Content Server Enterprise Edition

Version: 5.5.1

Installing Content Server With Sun ONE Application Server

Document Revision Date: May 5, 2004

FatWire SOFTWARE

Sun ONE Installation Guide
Document Revision Date: May 5, 2004
Product Version: 5.5.1

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Section 1

Overview

This section provides the information you will need before you begin the installation. It contains the following chapters:

- Chapter 1, “Installation Overview”
- Chapter 2, “Documenting Your Configuration”
- Chapter 3, “Before You Begin”

Chapter 1

Installation Overview

This book explains how to install Content Server with Sun ONE application server.

Note

To ensure a successful installation, please be sure that FatWire installation personnel or a qualified system integrator installs this licensed product on your system.

Content Server is a powerful J2EE application. Installing a J2EE application requires installation expertise with components such as:

- A web server
- A DBMS
- A JDBC driver
- A JVM
- An application server

This book is for professionals who have experience installing J2EE components. This book does not include full installation instructions for these components. Rather, it provides essential guidelines for the components to work with Content Server. For example, this guide does not explain how to install the Oracle DBMS, but does explain how to configure the Oracle DBMS to work with Content Server. When you install the various components, first refer to the related vendor documentation, and use the information in this guide as a supplement.

Please call FatWire Technical Support **before** installing the software.

If you do not have experience installing J2EE components, we strongly recommend contacting the FatWire Installation Services group or an experienced Content Server system integrator.

Be sure that you are using the supported versions of all components before installing software. See the product list at the following URL for the latest list of supported software:

`http://cswww.fatwire.com/products/ContentServer/`

Related Documents

If your application server is not Sun ONE, refer to one of the following manuals:

- *Installing Content Server with IBM WebSphere*
- *Installing Content Server with BEA WebLogic*

Before you install Content Server, FatWire strongly recommends that you read the following document:

- *Content Server Release Notes, located at the following URL:*

  http://e-docs.fatwire.com/CSEE/5.5.1/index.htm

After installing Content Server, you install the Content Server Enterprise Edition applications, which is described in the following manual:

- *Installing the CSEE Content Applications*

If you need to install CS-Satellite on remote hosts to increase performance of your delivery system, see the following manual:

- *Installing CS-Satellite*

What's New in This Release

Sun ONE Application Server now supports clustering on Solaris. For optimal performance, FatWire recommends installing Sun ONE Web Server on a machine separate from the Sun ONE Application Server machines. Both the web server and application server must be tuned. Information pertaining to clustered systems on Solaris is given in the following sections:

"Installation Sequence" on page 11

"Clustered Systems" on page 14

"Sun ONE Application Server Configuration" on page 18

"Content Server Configuration" on page 19

"Install Sun ONE Web Server" on page 25

"Configure the Installation" on page 26

"Install Sun ONE Application Server" on page 44

"Configure Sun ONE Application Server" on page 45

"Update the Web Server" on page 50

Chapter 9, "Installing Content Server in a Cluster on Solaris"

Installation Sequence

You install the components in the following order:

1. If you are using Solaris, install Solaris 8 or Solaris 9 and the latest patch cluster from Sun. If you are using Windows 2000, install SP 2.
2. Install a supported version of the Sun ONE Web Server. If you are using Solaris, see Chapter 4, "Installing Sun ONE Web Server on Solaris" for details. If you are using Windows 2000, see Chapter 5, "Installing Sun ONE Web Server on Windows 2000" for details.
3. Install a supported version of the Oracle DBMS. See Chapter 6, "Installing Oracle" for details.
4. If you are going to use the Type 2 JDBC driver, install the Oracle client on the host(s) that will run the Sun ONE Application Server.
5. Install a supported JDBC driver on the host(s) that will run the Sun ONE Application Server. See Chapter 7, "Installing Sun ONE Application Server" for details.
6. Install a supported version of the Sun ONE Application Server. See Chapter 7, "Installing Sun ONE Application Server" for details.
7. Install Content Server itself. See Chapter 8, "Installing Content Server" for details.
8. If you are installing Content Server in a cluster, see Chapter 9, "Installing Content Server in a Cluster on Solaris."
9. Optionally, install and configure the search engine. See the `readme.htm` file contained in the search engine kit for details.
10. Optionally, install and configure LDAP. See the separate manual, *CSEE Administrator's Guide* for details.
11. Install the CSEE content applications. See the separate manual, *Installing the CSEE Content Applications* for details.
12. Optionally, install and configure CS-Satellite. See the separate manual *Installing CS-Satellite* for details.

After you have completed the installation and configuration of each component, be sure to verify that each component is installed correctly.

User Login Guidelines

Observe the following user login guidelines when installing Sun ONE Web Server, Sun ONE Application Server, and Content Server:

Software	Login as	To do this
Sun ONE Web Server	`root`	Install Sun ONE Web Server
	`root`	Run Sun ONE Web Server
	`root`	Run the iWS administration console
	`admin`	Use the iWS administration console
Sun ONE Application Server	`root`	Install Sun ONE Application Server
	`csuser`	Run Sun ONE Application Server
	`csuser`	Run the iWS administration console
	`admin`	Use the iWS administration console
Content Server	`csuser`	Install Content Server
	`ContentServer`	Use the Content Server Management Tools

Note the following as well:

- The login name `csuser` refers to the user you create on Solaris before you begin (see “Create a Solaris Group and User” on page 22).
- For Windows 2000, you should be logged as a user with admin privileges on the machine on which you are installing the software.
- `ContentServer` is the default account ID presented during installation of Content Server (see “Content Server Configuration” on page 62).

Content Server Systems

You typically install Content Server and its related components on three different systems, with clustering as an option for each:

- Development System
- Management System
- Delivery System

FatWire also recommends a fourth system for testing.

Typical management and delivery systems are illustrated in Figure 1, and described on the pages that follow:

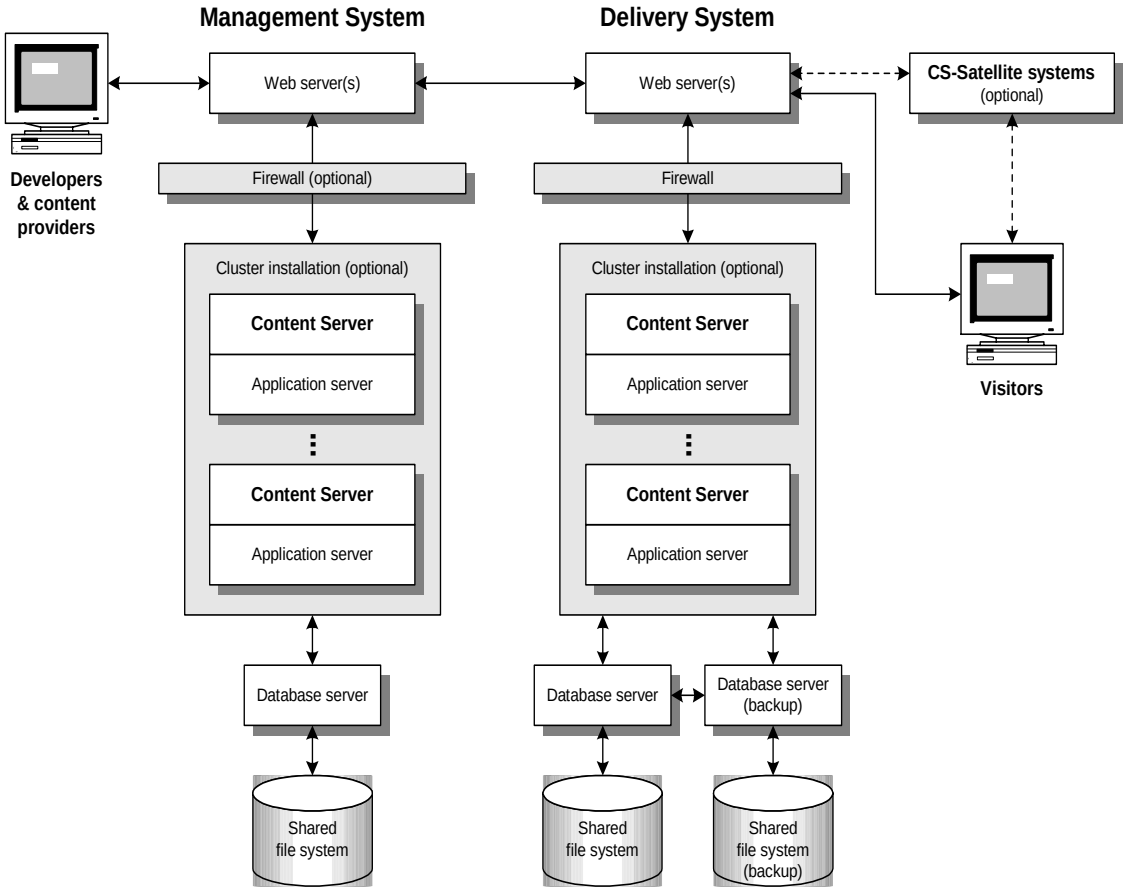

Figure 1: A Typical Management and Delivery Configuration

Development System

In a typical development system, all components except a web server are installed on a single Windows machine. Development systems typically have the following characteristics:

- No failover (clustering) required
- No firewall considerations

Management System

A management system typically has the following characteristics:

- Shared by one or more content providers
- No firewall considerations
- Incorporates growth considerations
- Content management issues (for example, frequent content changes)

A management system that is in use around the clock, seven days a week (for example, at a newspaper web site), may closely resemble a delivery system and typically uses a cluster setup.

Delivery System

A delivery, or public, environment has the following characteristics:

- High-volume access
- Delivery of information, with less frequent content changes and requirements for disk caching
- Firewall considerations
- Load balancing
- Failover (which means a cluster).

Clustered Systems

In a clustered system, the same component is installed on multiple hosts. For example, application servers are often clustered, meaning that each application server is installed on its own machine, as shown in Figure 1. For optimal performance, FatWire recommends installing the web server on a separate machine. Typically, the management system and delivery system are clustered.

Chapter 2

Documenting Your Configuration

There are a lot of details to remember after you've completed the installation. To help your memory, this chapter provides work sheets. Print these sheets now and then record information as you install the components.

The worksheets document the following items:

- Web Server Configuration
- Oracle Configuration
- Sun ONE Application Server Configuration
- Content Server Configuration
- Directory Server Configuration

Web Server Configuration

Table 1: Sun ONE Web Server Configuration

Parameter	You Write the Value in This Column
Version	
Host name	
Host IP address	
HTTP port number	
HTTPS port number (optional)	
Admin port number	
Admin Server user name	
Admin Server password	
Installation directory	

Table 2: Starting and Stopping Sun ONE Web Server on Solaris

Task	Issue the Shell Command
Start Sun ONE Web Server	`$ installdir/https-webhostname/start`
Stop Sun ONE Web Server	`$ installdir/https-webhostname/start`
Start Sun ONE Admin Server	`$ installdir/https-admin/start`
Stop Sun ONE Admin Server	`$ installdir/https-admin/stop`

Table 3: Starting and Stopping Sun ONE Web Server on Windows 2000

Task	Do one of the following:
Start or stop the Sun ONE Web Server	• Start the application server from the Sun ONE shortcut in the Program Menu,
	or:
	1. Open the Administration Server by pointing your browser at: `http://WebServerHostname:AdminServerPortNumber` **2.** From the **Servers** tab, click the **Manage** button. **3.** Click **Server On** or **Server Off**, as appropriate.

Oracle Configuration

Table 4: Oracle Configuration

Parameter	You Write the Value in This Column
Oracle version	
Oracle host name (also known as database server name)	
Oracle host's IP address	
Pathname of Oracle `HOME`	
Oracle port number (also known as listener port)	
Database name (also known as SID)	
User name of Oracle account (typically the DBA account)	
Password of Oracle account (typically the DBA account)	
Content Server tablespace	
Content Server temporary tablespace	
Content Server user account (**not** the same as the DBA account)	
Content Server account password (**not** the same as the DBA account)	

Sun ONE Application Server Configuration

If you are setting up a clustered installation, complete Tables 5 and 6 for each machine that hosts Sun ONE Application Server. For optimal performance, FatWire recommends installing Sun ONE Application Server on a separate machine from the one running Sun ONE Web Server.

Table 5: Sun ONE Application Server Configuration

Parameter	You Write the Value in This Column
Version	
Host name	
Host IP address	
Installation directory	
Admin Server port number	
Administrator user name	
Administrator password	

Table 6: My JDBC Driver Configuration

Parameter	You Write the Value in This Column
JDBC driver pool name	
JDBC driver classname	`oracle.jdbc.driver.Oracle.Driver`
JDBC driver classpath	
URL for thin driver	`jdbc:oracle:thin:@`*`OracleHostName`*`:`*`Port`*`:`*`SID`*
Database CS user name	
Database CS password	
JNDI data source name	
Database server alias (Type 2 driver)	

Starting on Windows

To start the admin server, go to the Program Menu and choose

`Start Application Server` or **`Stop Application Server`**.

To start the administration console, go to the Program Menu and choose:

`Start > Programs > Sun One > Start Admin Console`

Content Server Configuration

If you are setting up a clustered intallation, complete Table 7 for each machine that hosts Content Server.

Table 7: Content Server Configuration

Parameter	You Write the Value in This Column
Content Server version	
Content Server user name	
Content Server password	
Content Server installation directory	
Satellite Server user name	
Satellite Server password	

Directory Server Configuration

Table 8: Directory Server Setup

Parameter	You Write the Value in This Column
Directory server admin port	
Directory server administrator user name	
Directory server administrator password	
Directory manager user name	`CN=DirectoryManager` (default)
Directory manager password	
LDAP server name	
LDAP port number	389 (default)

Chapter 3

Before You Begin

This chapter describes some preliminary steps you should perform before installing components. It contains the following sections:

- Obtain an SSL Certificate (https Only)
- Configure Simple Network Management Protocol (Optional)
- Create a Solaris Group and User

Obtain an SSL Certificate (https Only)

If your Content Server system will serve content over a secure connection, you must obtain an SSL certificate from a certifying authority such as VeriSign. Obtaining the certificate may take some time, so you should submit your request well in advance to ensure you will have it before you install Content Server.

Note that you can complete the installation of the web server, Oracle database, and application server before you obtain and register the SSL certificate. If you plan to use https, however, you cannot install Content Server until after you have registered your SSL certificate on the web server.

Configure Simple Network Management Protocol (Optional)

If you want to use the Sun ONE Enterprise Server's Simple Network Management Protocol (SNMP) monitoring capabilities, make sure that SNMP is properly set up on your system before installing Sun ONE Web Server.

Create a Solaris Group and User

Before you begin installing software, you must create the appropriate Solaris user accounts:

- For a single-server installation in which the web server, application server, and Content Server are installed on one server, you must create one group and user account. Although you install the web server and application server as `root`, you use the Solaris user that you create to run the web server and the application server. You also use this Solaris user to install Content Server.
- For a single-server installation in which the web server is on a separate machine from the application server and Content Server, you must create a Solaris group and user account on both machines.
- For a cluster installation, each application server machine must have a Solaris user account that has the same UID (user ID number) as all the other application server machines in the cluster.

  The user account on the web server machine does not need the same UID as the user accounts for the application servers.

Create a Group

To create a group, complete the following steps:

1. Log in as `root`.
2. Go to the `/usr/bin` directory and invoke `admintool`. A window with the title **Admintool: User** appears on the screen.
3. Choose the **Browse** > **Groups** menu command.
4. In the **Admintool: Groups** window, click **Edit** and choose **Add**.
5. Enter a group name in the **Group Name** field. For example, `csgroup`.
6. Accept the default for **group ID** and leave **Members List** blank.
7. Click **Apply**, then click **OK**.

Create a User

You can create a user while you have the Administration Tool open. If you have closed the `admintool` utility, follow steps 1 and 2 in "Create a Group" above. Otherwise, follow these directions:

1. In **Admintool: Groups** window, choose the **Browse** > **Users** menu command.
2. In the **Admintool: Users** window, click **Edit** and choose **Add**.
3. Enter a user name in the **User Name** field. For example, `csuser`.
4. Enter the group you created in the **Primary Group** field. For example, `csgroup`.
5. Check the **Create Home Directory** checkbox.
6. At the bottom of the Admintool: Add User form, enter the path to your home directory. For example, `/export/home/csuser`.
7. Click **Apply**, then click **OK**.

Section 2

Web Server

This section describes how to install the Sun ONE Web Server on Solaris and Windows 2000. It contains the following chapters:

- Chapter 4, “Installing Sun ONE Web Server on Solaris”
- Chapter 5, “Installing Sun ONE Web Server on Windows 2000”

Chapter 4

Installing Sun ONE Web Server on Solaris

This chapter explains how to install the Sun ONE Web Server on Solaris. It contains the following sections:

- Install Sun ONE Web Server
- Configure the Installation

Install Sun ONE Web Server

While logged in as root, install the Sun ONE Web Server. Refer to the Sun ONE Web Server documentation and complete a **Typical** installation.

During the installation, be sure to use the work sheet from Chapter 2, “Documenting Your Configuration” to record the information you specify. You will need this information later.

Note

If you are setting up a clustered installation, FatWire recommends optimizing system performance by installing Sun ONE Web Server on a machine that is separate from the Sun ONE Application Server machine.

Configure the Installation

The following sections describe the procedures to follow for configuring Sun ONE Web Server for the Content Server installation.

- Start the Sun ONE Administration Server
- Start the Web Server and Test the Installation
- Create a futuretense_cs Document Directory and Web Root
- For Clustered Installations: Tune the Web Server
- Register the SSL Certificate (https Only)

Start the Sun ONE Administration Server

Start and test the Sun ONE Administration server by following these steps:

1. Change to the `https-admserv` directory located in the directory where you installed Sun ONE Web Server.
2. Run the `start` script to start the administration server. If the web server port is less than 1024 you must have root access to run the start script.

Start the Web Server and Test the Installation

To start the web server and test the installation, complete the following steps:

1. Open a browser window and type the following URL:

   `http://web_server_host:web_server_admin_port`

   where *`web_server_host`* is the machine name where the web server is installed and *`adminport`* is the port number that you specified for the admin port during the installation.

   An Enter Network Password dialog box appears.
2. Log in using the Administration Server user name and password that you created during the installation.
3. In the **Manage Users** form, select your web server from the drop-down list and then click the **Manage** button.
4. In the **Server On/Off** form, click the **Server On** button. A dialog box displays the message:

   `Success! The Server has Started up.`
5. In a browser, go to the following URL:

   `http://web_server_host`

   where *`web_server_host`* is the machine name where the web server is installed.

   The installation is successful and the web server is working if the Sun ONE Web Server, Enterprise Edition 6.0 site appears in the browser window.

Create a futuretense_cs Document Directory and Web Root

Before installing Content Server, you need to create a new document directory and a new web root for your web server. Content Server requires that the web root be `futuretense_cs`. However, you can map it to any directory.

Perform the following two steps:

- Create the futuretense_cs Directory
- Create a futuretense_cs Web Root

Create the futuretense_cs Directory

You must create an empty directory named `futuretense_cs` before you can set up the web root.

If the web server, the application server, and Content Server will be installed on the same machine, the `futuretense_cs` directory must be created in the directory where you intend to install Content Server.

Complete the following steps:

1. Log in to the system using the user name and password that you created in "Create a User" on page 22.
2. If necessary, change to the `HOME` directory.

   ```
   $ cd
   ```
3. Create a directory where you plan to install Content Server. For example:

   ```
   $ mkdir ContentServer
   ```
4. Create a subdirectory called `futuretense_cs`.

   ```
   $ mkdir ContentServer/futuretense_cs
   ```
5. If you plan to install any CS-Direct or any other application in the CSEE product family, create another subdirectory called `Xcelerate`.

   ```
   $ mkdir ContentServer/futuretense_cs/Xcelerate
   ```

Note

The Content Server installation directory does not have to be named `ContentServer`; however, the subdirectories must be named `futuretense_cs` and `Xcelerate`.

Create a futuretense_cs Web Root

1. Open a browser window and type the following URL:

   `http://`*`web_server_host:web_server_admin_port`*

   Where *`web_server_host`* is the machine name where the web server is installed and *`web_server_admin_port`* is the administration port you entered when installing.
2. Log in using the Administration Server user name and password that you created during the web server installation.
3. Select your web server from the drop down list and then click the **Manage** button.

The Server On/Off page appears. (The Server should be On already; if it is Off, turn it On.)

4. Click the **Class Manager** hyperlink.
5. Click the **Content Mgmt** tab.

   The Document Root Settings page appears.
6. Click the **Additional Document Directories** link in the left frame of this page.

   The Additional Document Directories page appears.
7. In the **URL Prefix** field, enter the following:

   ```
   futuretense_cs
   ```
8. In the **Map to Directory** field, enter the absolute pathname to the `futuretense_cs`, for example:

   ```
   /export/home/csuser/ContentServer/futuretense_cs
   ```
9. Leave the **Apply Style** field set to the default (**NONE**).
10. Click **OK**.

    A pop-up message appears; click **OK**.
11. Click **Apply**.

    The Apply Changes page appears.
12. Click **Apply Changes**.

    A "Success" confirmation message should appear.
13. If you plan to set up a clustered installation, continue with the next section. If you plan to use SSL, continue with the section "Register the SSL Certificate (https Only)" on page 29. Otherwise, you are finished configuring the web server.

For Clustered Installations: Tune the Web Server

If you are setting up a clustered installation, you must tune Sun ONE Web Server.

Complete the following steps:

1. For optimal performance, FatWire recommends installing Sun ONE Web Server and Sun ONE Application Server on separate machines. Make sure that in your system the web server and application servers are installed accordingly.
2. In /etc/system, set the system tuning parameters to the following:

   ```
   set rlim_fd_cur=65535
   set rlim_fd_max=65535
   ```
3. Tune the TCP stack:

   ```
   #!/bin/sh
   # Tunings to the tcp/ip stack for performance and stress
   #/usr/sbin/ndd -set /dev/tcp tcp_time_wait_interval 30000 # for
   solaris 9 only.
   /usr/sbin/ndd -set /dev/tcp tcp_conn_req_max_q 1024
   /usr/sbin/ndd -set /dev/tcp tcp_conn_req_max_q0 4096
   /usr/sbin/ndd -set /dev/tcp tcp_ip_abort_interval 60000
   ```

```
/usr/sbin/ndd -set /dev/tcp tcp_keepalive_interval 90000
/usr/sbin/ndd -set /dev/tcp tcp_rexmit_interval_initial 3000
/usr/sbin/ndd -set /dev/tcp tcp_rexmit_interval_max 10000
/usr/sbin/ndd -set /dev/tcp tcp_rexmit_interval_min 3000
/usr/sbin/ndd -set /dev/tcp tcp_smallest_anon_port 1024
/usr/sbin/ndd -set /dev/tcp tcp_slow_start_initial 2
#/usr/sbin/ndd -set /dev/tcp tcp_xmit_hiwat 32768 # for solaris
9 only.
#/usr/sbin/ndd -set /dev/tcp tcp_recv_hiwat 32768 # for solaris
9 only.
```

4. Adjust the web core subsystems appropriately.

   ```
   rqThrottle,
   KeepAliveQueryMaxSleepTime,
   KeepAliveQueryMeanTime,
   ListenQ,MaxKeepAliveConnections,
   ConnQueueSize.
   Refer to the performance and tuning guide on Sun ONE for more
   information.
   ```

5. Modify the init.conf file:

   ```
   Use these values only if you see errors such as
   ConnectionQueueFull etc.
   ListenQ 8192
   MaxKeepAliveConnections 32000
   KeepAliveTimeout        3600
   ConnQueueSize      32000
   ```

6. In obj.conf, comment out the following lines:

   ```
   #PathCheck fn=unix-uri-clean
   #PathCheck fn="check-acl" acl="default"
   #PathCheck fn=find-pathinfo
   #PathCheck fn=find-index index-names="index.html, home.html"
   Leave the rqThrottle to default which is 128.
   ```

7. In loadbalancer.xml, change the response-timeout-in-seconds to 300:

   ```
   <property name="response-timeout-in-seconds" value="300"/>
   ```

8. If you plan to use SSL, continue with the next section. Otherwise, you are finished configuring the web server.

Register the SSL Certificate (https Only)

If you are planning to use an https connection (see “Web Server Configuration” on page 62), you must obtain an SSL certificate from a certifying authority such as VeriSign, and register the certificate as part of your web server installation.

You can then test the installation by repeating the procedure “Start the Web Server and Test the Installation.” When you get to step 5, instead of browsing to:

```
http://web_server_host
```

browse to the following URL instead:

```
https://web_server_host
```

Note

If you plan to use https, you must obtain and register your SSL certificate **before** you can install Content Server.

Chapter 5

Installing Sun ONE Web Server on Windows 2000

This chapter explains how to install the Sun ONE Web Server on Windows 2000. It contains the following sections:

- Install Sun ONE Web Server
- Start Sun ONE Web Server
- Set Other Web Servers to Start Manually
- Test the Sun ONE Web Server Installation
- Create a futuretense_cs Document Directory and Web Root
- Register the SSL Certificate (Optional)

Install Sun ONE Web Server

To install the Sun ONE Web Server, insert the Sun ONE Web Server CD and run the `setup.exe` file. The installation GUI will guide you through the installation; we recommend that you choose a **Typical** installation type. During the installation, be sure to use the work sheet from Chapter 2, “Documenting Your Configuration” to record the information you specify.

Start Sun ONE Web Server

After installing Sun ONE Web Server, you must start it. The installation sets Windows 2000 to automatically start the web server and the Web Server Administration Server upon login. We recommended that you leave the setting as automatic. If you prefer to start the web server manually, follow these instructions:

1. From the Windows 2000 Start menu, select **Settings** > **Control Panel** > **Administrative Tools** > **Services**. The Services window appears.

2. Search for the Sun ONE (*web_host_name*), where *web_host_name* is the name of the machine where your web server is installed. Highlight and click the **Startup...** button. A second Service window appears.
3. In the **Startup Type** section, choose the setting you prefer. Click **OK**.

If you choose to have the Administration Server or the Web Server start manually, you need to highlight the service and click **Start** each time you log in to Windows 2000.

Set Other Web Servers to Start Manually

There may be other web servers (for example, Microsoft IIS, Oracle HTTP Server, etc.) installed on your system. Having multiple web servers running at the same time may cause confusion while you are installing and testing your Content Server environment. For the purposes of this installation, stop all other web servers on your machine and set them to start manually—instead of automatically—by completing the following instructions.

1. From the Windows 2000 Start menu, select **Settings** > **Control Panel** > **Administrative Tools** > **Services**. The Services window displays.
2. Search for any other web servers that might be installed. For each web server that you have running, other than the Sun One Web Server, perform the following:
   a. Highlight the web server, right-click and select **Stop**.
   b. Double-click inside the **Startup Type** column. When the **Properties** dialogue box appears, go to the **Startup Type** drop down menu and select **Manual**. Click **OK**.
3. Exit the Services Window by clicking the X.

Test the Sun ONE Web Server Installation

To test the web serve installation, follow these procedures:

1. Open a browser window and type the following URL:

   `http://web_server_host:web_server_admin_port`

   where *web_server_host* is the machine name where the web server is installed and *web_server_admin_port* is the administration port you specified when installing.

   You can also reach this page from the Windows 2000 Start menu, by selecting **Programs** > **iPlanet Web Server > Administer Web Server**.

   An Enter Network Password dialog box appears.
2. Log in using the Administration Server user name and password you created during the installation.
3. From the Manage Servers page, select your web server from the drop-down list and then click the **Manage** button. The Server On/Off page appears.
4. Click the **Server On** button.

   A dialog box displays the message “Success! The server has started up.”

5. Type in the following URL:

   `http://web_server_host`

   where *web_server_host* is the machine name where the web server is installed. If you have installed the web server improperly, an error message will appear.

Create a futuretense_cs Document Directory and Web Root

Before installing Content Server, you need to create a new document directory and a new web root for your web server. Although Content Server requires that the web root be `futuretense_cs`, you can map it to any directory.

Creating the web root directory is a two-step process. These sections describe the procedure to follow:

- Create a futuretense_cs Directory
- Create a futuretense_cs Web Root

Create a futuretense_cs Directory

You must have an empty directory named `futuretense_cs` created prior to setting up the web root. The `futuretense_cs` directory must be created in the directory where you intend to install Content Server. Follow these steps:

1. Make a new directory where you plan to install Content Server. For example:

   `c:\ContentServer`

2. In the newly created installation directory, create a subdirectory called `futuretense_cs`. For example:

   `c:\ContentServer\futuretense_cs`

3. If you plan to install any CS-Direct or any other application in the CSEE product family, create another subdirectory called `Xcelerate`.

   ```
   $ mkdir ContentServer/futuretense_cs/Xcelerate
   ```

Note

The Content Server installation directory does not have to be named `ContentServer`; however, the subdirectories must be named `futuretense_cs` and `Xcelerate`.

Create a futuretense_cs Web Root

1. Access the Administration Server as described in steps 1 and 2 of “Test the Sun ONE Web Server Installation”.
2. From the Manage Servers page, select your web server from the drop-down list and click the **Manage** button.

   The Server On/Off page appears.

3. Click the **Class Manager** button on the upper-right corner of the window.

   A set of tabs related to class manager appears.

4. Click the **Content Mgmt** tab.

   The Primary Document Directory page appears.

5. Click the **Additional Document Directories** link in the left frame of the page.

   The Additional Document Directories page appears.

6. In the **URL Prefix** field, enter `futuretense_cs`.

7. In the **Map to Directory** field, enter the absolute pathname to the directory that contains the `futuretense_cs` subdirectory. For example:

   ```
   c:\ContentServer\futuretense_cs
   ```

8. Click **OK**.

9. Click the **Apply** button on the upper-right corner of the window.

   The Apply Changes page appears.

10. Click the **Apply Changes** button.

    The message `"Success! Your changes have been applied and saved."` confirms the operation.

Register the SSL Certificate (Optional)

If you are planning to use an https connection (see “Web Server Configuration” on page 62), you must obtain an SSL certificate from a certifying authority such as VeriSign, and register the certificate as part of your web server installation.

You can then test the installation by repeating the procedure “Start Sun ONE Web Server” and using https rather than http in step 5.

Note

If you plan to use https, you must obtain and register your SSL certificate **before** you can install Content Server.

Section 3

Database Section

This section explains how to install the Oracle DBMS. It contains the following chapter:

- Chapter 6, “Installing Oracle”

Chapter 6

Installing Oracle

This chapter explains how to install Oracle on Solaris or Windows 2000 so that it will work properly with Content Server.

When installing Oracle for use by Content Server, you can configure it in a number of ways, the simplest being as a single server with a single database on a stand-alone system. However, while this might work for a development environment, typical production configurations are more complex and require careful considerations for database performance and reliability. If you are installing Oracle on what you intend to be a delivery system, you should rely on the expertise of a database administrator, or at the very least, consult the Oracle installation documentation for the optimal way to install and configure your system.

This chapter focuses on things you need to consider when installing Oracle for Content Server. Specifically, it describes how to do the following:

- Character Sets
- Installing the Oracle Database Server
- Configuring the Oracle Database Server for Content Server
- Checking Your Database Configuration

Note

If you are unsure about how to install database software or create a database, consult your database administrator and your vendor documentation.

Character Sets

The database character set must support all the characters that you intend to store. After you start storing data in the database, it can be tricky to migrate your data to a different character set. Therefore, it is wise to configure your database for the correct character set *before* storing data.

For example, if your database will handle information in European languages only, a database configured for default Latin-1 might suffice. Similarly, if Japanese is the only language used, then the Shift-JIS character set is suitable.

However, if you plan to use the CS-Desktop feature of CS-Direct, you must configure your system to support UTF-8.

We recommend that you use the UTF-8 character set even if you do not plan to use CS-Desktop. This character set gives you the maximum flexibility. It takes up more space in the database, but it encodes all characters used in modern languages and in some archaic languages.

Installing the Oracle Database Server

Follow the instructions in the documentation provided by Oracle to determine how to install the Oracle database server. Content Server imposes no requirements on the way in which you install the Oracle database server. The easiest way to install the database is to select the **Typical** install option, and to let the Oracle installation software create an initial database with its general defaults.

Be sure to consult the Oracle documentation as you install the database software, particularly in modifying the `/etc/system` file (on Solaris). On a Solaris installation, configure Oracle to include automatic startup and shutdown scripts for the server and the client. Refer to the vendor documentation for information about this procedure.

Configuring the Oracle Database Server for Content Server

After installing, you must now configure the Oracle database server so that it works properly with Content Server. Configuration consists of the following tasks:

1. Create a Default Tablespace for the Content Server database. For example, a tablespace named `ftcsdb`.
2. Create a Temporary Tablespace for the Content Server database. For example, a temporary tablespace named `ftcstemp`.
3. Create a User Account for the Content Server database. For example, a user named `ftuser`.

Note that you can perform these tasks using either DBA Studio or SQL*Plus. In order to get DBA Studio, you must select the full or custom installation option when you install Oracle.

Create a Default Tablespace

Content Server requires at least 100 megabytes of tablespace for installation. In a live environment, this number is likely to be higher. Make sure to adjust this as you tune your CSEE environment. See the Oracle documentation to determine how to add the default tablespace.

Create a Temporary Tablespace

Content Server requires 10-20 megabytes of tablespace for the temporary tablespace. See the Oracle documentation to determine how to add the temporary tablespace.

Create a User Account

You need an Oracle account that will manage Content Server's tables. This account should have the following specifications:

- The default tablespace associated with this account must be the tablespace you created in the "Create a Default Tablespace" section of this chapter.
- The temporary tablespace associated with this account must be the tablespace you created in the "Create a Temporary Tablespace" section of this chapter.
- This account must have the `RESOURCE` and `CONNECT` roles.
- This account should have unlimited tablespace privilege.
- This account must **not** have any other roles. If you do provide other roles, you run the risk of running into problems if you are running multiple instances with multiple tablespaces.

Note

Do **not** assign the `DBA` role to this account. The `DBA` role does not interact properly with JDBC.

Sample Commands

Here is an example of the commands you might use:

1. Access SQL*Plus.
   a. In the **Start Menu**, choose **Run...** and enter `cmd`.
   b. At the prompt, enter `sqlplus`.
   c. Enter your username and password when prompted.
2. To find the location of the data files, enter the following at the SQL prompt.

   ```
   select * from dba_data_files;
   ```
3. Press **Enter**.
4. To create a default tablespace, enter the following at the SQL prompt.

   ```
   create tablespace tablespace_name datafile
   'drive:\oracle_home\oradata\database_instance_name\tablespace_name_01.dbf' size 100M;
   ```
5. Press **Enter**.
6. To create a default temporary tablespace, enter the following at the SQL prompt.

   ```
   create temporary tablespace temp_tablespace_name tempfile
   'drive:\oracle_home\oradata\database_instance_name\tablespace_name_01.dbf' size 20M;
   ```
7. Press **Enter**.

8. To create a user account, enter the following at the SQL prompt.

   create user *username* **identified by** *password* **default tablespace** *tablespace_name* **temporary tablespace** *temp_tablespace_name*;

9. Press **Enter**.

10. To grant permissions to the user, enter the following at the SQL prompt.

    grant connect,resource to *username*.

11. Press **Enter**.

Checking Your Database Configuration

After installing and configuring Oracle, you should verify that the system works properly. To do so, determine whether you can perform certain tasks while logged in as the user that you created in the "Create a User Account" section in this chapter because that is the account that you will use to instruct Content Server to perform database actions. In particular, Content Server needs to perform the following actions:

- Add a table in the database
- Add a row to the table
- Drop the table from the database

To verify the system, do the following:

1. Access SQL*Plus.
2. Log in to the default tablespace instance that you created in "Create a Default Tablespace" with the login name and password you created in "Create a User Account."
3. At the SQL prompt, create a simple table called dummy. For example:

   SQL) **create table dummy (du_id varchar (6) not null, du_lname varchar2 (40) not null);**

   Oracle should create the table successfully.
4. Add a row to the dummy table.

   SQL) **insert into dummy values ('1001', 'Smith');**

   Oracle should add a row to the dummy table with these values.
5. Drop the dummy table.

   SQL) **drop table dummy;**

Make sure this test works. If you cannot successfully complete any of the previous tasks, verify that you can access the database, and examine the permissions for the user account that you created before you do anything else.

When you are successful, proceed to the next section for information about installing the application server.

Section 4

Application Server

This section explains how to install the Sun ONE Application Server so that it works properly with Content Server. It contains the following chapter:

- Installing Sun ONE Application Server

Chapter 7

Installing Sun ONE Application Server

This chapter describes how to configure Sun ONE Application Server on Windows 2000 or Solaris so that it will work properly with Content Server.

Before installing Sun ONE Application Server, note the following:

- You must stop the web server prior to installing the application server.
- You must log in to the system with the required administrator privileges.
- You must eventually install Content Server on the same host(s) as you installed the application server(s).

The steps to install and configure Sun ONE Application Server are as follows:

- Install Sun ONE Application Server
- Install the JDBC Driver
- Configure Sun ONE Application Server
- Update the Web Server
- Validate the Configuration

Install Sun ONE Application Server

While logged in as administrator on Windows or as root on Solaris, install Sun ONE Application Server. Refer to the Sun ONE Application Server documentation and complete a **Typical** installation. During the installation, use the following guidelines:

- When the Sun ONE Application Server setup program prompts you for a fully qualified domain name, use the following syntax: *`hostname.domainname.com`*.
- If you are installing Sun ONE Application Server and Sun ONE Web Server on the same machine, when you select which Sun ONE Application Server components you want to install, be sure to include the Sun ONE Application Server Connector Component.
- If you are setting up a clustered installation, FatWire recommends optimizing system performance by installing Sun ONE Web Server on a machine that is separate from the Sun ONE Application Server machines.

Be sure to use the work sheets from Chapter 2, "Documenting Your Configuration" to record the information you specify during the installation of the application server and directory server.

Verify the Installation

After installing, follow the instructions in the Sun ONE Application Server documentation on how to start and verify the installation.

Install the JDBC Driver

Content Server and Sun ONE Application Server communicate with Oracle through either of the following JDBC drivers:

- JDBC Thin (Type 4) driver
- JDBC Type 2 driver

Both kinds of drivers are located in a zip file named `classes12.zip`. Optionally, if Content Server must serve non-English text, then you must also download the `nls_charset12.zip` file. You can get either zip file from a variety of sources, including:

- The Oracle CD
- The Oracle web site

If you installed Oracle already, the zip files are located in the following directory:

`oracle_home``\jbdc\lib`

Additionally, Oracle does not permit you to use drivers obtained from their web site on a delivery system. You can use them on a development system, but not on a delivery system.

Choosing Between Type 2 and Type 4 Oracle JDBC Drivers

For Oracle, Content Server supports both type 2 and type 4 drivers. There are advantages to each type.

Type 2 drivers allow for longer text (virtually unlimited) to be stored in the DBMS. Furthermore, type 2 drivers work with other Oracle tools to perform database load balancing and failover.

Type 4 drivers have a limit of 2000 characters for storage in the database; longer text is referentially stored in the DBMS, with physical storage on disk. Type 4 drivers are more portable and easier to install than type 2 drivers. Finally, some J2EE applications other than Content Server require type 4 drivers and cannot work with type 2 drivers.

Install the Oracle Client

If you plan to use the Type 2 JDBC driver, you must install the Oracle client on the machine where Sun ONE Application Server is installed.

Configure Sun ONE Application Server

After installing the application server, you must configure it by following these steps:

- Create the Server Instance
- Create the Database Connection Pool
- Edit the server.policy File
- For Clustered Installations: Configure and Tune Each Sun ONE Application Server

Create the Server Instance

To create the server instance, follow these steps:

1. Start the Admin Console.
2. Select the **AppServer Instance** on the tree in the left panel.
3. Select the **New** Button on the Right Pane.
4. Type the instance, which must have the following syntax:

   ```
   Name, Http_Port
   ```

   For example:

   ```
   CSServer, 8001
   ```

Create the Database Connection Pool

1. Start the Admin Console.
2. On the tree in the left panel, select **App Server Instance**.
3. Expand the node with the name of your **application server instance**.
4. Expand the node with the icon of the **server** that you created to install Content Server.
5. Expand the **JDBC** icon.
6. Select the **Connection Pool** icon.
7. In the right pane, select the **New** button to create a new Connection Pool.
8. Configure the Connection Pool as follows:

In the General section:

a. Enter a **Name** (for example, `Fat Wirepool`)

b. For the Database Vendor, enter one of the following strings: `Oracle 8.1.x` or `Oracle 9.x`

c. Select **Next**.

In the Properties section:

a. Add the values for:

User: *Database User Name* (for example, `csuser`)

Password: *Database User Password* (for example, `csuser`)

Database Name: *Database name* (for example, `csdb`)

b. Click the **Add** button, and add the following name and value in the text fields provided:

Name: `URL`

Value: `jdbc:oracle:thin:@`*`databaseservername`*`:1521:`*`databasesid`*

(for example, **URL:** `jdbc:oracle:thin:@`*`localhost`*`:1521:`*`csdb`*

In the Pool Settings section:

a. Change the **Max Pool Size** from **32** to **100**

9. Click the **Finish** button.

Add the JDBC Driver to the Path Settings

1. Start the Admin Console.
2. On the tree in the left panel, select the name of your **application server instance**.
3. Expand the node with the icon of the **server** that you created to install Content Server.
4. Click the **JVM Settings** tab on the right panel.
5. Select **Path Settings**.
6. Add the full pathname of `classes12.zip` in the **Classpath Suffix**. If you plan to serve non-English text, you must also add the full pathname of `nls_classes12.zip`. For Windows 2000, the Classpath Suffix is:

```
oracle_home\jdbc\lib\classes12.zip
oracle_home\jdbc\lib\nls_classes12.zip
```

For example:

```
c:\oracle\ora81\jdbc\lib\classes12.zip
c:\oracle\ora81\jdbc\lib\nls_classes12.zip
```

For Solaris, the Classpath Suffix is the full pathname where `classes12.zip` exists.

7. Click the **Save** button.
8. Click the **Apply Changes** button.
9. Click the **Start Server** button.

Create the Data Source

1. Start the Admin Console.
2. On the tree in the left panel, select the name of your **application server instance**.
3. Expand the node with the icon of the **server** that you created to install Content Server.
4. Expand the **JDBC** icon node.
5. Select the **JDBC Resources** icon.
6. In the right pane, click the **New** button to create a new JDBC Resource.
7. In the **Configuring the JDBC Resources** section, enter the **JNDI Name** in the following format:

   `jdbc/`*`anyname`*

   For example:

   `jdbc/ftcs`

   or:

   `jdbc/Fat Wirejndi`

   Note

   Be sure to write down this name—you will need to enter it during the Content Server installation.

8. Select the **Connection Pool** that you created previously.
9. Click the **OK** button.

Edit the server.policy File

Edit the `server.policy` file, which is found in the following directory:

`App_Svr_Root``\domains\`*`domain_name`*`\`*`server_name`*`\config`

1. In the `server.policy` file, find the following line:

   ```
   permission java.io.FilePermission “<<ALL FILES>>” “read,write”
   ```

2. Add the delete permission to the default file permissions. The result should be:

   ```
   permission java.io.FilePermission “<<ALL FILES>>”
   “read,write,delete”;
   ```

3. Save the `server.policy` file.
4. Restart the application server.

For Clustered Installations: Configure and Tune Each Sun ONE Application Server

If you are setting up a clustered installation, you must tune each Sun ONE Application Server after it has been configured as shown in the preceding steps of this section.

Complete the following steps for each machine hosting Sun ONE Application Server and HADB nodes:

1. Before you start configuring and tuning each Sun ONE Application Server, note the following:
   - For optimal performance, FatWire recommends installing Sun ONE Web Server and Sun ONE Application Server on separate machines. Make sure that in your system the web server and application servers are installed accordingly.
   - Plan to create at least two HADB nodes for each cluster member.
2. In /etc/system, set the system tuning parameters as follows:

   ```
   set rlim_fd_cur=65535
   set rlim_fd_max=65535
   ```

3. Tune the TCP stack:

   ```
   #!/bin/sh
   # Tunings to the tcp/ip stack for performance and stress
   #/usr/sbin/ndd -set /dev/tcp tcp_time_wait_interval 30000 # for
   solaris 9 only.
   /usr/sbin/ndd -set /dev/tcp tcp_conn_req_max_q 1024
   /usr/sbin/ndd -set /dev/tcp tcp_conn_req_max_q0 4096
   /usr/sbin/ndd -set /dev/tcp tcp_ip_abort_interval 60000
   /usr/sbin/ndd -set /dev/tcp tcp_keepalive_interval 90000
   /usr/sbin/ndd -set /dev/tcp tcp_rexmit_interval_initial 3000
   /usr/sbin/ndd -set /dev/tcp tcp_rexmit_interval_max 10000
   /usr/sbin/ndd -set /dev/tcp tcp_rexmit_interval_min 3000
   /usr/sbin/ndd -set /dev/tcp tcp_smallest_anon_port 1024
   /usr/sbin/ndd -set /dev/tcp tcp_slow_start_initial 2
   #/usr/sbin/ndd -set /dev/tcp tcp_xmit_hiwat 32768 # for solaris
   9 only.
   #/usr/sbin/ndd -set /dev/tcp tcp_recv_hiwat 32768 # for solaris
   9 only.
   ```

4. In /etc/system, tune the semaphores and shared memory. The following are the shared memory and semaphore configuration for HADB on Solaris/SPARC

   ```
   set semsys:seminfo_semmap=14 [ <default=10> + NNODES]
   set semsys:seminfo_semmni=14 [ <default=10> + NNODES]
   set semsys:seminfo_semmns=92 [ default=60> + (NNODES * 8)]
   set semsys:seminfo_semmnu=134 [ default=30> + NNODES + NCONNS]
   The commands sysinfo and sysdef may be used to inspect the
   settings.
   set shmsys:shminfo_shmmax=0xffffffff [ Allocate max.shared
   memory]
   set shmsys:shminfo_shmseg=20 [ default is 6]
   set shmsys:shminfo_shmmni=124 [ <default=100> + (6 * NNODES)]
   ```

5. Edit the `server.xml` file as follows:
   - Disable sso support via `<property name=sso-enabled value=”false”>`
   - For each HADB node, specify the steady-pool-size to be at least 16 and the max-pool-size to be at least 32 for each app.server instance in the jdbc connection pool.
   - Ensure that the following properties are specified for the HADB connection:

     ```
     pool:<property name="maxStatements" value="30"/>, <property
     name="cacheDatabaseMetaData" value="false"/> <property
     name="eliminateRedundantEndTransaction" value="true"/>
     ```
   - Disable server.policy by commenting out the corresponding line in server.xml (or moving `server.xml` file to another location).
   - Disable JMS service by changing the enabled flag to `false`.
   - Increase the jvm heapsize to 1.0 GB via `<jvm-options> -Xms1024m -Xmx1024m </jvm-options>`
   - Change the session time out in the web.xml of the deployed application from 30 min to 6 min.
6. In the `init.conf` file, comment out the function stats-init line. If you want to disable the access log, comment out the line containing `$accesslog`
7. In the `servername-obj.conf` file, comment out the following lines:

   ```
   PathCheck fn=unix-uri-clean
   PathCheck fn="check-acl" acl="default"
   PathCheck fn=find-pathinfo
   PathCheck fn=find-index index-names="index.html,home.html"
   ```
8. Create at least two HADB nodes for each host machine in the cluster. For instructions, refer to the Sun ONE Application Server documentation. Before creating HADB nodes, note the following instructions:
   - In `clresource.conf`, add the following line:

     ```
      --set "LogBufferSize=100 DataBufferPoolSize=400
     InternalLogbufferSize=24"
     ```

     If creation fails for the values shown above, the values might have to be reduced.
   - Name the host machines in the `clrsource.conf` file. For example, if you are using two hosts (A and B) and creating two nodes per host, name the hosts A,B,A,B. Two nodes will be created for each host machine.

CS-Desktop Considerations

Before installing CS-Desktop, edit the `server.xml` file, which is found in the same directory as `server.policy`:

App_Svr_Root\domains*domain_name**server_name*\config

1. In the `server.xml` file, find the following tag:

   ```
   <java-config java-home="...." server-classpath="..." classpath-
   suffix="..."...>
   ```

2. Add the following argument into this tag:

   ```
   classpath-prefix="App_Svr_Root/share/lib/dom.jar;App_Svr_Root/
   share/lib/jaxp-api.jar;App_Svr_Root/share/lib/
   xercesImpl.jar;App_Svr_Root/share/lib/xalan.jar"
   ```

   The result will look something like this:

   ```
   <java-config java-home="..." server-classpath="..." classpath-
   prefix="App_Svr_Root/share/lib/dom.jar;App_Svr_Root/share/lib/
   jaxp-api.jar;App_Svr_Root/share/lib/
   xercesImpl.jar;App_Svr_Root/share/lib/xalan.jar" classpath-
   suffix="..."...>
   ```

Update the Web Server

After configuring the application server, you must perform the following additional reconfiguration of the web server:

- Copy passthrough.dll
- Edit magnus.conf File
- Edit obj.conf File
- For Clustered Installations: Add loadbalancer.xml File

Copy passthrough.dll

Copy the file `passthrough.dll` from the following folder:

app_server_install_folder`\Appserver7\bin`

to the following folder:

web_server_install_folder`\plugins\passthrough\bin`

Edit magnus.conf File

Edit the `magnus.conf` file, which is found in the following folder:

web_server_install_folder`\https-`*host.domain.*`com\config`

In `magnus.conf`, append the following two `Init` directives, substituting the correct web server install folder. Unfortunately, due to pesky laws of typography, if you are reading the PDF version of this manual, the first `Init` directive will appear to consume four physical lines. However, when you edit the magnus.conf file, make sure the first `Init` directive occupies only a single (no doubt, very long) line. Put the second Init directive on the following line:

```
Init fn="load-modules"
shlib="web_server_install_folder\plugins\passthrough\bin\passthrou
gh.dll" funcs="init-passthrough,auth-passthrough,check-
passthrough,service-passthrough" NativeThread="no"
Init fn="init-passthrough"
```

Edit obj.conf File

Edit the `obj.conf` file, which is found in the same directory as `magnus.conf`. In `obj.conf`, add the following line as the first line inside the **default** object:

```
NameTrans fn="assign-name" from="(/servlet/*)" name="passthrough"
```

Append the following lines to the end of `obj.conf`:

```
<Object name="passthrough">
ObjectType fn="force-type" type="magnus-internal/passthrough"
Service type="magnus-internal/passthrough" fn="service-
passthrough" servers="http://appservername:appserverport"
Error reason="Bad Gateway" fn="send-error" uri="$docroot/
badgateway.html"
</Object>
```

For Clustered Installations: Add loadbalancer.xml File

Add the `loadbalancer.xml` file under the path <*webserver path*>/https-*servername*/conf/ or at the same level as the `obj.conf` file.

Sample `loadbalancer.xml`:

```
<!DOCTYPE loadbalancer PUBLIC "-//Sun Microsystems Inc.//DTD Sun ONE
Application Server 7.0//
EN" "sun-loadbalancer_1_0.dtd">
<loadbalancer>
   <cluster name="cluster1">
      <instance name="fcs55-1" enabled="true" disable-timeout-in-
         minutes="60" listeners="http://server1:9001"/>
      <instance name="fcs55-2" enabled="true" disable-timeout-in-
        minutes="60" listeners="http://server2:9001"/>
      <web-module context-root="/servlet" enabled="true" disable-
        timeout-in-minutes="60" />
      <health-checker url="/" interval-in-seconds="10" timeout-in-
        seconds="30" />
   </cluster>
   <property name="reload-poll-interval-in-seconds" value="60"/>
   <property name="response-timeout-in-seconds" value="300"/>
   <property name="https-routing" value="true"/>
   <property name="require-monitor-data" value="false"/>
</loadbalancer>
```

Apply Changes

After changing `obj.conf`, and `magnus.conf`, do the following to apply those changes:

1. Open a browser window and type the following URL to go to the web server administration page:

   `http://web_server_host:web_server_admin_port`

   where *`web_server_host`* is the machine name where the web server is installed and *`web_server_admin_port`* is the administration port you entered when installing.

   An Enter Network Password dialog box appears.

2. Log in using the Administration Server user name and password you created during the installation.
3. From the Manage Servers page, select your web server from the drop-down list and then click the **Manage** button.
4. A warning message appears, noting that you need to accept the changes made to the configuration file. Click **OK**.
5. From the Server On/Off page, click the **Apply** button at the upper-right corner of the screen.
6. From the Save and Apply Changes page, click **Save and Apply Changes** to accept changes. The update completes with a `"Success!"` message.

   Subsequently, this step will be from the Apply Changes page, where you will click the **Apply Changes** button to apply previously saved changes.

Validate the Configuration

Before installing Content Server, FatWire strongly recommends testing the Sun ONE Application Server installation to make sure the application server is running properly. For details on testing, see the Sun ONE Application Server documentation provided by Sun Microsystems.

Section 5

Content Server

This section explains how to install Content Server. It contains the following chapters.

- Chapter 8, “Installing Content Server”
- Chapter 10, “Uninstalling Content Server”
- Appendix A, “Pre-Installation Readiness”

Chapter 8

Installing Content Server

This chapter describes how to install Content Server on Solaris or on Windows 2000. It contains the following sections:

- Determining If You Are Ready to Install
- Extracting the Installation Program
- Completing Installation Screens
- Installing Software
- Verifying the Installation
- Starting the Configuration
- Accessing Content Server Enterprise Edition Documentation

Caution

The Content Server installation program will overwrite the `web.xml` file used by the Sun ONE Application Server. If you have customized your `web.xml` file, make a copy of it before you install Content Server so that your customizations will not be lost.

Note

If you are installing Content Server in a cluster on Solaris, refer to Chapter 9, “Installing Content Server in a Cluster on Solaris” for instructions.

Determining If You Are Ready to Install

Are you ready to install Content Server? The lists in this section will help you determine the answer.

On Solaris

Before installing Content Server, you must complete the following tasks:

- Verify that you are running the proper version of Solaris and have all the necessary Solaris patches.
- Verify that your DBMS is installed correctly. Refer to Chapter 6, "Installing Oracle" for instructions. Confirm that the tablespace is empty.
- Verify that Sun ONE Web Server is installed and configured correctly, as described in "Installing Sun ONE Web Server on Solaris" on page 25.
- Verify that the Sun ONE Application Server is installed and configured correctly, as described in Chapter 7, "Installing Sun ONE Application Server," on the machine where you plan to install Content Server.
- Verify HOME Directory Permissions, as described in this chapter.
- Set the PATH, as described in this chapter.

Verify HOME Directory Permissions

Follow these steps to ensure that the `HOME` directory has the correct permissions:

1. In a UNIX shell, log in as the Solaris user that you created in the procedure "Create a Solaris Group and User" on page 22. If necessary, change to the `HOME` directory by issuing the following command:

   ```
   $ cd
   ```

2. Check the permissions by entering the following command:

   ```
   $ ls -ald .
   ```

   The output from the ls command should start with the following permissions:

   ```
   drwxr-xr-x
   ```

3. If the permissions are not 755, run the following command:

   ```
   $ chmod 755 .
   ```

Set the PATH

You need to verify that your `PATH` variable includes *`app_server_install_dir`*`/bin`. You also need to include the appropriate JDK in the `PATH` variable in order for the installation to work. To confirm whether these are included in your `PATH`, run the following command:

```
$ echo $PATH
```

If neither directory is included, you must edit the `PATH` variable.

- If your login shell is the Bourne shell or KornShell, edit the `~/.profile` file.
- For example, If your login shell is `tcsh` or `csh`, edit the `~/.cshrc` file instead.

The next two sections describe how to edit the PATH variable.

Including bin in PATH

To ensure that Content Server can find the appropriate shell scripts, you must edit the PATH to include the *app_server_install_dir*/bin directory. For example, if the Sun ONE Application Server directory is SUNWappserver7 and your home directory is /export/home, then you would edit the PATH variable as follows:

```
PATH=$PATH:/export/home/SUNWappserver7/bin
```

Including the JDK in PATH

The Content Server installation program first executes "java -version" to determine which version of Java is used. Currently, jdk 1.3.x or greater is required. If this version is not on the approved list for installing Content Server, the program displays the following message and then stops.

```
Your default jre, version is unsupported.
Either upgrade it, or modify your PATH so that it points to a
supported jre.
```

The JDK bin directory must appear at the beginning of the PATH variable. For example, if your JDK is located in /usr/j2se/jre/bin and the version is jdk 1.4.0, then you edit the PATH variable as follows:

```
PATH=/usr/j2se/jre/bin/jdk1.4.0/bin:$PATH:$HOME/bin
export PATH
```

Changes to the PATH variable will not take effect until you log out and log in again.

If you do not want to permanently set the JDK in your PATH, you can run the following command before invoking the Content Server installation:

```
$ PATH=/usr/j2se/jre/bin/jdk1.4.0/bin:$PATH; export PATH
```

On Windows 2000

Before installing Content Server on Windows 2000, you must complete the following tasks:

- Verify that you are running Windows 2000 SP 2 or later.
- Verify that your DBMS is installed correctly. Refer to Chapter 6, "Installing Oracle" for instructions. If you are doing a fresh install, confirm that the tablespace is empty.
- Verify that Sun ONE Web Server is installed and configured. Refer to "Installing Sun ONE Web Server on Windows 2000" on page 31.
- Verify that Sun ONE Application Server is installed and configured correctly. Refer to "Installing Sun ONE Application Server" on page 43.
- "Verify the PATH is Set," as described in the following section.

Verify the PATH is Set

When using Sun ONE Application Server, you must verify that your PATH variable includes the *app_server_install_dir*/jdk/bin directory where *app_server_install_dir* is the installation directory for Sun ONE Application Server. Currently, jdk 1.3.x or greater is required.

For example, if the Sun ONE Application Server installation directory is named `Sun\AppServer7` and is located in `c:\`, follow these steps:

1. Open the Control Panel.
2. Double-click the System icon. The **System Properties** menu appears.
3. Click the **Environment** tab.
4. Examine the value assigned to the `PATH` variable. If necessary, add the following directory to the beginning of the `PATH` variable.

   ```
   c:\Sun\AppServer7\jdk\bin;%PATH%
   ```

5. Reboot the Windows 2000 server.

Setting the PATH at a Command Prompt

You can also set the `PATH` variable to Java at a command prompt.

1. Open a command prompt and use the `cd` command to navigate to the folder containing your Content Server installation files.
2. At the command prompt, enter `csinstall`.
3. Press **Enter**.
4. To set the path variable to Java, enter the following command:

   `PATH=`*`drive:\app_server_install_dir`*`\jdk\bin; %PATH%`

   where the application server install directory is the folder where the application server is installed (for example, `c:\Sun\AppServer7\jdk\bin`).
5. Press **Enter**.
6. To verify the Java version, enter `java-version.`

Extracting the Installation Program

The way you extract the installation program depends on the operating system.

On Solaris

Before you begin, make sure you are logged in as the Solaris user that you created in the procedure “Create a Solaris Group and User” on page 22.

To extract the Content Server installation program for Solaris, complete the following steps:

1. Start the database and listener as the same user who installed Oracle, if they are not already running.
2. Start the web server.
3. Start the application server.
4. Create a temporary directory into which you untar the `cs.tar` file:

   ```
   $ mkdir $HOME/temp_cs
   ```

5. Change to this temporary directory:

   ```
   $ cd $HOME/temp_cs
   ```

6. Untar the `cs.tar` file; for example:

   ```
   $ tar -xvf /cdrom/unix/cs.tar
   ```

   Note

   The GNU `tar` utility does not handle long pathnames in the same way as the Solaris `tar` utility. Do not use the GNU tar utility to unbundle the tar file; you must use the Solaris `tar` utility.

7. The tar program creates a `ContentServer` subdirectory of the temporary directory. Change to that subdirectory by typing:

   ```
   $ cd ContentServer
   ```

8. Invoke the `csinstall` program by typing the following command:

   ```
   $ sh csinstall.sh
   ```

9. Follow the instructions in "Completing Installation Screens."

On Windows 2000

To extract the Content Server installation program for Windows 2000, complete the following steps:

1. Start the database and listener as the same user who installed Oracle, if they are not already running.
2. Start the web server.
3. Start the application server.
4. Run the self-extracting file `cs.exe` from the CD to extract the installation files to a temporary directory that you specify.
5. Open a DOS Window.
6. Change to the directory you specified in step 4. For example, if you extracted the files into `c:\temp_cs`, issue the following command:

   ```
   c:\> cd c:\temp_cs
   ```

7. Type the following to invoke the installation batch file (`csinstall.bat`):

   ```
   c:\temp_cs> csintall
   ```

8. Follow the instructions in the next section.

Completing Installation Screens

After starting, the installation program runs identically on both Solaris and Windows 2000. The installation program displays the following windows as you progress:

1. Select Products

2. Installation Directory
3. Installation Type
4. Installation Options
5. Application Server
6. Web Server Configuration
7. Content Server Configuration
8. Satellite Server Configuration
9. Web Server Document Root
10. SAS Root Directory
11. Database Configuration
12. Database Users
13. SAS7 Configuration
14. Warning: Prerequisites for Install

The remainder of this section details each of the preceding screens.

After going through the preceding screens, the installer program will begin to install the software.

Select Products

The **Select Products** window appears, asking which product(s) you wish to install. Put a check in the box next to the only choice, which is:

```
ContentServer V5.0
```

Then, click **Next**.

Installation Directory

In the **Installation Directory** window, you must supply the full path to where Content Server will be installed. Consider the following:

- You must install Content Server on the same machine where the Sun ONE Application Server is installed.
- You must enter a full pathname, not a relative pathname. The installation program creates the specified directory if it does not already exist.
- For a cluster installation, this path must be the same on each machine in the cluster.
- The default pathname is a placeholder only. Be sure to enter the appropriate pathname for your installation.

Click **Next** to continue.

Installation Type

The **Installation Type** window asks you to choose one of the following installation types from the drop-down list:

Installation Type	Select This Option For...
Single Server	A new single server or for the primary member of a cluster installation.
Cluster Member	A new installation of a member of an existing cluster.
Upgrade	An upgrade of an existing installation. If the Content Server database tables have already been created, then you must pick **Upgrade**. The Content Server installation process creates these database tables in the middle of the process. It is possible that the database tables are created even though an installation does not complete. For example, suppose you choose **Single Server** but the installation fails after the database tables were created. Therefore, in order to complete the installation, you must pick **Upgrade** on subsequent attempts to install.

After making your selection, click **Next**. If you chose **Cluster Member**, proceed to the Application Server menu.

Installation Options

In the **Installation Options** window, select from the following options:

Table 9: Installation Options

Option	Explanation
Portal Example	A sample web portal site that illustrates content delivery techniques for page components, page caching, and image serving.
Deploy Content Server XML Bridge	You use CS-Bridge XML to receive, deliver, process, route, and transform XML documents to and from other enterprise applications over the web. See the *CSEE Product Overview* for an overview.
Deploy Content Server XML Bridge Sample	Some sample code useful in understanding CS-Bridge XML.
Deploy Debug Servlet	A servlet that will help you debug XML code. This is a useful servlet to install on a development system, but is not recommended on a management or delivery system.

This form also asks if you want to display the Property Editor. The installation creates a property file named `futuretense.ini`. You use the Property Editor to modify `futuretense.ini` and change the default values. You can also start the Property Editor manually and change values after the installation completes.

Select **Yes** for the Property Editor to automatically appear during installation. This allows you to turn debugging on while the installation program runs.

Note

Turning on debugging can significantly increase the time it takes to install Content Server. Turn on debugging only if necessary to resolve some issue.

Click **Next** to continue.

Application Server

The **Application Server** window asks you to select your application server from the drop-down list.

Choose **Sun ONE Application Server 7.0** and then click **Next**.

Web Server Configuration

In the **Web Server Configuration** window, enter the host name and web server port number of the server on which the Sun ONE Web Server is installed. Then, click **Yes** or **No** to indicate whether Sun ONE Application Server will be serving Content Server servlets over a secure port.

Note

Before you select **Yes**, be sure to register your SSL certificate on the web server. If you select **Yes** but have not yet registered your SSL certificate, the installation will fail.

Then click **Next**.

Content Server Configuration

The **Content Server Configuration** window asks you to supply login information for the Content Server administration account.

- Username—The default user name is `ContentServer`. You can accept this default or change it.
- Password—Enter the password and reconfirm it. The restrictions to the length of the password depend on the system you are using to manage users.

Record this information on the work sheet provided in Chapter 2, “Documenting Your Configuration.”

Click **Next** to continue.

Satellite Server Configuration

The **Satellite Server Configuration** window asks you to supply login information for the Satellite Server administration account.

- Username—The default user name is `SatelliteServer`. You can accept this default or change it.
- Password—Enter the password and reconfirm it. The restrictions to the length of the password depend on the system you are using to manage users.

Record this information on the work sheet provided in Chapter 2, "Documenting Your Configuration."

Click **Next** to continue.

Web Server Document Root

In the **Web Server Document Root** window, you must supply the **full path** to two directories:

- The web root directory. You created this directory when you configured the web server. The web root directory is required to be `futuretense_cs`, which you can map to any other directory.
- A directory for shared upload folders, which is necessary for cluster installations. If you are installing on Windows 2000, you must include the drive and folder when you specify the shared folder.

You can accept the defaults that are provided or enter a new pathname. If you type in a pathname, it must be a full pathname, not a relative pathname. The installation program creates the specified directory if it does not already exist.

Click **Next** to continue.

SAS Root Directory

The **SAS Root Directory** window asks you to identify the directory in which Sun ONE Application Server is stored.

You must enter the absolute path name to the Sun ONE installation directory; that is, the directory where you installed Sun ONE Application Server. (By the way, the correct directory has a subdirectory called `domains`.) For example:

For Solaris: `/export/home/SUN/AppServer7`

For Windows 2000: `c:\sun\appserver7`

Click **Next.** The **Database Configuration** dialog window appears.

Database Configuration

In the **Database Configuration** window, enter the appropriate values for each field:

- **Select the Database you are using** — Select the appropriate kind of database and JDBC driver type from the drop-down list.
- **JNDI Data Source Name** – This is the name used for storing database configuration information in the registry. This can be any name you prefer, but it must match the JNDI data source name that you devised when configuring your application server plugin. For example: `MYJNDI`.

Hopefully, you recorded this information in Chapter 2, “Documenting Your Configuration.”

Click **Next** to continue.

Database Users

You must supply the name (for example, `csuser`) and password for the Oracle account that Content Server will use to interact with Oracle. You created the name and password when you configured Oracle.

Click **Next** to continue.

SAS7 Configuration

You must supply the following information:

Field	Value
domain name	The name of the domain created while installing the application server. The default domain name is `domain1`.
server name	The name you specified (for example, `CSServer`) when creating the server instance while configuring the application server.
application name	Pick any name, for example, ContentServer. You will need to enter the application name in order to deploy ContentServer.ear later on in the installation process.

Click the **Next** button.

Warning: Prerequisites for Install

Verify the prerequisites displayed in the **Prerequisites for Install** window.

Click **Next** to continue.

Installing Software

The installation program displays a status bar showing installation progress, displays log messages in the Install window, and also logs these messages to the following installation log file:

```
$HOME/omninstallinfo/install_log.log
```

After verifying the prerequisites, the installer program begins to install Content Server. You will be directed to do the following tasks during this install procedure:

- Change Properties (Optional)
- Complete the Installation
- Deploy ContentServer.ear

Change Properties (Optional)

Properties control much of the behavior of Content Server. You use the Property Editor to modify `futuretense.ini`. If the Property Editor does not appear (because you did not select it in the Installation Options window), after the installation completes, you can start the Property Editor manually and change values in the `.ini` file.

A complete description of all the properties in the `futuretense.ini` file is provided in the *CSEE Administrator's Guide*. Descriptions of each property are also available within the Property Editor itself. While the installation program is running, only a small fraction of the available properties are pertinent. The following table identifies the relevant properties:

Table 10: Properties to Consider Setting During Installation

Property	Setting
`ft.debug`	Set to `yes` to enter debug messages in a log.
`ft.dbdebug`	Set to `yes` to enter database errors in the log.
`ft.logsize`	Set to some big number (For example, 100000).
`cc.datetime`	Set to `TIMESTAMP` if you are running Oracle 9.20. If you are running Oracle 9.0.2 or earlier, accept the default value.
`cc.bigtext`	Set to `VARCHAR (2000)` if you are using an Oracle Type 4 driver. Set to either `CLOB` or `VARCHAR (2000)` if you are using an Oracle Type 2 driver.
`cs.documentation`	The URL from which a user accesses Content Server documentation. See "Accessing Content Server Enterprise Edition Documentation" for details.

Note

In some older versions of the Content Server Installer, you were instructed to modify the value of the `cc.security` property. As of Content Server 4.0, you should not alter the `cc.security` property during installation.

The resulting log file is in the Content Server installation directory; for example:

```
/local/ContentServer/futuretense.txt
```

When you finish making changes to the properties, choose **File** > **Save** and then **File** > **Exit**.

After the Property Editor window closes, the Content Server Installer resumes. Next, it displays the **iAS Install Actions** window.

Complete the Installation

Start the application server. After the application server has started, start the web server. Be sure to allow sufficient time for the application server to start (10-15 seconds) prior to starting the web server. If you proceed too quickly, you might encounter a "Could not bind to socket" condition.

Then, click **OK** on the **Install Options** window and the installation continues.

When the installation is complete, a message box appears and indicates the outcome. Follow the instructions in the message and then click **OK**.

Finally, in the Installation Window itself, click **Exit** to finish.

Deploy ContentServer.ear

After starting the Content Server install and clicking through a series of screens, you will get a warning message indicating that you should restart the application server. When you get this message, do not continue the Content Server installation process until you finish deploying the `ContentServer.ear` file. After deploying the `ContentServer.ear` file, restart the application server and finish the Content Server installation.

1. Start the application server admin console.
2. Click the icon with the application server instance name to expand the tree in the left panel.
3. Click the icon with the name of the server you created to install Content Server to expand the tree.
4. Click the **Applications** icon to expand the tree.
5. Click the **Enterprise Applications** icon to further expand the tree.
6. On the right-hand side of your screen, select the **Deploy** button.
7. In the **File Path** section, enter the path to the `ContentServer.ear` file (for example, `c:\FutureTense\ominstallinfo\app\ContentServer.ear`) or click the **Browse** button to browse to the `ContentServer.ear` file. Then, click **OK**.
8. In the **Deploy Enterprise Apps** section, enter a name (for example, `ContentServer`) in the **Application Name** field. This name should match the **Application Name** you entered to the SAS7 Configuration window.
9. In the **Virtual Servers** drop-down menu, select the server that you created to install Content Server.
10. Click the **OK** button.

Note

If your installation fails you need to undeploy the ContentServer.ear file before beginning the installation again.

To undeploy the ContentServer.ear file, simply follow the steps to deploying the file, until you reach the screen with the deploy button. Instead of clicking the **deploy** button, click the **undeploy** button.

When you run the Content Server installation a second time, you will need to deploy the ContentServer.ear file again.

Verifying the Installation

To verify the installation, do the following:

- Verify the connections between Content Server and the application server. Verify the connections between Content Server and the DBMS.
- Verify that the Content Server log files are being created.
- Verify that you can log in to Content Server.

Verify the Connections

To verify that Content Server can communicate with all the other components, complete the following steps:

1. Open a browser and enter the following URL:

   `http://web_server_host:web_server_port/servlet/HelloCS`

   where *`web_server_host`* is the name of the web server and *`web_server_port`* is the port number of the web server.

   If everything is installed correctly, Content Server displays a simple message starting with the following line of text:

   ```
   Welcome to Content Server
   ```

   If you do not see this message, see “Verify That Log Files are Being Created” on page 68 for information about accessing the log file that holds error and status messages when debugging is enabled.

2. In the browser window, enter the following URL:

   `http://web_server_host:web_server_port/servlet/CatalogManager?ftcmd=pingdb`

   If the database connections were configured correctly, Content Server displays the message:

   ```
   Operation complete.
   ```

If you do not see this message, then one of the following problems has probably occurred:

- You did not register the JDBC driver.

- You supplied the wrong DBMS user name/password combination in the `futuretense.ini` property file.
- The DBMS is not running.
- The network connection between your browser and iPlanet, or between iPlanet and the DBMS is not up.

Verify That Log Files are Being Created

When the debugging option is enabled (`ft.debug=yes`) in the `futuretense.ini` file, Content Server writes errors and messages to the log file, `futuretense.txt`.

The log file is in the `logs` directory under the Sun ONE Application Server server directory. For example:

```
c:\Sun\AppServer7\domains\domain1\server1\logs
```

Be sure to delete or archive this file frequently because a large log file can affect the performance of the system.

On a delivery system, you should disable debugging.

Starting the Configuration

After verifying the installation, you are ready to start configuring the system. System configuration is documented in the *CSEE Administrator's Guide*.

This section describes basic tasks that you should complete before you start configuring everything else. These tasks are detailed in the *CSEE Administrator's Guide*:

1. (Optional) Tighten the security settings that are already in place by enabling the `secure.CatalogManager` property in the `futuretense.ini` file. See the *CSEE Administrator's Guide* for information about how to invoke the Property Editor and then set the `secure.CatalogManager` property to `true`.
2. Add new users to the Content Server system.
3. Change the password for the system.
4. Secure your web server document directories so that they allow users to view web documents only (HTML, dynamic documents, or active server pages), not directories.
5. (Optional) Configure your user management setup to use LDAP or 2000 instead of the default facilities. For more information, see the *CSEE Administrator's Guide*.

Accessing Content Server Enterprise Edition Documentation

You can access Content Server Enterprise Edition documentation from two different places:

- From a web site
- From the kit itself

Note

The most up-to-date documentation is on the web site, not on the kit.

Documentation on the Web Site

FatWire maintains a web site that contains the latest CSEE documentation, located at the following URL:

`http://e-docs.FatWire.com/CSEE/5.5.`*n*`/index.htm`

where *n* identifies the particular release; for example:

`http://e-docs.FatWire.com/CSEE/5.5.1/index.htm`

For the most recent information, access documentation through this web site rather than through the documentation you received in the kit—to ensure that you have the most recent information available. The web site also lets you easily download a package containing all the latest documentation to your local site.

Documentation on the Kit

In the top-level directory of the kit, you'll find the following documentation files:

DOC500 (in both .tar and .zip formats)
: These files hold all the manuals associated with this release.

ReadMe.htm
: This HTML file contains the release notes.

The installation program does **not** install the documentation on your system. If you want to place this documentation on your system, then you must unpack it yourself. To unpack the `DOC500.zip` file, just use Winzip or an unzip utility. To unpack the `DOC500.tar` file, use the `tar` command with the `-xvf` keys. For example, assuming that you are installing Content Server from a CD, the following command would unpack the documentation to directory `/local/CSEE_Docs_500`:

```
$ tar -xvf DOC500.tar /local/CSEE_DOC_500
```

Setting Up Help

Most of the CSEE applications contain a help button (a large question mark symbol). When a user clicks the help button, Content Server redirects their browser to the URL stored in the `cs.documentation` property. By default, the `cs.documentation` property contains the URL of the FatWire documentation web site. If you prefer to get help from documentation stored locally, just change the value of the `cs.documentation` property to the local URL. In fact, you can change `cs.documentation` to any URL at which CSEE documentation is stored. However, be sure that you check the CSEE web site periodically so you can download any new or revised documents to your local site.

Chapter 9

Installing Content Server in a Cluster on Solaris

This chapter contains instructions for installing Content Server in a Sun ONE cluster environment running on Solaris, and lists several important tasks that you must complete before you actually install Content Server. It contains the following sections:

- Pre-Installation Tasks
- Installing Content Server on the Primary Cluster Member
- Installing Content Server on Secondary Cluster Members
- Post-Installation Tasks
- Testing the Cluster
- Additional Content Server Cluster Properties

Pre-Installation Tasks

Before you install Content Server, perform the following tasks:

1. Set up the Oracle database and Content Server database user as described in Chapter 6, "Installing Oracle."

   All cluster members use this Oracle database user.

2. Create a user account for installing Content Server. The user name, password, and privileges must be identical on each machine in the cluster. The Content Server installation creates files in the application server directory, so make sure this Content Server user has the correct privileges.

3. Create a shared file system for sharing common files and synchronizing cache activities. For instructions, refer to your operating system documentation, and consider any applicable Sun ONE application server guidelines.

   The shared file system usually (but not always) resides on the database machine, and on a fault-tolerant disk. Make sure all machines in the cluster can read and write to the shared file system. The Content Server user account you create in step 2 of this procedure also must have the correct read/write privileges.

   Note

   Read/write privileges must be consistent across all cluster members.

4. Set up the Sun ONE application server cluster according to instructions in the Sun ONE product documentation.

5. Set up the Sun ONE web server according to instructions in the Sun ONE product documentation.

6. Synchronize system clocks for all machines involved in the cluster. Problems with synchronizing processes across cluster members are likely to occur if you do not do this correctly.

   Note

   FatWire recommends that you set up an automated or manual process that periodically synchronizes system clocks hourly or more frequently, depending on the accuracy of your system clocks.

Installing Content Server on the Primary Cluster Member

To install Content Server on the primary cluster member:

1. Make sure that you have completed the Content Server pre-installation tasks described in “Pre-Installation Tasks” on page 72, and that you have correctly configured the application server and web server for Content Server.
2. Disable all cluster members except for the primary cluster member by stopping the application server on the other cluster members.
3. Log in to the primary cluster machine as the Content Server user you created in “Pre-Installation Tasks” on page 72.
4. Install Content Server according to instructions in Chapter 8, “Installing Content Server,” except for the following cluster installation differences:
   a. In the **Installation Type** window, select **Single Server** as the type. This is the correct setting for a primary cluster member.
   b. In the **Web Server Document Root** window, enter the path where the shared folders are to be stored. This is the same shared directory you created in “Pre-Installation Tasks” on page 72.
   c. If the web server is on a different machine, specify the `futuretense_cs` web server document root on the shared file system. This directory is a temporary placeholder for Content Server web server files. You will copy these files later, as described in “Post-Installation Tasks” on page 74.

Installing Content Server on Secondary Cluster Members

Complete the following steps for *each* secondary cluster member (that is, a machine other than the primary cluster member).

To install Content Server on a secondary cluster member:

1. Make sure that you have completed the Content Server pre-installation tasks described in “Pre-Installation Tasks” on page 72.
2. Make sure that Sun ONE Application Server is installed on the secondary cluster machine. For instructions, refer to the Sun ONE product documentation.
3. Install the JDBC driver on the secondary cluster machine. For instructions, see Chapter 7, “Installing Sun ONE Application Server.”
4. Log in to the secondary cluster machine as the Content Server user that you created in “Pre-Installation Tasks” on page 72.

5. Install Content Server according to the instructions in Chapter 8, "Installing Content Server," except for the following cluster installation differences:
   a. From the Installation Type window, select **Cluster Member** as the type.
   a. In the Database Configuration window, enter the same database user and password you specified for the primary cluster machine.
   b. For the Content Server Shared Directory, choose the `/ContentServerSharedDir` directory that is now shared on the cluster member machine.

Post-Installation Tasks

Do the following after you complete the Content Server installation steps:

1. Stop all instances of Sun ONE application servers.
2. On each cluster member, including the primary, start the Property Editor. (For more information about the Property Editor and property settings, see the *CSEE Administrator's Guide.)*
   a. From a system prompt, enter the following command on a single line or with line continuation characters:

      ```
      $ java -classpath cs-root/cs.jar:cs-root/swingall.jar
      COM.FutureTense.Apps.PropEditor /export/home/futuretense.ini
      ```

   b. Open the `futuretense.ini` property file (normally in the Content Server directory).
3. Set the following properties for each cluster member:

   `ft.sync` – To enable synchronization, set this to any value you want. This cannot be left blank, and must be identical on all machines in the cluster (for example, the DSN that cluster members use for their shared database).

   `ft.usedisksync` – Specify a shared file system folder for synchronizing data across a cluster. Set this to a valid empty folder (for example, a directory where the Content Server user has read/write access) when synchronization is enabled with the `ft.sync` property.

   `cc.security` – Set this to `true` to have Content Server check security before allowing database access. (Possible values are `true` and `false`.)

   These are the minimum Content Server properties required for clustering. Other properties that apply to clusters are described in "Additional Content Server Cluster Properties" on page 75.
4. Start all instances of Sun ONE application servers.
5. Copy the `futuretense_cs` directory to all of the web server machines.
6. After you copy this directory, configure the Content Server web root directory as described in "Configure the Installation" on page 26 (in Chapter 4, "Installing Sun ONE Web Server on Solaris").

Note that if you are installing the CS Content Applications in addition to Content Server, there are additional post-cluster steps. For more information about installing the CS Content Applications on a cluster, see the *CS Content Applications Installation Guide*.

Testing the Cluster

To test the cluster, as installed so far:

1. Stop all instances of Sun ONE application servers.
2. On each cluster member, including the primary member, start the Property Editor. (For more information about the Property Editor and property settings, see the *CSEE Administrator's Guide.)*
   a. From the system prompt, enter the following command on a single line or with line continuation characters:

      ```
      $ java -classpath cs-root/cs.jar:cs-root/swingall.jar
      COM.FutureTense.Apps.PropEditor /export/home/futuretense.ini
      ```

   b. Open the `futuretense.ini` property file (normally in the Content Server directory).
3. Set both the `ft.debug` and `ft.dbdebug` properties to `yes`.
4. Start all instances of the Sun ONE application servers.
5. Create a simple test page. To do this, use Content Server Explorer to add a SiteCatalog entry that modifies a table row, then queries that table again.
6. On each cluster machine, tail the application server log file.
7. Open multiple browser windows, call the test page repeatedly in each window until you see all cluster members respond to the page request (you should see a database SQL statement in each log).

To test for failover:

1. Start a CS-Direct session and note which application server handles the requests.
2. Shut down that application server.
3. Verify that the session is maintained, and that a different application server picks up the requests.

Additional Content Server Cluster Properties

The Content Server `futuretense.ini` file contains properties that control various aspects of Content Server operations. You use the Property Editor to configure properties and set property values.

During installation, you typically use the Property Editor to verify and modify property settings needed by Content Server to identify the database and other components, such as the application server and debugger. After installation, you can use the Property Editor to performance-tune the application or to set specific values to enable clustering.

For each Content Server instance, make sure the following property values are set the same:

- Make sure all debugging is turned off for all Content Server instances. Start the Property Editor, and select the **Debug** tab on the left side. Make sure all of the debug properties are set to `no`.
- Select the **Basic tab**, and set `cs.timeout` to a desired value (in seconds).
- Select the **Caching** tab, and set `ft.filecheck` to `no`.
- Review all Caching properties and set the value accordingly. Good candidates to change include `cc.cacheResultsTimeout` and `cc.pgCacheTimeout`.

To improve performance or to stabilize write/read operations to the shared disk, the following property values can be set to a local folder:

- `cs.pgcachefolder` – Specifies the default locations for pages cached to disk. Located in the Content Server install folder.

  Note

  If you modify a cached page then it is possible that all of the cluster members may have different versions of the same page. If the cached page expires within a certain time, then the cache clears and the cluster members retrieve the new page from the database.

- `cs.pgexportfolder` – Specifies the default location for exported pages. Located in the Content Server `Install` folder.
- `cs.xmlfolder` – Specifies a working folder for use with HTML filtering. Located in the Content Server `Install` folder.

Chapter 10

Uninstalling Content Server

This chapter explains how to uninstall Content Server. Uninstalling Content Server involves cleaning the following components:

- Content Server
- Application server
- DBMS

Content Server

To clean the disk on which Content Server was installed, do the following:

1. Delete the `omninstallinfo` directory, which is found in the HOME directory of the account that performed the Content Server installation.
2. Delete the entire Content Server installation directory and all its subdirectories.

Application Server

To clean the application server, do the following:

1. Start the application server administration console.
2. In the application server administration console, select **Applications**.
3. Select **Enterprise Applications**.
4. Select the name of the enterprise application corresponding to Content Server and remove it.
5. In the application server administration console, select **JDBC**.
6. Select **JDBC Resources**.
7. Select the name of your JDBC resource for Content Server and delete it.
8. In the application server administration console, select **Connection Pools**.
9. Select the name of your connection pool for Content Server and delete it.

DBMS

The Content Server install creates many database tables. To uninstall Content Server completely, you should delete all the tables created by Content Server using your choice of database tools. Most sites create a separate DBMS account to hold Content Server information. So, the best way to locate all Content Server tables is to search for all tables owned by the DBMS account.

Appendix A

Pre-Installation Readiness

FatWire provides an Installation Services team to install Content Server. If you decide to hire this team, the manager of the team will contact you prior to performing the installation. During that contact, the manager will walk you through the pre-installation readiness checklist that appears in this appendix.

General Logistics

To help us plan, please provide the following information to us as soon as possible. In addition, please provide directions to your site and hotel recommendations.

Table 11: General Logistics

You Fill Out	Information We Need
	What is the address of the site where we will install the software?
	During which hours may the FatWire Installation Services representative perform the installation?
	Who is the primary contact at your organization? (Need name, e-mail address, and phone number.)
	Who is the secondary contact at your organization? (Need name, e-mail address, and phone number.)
	Have you received any training from FatWire? If so, what courses?
	What is your anticipated date to “go live”?
	Who is your system integrator?

Checklist: Before We Arrive

Before we arrive, you must have completed the tasks shown in the following table:

Table 12: Readiness Checklist

Completed?	Task
	All hosts have the operating system versions and patch levels required by Content Server.
	All hosts are configured with a static IP address and must be properly set up in DNS.
	You have sent the FatWire Installation Services team an architectural diagram. This diagram should identify the following: • The names and IP addresses of all hosts involved in the installation. • The software that will be installed on each host. • The position of any firewalls between hosts, or between the hosts and the rest of the network.
	A C compiler is installed on the host on which Apache will be installed. (If some other web server is to be installed, no C compiler is required.)
	If we are installing remotely (not on the console), then all of the following must be true: • A network drop to connect a laptop is available. The connection has been tested and works properly. (Be aware of firewall issues.) • Your firewall permits our laptop to access remote files via FTP. (We need FTP access in order to download software.)
	If we are installing on UNIX (Solaris or AIX), then we need at least one of the following: • The root password to all the hosts. • The name and phone number of the UNIX system administrator who can type in the root password when we need root access.
	An X-Windows client is installed on all UNIX hosts on which we will install Content Server. (Content Server is installed on the same host(s) running an application server.)
	If this is a multi-tiered installation with a firewall between the tiers, then the appropriate ports have been opened to allow communication between servers.
	If you are supplying the web server, you have the installation media and license keys.
	If you are supplying the application server, you have the installation media and license keys.
	If you are supplying the DBMS, you have the installation media and license keys.

Architecture Overview

We typically install software on three environments:

- Development
- Management
- Delivery

When we ask you to specify the number of tiers for each environment, your possible answers are as follows:

- One tier – all software is installed on a single host.
- Two tier – software is installed across two hosts. Typically, the web server and application server are installed on one host, and the DBMS is installed on a different host.
- Three tier – software is installed across three hosts. The web server, application server, and DBMS are all installed on different hosts.

We also need to know if any of the tiers are clustered on each environment. Clustering means that the same component is installed on multiple hosts. For example, application servers are often clustered, meaning that the application server is installed on two or more hosts.

Development Environment

Please complete Table 13, Table 14, and Table 15 for your development environment.

Table 13: Architecture for Development Environment

You Fill In	Parameter
	How many tiers? (Typically, there is only one.)
	Is there any clustering? (Typically, there is not.) If there is clustering, describe which components are clustered.
	What is the operating system version, including patch level or service pack.

Table 14: Hardware for Development Environment

Hostname	Purpose (for example, DBMS host)	Make/Model	Processor Speed	RAM

Table 15: IP Addresses for Development Environment

Hostname	IP Address (primary/front-end)	IP Address (secondary/back-end)

Management Environment

Please complete Table 16, Table 17, and Table 18 for your management environment.

Table 16: Architecture for Management Environment

You Fill In	Parameter
	How many tiers?
	Is there any clustering? If there is clustering, describe which components are clustered.
	What is the operating system version, including patch level or service pack.

Table 17: Hardware for Management Environment

Hostname	Purpose (for example, DBMS host)	Make/Model	Processor Speed	RAM

Table 18: IP Addresses for Management Environment

Hostname	IP Address (primary/front-end)	IP Address (secondary/back-end)

Delivery Environment

Please complete Table 19, Table 20, and Table 21 for your delivery environment.

Table 19: Architecture for Delivery Environment

You Fill In	Parameter
	How many tiers?
	Is there any clustering? If there is clustering, describe which components are clustered.
	What is the operating system version, including patch level or service pack.

Table 20: Hardware for Delivery Environment

Hostname	Purpose (for example, DBMS host)	Make/Model	Processor Speed	RAM

Table 21: IP Addresses for Delivery Environment

Hostname	IP Address (primary/front-end)	IP Address (secondary/back-end)

Software

A full installation requires the following components:

- Web Server
- Application Server
- DBMS
- JDBC Driver
- FatWire Products

Some of these components might already be installed on your systems. We need to know what is already installed and what needs to be installed.

Web Server

Is a web server already installed? If so, complete Table 22. If you want us to install a web server, complete Table 23. (You might need to complete both tables.)

Table 22: Web Server Already Installed

You Fill In	Parameter
	Type of web server (for example, Apache)
	Version number (for example, 1.3.12)
	Has connectivity to the application server (plug-in/web connector) been configured and tested?
	Is there a single web server or are there multiple web servers with load balancing?

Table 23: Web Server That We Will Install

You Fill In	Parameter
	Type of web server (for example, Apache)
	Version number of web server
	If we upgrade the web server described in Table 22, do you want us to preserve the current configuration settings (as much as possible)?

Application Server

Is an application server already installed? If so, complete Table 24. If you want us to install an application server, complete Table 25. (You might need to complete both tables.)

Table 24: Application Server Already Installed

You Fill In	Parameter
	Type of application server (for example, WebLogic)
	Version number (for example, 5.1.0) Be precise about patch numbers or service packs.
	What applications is this application server already running?
	Are there currently any other applications on this host that will share hardware resources?
	How many hosts are running application servers in this environment?

Table 25: Application Server That We Will Install

You Fill In	Parameter
	Type of application server (for example, WebSphere)
	Version number of application server.
	If we upgrade the application server described in Table 22, do you want us to preserve the current configuration settings (as much as possible)?

DBMS

Is a DBMS already installed? If so, complete Table 26. If you want us to install a DBMS, complete Table 27. (You might need to complete both tables.)

Table 26: DBMS Already Installed

You Fill In	Parameter
	Type of DBMS (for example, Oracle)
	Version number of DBMS (for example, 8.1.7) Be precise about patch numbers or service packs.
	Have tablespaces and user IDs been created for Content Server?
	Is this DBMS clustered? If so, on how many hosts in this environment?

Table 27: DBMS We Will Install

You Fill In	Parameter
	Type of DBMS (for example, Oracle)
	Version number. Be precise about patch numbers or service packs.
	Will we have the DBMS system password? If not, who is the database administrator to contact during the installation?
	Will this DBMS need to store non-English content?
	Is this DBMS shared used by any other applications?

JDBC Driver

Is a JDBC driver already installed? If so, complete Table 28. If you want us to install a DBMS, complete Table 29. (You might need to complete both tables.)

Table 28: JDBC Driver Already Installed

You Fill In	Parameter
	Type of JDBC driver currently installed (for example, Oracle Type 2)

Table 29: JDBC Driver We Will Install

You Fill In	Parameter
	Type of JDBC driver we should install (for example, Oracle Type 4)
	Does the DBMS store non-English content?

FatWire Products

Please complete the following table, identifying those products currently installed and those you want us to install.

Table 30: FatWire Products

Currently Installed Version	Version That We Should Install	Product Name (Former Product Names are in Parentheses)
		Content Server
		CS-Direct (Content Centre)
		CS-Direct Advantage (Catalog Centre)
		CS-Engage (Marketing Studio)
		CS-Satellite (Satellite Server)
		CS-Bridge Enterprise (Integration Centre)
		Analysis Connector
		Commerce Connector
		A search engine, such as AltaVista

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