conf` file (located in `$APACHE2_HOME/conf/ssl.conf`) as shown below:
  - a. Fill in the following fields:

#### Note

By default, the SSL port is 443. If this server runs simultaneously with another Apache or Apache 2 server, the SSL port will need to be changed from 443, to some other unused port.

```
Listen <SSL_port>
<VirtualHost _default_:<SSL_port>
ServerName <hostname>:<SSL_port>
ServerAdmin you@example.com
```

- b. Edit the following lines to point to the certificate and key files:

```
SSLCertificateFile <$APACHE2_HOME>/demoCA/cacert.pem
SSLCertificateKeyFile <$APACHE2_HOME>/ca.key
```
3. Restart the Apache web server
4. Access the following URL: `http://<hostname>:<SSL_port>/web-console/`
5. When prompted, accept the certificate.
6. Once you accept the certificate, the “JBoss Management Console” is displayed, confirming that JBoss is running over SSL.



## Part 4

# Content Server

This part shows you how to install Content Server, verify the installation, and complete any other post-installation steps that apply to your system. This part contains the following chapter:

- [Chapter 5, “Installing and Configuring Content Server”](#)



## Chapter 5

# Installing and Configuring Content Server

This chapter explains how to install and test Content Server on JBoss Application Server as a single-server or a clustered installation. This chapter contains the following sections:

- [Installing Content Server](#)
- [Post-Installation Steps](#)

## Installing Content Server

After completing [Steps I – IV.1](#) in the “[Installation Quick Reference](#),” on [page 7](#), 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 deploys the CS application. 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.

If you are using an Oracle database and require text attributes greater than 2000 characters, you must set the `cc.bigtext` property to CLOB after 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 performed [Steps I – IV.1](#) in the “[Installation Quick Reference](#),” on [page 7](#).
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 in each screen. If you encounter problems during the installation process, consult the online help for possible causes and solutions.

5. If you are using an Oracle database and require text attributes greater than 2000 characters, you must set the `cc.bigtext` property to CLOB. When the installer displays the “Installation Actions” pop-up window, complete step 1 displayed in the window, then 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 3 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 installation process completes successfully, perform the steps in this section, as required for your configuration:

- [A. Setting File Permissions \(Unix Only\)](#)
- [B. Verifying the Installation](#)
- [C. Integrating with LDAP \(Required for Portal Installations\)](#)
- [D. Configuring JBoss Portal for Content Server \(Required for Portal Installations\)](#)
- [E. Setting Up a Content Server Cluster \(Optional\)](#)
- [F. 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 JBoss.

### B. Verifying the Installation

Verify the installation by logging in to Content Server as the administrator. This section covers the following types of installations:

- [Web Installations](#)
- [Portal Installations](#)

#### Web Installations

##### 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:



The login form for FatWire Content Server 7. It features a blue header with the FatWire logo and 'Content Server 7'. Below the header are two input fields: 'User Name:' and 'Password:'. Underneath these fields are two buttons: 'login' and 'reset'. At the bottom left, there is a circular icon with a person silhouette and two links: 'Forgot your password?' and 'Don't have an account?'. At the bottom right, under the heading 'Installed Products:', a list of installed components is shown: Content Server 7.0, CS-Direct 7.0, CS-Direct Advantage 7.0, CS-Engage 7.0, and Commerce Connector 7.0.

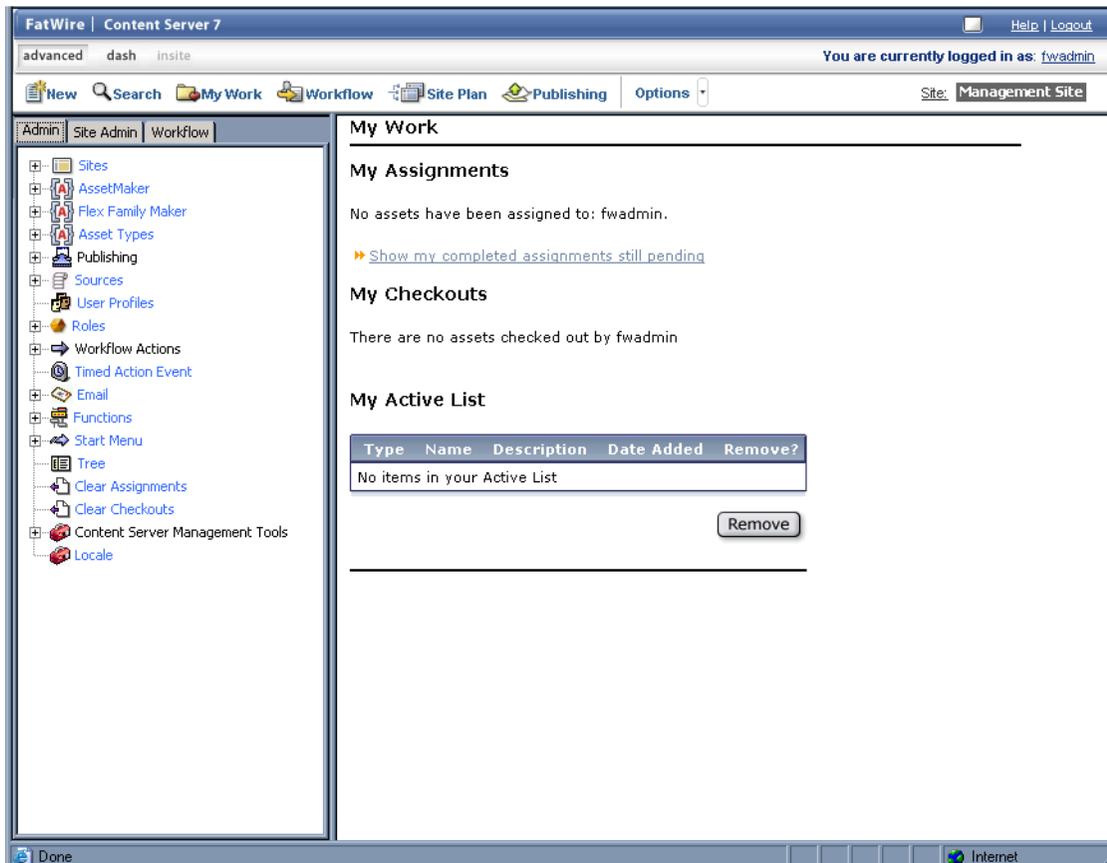
2. Enter the following credentials:

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

3. Click **Login**.

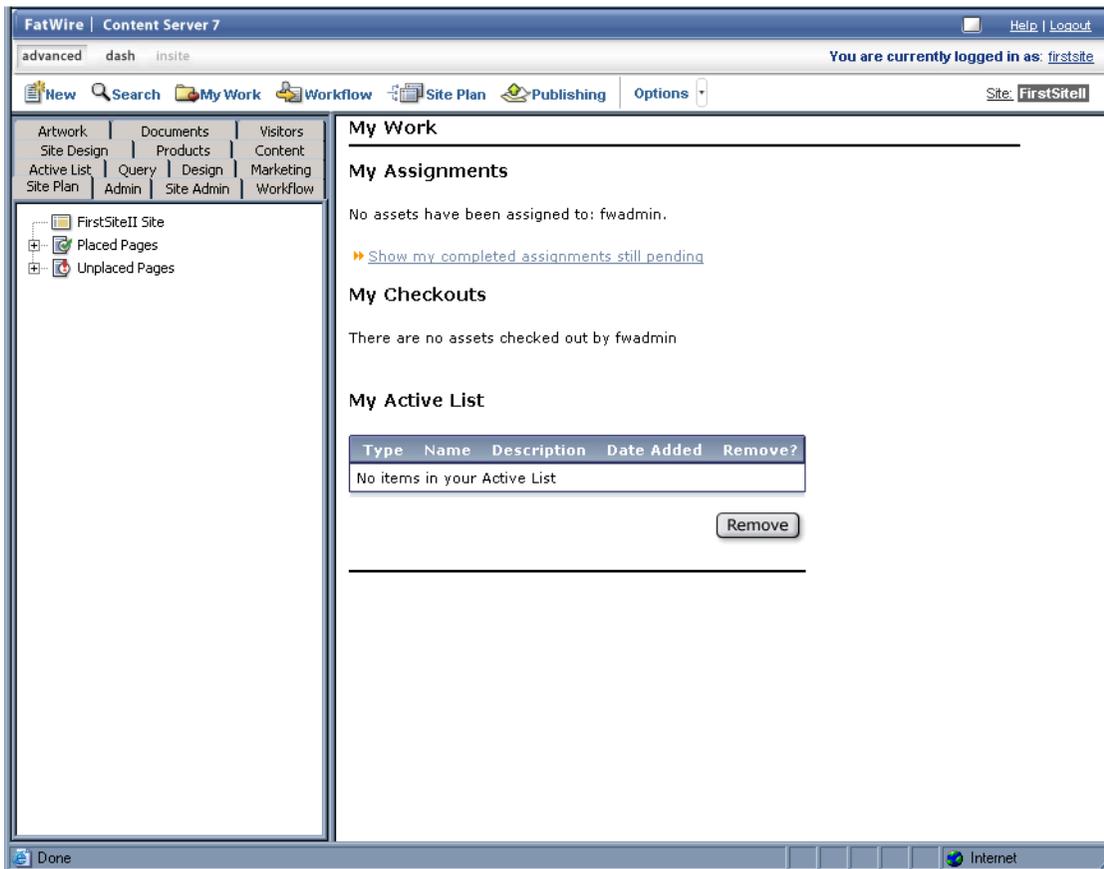
Depending on whether you installed sample sites, one of the following happens:

- 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.



The screenshot shows the FatWire Content Server 7 management interface. The top navigation bar includes 'advanced', 'dash', and 'insite' tabs, along with 'Help' and 'Logout' links. A status message indicates 'You are currently logged in as: fwadmin'. The main interface is divided into a left sidebar and a main content area. The sidebar contains a tree view of administrative functions such as 'Sites', 'AssetMaker', 'Flex Family Maker', 'Asset Types', 'Publishing', 'Sources', 'User Profiles', 'Roles', 'Workflow Actions', 'Timed Action Event', 'Email', 'Functions', 'Start Menu', 'Tree', 'Clear Assignments', 'Clear Checkouts', 'Content Server Management Tools', and 'Locale'. The main content area is titled 'My Work' and contains three sections: 'My Assignments' (with a message 'No assets have been assigned to: fwadmin.' and a link 'Show my completed assignments still pending'), 'My Checkouts' (with a message 'There are no assets checked out by fwadmin'), and 'My Active List' (with a table header 'Type Name Description Date Added Remove?' and a message 'No items in your Active List' and a 'Remove' button). The bottom of the window shows a Windows taskbar with 'Done' and 'Internet' icons.

- 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.

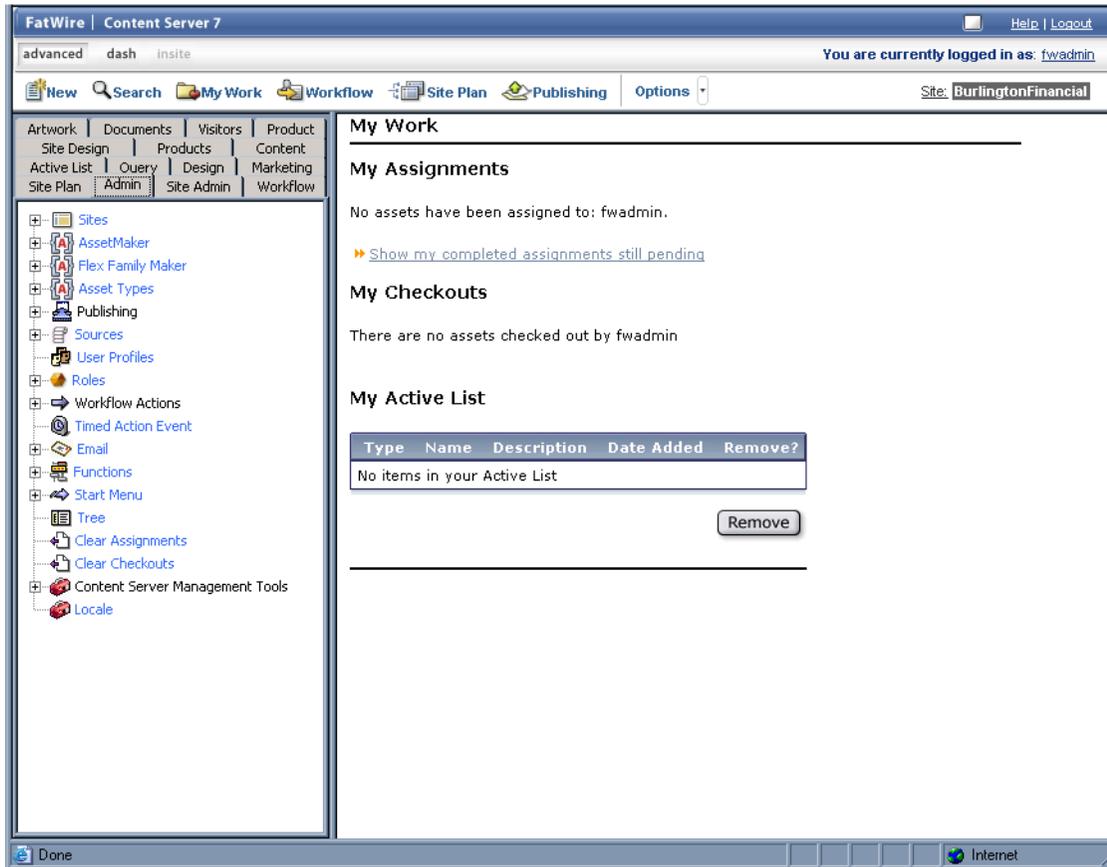
**You have logged in as fwadmin**

Select a site that you want to work on:

| Site                                | Description          | Assigned Role                                                                                                                                                                                                                                                                      |
|-------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">BurlingtonFinancial</a> | Burlington Financial | GeneralAdmin, ArtworkEditor, Approver, ContentEditor, WorkflowAdmin, Analyst, Pricer, Marketer, SiteAdmin, Checker, MarketingAuthor, MarketingEditor, Author, Editor, ContentAuthor, Expert, ProductAuthor, ProductEditor, DocumentAuthor, DocumentEditor, Designer, ArtworkAuthor |
| <a href="#">FirstSiteII</a>         | FirstSite Mark II    | ArtworkEditor, GeneralAdmin, Approver, ContentEditor, WorkflowAdmin, Analyst, Pricer, Marketer, SiteAdmin, Checker, MarketingAuthor, MarketingEditor, Author, Editor, ContentAuthor, Expert, ProductAuthor, ProductEditor, DocumentAuthor, ArtworkAuthor, Designer, DocumentEditor |
| <a href="#">GE Lighting</a>         | GE Lighting          | Designer, SiteAdmin, WorkflowAdmin, GeneralAdmin                                                                                                                                                                                                                                   |

[\[Log in again\]](#)

When you select a site, you are logged in to that site.



## Logging in to the Dashboard Interface

1. Point your browser to the following URL:

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

Content Server displays the Dashboard interface login page.



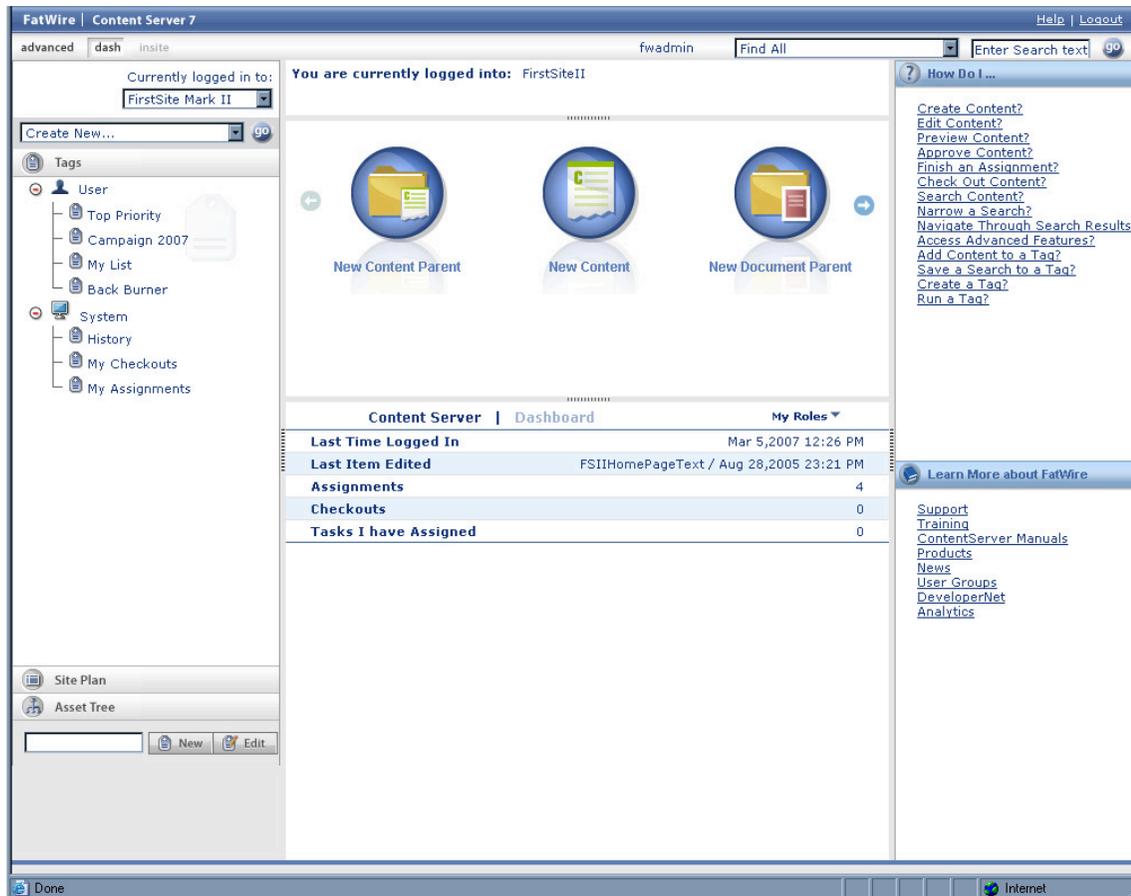
2. Enter the following credentials:

- 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 Dashboard interface until at least one site exists on your system.
- If you installed one sample site, you are logged in to that site.



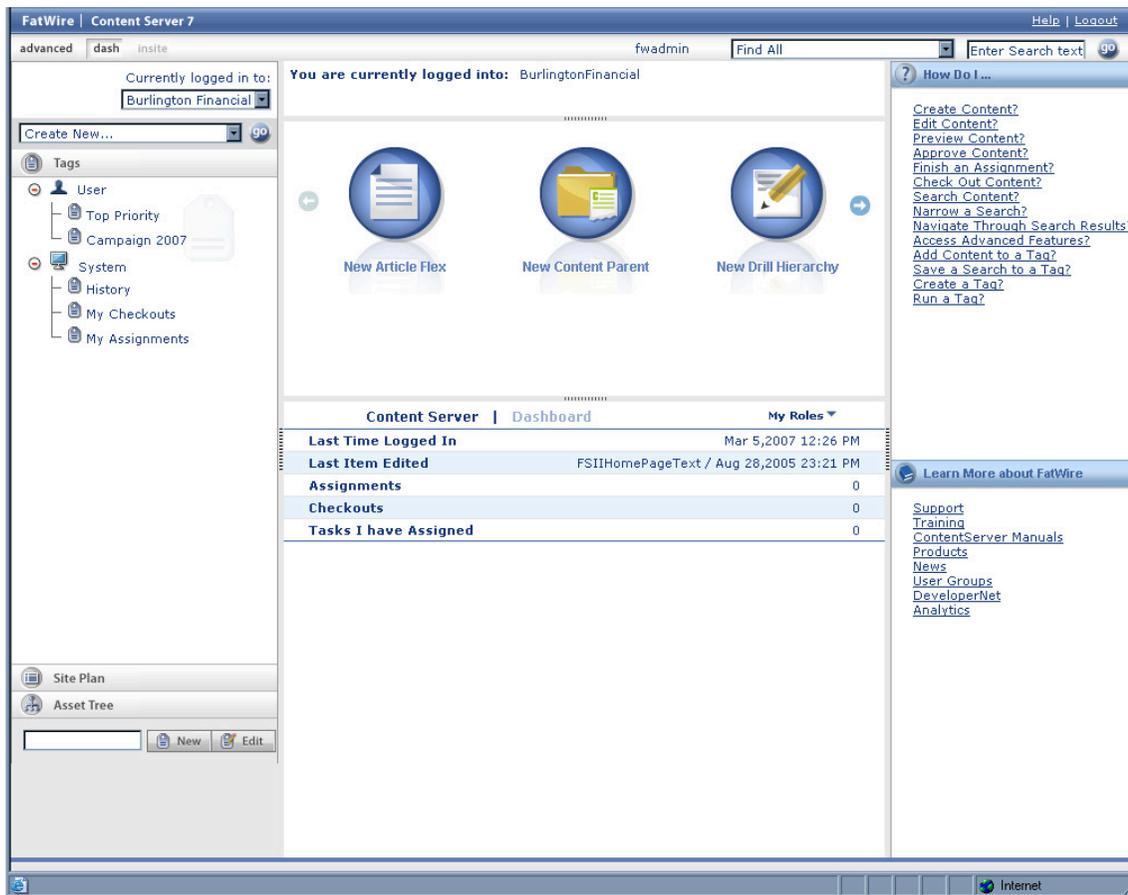
- If you installed more than one sample site, Content Server displays the “Select Site” screen. In such case, select the sample site you wish to log in to.

You are currently logged in as 'fwadmin'  
Select a site that you want to work on:

| Select                           | Name                | Description          | Roles                                                                                                                                                                                                                                                                              |
|----------------------------------|---------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="radio"/> | BurlingtonFinancial | Burlington Financial | ArtworkEditor, GeneralAdmin, Approver, ContentEditor, WorkflowAdmin, Analyst, Pricer, Marketer, SiteAdmin, Checker, MarketingAuthor, MarketingEditor, Author, Editor, ContentAuthor, Expert, ProductAuthor, ProductEditor, DocumentAuthor, DocumentEditor, Designer, ArtworkAuthor |
| <input type="radio"/>            | GE Lighting         | GE Lighting          | Designer, SiteAdmin, WorkflowAdmin, GeneralAdmin                                                                                                                                                                                                                                   |
| <input type="radio"/>            | FirstSiteII         | FirstSite Mark II    | ArtworkEditor, GeneralAdmin, Approver, ContentEditor, WorkflowAdmin, Analyst, Pricer, Marketer, SiteAdmin, Checker, MarketingAuthor, MarketingEditor, Author, Editor, ContentAuthor, Expert, ProductAuthor, ProductEditor, DocumentAuthor, ArtworkAuthor, Designer, DocumentEditor |

Select Site

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, starting with “[C. Integrating with LDAP \(Required for Portal Installations\)](#),” on page 43.

## Portal Installations

Verify the installation by accessing the portal interface in a browser:

```
http://<IP Address>:<Port>/portal
```



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

### C. Integrating with LDAP (Required for Portal Installations)

LDAP integration is mandatory for portal installations, and optional for web installations. If you need to perform LDAP integration, you must do the following:

1. Set up a supported LDAP server of your choice. For instructions, see *Configuring Third-Party Software*.
2. Run the LDAP integration program included on the Content Server CD.

For more information, see the *LDAP Integration Guide*.

## D. Configuring JBoss Portal for Content Server (Required for Portal Installations)

In this section, you will complete the following steps:

1. [Configuring Content Server for LDAP Authorization](#)
2. [Setting Up the JBoss Portal Pages and Portlets](#)

### Note

The examples in this section are explicitly designed for OpenLDAP. For other LDAP server types, they must be modified to match the type

### 1. Configuring Content Server for LDAP Authorization

By default JBoss Portal uses its own database to authenticate users. However, for Content Server to work with JBoss Portal and allow for single sign-on, LDAP authorization must be configured as a fallback method. When authenticating, JBoss Portal will first refer to its own database, and then to the LDAP database.

### Note

The default portal users are `admin` and `user`. The password for each is the same as the user name.

In the steps below, we assume that you will be connecting to OpenLDAP, but any LDAP server can be configured.

1. Locate the file `login-config.xml` (in `<your server name>/deploy/jboss-portal.sar/conf/`).
2. Open the file in an editor, and replace the following section with the section below. Make sure to change `dc=fatwire` and `dc=com` to values that are appropriate for your system:

```
<application-policy name="portal">
  <authentication>
    <login-module code="org.jboss.portal.identity.auth.IdentityLoginModule" flag="required">
      <module-option name="unauthenticatedIdentity">guest</module-option>
      <module-option name="userModuleJNDIName">java:/portal/UserModule</module-option>
      <module-option name="roleModuleJNDIName">java:/portal/RoleModule</module-option>
      <module-option name="additionalRole">Authenticated</module-option>
      <module-option name="password-stacking">useFirstPass</module-option>
    </login-module>
  </authentication>
</application-policy>
```

Replace with the following section (change the values in bold red type to values that are appropriate for your system):

```

<application-policy name="portal">
  <authentication>
    <login-module code="org.jboss.portal.identity.auth.IdentityLoginModule"
      flag="sufficient">
      <module-option name="unauthenticatedIdentity">guest</module-option>
      <module-option name="userModuleJNDIName">java:/portal/UserModule</module-option>
      <module-option name="roleModuleJNDIName">java:/portal/RoleModule</module-option>
      <module-option name="additionalRole">Authenticated</module-option>
      <module-option name="password-stacking">useFirstPass</module-option>
    </login-module>
    <login-module code="org.jboss.security.auth.spi.LdapExtLoginModule" flag="required" >
    <!-- General LDAP Setup -->
      <module-option name="java.naming.factory.initial">com.sun.jndi.ldap.LdapCtxFactory</
        module-option>
      <module-option name="java.naming.provider.url">ldap://127.0.0.1:389/</module-option>
      <module-option name="java.naming.security.authentication">simple</module-option>

    <!-- OPENLDAP Authentcation -->
      <module-option name="bindDN">cn=Manager,dc=fatwire,dc=com</module-option>
      <module-option name="bindCredential">ldap password</module-option>

    <!-- USER -->
      <module-option name="baseCtxDN">ou=People,dc=fatwire,dc=com</module-option>
      <module-option name="baseFilter">(cn={0})</module-option>

    <!-- GROUP -->
      <module-option name="rolesCtxDN">ou=Groups,dc=fatwire,dc=com</module-option>
      <module-option name="roleFilter">(uniqueMember={1})</module-option>
      <module-option name="roleRecursion">-1</module-option>
      <module-option name="roleAttributeID">cn</module-option>
    </login-module>
  </authentication>
</application-policy>

```

### 3. Import the following ldif file into your LDAP server:

#### a. Create a file named authenticated.ldif:

```

dn: cn=Authenticated,ou=Groups,dc=fatwire,dc=com
description: JBoss Portal Authenticated Group
objectClass: top
objectClass: groupOfUniqueNames
uniqueMember: cn=fwadmin,ou=People,dc=fatwire,dc=com
cn: Authenticated

```

This creates a group and adds **fwadmin** to it. In order for a user to log in to the portal, they must belong to this group (along with any other Content Server roles).

#### b. To add another user, duplicate the following line:

```

uniqueMember: cn=<your user name>,ou=People,
dc=fatwire,dc=com

```

- c. To import into OpenLDAP, use the command:

```
ldapadd -D 'cn=Manager,dc=fatwire,dc=com' -w <password> -f
  authenticated.ldif
```

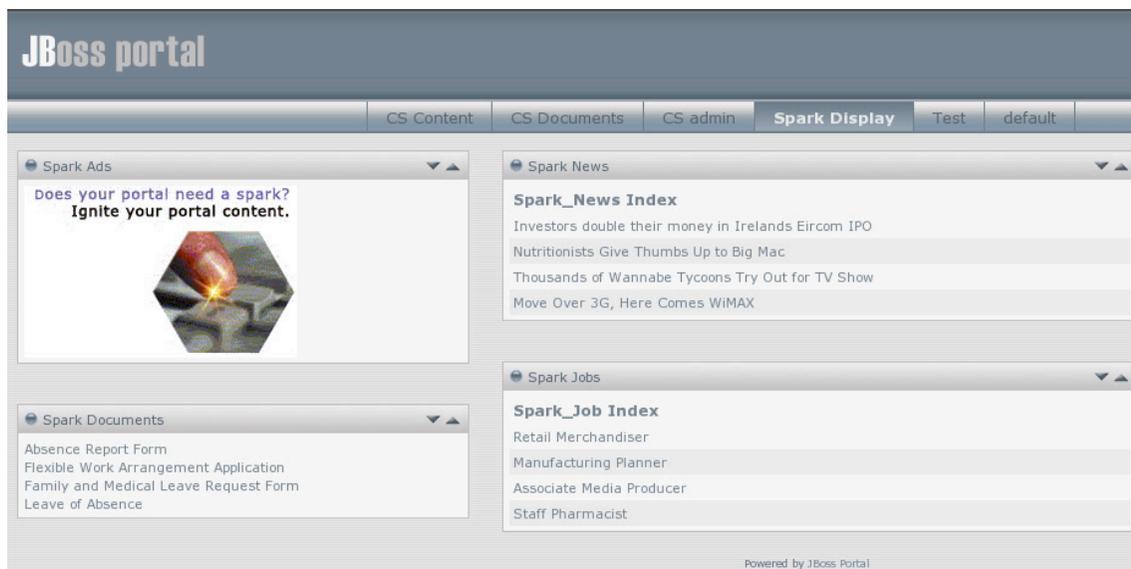
Be sure to replace `dc=fatwire,dc=com` with the correct DN for your domain.

4. Restart JBoss Portal.

## 2. Setting Up the JBoss Portal Pages and Portlets

In the steps that follow, you will add pages on which to display Content Server’s portlets. You will then enable the portlets and place them on the pages. The pages will look similar to the one in [Figure 1](#). Default pages and portlets are named as shown in [Table 3](#).

**Figure 1:** “Spark Display” page



**Table 3:** Default Page and Portlet Names

Page Name	Portlet Name	Page Name	Portlet Name
CS Admin (optional, as it duplicates the CS administrator interface)	ClearAssignments ClearCheckouts ContentDefinition PublishTarget Roles UserPortlet	CS Documents	ActiveDocuments CheckedOutDocuments DocumentAssignments DocumentHistory MyDocuments SearchDocuments SiteInfo
CS Content	ActiveContent CheckedOutContent ContentAssignments ContentHistory CreateContent PublishConsole SearchContent Site Info	Spark Display (optional; cannot be created unless you installed the “Spark” sample site)	SparkAds SparkDocuments SparkNews SparkJobs

**1. Point your browser to the following URL:**

`http://<server>:<port>/portal`

**2. Log in to the portal:**

- 1) In the “User” portlet, click **Standard Login**.**
- 2) In the login screen, enter the following information:**
  - Username: **admin**
  - Password: **admin**
- 3) Click **Login**.**

**JBoss Portal Login**

Username:

Password:

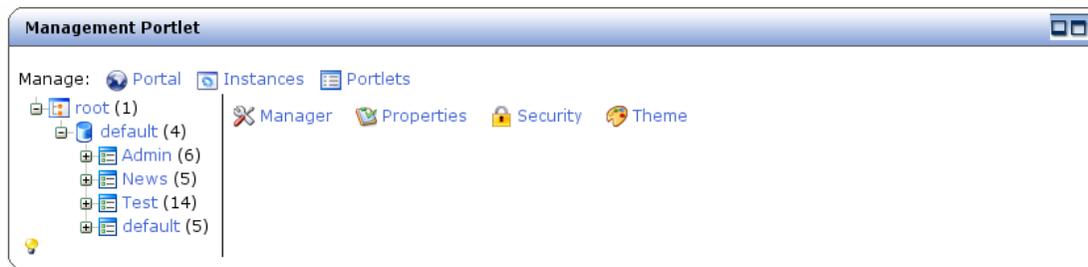
3. Create pages:
  - a. Click the **Admin** tab.



### Note

On the **Admin** tab, you will be using the “Management Portlet.” The rest of the page will not be displayed in the steps below.

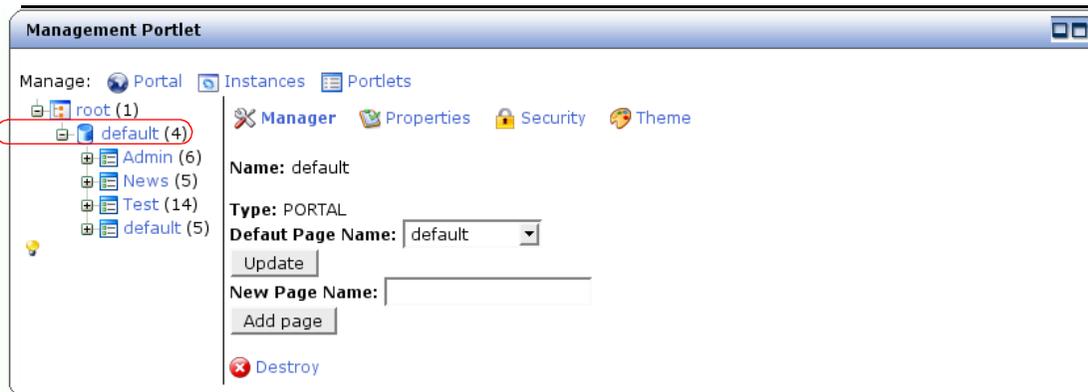
- b. Expand the tree in the “Management Portlet.”



In a default JBoss Portal installation, the tree has three levels:

1. **root**
2. **default**
3. **Admin, News, Test, and default**

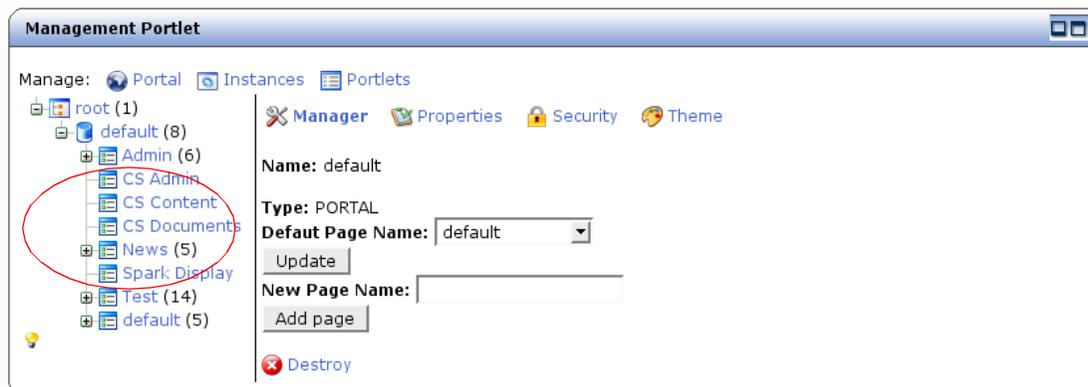
- c. To create pages, click the second level **default**.



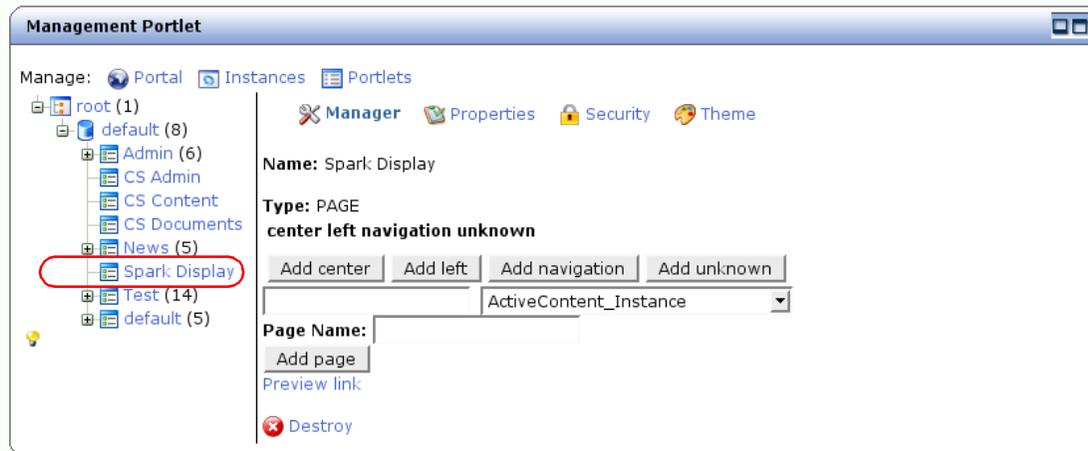
- d. In the “New Page Name” field, enter a name for your new page. If you are creating a default installation, we suggest choosing from the following page names (listed in [Table 3, on page 46](#)): **CS Admin**, **CS Content**, **CS Documents**, and **Spark Display**. Refer to [Table 3](#) for information as to which portlets are displayed on the pages.

- e. Repeat [step d](#) until you have created all the pages you need.

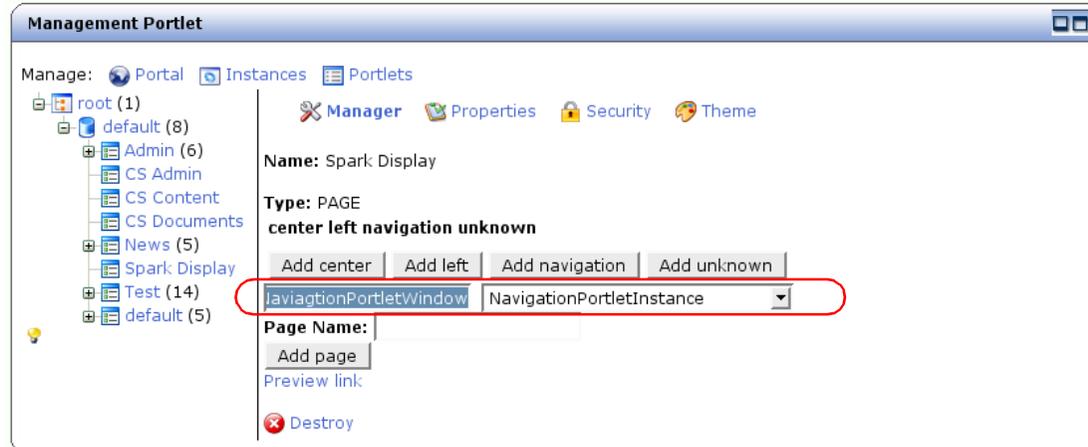
Your pages are listed as level-3 nodes in the tree, as shown in the figure below:



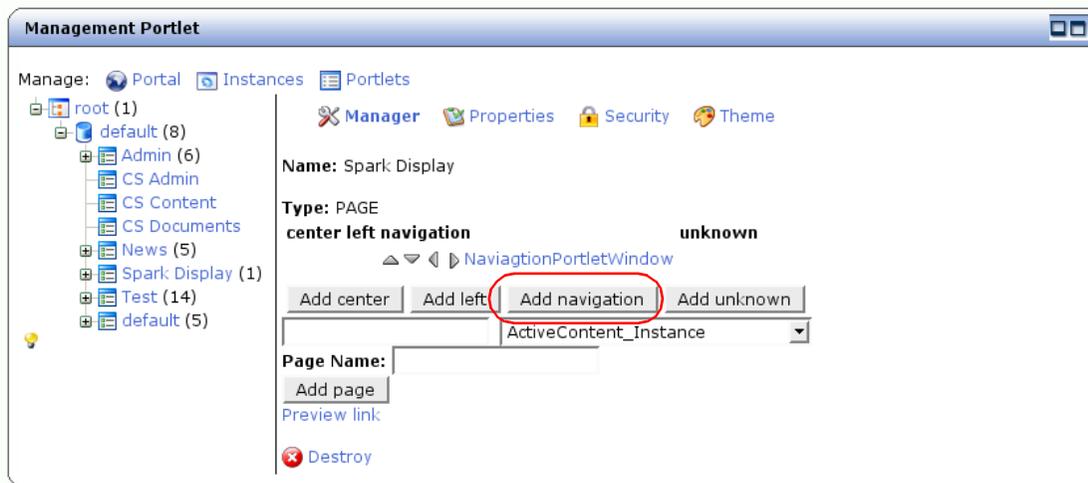
4. Add *navigation* portlets to the pages. Complete [steps a–i](#) (below) for each page that you created in [step 3](#) on [page 48](#).
  - a. From the tree, select one of your newly created pages under the level-2 **default** node. (In this example, the page is **Spark Display**.)



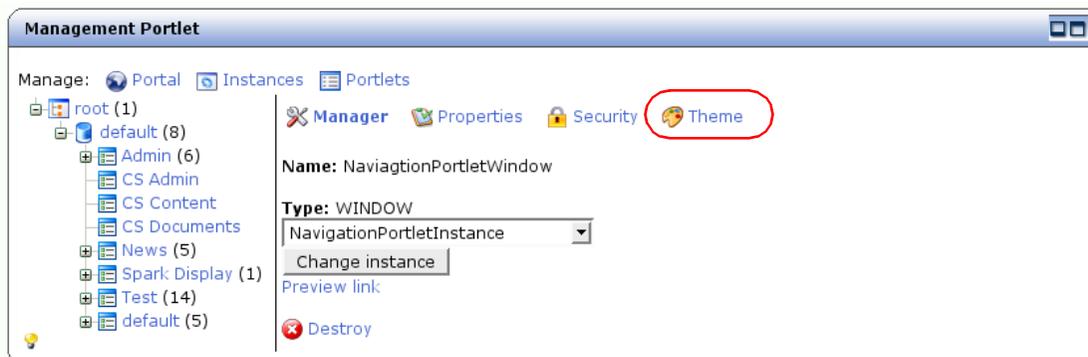
- b. Select **NavigationPortletInstance** from the drop-down menu.
- c. In the neighboring text box, enter the following text: **NavigationPortletWindow**



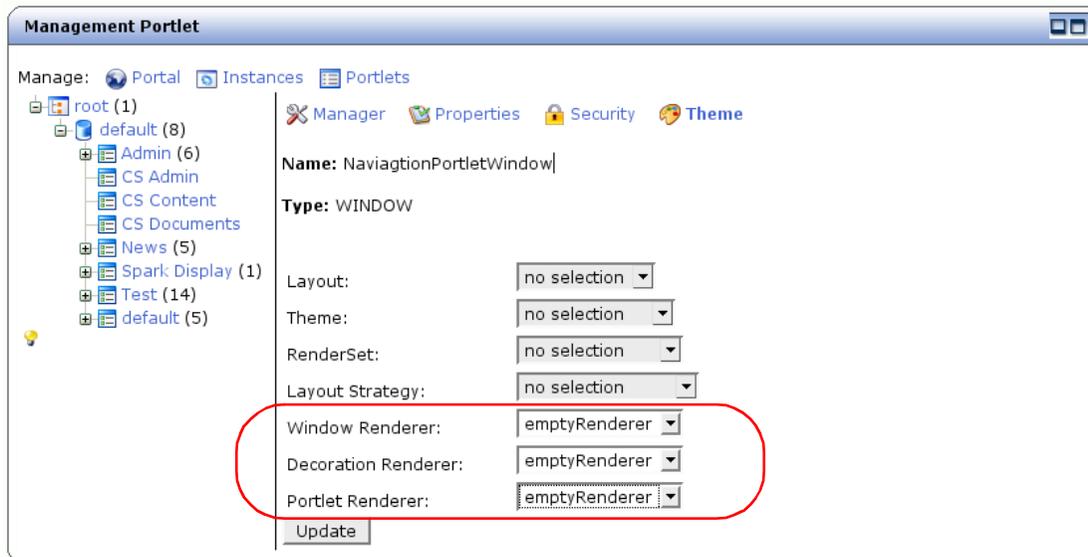
d. Click the **Add navigation** button.



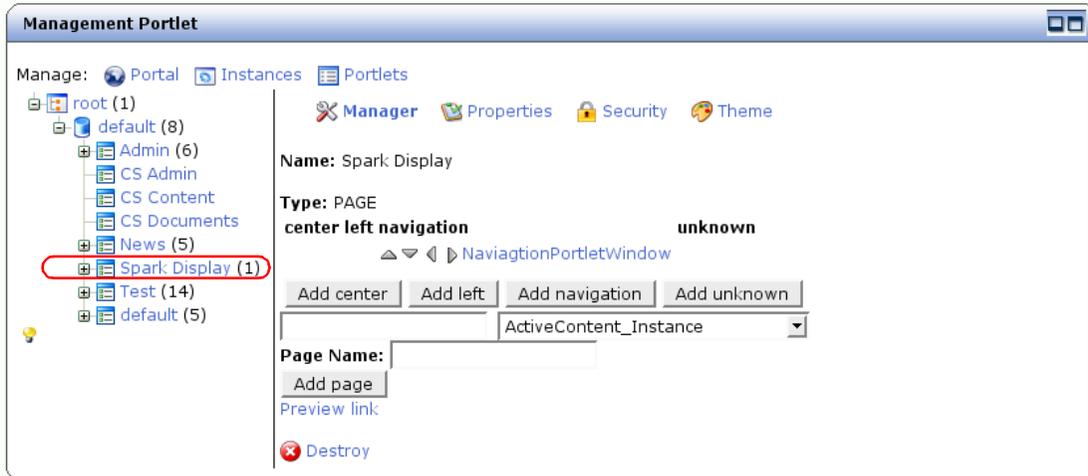
e. Click the **Theme** icon.



- f. Click the new item **NavigationPortletWindow**.
- g. Set the items “Windows Renderer,” “Decoration Renderer,” and “Portlet Renderer” to **emptyRenderer**.



- h. Click **Update**.



- i. As a reminder, repeat [step 4 on page 50](#) to add navigation portlets to the rest of the pages.

5. Add the content management portlets to each page by repeating the following steps as needed until all portlets are placed on the intended pages. If you are creating a default installation, use [Table 3, on page 46](#) to determine which portlets to place on which pages. As an example, we add the “SparkAds” portlet to the “Spark Display” page in the steps that follow:
  - a. In the tree, click the name of a page for which you have created a navigation portlet (in our example, the page is **Spark Display**).
  - b. From the drop-down list, select a portlet **<PortletName>\_Instance** for the page. (In our example, the portlet is **SparkAds\_Instance**.)

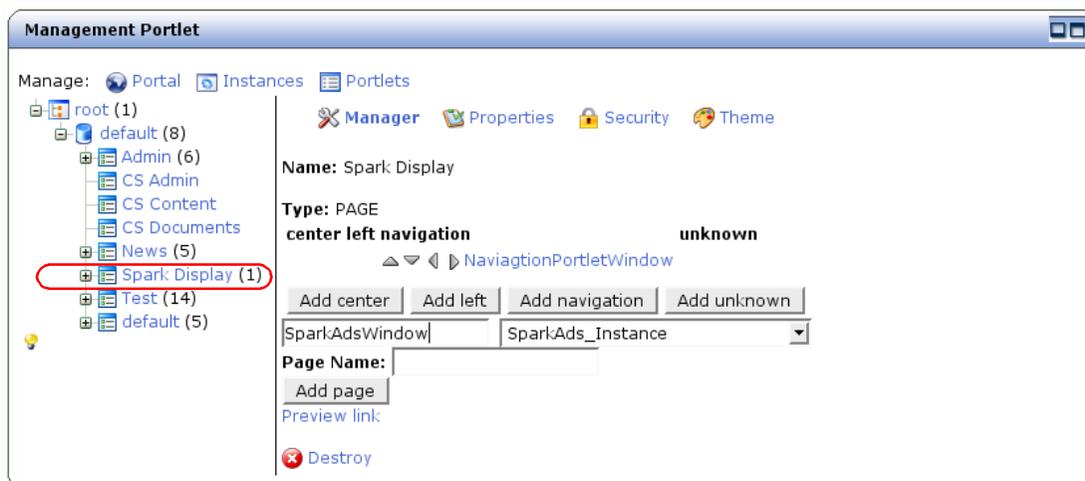
### Note

For the default portal installation, the drop-down menu automatically displays the names of portlets that are available for placement on the pages.

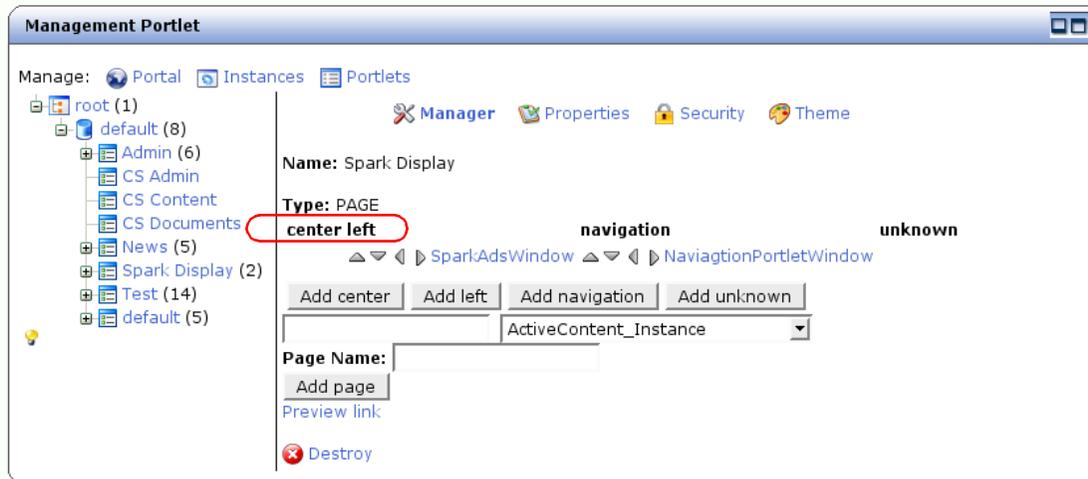
- c. In the neighboring text box, enter the portlet’s name, but replace **\_Instance** with **Window** (**SparkAdsWindow** in this example).

### Note

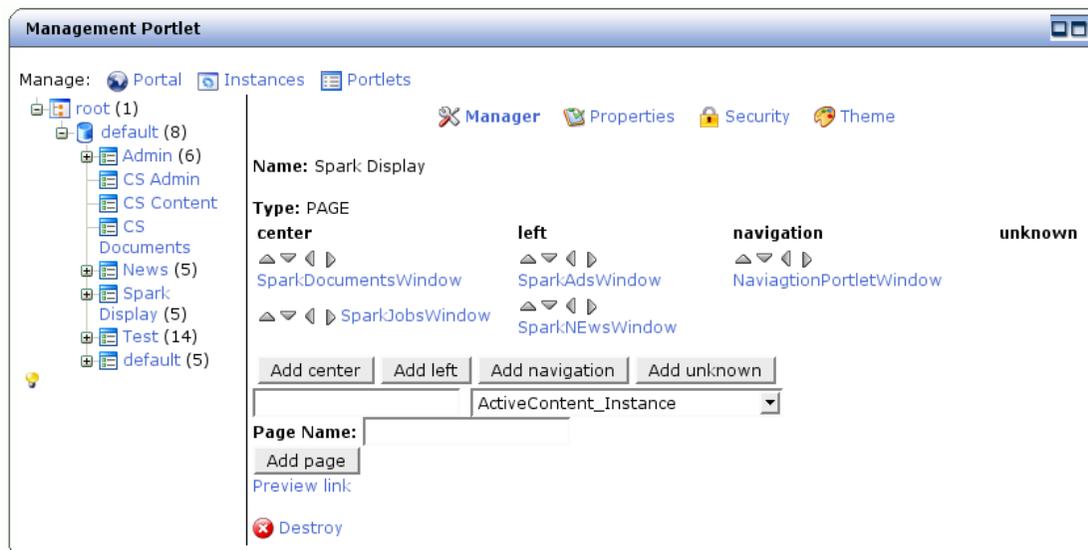
Whereas a portlet is identified in the drop-down menu as **<PortletName>\_Instance**, its name in the text field must be entered as **<PortletName>Window**.



- d. Click the **Add Left** button (or **Add center** button depending on where you want the portlet to be displayed).



- e. After all the portlets are added to the page, the page layout specifications will be similar to those below. (In our example, the portlets are SparkDocuments, SparkAds, SparkJobs, and SparkNews.)



- f. To display the completed page, click the **Spark Display** tab (outside the “Management Portlet”).

**Figure 2:** “Spark Display” page



- g. As a reminder, repeat [step 5 on page 53](#) to place the remaining portlets on the rest of the pages.
- If you chose to set up your Content Server installation with the Spark sample site and the default page names ([Table 3, on page 46](#)), you now have four pages:
- Spark Display ([Figure 2, on page 55](#))
  - CS Admin
  - CS Content
  - CS Documents
6. Once all pages are configured, click **Log out** in the “User” portlet.
- JBoss Portal is now ready for use.

## E. Setting Up a Content Server Cluster (Optional)

Before beginning the steps in this section, make sure of the following:

- You are installing a vertical cluster (JBoss application server or portal server instances are installed on the same machine).
- You have already installed and configured an instance of JBoss, and it is running a verified Content Server system.

If the conditions above are satisfied, complete the following steps in this section:

1. [Creating Cluster Members](#)
2. [Balancing Load with mod\\_jk](#)

### 1. Creating Cluster Members

1. Create a new JBoss instance and Content Server installation directory by completing “[Step II. Setting Up the Environment](#),” on page 19.
2. Ensure that the port settings of the new instance are unique across the cluster members. Follow the steps in “[Step III. Setting Up Multiple Instances of JBoss to Run Simultaneously](#),” on page 22.
3. Run the Content Server installer on the newly created JBoss instance (by executing either `csInstall.bat` or `csInstall.sh`). Perform the steps exactly as you performed them when installing the first Content Server instance, but with the following exceptions:
  - a. In the “Installation Directory and License File” screen, select the Content Server directory that you created in [step 1](#) of this section.
  - b. In the “Clustering” screen, select **Cluster Member**.
  - c. In the “Content Server Shared File System” screen, enter the path to the shared file system of the primary cluster member.
  - d. In the “Content Server URL Parameters” screen, use the IP address and port that you set in [step 2](#) for this application server instance.
  - e. In the “Content Server Application Deployment” screen, enter the path to the JBoss instance you created in [step 1](#) of this section.
4. For all members of the cluster, edit the `web.xml` file for Content Server so that JBoss will add them to the cluster. Do the following:

Open `<jboss_install_dir>/server/<instance name>/deploy/cs.war/WEB-INF/web.xml` in a text editor, and add the line shown in bold:

```
<web-app>  
<distributable/>  
<servlet>
```

5. Ensure there is a `usedisksync` directory in the `Shared` directory of your primary CS installation (the first member that was created). If `usedisksync` is not already there, then create it with the following command:

```
mkdir <cs_install_dir>/Shared/usedisksync
```

#### Note

To complete the next step, make sure your `X-Display` variable is set.

6. To finalize the clustering process, edit the following properties **for each cluster member** using the Property Editor:
  - a. Run the Property Editor, `propeditor.sh` (or `.bat`), in `<cs_install_dir>`.
  - b. Click **File > Open**, and open the `futuretense.ini` file in your Content Server installation directory.
  - c. Click **Cluster**.
 

Three properties should be displayed on the **Items** tab:

    - `cc.cacheNoSync`: Assign a value of `false`.
    - `ft.sync`: Assign the same value to all members of this cluster.  
**Ex:** `cluster1`
    - `ft.usedisksync`: Set its value to the path to the `usedisksync` directory created in [step 5](#).
7. Verify the newly created cluster member. For instructions, see [“B. Verifying the Installation,” on page 37](#).
8. To create additional cluster members, repeat the steps in this section. Once the cluster is created, continue with the next step, [“2. Balancing Load with mod\\_jk.”](#)

## 2. Balancing Load with mod\_jk

1. Open `<jboss_install_dir>/server/<instance_name>/deploy/jbossweb-tomcat55.sar/server.xml` and add the following attribute to the Engine tag:

```
jvmRoute="node1"
```

#### Note

A cluster member can be given any node name as long as the names are unique across members.

2. In [step 7 on page 28](#), make sure the `workers.properties` in `$APACHE2_HOME/conf` has the following content:

```
ps=/
worker.list=node1, node2, loadbalancer

worker.node1.port=<ajp port1>
worker.node1.host=<hostname>
worker.node1.type=ajp13
worker.node1.lbfactor=1
```

```
worker.node1.cachesize=1
worker.node2.port=<ajp port2>
worker.node2.host=<hostname>
worker.node2.type=ajp13
worker.node2.lbfactor=1
worker.node2.cachesize=1
worker.loadbalancer.type=lb
worker.loadbalancer.balanced_workers=node1,node2
/cs/*=loadbalancer
```

### Note

This configuration supports two cluster members and one load balancer. For each additional cluster member, add the member name to the `worker.list`, `worker.loadbalancer.balanced_workers`, and add the following lines:

```
worker.<member name>.port=<ajp port>
worker.<member name>.host=<hostname>
worker.<member name>.type=ajp13
worker.<member name>.lbfactor=1
worker.node1.cachesize=1
```

Use the names stored in the `server.xml` file mentioned in [step 1](#) of this section.

3. In [step 8 on page 28](#), edit line `JkMount /cs/* jboss` to read:  
`JkMount /cs/* loadbalancer`
4. Restart Apache for the changes to take effect.

## F. Setting Up Content Server for Its Business Purpose

Once you have completed the 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.