

# **Configuring and Administering ADOBE® COLDFUSION (2016 release)**

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# Administering ColdFusion

Although you use the ColdFusion Administrator to perform most ColdFusion administration tasks, you can also manage databases, web server configurations, and ColdFusion Search Server.

## About the ColdFusion Administrator

The ColdFusion Administrator provides a browser-based interface for managing your ColdFusion environment. You can configure many settings to provide optimal levels of security and functionality. The available options are based on your edition of ColdFusion Standard or Enterprise as well as your configuration: server, or J2EE. For more information on ColdFusion configurations, see [Preparing to Install ColdFusion](#) in *Installing ColdFusion*.

The default location for the ColdFusion Administrator login page is:

`http://_servername_portnumber_/CFIDE/administrator/index.cfm` Where `servername` is the fully qualified domain name of your web server. Common values for `servername` are `localhost` or `127.0.0.1` (each refers to the web server on the local computer).

If you are using the ColdFusion built-in web server, include the port number as part of the `servername`. The default port number for the server configuration is 8500; for example,

`http://_servername_:8500/CFIDE/administrator/index.cfm`.

To access the ColdFusion Administrator, enter the password specified when you installed ColdFusion. If your ColdFusion Administrator is on a remote computer, use the Domain Name Services (DNS) name or Internet Protocol (IP) address of the remote host.

For more information, see [Using the ColdFusion Administrator](#).

**Note:** *If you are running ColdFusion in a multihomed environment and have problems displaying the ColdFusion Administrator, see [Web Server Management](#) for configuration information.*

## Key features of the ColdFusion Administrator

- **Server configuration:** The Server area of the Administrator lets you set up and manage the functionality of ColdFusion. You can define caching preferences, connect to data sources for use in ColdFusion applications, select debugging options, manage variables, set up task automation, and register Java applets, settings, and custom tags.
- **Security:** The Security area of the Administrator lets you secure your development environment. You can enable password protection for the Administrator, enable password protection for remote access, and control access by using ColdFusion tags and functions to server resources.
- **ColdFusion resources:** The ColdFusion Administrator home page provides access to the following information and support:
  - **Local resources** - release notes, new features documentation, product documentation, and example applications
  - **Technical support** - installation, support, resources, and TechNotes

- **Online resources** - product registration, developer information, white papers, training, enhancement requests, and security

## What you can do in ColdFusion Administrator

Some of the tasks that you can perform in ColdFusion Administrator:

- Set up and maintain your server
- Create and manage ColdFusion cluster
- Monitor system performance
- Secure your resources
- Manage and analyze log files
- Connect to ColdFusion data sources
- Schedule tasks
- Integrate Java applets and custom tags
- Download and install Server Manager
- Configure OpenOffice
- Manage undelivered mails
- Access online product documentation, release notes, product upgrades, and TechNotes
- Download and install product updates and hotfixes.

## Optional configuration overview

After you perform basic configuration tasks in the Administrator pages, consider taking these actions:

- **Determine the identity of a website visitor:** ColdFusion lets you use client variables to determine the identity of a client visiting your site. By managing client variables, you can use this information to customize page content for your clients. Select Server Settings > Client Variables in the ColdFusion Administrator navigation pane to specify a default storage mechanism for client variables and to optionally specify the data source used to store client information.
- **Create logical aliases for physical directories:** You can create logical aliases for paths to directories on your server. Select Server Settings > Mappings in the ColdFusion Administrator navigation pane. By creating aliases for directories on your server, you can use them in your ColdFusion applications. These are referred to as mappings. You typically use two types of mappings:
- **ColdFusion mappings:** Equates a logical path (for example, /payroll) with a physical directory path (for example, C:\finance\payroll). ColdFusion uses these mappings for the cfinclude tag, the cfmodule tag, and when locating ColdFusion components.
- **Web server mappings:** Web server mappings also equate a logical path to a physical path, but at the web server level. Web server mappings are in effect for all requests made to a web server. In many cases, web server mappings render ColdFusion mappings unnecessary.
- **Register Java applets and CFX tags:** You can use Java applets and CFX tags in your ColdFusion applications. Register the applets on the appropriate Extensions pages by selecting Extensions > Java Applets or Extensions > CFX Tags in the ColdFusion Administrator navigation pane. After they are registered, you can incorporate the applets and tags in your applications.

- **Configure standard debugging options:** You can get useful debugging information about your application page requests from browsers by setting debugging preferences. Select Debugging & Logging > Debug Output Settings in the ColdFusion Administrator navigation pane to set up debugging.
- **Perform advanced administration tasks:** If you require granular security control over your ColdFusion resources, or need to decentralize ColdFusion administrative responsibilities, implement ColdFusion Security. In the ColdFusion Administrator navigation pane, select Security > Sandbox Security (Enterprise Edition) or Security > Resource Security (Standard Edition). To take advantage of additional capabilities that ColdFusion provides for controlling access by applications to resources on the server (such as data sources, files, directories, and IP addresses), consider configuring Sandbox Security. For details, see [Administering ColdFusion Security](#).

## Services and processes

ColdFusion uses services in Windows operating systems and processes on UNIX systems.

If you enable or disable security or change any option in the Java and JVM Settings page in the ColdFusion Administrator, you must stop and restart ColdFusion for your changes to take effect.

*Note: This does not apply when deploying ColdFusion on a J2EE server.*

## Installing the server configuration

### ColdFusion services in Windows

The ColdFusion installation creates the following services in Windows 2000, Windows XP, and Windows 2003:

Service	Description
ColdFusion Application Server	The main ColdFusion service. ColdFusion pages cannot be processed if this service is not running. Note: This does not apply when deploying ColdFusion on a J2EE server.
ColdFusion .NET extension	The extension that lets you access .NET assembly classes as ColdFusion objects. Uses Java proxies to represent the .NET classes on the ColdFusion system, and requires that the ColdFusion .NET-side agent run on the system where the assemblies are located.
ColdFusion ODBC Agent	The service that configures data sources for the ColdFusion ODBC Server.
ColdFusion ODBC Server	The middle-tier service for ODBC connections that use the ColdFusion DataDirect drivers for Microsoft Access and ODBC Socket.
ColdFusion Jetty Server	Manages and controls configuration and services of Solr.

### ColdFusion processes in UNIX

The ColdFusion process discussion does not apply when deploying ColdFusion on a J2EE server

Manage the ColdFusion process in UNIX The ColdFusion installation creates a single process in UNIX called cfusion. To check whether it is running, use the following command: `ps - eaf | grep coldfusion` If it is running, your computer returns a line like the following: `nobody 4528 1 10 12:44 pts/0 00:00:07 /opt/coldfusion/bin/coldfusion -start`

- 1 Log in as root.

- 2 Enter the following command: `cd cf_root/bin`
- 3 Enter the appropriate command, as the following table describes:

Task	Command
Start ColdFusion	<code>coldfusion start</code>
Stop ColdFusion	<code>coldfusion stop</code>
Restart ColdFusion	<code>coldfusion restart</code>
View status information for ColdFusion	<code>coldfusion status</code>

### Layout of the ColdFusion Administrator

To become familiar with the layout of the ColdFusion Administrator pages, open the Administrator and refer to the following descriptions:

Area or Button	Description
Help button	Displays online help for the page in the ColdFusion Administrator you are viewing.
System information button	Displays system information.
Resource button	Displays links to additional sources of information.
Left pane	Lets you navigate to pages in the ColdFusion Administrator.

Verify that the web server is running

Before you install ColdFusion, ensure that your web server is installed and running.

- 1 Open a web browser.
- 2 In the address line, enter the URL for a web page or site. For example, if the file `myindex.htm` is in your web document root directory, load the page in your browser, using the localhost URL, as follows:  
**`http://127.0.0.1/myindex.htm`** or **`http://127.0.0.1:8500/myindex.htm`** (built-in web server)
- 3 Press Enter. If the web server is running, the page appears, otherwise, an error message appears.

System information

Use the ColdFusion System Information page to do the following:

- Update or upgrade a Trial or Developer Edition of ColdFusion as follows:
  - 1 On the System Information page, enter your product serial number in the New License field.
  - 2 Click Submit Changes.
- See the expiration date of your Trial copy of ColdFusion Administrator.
- Identify values that correspond to several ColdFusion server variables. To access the ColdFusion System Information page, click the System Information button in the top right of the ColdFusion Administrator.

### Changes in ColdFusion 11

The ColdFusion 11 Administrator has significant new functionality that includes:

### WebSocket enhancements

ColdFusion 11 has introduced the proxy support for WebSocket. There is a new proxy module (that runs inside IIS and Apache Web Server) that can intercept the ColdFusion WebSocket requests and redirect the requests to the ColdFusion Server.

See [WebSocket enhancements](#)

### PDF generation enhancements

To generate high quality PDFs from HTML documents, 2 new tags, `<cfhtmltopdf>` and `<cfhtmltopdfitem>` have been introduced in ColdFusion 11.

See [PDF generation enhancements](#)

### Security enhancements

ColdFusion 11 has a lot of security enhancements and bug fixes. This update fixes a few security issues and has strengthened the Server to a large extent. Some notable security enhancements are described in the following document:

See [Security Enhancements \(ColdFusion 11\)](#)

### Social enhancements

ColdFusion 11 has introduced the support for dynamically generating Like button, Tweet button, and Comment box for social media sites.

See [Social Enhancements](#)

### REST enhancements

ColdFusion 11 now supports site-level REST applications and enables pluggable serializer and deserializer.

See [REST Enhancements in ColdFusion 11](#)

## Changes in ColdFusion 10

### Server updates

Verify if there are any product updates using the ColdFusion Administrator (Server Update > Update). The updates can include hot fixes and security hot fixes for ColdFusion 10. For details, see [Server update using ColdFusion Administrator](#).

### Configure built-in web server

Instead of JRun, Tomcat is embedded with a stand-alone ColdFusion 10 installation. ColdFusion Administrator provides options to configure Tomcat. For details, see [Administering ColdFusion](#).

### Scheduling

Scheduling tasks feature (Server Settings > Scheduled Tasks) has been enhanced in this release. The enhancements include options for Application and Server Level scheduled tasks and enabling cluster setup. For details, see [Administering ColdFusion](#).

### Caching

Options to use internal cache to store queries, clear query cache, and to clear folder-specific template cache. For details, see [Administering ColdFusion](#).

### Web services



ColdFusion supports Axis 2 web service and an option is provided to specify the Axis version. For details, see [Web services](#).

REST services

Option to register an application with REST service. For details, see [REST Services page](#).

Enabling RDS

RDS can be enabled from ColdFusion Administrator. For details, see [RDS page](#).

## Accessing the ColdFusion Administrator

If you are using the Developer Edition of ColdFusion, in the previous releases, only two IP addresses are allowed to access ColdFusion Administrator concurrently. Even if either or both of the IP addresses do not access ColdFusion Administrator, a third IP address is denied the right. In this release, access is permitted to any two IP addresses concurrently. For example, Client1 and Client2 already have access to ColdFusion Administrator. When either Client1 or Client2 does not access ColdFusion Administrator, Client3 is allowed access.

## Restricting access to ColdFusion Administrator

For details, see [Restricting access to ColdFusion Administrator](#)

## Logging Administrator actions

By default all major ColdFusion Administrator actions are logged. The log contains details that include current user, date, time, and action taken. Note that the logs cover only high-level actions for most pages of the ColdFusion Administrator, such as the following:

```
<timestamp>: <Username>: <deleted data source name>
```

However, for the following pages on the ColdFusion Administrator, all actions performed on the page are written to the audit logs:

- Server Settings
- Request tuning
- CACHING
- Memory VARIABLES
- Java and JVM The default log location is cfusion\logs\audit.log.

## Changes to default settings

The following default settings in the previous releases of ColdFusion have been revised in this release:

Area/UI	Path	Previous value	New value
Client variable storage name	Server Settings > Client Variables > Select Default Storage Mechanism for Client Sessions	Registry	Cookie
Use UUID for cftoken	Server Settings > Settings	Unchecked	Checked
Enable Global Script Protection	Server Settings > Settings	Unchecked	Checked

Maximum number of simultaneous Template requests	Server Settings > Request Tuning > Request Limits	10	25
Maximum number of simultaneous CFC function requests	Server Settings > Request Tuning > Request Limits	10	15
Minimum JVM Heap Size (MB)	Server Settings > Java and JVM		256
Maximum size of post data (in MB)	Server Settings > Settings > Request Size Limits	100	20
Enable ColdFusion Event Gateway Services	Event Gateways > Settings	Checked	Unchecked

## Session cookie settings

The following settings can be made at the server level using ColdFusion Administrator (Server Settings > Memory Variables > Session Cookie Settings). Adobe recommends that you use the new settings.

Setting	Default
HTTPONLY session cookie	Checked
Secure Session cookie	Unchecked
Session cookie timeout	Maximum of 30 years and minimum of two minutes.

## Using the ColdFusion Administrator

### ColdFusion System Probes HAS BEEN DEPRECATED

For a full list of deprecated features, refer to [Deprecated features](#).

Use the Adobe ColdFusion Administrator to perform basic administration tasks. You can also use the Administrator Application Programming Interface (API) to perform Administrator functionality programmatically.

### Initial administration tasks

Immediately after you install ColdFusion, you might have to perform some or all the administrative tasks described in the following table:

Task	Description
Establish database connections	ColdFusion applications require data source connections to query and write to databases. To create, verify, edit, and delete database connections, use the Data Sources page. For more information, see <a href="#">Data Source Management for ColdFusion</a> .
Specify directory mappings	Directory mappings redirect relative file paths to physical directories on your server. To specify server-wide directory aliases, use the Mappings page. For more information, see <a href="#">Mappings page</a> .
Configure debugging settings	Debugging information provides important data about CFML page processing. To choose the debugging information to display, and to designate an IP address to receive debugging information, use the Debugging & Logging section. For more information, see <a href="#">Debugging Output Settings page</a> .

Set up e-mail	E-mail lets ColdFusion applications send automated e-mail messages. To configure an e-mail server and mail options, use the Mail Server page. For more information, see <a href="#">Mail</a> page.
Change passwords	You might have to change the passwords that you set for the ColdFusion Administrator and Remote Development Service (RDS) during ColdFusion installation. To change passwords, use the Security section. For more information, see <a href="#">Administrator page</a> and <a href="#">RDS page</a> .
Define user-specific access to the ColdFusion Administrator	To grant user-specific access to the ColdFusion Administrator, you create users and specify a user name, password, applicable sandboxes, and the sections of the ColdFusion Administrator that each user can access. For more information, see <a href="#">Security section</a> .
Configure Java settings	(Server configuration only) You might have to customize Java settings, such as classpath information, to meet the needs of your applications. To change Java settings, use the Java and JVM page. For more information, see <a href="#">Extensions section</a> .
Restrict tag access	Some CFML tags might present a potential security risk for your server. To disable certain tags, use the Sandbox Security page. For more information, see <a href="#">Administering ColdFusion Security</a> .

### Accessing user assistance

You can use the buttons on the upper left of the ColdFusion Administrator to access online Help, information about additional resources, and system information.

- **Online Help** Click the question-mark icon on any ColdFusion Administrator page to access the context-sensitive online Help. The online Help has procedural and brief overview content for the ColdFusion Administrator page that you are viewing. This information appears in a new browser window and contains standard Contents, Index, and Search tabs.
- **System Information** Click System Information to see information about the ColdFusion server, including version number, serial number, and JVM details.
- **Resources** Click Resources to display the Resources page, which provides links to the following:
  - Getting Started experience
  - Example applications,
  - Product Information
  - Technical Support and Training,
  - Additional Installers
  - Product Updates
  - Community Resources
  - Security-related Information

### Server Settings section

The Server Settings section lets you manage client and memory variables, mappings, charting, and archiving. It also allows you to configure e-mail and Java settings.

### Settings page

The Settings page of the ColdFusion Administrator contains configuration options that you can set or enable to manage ColdFusion. These options can significantly affect server performance. The following table describes the options:

Option	Description
Timeout Requests After (Seconds)	Prevents unusually lengthy requests from using up server resources. Enter a limit to the time that ColdFusion waits before terminating a request. Requests that take longer than the time-out period are terminated.
Enable Per App Settings	Lets developers programmatically define ColdFusion settings such as mappings and debugging per application.
Use UUID For cftoken	Specify whether to use a universally unique identifier (UUID), rather than a random number, for a cftoken.
Enable HTTP Status Codes	Configures ColdFusion to set a status code of 500 Internal Server Error for an unhandled error. Disable this option to configure ColdFusion to set a status code of 200 OK for everything, including unhandled errors.
Enable Whitespace Management	Compresses repeating sequences of spaces, tabs, and carriage returns and linefeeds. Compressing whitespace can significantly compact the output of a ColdFusion page. This option is enabled, by default.
Disable Access To Internal ColdFusion Java Components	Prevents CFML code from accessing and creating Java objects that are part of the internal ColdFusion implementation. This prevents a non-authenticated CFML template from reading or modifying administration and configuration information for this server.
Disable CFC Type Check	Turns off verifying the CFC type when calling methods with CFCs as arguments. This option also disables verifying an object that implements the right interface. Enabling this option can improve the performance of your application. However enable it only on a production server.
Disable Access To Internal ColdFusion Java Components	Prevents CFML code from accessing and creating Java objects that are part of the internal ColdFusion implementation. This prevents a non-authenticated CFML template from reading or modifying administration and configuration information for this server.
Preserve Case for Struct Key for Serialization	Maintains and preserves the case in which keys of a struct have been defined. If not checked, keys will be converted to uppercase.  Cases for struct keys were not preserved in the past versions of ColdFusion. The struct keys get converted to upper case automatically.  For instance, consider the following code:  In ColdFusion 10 and earlier versions, the output generated by the above code will be:  For ColdFusion 11 and following, the output generated will be:  To enable case preservation of struct keys, change the setting in the ColdFusion Administrator, as discussed above.  To enable case preservation of struct keys at the application level, modify the application.cfc file by setting:
Prefix serialized JSON with	Protects web services, which return JSON data from cross-site scripting attacks by prefixing serialized JSON strings with a custom prefix.
Enable In-Memory File System	Enables the in-memory virtual file system support. By default, this is enabled.
Memory Limit for In-Memory Virtual File System	Lets you specify the memory limit in Megabytes (MB) for in-memory virtual file system.

Watch Configuration Files For Changes (Check Every nSeconds)	Sets ColdFusion to monitor its configuration files and automatically reload them if they change. This action is required if you deploy ColdFusion in a WebSphere ND vertical cluster, because multiple instances of ColdFusion share the same configuration files. It is recommended that you do not enable this feature for most installations.
Enable Global Script Protection	Protects Form, URL, CGI, and Cookie scope variables from cross-site scripting attacks. Select this option if your application does not contain this type of protection logic.
Allow Extra Attributes in AttributeCollection	Specify whether ColdFusion tags can pass non-standard attributes in the attributecollection structure.
Clear temporary files created during CFaaS after	Specify the time in minutes after which the temporary files created during CF as a Service(CFaaS) operation must be deleted. The default value is 30 minutes.
ORM Search Index Directory	Specify the index directory (the one in which all persistent entities, of an application's indexable data, are saved) either at the server-level or application-level.
Default ScriptSrc Directory	Specify the default path (relative to the web root) to the directory that contains the cform.js file. Developers reference this file in the ScriptSrc attribute of the cform tag. In a hosted environment, you might need to move the cform.js file to a directory other than CFIDE.
Google Map API Key	Specify the Google Map API license key that you require to access Google Maps.
Component with onServerStart() method	Specify the absolute path to a CFC having onServerStart() method or specify a dot delimited CFC path under web root, like "a.b.server". By default, ColdFusion looks for server.cfc under web root.
Allowed file extensions for <cfinclude> tag (New in ColdFusion 11)	Specify the list of allowed file extensions (as a comma separated list) while using the <cfinclude> tag. Specifying a wildcard (**) in the list makes any file included using the <cfinclude> tag to be compiled. If any other file included using the <cfinclude> tag is not found in this list, their content will be statically included. By default files with the extensions cfm and cfm1 always gets compiled irrespective of this setting. This value can be overridden at the application-level using the key compileExtForInclude in the Application.cfc/Application.cfm file.
Application.cfc/Application.cfm lookup order	<p>Select the order in which ColdFusion searches for Application.cfm or Application.cfc if it is not found in the current project folder. You can set ColdFusion to search as follows:</p> <ul style="list-style-type: none"> <li>• default search order: ColdFusion looks for an Application.cfc/Application.cfm file from the current folder until the system root directory. On Windows, this could be C:\ and on UNIX, /opt.</li> <li>• till web root: ColdFusion looks for an Application.cfc/Application.cfm file from the current folder till web root.</li> <li>• in web root: ColdFusion looks for an Application.cfc/Application.cfm file in the current folder or web root.</li> </ul>

Missing Template Handler	Specify a page to execute when ColdFusion cannot find a requested page. This specification is relative to the web root. Note: If the user is running Microsoft Internet Explorer with "Show Friendly HTTP error messages" enabled, Internet Explorer displays this page only if it contains more than 512 bytes.
Site-Wide Error Handler	Specify a page to execute when ColdFusion encounters an error while processing a request. This specification is relative to the web root. When you define a site-wide error handler or missing template handler, ColdFusion does not log page-not-found errors and exceptions. Note: If the user is running Internet Explorer with Show Friendly HTTP Error Messages enabled, Internet Explorer only displays this page if it contains more than 512 bytes.
Maximum Size Of Post Data	Limits the amount of data that can be posted to the server in a single request. ColdFusion rejects single requests larger than the specified limit.
Request Throttle Threshold	Requests smaller than the specified limit are not queued or counted as part of the total memory. Requests larger than the specified limit are counted as part of total memory and are queued if the request throttle-memory size is exceeded.
Request Throttle Memory	Limits total memory size for the throttle. If sufficient total memory is not available, ColdFusion queues requests until enough memory is free.
Disable Creation of unnamed application	Disallows creation of unnamed applications.
Allow REST Discovery	Specify whether to allow Adobe API Manager to discover REST services published in ColdFusion.

## Request Tuning page

### Simultaneous request tuning overview

You can specify the number of simultaneous requests that can be processed for each of the following types of requests:

- CFM page requests
- CFC method invocations (via an HTTP GET)
- Flash Remoting requests
- Web Service requests The settings are contained completely within ColdFusion code and work across all J2EE application servers. You do not have to restart the ColdFusion server for changes to the configuration to take effect. JSP processing is not affected by these changes.

**Note:** The Flash Remoting request control setting applies to remoting that uses ActionScript 2.0 and ActionScript 3.0, with each type treated independently. For example, a setting of 5 means that up to 5 ActionScript 2.0 Flash Remoting and 5 ActionScript 3.0. Flash Remoting requests are allowed simultaneously.

### Capabilities by edition

- **Standard Edition:** Only the Async CFML, DirectoryWatcher, Socket, and user written event gateways are enabled. The maximum number of threads in the pool for the cfthread tag is limited to 10. Only the CFM page request limit is adjustable.
- **Enterprise Edition:** All event gateways are supported. The number of threads in the pool for the cfthread tag is unlimited. You can adjust the limits for each request type (CFM page, CFC, Flash Remoting, and Web Service) independently.

### Request Tuning page

The Request Tuning page of the Administrator contains configuration options that you use to specify the number of different types of requests and threads that ColdFusion can handle simultaneously.

Option	Description
Maximum Number Of Simultaneous Template Requests	The number of CFML page requests that can be processed concurrently. Use this setting to increase overall system performance for heavy-load applications. Requests beyond the specified limit are queued.
Maximum Number Of Simultaneous Flash Remoting Requests	The number of Adobe Flash Remoting requests that can be processed concurrently.
Maximum Number Of Simultaneous Web Service Requests	The number of Web Service requests that can be processed concurrently.
Maximum Number Of Simultaneous CFC Function Requests	The number of ColdFusion Component methods that can be processed concurrently through HTTP. This does not affect starting CFC methods from CFML, only methods requested through an HTTP request.
Maximum Number Of Simultaneous Report Threads	The maximum number of ColdFusion reports that can be processed concurrently.
Maximum Number Of Threads Available For CFTHREAD	CFTHREAD that runs concurrently. Threads that CFTHREAD creates in excess of the specified limit are queued.
Timeout Requests Waiting In Queue After n Seconds	If a request has waited in queue beyond the specified limit, time out the request. This value must be at least as long as the Request Timeout setting (currently 60 seconds).
Request Queue Timeout Page	Specify a relative path to an HTML page to send to clients when a template requests time out before getting a chance to run. For example "/CFIDE/timeout.html." This page cannot contain CFML. If a page is not specified, clients receive a 500 Request Timeout error when their request does not get a chance to run.

### Caching page

The Caching page of the Administrator contains configuration options that you can set or enable to cache templates, queries, and data sources. These options can significantly affect server performance. The following table describes the settings:

Option	Description
Maximum Number Of Cached Templates	Enter a value that specifies the number of templates that ColdFusion caches. For best application performance, set this option to a value that is large enough to contain the commonly accessed ColdFusion pages, yet small enough to avoid excessive reloading. You can experiment with a range of values on your development server; a suitable starting point is one page per MB of Java Virtual Machine (JVM) size.
Trusted Cache	Use cached templates without checking whether they changed. For sites that are not updated frequently, using this option minimizes file system overhead.

Cache Template in Request	When checked, any requested files are inspected only once for potential updates within a request. If unchecked, requested file are inspected for changes each and every time when it is accessed within the same request. For application where templates/components are not expected to reflect updates within the same request, this minimizes file system overhead. This setting does not require restarting the server.
Component cache	When checked, component path resolution is cached and not resolved again. This setting does not require restarting the server.
Save Class Files	Saves to disk the class files that the ColdFusion bytecode compiler generates. During the development phase, it is typically faster if you disable this option.
Cache Web Server Paths	Caches ColdFusion page paths for a single server. Clear this option if ColdFusion connects to a web server with multiple websites or multiple virtual websites.
Maximum Number Of Cached Queries	Enter a value to limit the maximum number of cached queries that the server maintains. Cached queries allow retrieval of result sets from memory rather than through a database transaction. Because queries reside in memory, and query result set sizes differ, provide a limit for the number of cached queries. You enable cached queries with the cachedwithin or cachedafter attributes of the cfquery tag. When the maximum number of cached queries is reached, the oldest query is dropped from the cache and replaced with the specified query. If you set the maximum number of cached queries to 0, query caching is unlimited.
Use Internal Cache to Store Queries	When you select this option, at server level, internal cache is used to store cached queries. By default, cached queries are stored in QUERY region supported by Ehcache.
Clear Template Cache Now	Empties the template cache. ColdFusion reloads templates into memory the next time they are requested and recompiles them if they have been modified.
Clear Template Cache of Specific Folder	In the previous releases, you have the option only to clear the trusted cache, which clears the entire system cache. Now you can limit the clearing to folder level using this option.
Clear Component Cache Now	Empties the component cache. ColdFusion ignores the resolved path for components and try resolution again.
Clear Query Cache Now	Removes the query cache in the server.

### Client Variables page

You enable client variable default settings in ColdFusion on the Client Variables page of the Administrator. ColdFusion lets you store client variables in the following ways:

- In database tables

**Note:** If your data source uses one of the JDBC drivers bundled with ColdFusion 10, ColdFusion can automatically create the necessary tables. If your data source uses the ODBC Socket or a third-party JDBC driver, you manually create the necessary CDATA and CGLOBAL database tables.

- As cookies in the web browsers
- In the operating system registry



**Note:** Adobe recommends that you do not store client variables in the registry because it can critically degrade performance of the server. If you use the registry to store client variables, you allocate sufficient memory and disk space.

To override settings specified in the Client Variables page, use the Application.cfc file or the cfapplication tag. For more information, see the Developing ColdFusion Applications.

#### Store client variables in a data source

- 1 On the Client Variables page, in the Select Data Source to Add as Client Store table, select a data source from the drop-down.
- 2 Click Add. The Add/Edit Client Store page for the data source appears.
- 3 Select options for the data source, as described in the following table. (To exit from the page without saving changes, click the left-arrow icon.)

Option	Description
Description	A description of the client data store and its settings. Not displayed for Registry.
Create Client database tables	If ColdFusion can determine that the database you use supports SQL creation of database tables, this option appears, and you do not need to create the client variable tables before they are used. In this case, the Create Client Database Tables option appears on the Add/Edit Client Store page; if you select this option, ColdFusion creates the necessary tables in the database. If the database does not support SQL table creation, if the database already has the required tables, or if you are using the Registry, this option does not appear.
Purge data for clients that remain unvisited for n days	Typically, client data is saved for a limited time. To delete (purge) client data that has not been accessed in a specified number of days, select this option and enter a value for the number of days. If a cluster of ColdFusion servers uses this data source, ensure that only one server is configured to purge client data.
Disable global client variable updates	By default, ColdFusion updates client variables for every page request. To prevent ColdFusion from updating variables, select this option. If updates are disabled, ColdFusion updates global client variables only when they are first created and when they are updated. This helps improve application performance.

- 1 Click Submit Changes. The Client Variables page appears, with your data source in the list.
- 2 In the Select Default Storage Mechanism for Client Sessions table, select the data source.
- 3 Click Apply.

#### Store client variables in a cookie or in the system registry

- 1 In the Client Variables page, select Cookie or Registry.
- 2 Click Apply.

#### Client variable storage options

Storage type	Advantages	Disadvantages
Data source	<ul style="list-style-type: none"> <li>• Can use existing data source</li> <li>• Portable: not tied to the host system or operating system</li> </ul>	<ul style="list-style-type: none"> <li>• Requires database transaction to read/write variables</li> <li>• More complex to implement</li> </ul>
Browser cookies	<ul style="list-style-type: none"> <li>• Simple implementation</li> <li>• Good performance</li> <li>• Can be set to expire automatically</li> <li>• Client-side control</li> </ul>	<ul style="list-style-type: none"> <li>• Users can configure browsers to disallow cookies</li> <li>• Cookie data is limited to 4-KB</li> <li>• Netscape Navigator allows only 20 cookies from one host; ColdFusion uses three cookies to store read-only data, leaving only 17 cookies available</li> </ul>
System registry	<ul style="list-style-type: none"> <li>• Simple implementation</li> <li>• Good performance</li> <li>• Registry can be exported easily to other systems</li> <li>• Server-side control</li> </ul>	<ul style="list-style-type: none"> <li>• Possible restriction of the registry's maximum size limit in Windows in the Control Panel</li> <li>• Integrated with the host system: not practical for clustered servers</li> <li>• Not available for UNIX</li> <li>• Applicable only for Windows</li> </ul>

### Migrating client variable data

To migrate your client variable data to another data source, determine the structure of the database tables that store this information. Client variables stored externally use two simple database tables, as shown in the following tables:

CDATA Table
-------------

Column	Data type
cfid	CHAR(64), TEXT, VARCHAR, or equivalent
app	CHAR(64), TEXT, VARCHAR, or equivalent
data	MEMO, LONGTEXT, LONG VARCHAR, or equivalent

CGLOBAL Table
---------------

Column	Data type
cfid	CHAR(64), TEXT, VARCHAR, or equivalent
data	MEMO, LONGTEXT, LONG VARCHAR, or equivalent
lvisit	TIMESTAMP, DATETIME, DATE, or equivalent

### Creating client variable tables

Use the following sample ColdFusion page as a model for creating client variable database tables in your own database. However, keep in mind that not all databases support the same column data type names. For the proper data type, see your database documentation.

**Note:** The ColdFusion Administrator can create client variable tables for data sources that use one of the bundled JDBC drivers. For more information, see the Online Help.

### Sample table creation page

This example applies to Microsoft Access databases.

```
(
cfid char(20),
app char(64),
data memo
)
</cfquery>
<cfquery name="data2" datasource="#DSN#">
CREATE UNIQUE INDEX id1
ON CDATA (cfid,app)
</cfquery>
<cfquery name="global1" datasource="#DSN#">
CREATE TABLE CGLOBAL
(
cfid char(20),
data memo,
lvisit date
)
</cfquery>
<cfquery name="global2" datasource="#DSN#">
CREATE INDEX id2
ON CGLOBAL (cfid)
</cfquery>
<cfquery name="global2" datasource="#DSN#">
CREATE INDEX id3
ON CGLOBAL (lvisit)
</cfquery>
```

### Memory Variables page

You can specify maximum and default time-out values for session and application variables. Unless you define a time-out value in an Application.cfc or Application.cfm file, application variables expire in two days. Session variables expire when user sessions end. To change these behaviors, enter new default and maximum time-out values on the Memory Variables page of the Administrator.

You can also specify whether to use J2EE session variables. When you enable the J2EE session variables, ColdFusion creates an identifier for each session and does not use the CFToken or CFID cookie value. For more information, see the Developing ColdFusion Applications. You can also determine how ColdFusion stores the session variables - in memory or Redis. Select an option from the **Session Storage** drop-down list. For more information, see [External session storage](#).

**Note:** When using J2EE sessions, ensure that the session time out, specified in the WEB INF/web.xml session-timeout element, is longer than the session time out specified in the ColdFusion Administrator, and longer than any sessiontimeout attribute specified in a cfapplication tag.

### Mappings page

Use the Mappings page of the ColdFusion Administrator to add, update, and delete logical aliases for paths to directories on your server. ColdFusion mappings apply only to pages that ColdFusion processes with the `cfinclude` and `cfmodule` tags. If you save CFML pages outside the `web_root` directory (or whatever directory is mapped to `/`), you add a mapping to the location of those files on your server. Assume that the `/` mapping on your server points to `C:\coldfusion2016\wwwroot`, but that all of your ColdFusion header pages reside in `C:\2002\newpages\headers`. Add a mapping in the ColdFusion Administrator that points to `C:\2002\newpages\headers`, for ColdFusion to find the header pages. For example, add a mapping for `/headers` that points to `C:\2002\newpages\headers`. In the ColdFusion pages located in `C:\coldfusion2016\wwwroot`, you reference these header pages using `/headers` in your `cfinclude` and `cfmodule` tags.

**Note:** ColdFusion mappings are different from web server virtual directories. For information on creating a virtual directory to access a given directory using a URL in your web browser, consult your web server documentation.

### Mail page

The ColdFusion Enterprise Edition supports mail-server failover, as well as additional mail delivery options. The ColdFusion implementation of SMTP mail uses a spooled architecture. This means that when a `cfmail` tag is processed in an application page, the messages generated might not be sent immediately. If ColdFusion has a large queue, delivery could occur after some delay.

**Note:** For more information about the `cfmail` tag, see Sending SMTP e-mail with the `cfmail` tag in Sending and Receiving E-Mail in the Developing ColdFusion Applications.

### Mail Server Settings area

The following table describes basic mail server settings:

Option	Description
Mail Server	Enter a valid mail server for sending dynamic SMTP mail messages in the text box. You can enter an Internet address, such as <code>mail.company.com</code> , or the IP address of the mail server, such as <code>127.0.0.1</code> .
Username	Enter the user name for the mail server, if necessary.
Password	Enter the password for the mail server, if necessary.
Sign	Select this check box to configure ColdFusion to digitally sign your mails.
Keystore	Location of the Keystore containing the private key and certificate. The supported type is JKS (java key store) and pkcs12.
Keystore Password	Keystore password.
KeyAlias	Alias of the key with which the certificate and private key is stored in Keystore. If it is not specified then the first entry in the Keystore is be picked up.
KeyPassword	Password with which the private key is stored. If it is not specified, KeystorePassword is used as KeyPassword.
Verify Mail Server Connection	Verifies that ColdFusion can connect to your specified mail server after you submit this form. Even if you do not use this option, send a test message to verify that your mail server connection works.
Server Port	Enter the number of the port on which the mail server is running. Contact your server administrator if you are unsure of the appropriate port number.

Backup Mail Servers (Enterprise Edition only)	Enter zero or more backup servers for sending SMTP mail messages. You can enter an Internet address, such as mail.company.com, or the IP address of the mail server, such as 127.0.0.1. Separate multiple servers with a comma. If the mail server requires authentication, prepend the mail server with the user name and password, as follows:username:password@mailserveraddress_To use a port number other than the default (25), specify _mailserveraddress:portnumber
Maintain Connection To Mail Server(Enterprise Edition only)	Keeps mail server connections open after sending a mail message. Enabling this option can enhance performance when delivering multiple messages.
Connection Timeout (seconds)	Enter the number of seconds that ColdFusion should wait for a response from the mail server before timing out.
Enable SSL Socket Connections To Mail Server	Enables SSL encryption on the connections to the mail server.
Enable TLS Connection To Mail Server	Enables Transport Level Security (TLS) on the connection to the mail server.

### Mail Spool Settings area

The following table describes mail server spool settings:

Option	Description
Spool Interval (Seconds)	Enter the interval, in seconds, at which you want the mail server to process spooled mail.
Mail Delivery Threads(Enterprise Edition only)	Enter the maximum number of simultaneous threads used to deliver spooled mail.
Spool Mail Messages For Delivery To(Memory spooling available for Enterprise Edition only)	Routes outgoing mail messages to the mail spooler. If you disable this option, ColdFusion delivers outgoing mail messages immediately. In ColdFusion Enterprise Edition, you can spool messages to disk (slower, but messages persist across shutdowns) or to memory (faster, but messages do not persist). You can override this setting in the cfmail tag.
Maximum Number Of Messages Spooled To Memory(Enterprise Edition only)	Enter the maximum number of messages that spool to memory before switching to disk spooling.
View Undelivered Mail	Click to view undelivered mails.

### Mail Logging Settings area

Select preferences for handling mail logs, as described in the following table:

Option	Description
Error Log Severity	From the drop-down list object, select the type of SMTP-related error message to write to a log file. The options are the following: <ul style="list-style-type: none"> <li>• Debug (contains Information, Warning, and Error)</li> <li>• Information (contains Warning and Error)</li> <li>• Warning (contains Error)</li> <li>• Error</li> </ul>
Log All Mail Messages Sent By ColdFusion	Saves to a log file the To, From, and Subject fields of all e-mail messages.

ColdFusion writes sent-mail and mail-error logs to the following directories:

- \coldfusion10\logs (Windows server configuration)
- /opt/coldfusion10/log (Solaris and Linux server configuration)
- cf\_webapp\_root/WEB-INF/cfusion/logs ( J2EE configurations, all platforms) The following table describes the e-mail log files:

Log	Description
mailemail.log	Records sent e-mail messages.
mail.log	Records general e-mail errors.

#### Mail Character Set Settings area

Select preferences for the default mail character set, as described in the following table:

Option	Description
Default CFMail CharSet	From the drop-down list object, select the default character set that the cfmail tag uses. The default value is UTF-8. If most of your e-mail clients use a specific character set, you can use this setting to switch to that locale-specific character set. For example, Japanese mail is typically sent using the ISO-2022-JP character set.

#### Scheduled Tasks page

Information that is read more often than written is a good candidate for scheduled tasks. Instead of executing a query to a database every time the page is requested, ColdFusion renders the static page with information that the scheduled event generates. Response time is faster because no database transaction takes place.

You can run scheduled tasks once; on a specified date; or at a specified time, daily, weekly, or monthly; daily; at a specified interval; or between specified dates. When a scheduled page executes, ColdFusion writes a message to a log file called schedule.log automatically. This file identifies the name of the scheduled action, the page to be executed, and whether the task scheduled executed successfully. You can pause and resume scheduled tasks.

The Scheduled Task page lets you create, edit, pause, resume, and delete scheduled tasks. This page has the following areas:

Area	Description
Schedule New Tasks	Click to add new scheduled task.
Actions	Click the icons to run, pause, edit or remove the schedule task.
Task Name	Identifies the names of the existing tasks scheduled to run.
Duration	Identifies the duration of the task to run.
Interval	Identifies how often this task runs. The values for this column can be Once, Daily, or DailyEvery.

- **Application Level Scheduled Tasks:** Provides a list of application-specific tasks that you have scheduled, with task details in tabular format. The table provides details such as actions, application name, group, task name, duration, interval, last run, next run, repeat count, and if cluster is enabled.

**Note:** Application-specific tasks cannot be created using ColdFusion Administrator. But you can pause, resume, or delete the tasks.

- **Server Level Scheduled Tasks:** Provides a list of server-specific tasks that you have scheduled, with task details in tabular format. The table provides new details such as group, next run, repeat count, if cluster is enabled, and the remaining task count.
- **Enable Cluster Setup:** Applies if you have at least one data source configured. Specify the following details:
  - **Select Data source:** All the data sources you have connected to are listed.
  - **Create Tables for Cluster Setup:** Check to create scheduler-specific tables for cluster.

**Note:** Enable this option only for one node in the cluster. Otherwise, the tables are overridden. If you have created tables from one node, in other nodes you need to only select and choose the data source. All nodes will point to the same data source and therefore will be part of the cluster.

- After you specify the details, click Submit. To disable cluster, select the option Disable Cluster.

#### Add/Edit Scheduled Task page

Add/Edit Scheduled Task page lets you add or edit task. Click Submit after you specify the following tasks. When the page loads for the first time, you are provided with only minimum options to create the task. Click Show Additional Settings to list all settings.

Option	Description
Task Name	Enter a name for the task in the Task Name text box.
Duration	Enter the start and end dates for the task. The end date is optional. If you want this task to execute continuously, leave the End Date text box blank.
Frequency	<p>Select the schedule for running this task:</p> <ul style="list-style-type: none"> <li>• <b>One-time</b> Schedules the task to run once on the start date and scheduled time specified. Specify the date and time. The task must be set at least 15 minutes in the future in order for the task to execute successfully</li> <li>• <b>Recurring</b> Schedules the task to run daily, weekly, or monthly at the specified time.</li> <li>• <b>Daily every</b> Schedules the task to repeat during a day. Specify Start Time and End Time to designate when the task begins and ends. Specify Hours, Minutes, Seconds to set an interval after which the task repeats.</li> </ul>
URL	Enter the URL for the ColdFusion page that you want to execute. You can execute a local page or a page on a remote ColdFusion Server, assuming that you have the proper access rights.
Username	(Optional) Specify a user name only if the page you want to execute is in a secure location.
Password	(Optional) Specify a password only if the page you want to execute is in a secure location.
Timeout	(Optional) Specify a timeout setting. This helps prevent requests from stalling due to an overloaded web server, a network problem, or a page that takes too long to execute.
Proxy Server: Port	(Optional) If this request must be routed through a proxy server, enter the URL and Port number of that proxy server.

Publish; File	(Optional) To publish an output file of this task, select the Save Output to a File option and then, in the File text box, enter the full path and filename of the output file. Note that the Publish file in scheduled tasks can now only have .txt and .log extensions by default. You can add more extensions in cfusion\lib\neo-cron.xml.
Resolve URL	(Optional) Select the Resolve URL option to replace any relative URLs used in links returned in the result page to absolute URLs.
Group	The group to which the scheduled tasks belong. Ensure that the combination of task name and group are unique.
Crontime	Specify task scheduling time in cron job syntax.
Overwrite	If not selected, creates new output files every time the task executes. Select to overwrite the existing output file, instead of creating a new one.
Eventhandler	A CFC file whose pre-defined methods are invoked for various events while running the task. The path you specify can be relative to webroot for example, schedulerdemo.eventhandler, or use a ColdFusion mapping.
Exclude	Comma-separated list of dates or date range for exclusion in the schedule period.
On Misfire	Specify what the server has to do if a scheduled task misfires.
On Exception	Specify what to do if a task results in error.
On Complete	The action to be performed after the completion of current task. Specify the details in the following format: Task1:Group1, Task3:Group3
Priority	An integer that indicates the priority of the task.
Retry Count	The number of reattempts if the task results in an error.
Cluster	Enable to execute tasks in cluster setup.

### WebSocket page

Use the ColdFusion Administrator (Server Settings > WebSocket) to specify the following WebSocket-related details:

Option	Description
Port	Port that the WebSocket server listens to.
Max Data Size	Data size of packets sent/received.
Start Flash Policy Server	Start Flash cross-domain Policy Server on port 1243. This is required for Flash fallback if there is no native WebSocket support at the client side.
Flash Port	If Flash Policy server is to be run on a different port other than the default one, it can be configured in neo-websocket.xml file located in <cf_home>/cfusion/lib directory.

### Charting page

The following table describes the caching and thread settings for the ColdFusion charting and graphing server:



Option	Description
Cache Type	Set the cache type. Charts can be cached either in memory or to disk. Memory caching is faster, but more memory intensive.
Maximum Number Of Cached Images	Specify the maximum number of charts to store in the cache. After the cache is full, if you generate a new chart, ColdFusion discards the oldest chart in the cache.
Max Number Of Charting Threads	Specify the maximum number of chart requests that can be processed concurrently. The minimum number is 1 and the maximum is 5. (Higher numbers are more memory-intensive.)
Disk Cache Location	When caching to disk, specify the directory in which to store the generated charts.

### Font Management page

ColdFusion automatically registers Acrobat built-in fonts and fonts located in typical font locations (such as the Windows\fonts directory). However, if your server has additional fonts installed in nonstandard locations, you register them with the ColdFusion Administrator so that the cfdocument and cfreport tags can locate and render PDF and FlashPaper reports. This page contains the following topics:

- **Register New Font with ColdFusion** Lets you browse to a directory that contains fonts, or select a specific font.
- **User Defined Fonts** Displays the fonts that have been registered explicitly.
- **Current System Fonts** Displays fonts stored in platform-specific system font directories. The following table describes the fields on the Font Management page:

Area	Description
New Font/Font Directory	Specifies a fully qualified path to a directory that contains font files or to a specific font file. The ColdFusion Administrator lets you register the following types of font formats: <ul style="list-style-type: none"> <li>• TTF: TrueType font.</li> <li>• TTC: Collection of TrueType or OpenType fonts.</li> <li>• OTF: OpenType font.</li> <li>• PFB: (Adobe printer fonts).</li> <li>• AFM: Adobe Font Metrics.</li> </ul>
Font Family	High-level font name (for example, Arial or Times New Roman).
Font Face	A specific font face (for example, Arial Italic or Times New Roman Bold).
PostScript Name	Specifies the PostScript name of the font.
Font Type	Specifies the font type (for example, TrueType or Adobe Built-In)
Usable In	Specifies whether the font is usable in PDF, FlashPaper, or both formats. Note that Adobe built-in fonts are not usable in FlashPaper output format.
Path	Fully qualified path to the font file.

The Font Management page also displays the built-in Acrobat fonts, which are available for PDF only. For more information on reporting in ColdFusion, see *Creating Reports and Documents for Printing in the Developing ColdFusion Applications*.

About Font Management

ColdFusion can create documents and reports in both PDF and FlashPaper format. Both of these formats require that the server computer have access to the fonts used in the HTML styles (cfdocument tag) or the report definition (ColdFusion Report Builder). ColdFusion requires access to these fonts to properly render text in PDF and FlashPaper documents and, when specified, to embed fonts into a PDF file.

#### Types of fonts and font extensions

The ColdFusion Administrator lets you register the following types of fonts:

Type	File extension	Description	Usable in
True Type	TTF	Scaleable font format developed by Apple Computer and supported in all Macintosh and Windows operating systems.	PDF and FlashPaper
True Type Collection	TTC	A file that contains multiple TrueType or OpenType fonts	PDF and FlashPaper
Open Type	OTF	An extension of the TrueType font format.	PDF and FlashPaper
Adobe printer font	PFB	Adobe printer font	PDF only
Adobe Font Metrics	AFM	A font format that contains general font information and font metrics information. Typically used on Unix only.	PDF only

The Font Management page also displays the built-in Acrobat fonts, which are available for PDF only. ColdFusion does not use PFM or FFT fonts.

#### Font locations

The ColdFusion Administrator automatically displays the fonts discovered in platform-specific default locations, as follows:

- **Windows** - The Windows/Fonts directory (for example, WINDOWS/Fonts or WINNT/Fonts)
- **Unix** - The following directories:
  - /usr/X/lib/X11/fonts/TrueType
  - /usr/openwin/lib/X11/fonts/TrueType
  - /usr/share/fonts/default/TrueType
  - /usr/X11R6/lib/X11/fonts/ttf
  - /usr/X11R6/lib/X11/fonts/truetype
  - /usr/X11R6/lib/X11/fonts/TTF Additionally, you can define fonts stored in other locations on the server. These are called user-defined fonts. For example, you may want to register the Lucida family of TrueType fonts, which the Sun JDK ships in the jdk\_root/jre/lib/fonts directory.

#### Embedding fonts in PDF output

Report developers can optionally specify that ColdFusion embed fonts in the PDF file (FlashPaper always embeds fonts). When using the cfdocument tag, fonts are embedded if fontEmbed is set to yes or selective. When using reports defined in the Report Builder, fonts are embedded if specified in the report definition file. Embedding fonts increases file size, but ensures that reports display appropriately regardless of whether or not client computers have the fonts installed.

**Note:** Some font licenses prohibit embedding. ColdFusion does not embed fonts marked as not-for-embedding.

#### Client requirements

If fonts are not embedded in the PDF file, fonts must be installed on the client computer to ensure that reports display appropriately. Most Windows computers ship with Internet Explorer, which includes the Microsoft Core Fonts, a set of TrueType fonts.

#### UNIX considerations

If you install ColdFusion on a UNIX computer you must ensure that the appropriate fonts are installed, even if the computer provides console access only. For more information on TrueType fonts for UNIX, see <http://corefonts.sourceforge.net/>.

#### ColdFusion Report Builder considerations

The ColdFusion Report Builder has no automatic knowledge of fonts available on the server so the developer building the report definition must consult the ColdFusion MX Administrator to determine which fonts are available on the server and, if necessary, register fonts in the Administrator or install fonts on the computer that runs Report Builder.

#### Document page

Depending on whether your ColdFusion server is installed on a local or remote server, you can configure OpenOffice with your ColdFusion server instance.

For more information about configuring OpenOffice with ColdFusion, see [Using the ColdFusion Administrator in Installing ColdFusion](#).

#### Java and JVM page

The Java and JVM page lets you specify the following settings, which enable ColdFusion to work with Java:

Option	Description
Java Virtual Machine Path	The absolute file path to the location of the Java Virtual Machine (JVM) root directory. The default is <code>cf_root/runtime/jre</code> .
Minimum JVM Heap Size	The JVM initial heap size.
Maximum JVM Heap Size	The JVM maximum heap size. The default value is 512 MB.
ColdFusion Class Path	The file paths to the directories that contain the JAR files that ColdFusion uses. Specify either the fully qualified name of a directory that contains your JAR files or a fully qualified JAR filename. Use a comma to separate multiple entries.
JVM Arguments	The arguments to the JVM. Use a space to separate multiple entries (for example, <code>-Xint -Xincgc</code> ).

Restart ColdFusion server after making the changes.

```
aArgs[i] contains '-Xms' aArgs[i] contains '-Djava.security.manager' aArgs[i] contains '-Djava.security.policy' aArgs[i] contains '-Djava.security.auth.policy' aArgs[i] contains '-Djava.awt.graphicsenv' aArgs[i] contains '-Djava.awt.headless' aArgs[i] contains '-Dcoldfusion.classPath' aArgs[i] contains '-Dcoldfusion.rootDir' aArgs[i] contains '-Dcoldfusion.libPath' aArgs[i] contains '{application.home}/lib/webchartsJava2D.jar'
```

When you update the Java and JVM Settings page, ColdFusion writes the changes to `jvm.config`, which is located in `cf_root\runtime\bin`. Before ColdFusion saves your changes, it saves a copy of the current `jvm.config` file as `jvm.bak`. If your changes prevent ColdFusion from restarting, use `jvm.bak` to restore your system. For example, rename `jvm.config` to `jvm.config_BAD`, and then rename `jvm.bak` to `jvm.config`. ColdFusion filters out default settings for the `jvm.args` attribute from the `jvm.config` file, including the following:

To use Server Monitor or Multiserver Monitor on a J2EE deployment of ColdFusion on Oracle 10g, in JVM Arguments set `-Doc4j.jmx.security.proxy.off=true`

### Settings Summary page

The Settings Summary page shows all ColdFusion configuration settings. Click a group name to open the Administrator section of that group, where you can edit settings. This page is not enabled in the Standard Edition.

In ColdFusion, you can export the server settings to PDF by clicking the Save As PDF button on this page.

### Data and Services section

The Data and Services section of the Administrator is the interface for ColdFusion, data sources, and search and indexing features. The following table describes some common tasks that you can perform in the Data & Services section of the Administrator:

Task	Description
Create and manage JDBC data sources	The Data Sources page lets you establish, edit, and delete JDBC data source connections for ColdFusion. For more information, see <a href="#">Data Source Management for ColdFusion</a> .
Create and maintain ColdFusion collections	The ColdFusion Collections page lets you create and delete Solr collections and perform maintenance operations on collections that you create. For more information, see <a href="#">ColdFusion Collections page</a> .
Define mappings for web services	The Web Services page lets you produce and consume remote application functionality over the Internet. For more information, see <a href="#">Web Services page</a> .
Specify settings to integrate with Adobe Flex applications	The Flex Integration page lets you specify which Flex integration features to enable and which IP addresses can perform data service operations. For more information, see <a href="#">Flex Integration page</a> .

### Data Sources page

The Data Sources page lets you create, edit, and delete JDBC data sources. Before you can use a database in a ColdFusion application, you register the data source in the ColdFusion Administrator. For more information, see [Data Source Management for ColdFusion](#). Before you can access a database with a ColdFusion application, perform the following:

- 1 Understand and determine the database driver required to interact with the data source. ColdFusion uses JDBC database drivers to communicate with data sources.
- 2 Configure the database as a ColdFusion data source by specifying a driver, adding data source information, and connecting to a database.
- 3 Verify the data source. For more information on adding data sources, see [Adding data sources](#).

### ColdFusion Collections page

Use this page to create and manage your Solr collections.

ColdFusion lets you manage your collections from the Administrator. You can index, optimize, purge, reload, or delete Solr collections that are connected to ColdFusion. You use the icons in the Actions column to perform the following actions:

Action	Description
Reload	Reloads the collection.
Index	Analyzes the files in a collection and assembles metadata and pointers to the files.
Optimize	Reclaims space left by deleted and changed files by consolidating collection indexes for faster searching. You should optimize collections regularly.
Purge	Deletes all documents in a collection, but not the collection itself. Leaves the collection directory structure intact.
Delete	Deletes a collection.

ColdFusion includes Solr, which provides indexing and searching technology. This enables creating, populating, and managing collections of indexed data that are optimized for fast and efficient site searches. A collection is a logical group of documents and metadata about the documents. The metadata includes word indexes, an internal documents table of document field information, and logical pointers to the document files. For more information about building search interfaces, see *Building a Search Interface* and Solr search support in the *Developing ColdFusion Applications*. If the ColdFusion Collections page is unable to retrieve collections, ensure that Solr Search Server is running.

#### Populate a Solr collection

After you create a collection, use the Solr Collections section to populate (or index) it, with data from text and binary files, in a directory that you specify. A collection comprises metadata that describes indexed documents. Data from a ColdFusion query can be indexed only by using the ColdFusion cfindex tag. To populate (index) a collection,

- 1 In the list of Solr Collections, click the name of the collection or its Index Collection button. The Index Solr Collections page appears.
- 2 Review the extensions in the File Extensions field. You can add, edit, or remove extensions for files in the collection.
- 3 In the Directory Path field, enter the path to a directory to index. To locate and enter a path, click Browse Server.
- 4 To include subdirectories of the specified directory, select the Recursively Index Sub Directories option.
- 5 (Optional) In the Return URL field, enter the URL prefix used to display documents found in the search in a browser. For example, if you index the ColdFusion documentation directory, the directory you index could be C:\ColdFusion10\cfusion\wwwroot\cfdocs. You would enter the return URL as `{{http://localhost:8500/cfdocs/}}` This assumes that you are using the built-in web server on port 8500.
- 6 Click Submit. ColdFusion populates the collection with data from the specified directory. Then the ColdFusion Collections page appears. To close the page without saving changes, click Cancel.

#### Rename or create an alias for a Solr collection

- 1 Click the ColdFusion collection that you need to rename from the ColdFusion Collections page. The Manage Collection page is displayed.
- 2 In the Rename Collection section, enter a new name in the New Name for Collection field and click Submit.
- 3 To specify an alias for the collection, enter the alias in the Collection Alias field and click Submit.

#### Solr Server page

The Solr server instance runs as a separate server, which you can start or stop as a service. You can configure your Solr collection for indexing and search capabilities using ColdFusion Administrator.

#### Solr collections

The ColdFusion Administrator implements Solr support using the following panels in the Data & Services area:

- **ColdFusion Collections** Once a Solr collection is created, use the Index, Optimize, Purge, or Delete Actions under the Solr Collection area at the bottom of the panel. You can also rename and alias a Solr collection in ColdFusion Administrator. To do this,
  - 1 Click the ColdFusion collection that you need to rename from the ColdFusion Collections page. The Manage Collection page is displayed.
  - 2 In the Rename Collection section, enter a new name in the New Name for Collection field and click Submit.
  - 3 To specify an alias for the collection, enter the alias in the Collection Alias field and click Submit.
- **Solr Server** Configure the Solr server host name, home directory, and other advance settings using the Solr Server page.

#### Solr server

Use the Solr Server page to specify the Solr server host name and home directory. You can also configure advance settings including the admin port, web application name, and buffer limit. Click Show Advance Settings to add the following details:

- Solr admin port
- Solr WebApp
- Solr Buffer Limit
- Authentication details
- If to use an HTTPS connection, and if so the Solr HTTPS port. You can also configure indexing languages by providing a language name and suffix.

#### Migrate collections

To migrate the collection, browse and select the old Solr home and then click Migrate Solr Collections. For details, see "Solr enhancements in ColdFusion 10" in Developing Adobe ColdFusion Applications.

#### Web Services page

Web services let you publish and consume remote application functionality over the Internet. With a web service, you can make a request to the remote application to perform an action. You can use the ColdFusion Administrator to register web services so that clients do not have to specify the entire WSDL URL when they reference the web service. For more information on publishing and consuming web services through ColdFusion, see ColdFusion Developer's Guide.

#### Add a web service

- 1 In the Web Service Name box, enter the name of the web service.
- 2 In the WSDL URL box, enter the URL for the Web Services Description Language (WSDL).
- 3 Enter a user name and password.
- 4 (If applicable) Specify the proxy server details and credentials.
- 5 (Optional) Specify the timeout value for the web-service request in seconds.
- 6 Click Add Web Service. Your Web Service Name appears in the list of Active ColdFusion Web Services.

### Edit a web service

- 1 In the Active ColdFusion Web Services area, click the web service name. The ColdFusion Administrator displays the web service in the top portion of the window.
- 2 Modify settings.
- 3 Click Update Web Service.

### View WSDL for a web service

- ? In the Active ColdFusion Web Services area, click the WSDL URL. The ColdFusion Administrator opens the WSDL in a new browser window.

When you register a web service, you can shorten your code and change a web service URL without editing your code. For more information, see *Using Web Services in the Developing ColdFusion Applications*.

### REST Services page

After you create the CFC you want to REST-enable, specify the folder for registering as web service in the ColdFusion Administrator.

Browse and select the application path or root folder where ColdFusion would search for CFCs. When you specify a folder, all CFCs in that folder or subfolders for which you have specified rest or restPath are registered.

- 1 (Optional) In the Service Mapping section, specify virtual mapping in place of application name. If the folder has an Application.cfc and an application name, then the service is identified with the application name. You can override this by specifying the service mapping. In this case, the service is identified with the service mapping that is provided. If there is no Application.cfc in the folder, then it is mandatory to specify the Service mapping.
- 2 (Optional) Specify an application as default REST service. Only one application can be set as default for a server instance. You can change the default application at any time. Check Set the default application and then click Add Service. To remove the service as default, uncheck it.
- 3 After you specify the details, click Add Service to register. The Active ColdFusion REST Services section specifies the details of all registered web services. After you register, all CFCs are published as RESTful services. On subsequent startups, the registered services automatically get published.

### Flex Integration page

Use this page to specify which Flex integration features to enable and which IP addresses can perform data-service operations. If you enable Adobe LiveCycle Data Services ES support, but do not specify any IP addresses, only processes on the local computer can connect to the LiveCycle Data Services ES server in ColdFusion.

Option	Description
Enable Flash Remoting Support	Specifies whether to enable Flash clients to connect to this ColdFusion server and invoke methods in ColdFusion components (CFCs).
Enable Remote LiveCycle Data Management Access	Specifies whether to enable a LiveCycle Data Services ES server to connect to this ColdFusion server and invoke methods in CFCs to fill, sync, get, or count records in a result set used in a Flex application. Enable this option only if you are running LiveCycle Data Services ES remotely.

Server Identity	Specifies the ColdFusion server on which you want to enable Flex Data Management Support.
Enable RMI Over SSL For Data Management	To encrypt communication between ColdFusion and Flex, enable Secure Sockets Layer (SSL).
Select IP Addresses Where LiveCycle Data Services Are Running	Specifies which LiveCycle Data Services ES servers can connect to the LiveCycle Data Services ES support in ColdFusion. If you do not specify a list of allowed IP addresses, only processes on the local computer can connect to the LiveCycle Data Services ES support in ColdFusion

To use SSL, create a keystore file. The keystore is a self-signed certificate. (You do not need a certificate signed by a Certificate Authority, although if you do use one, you do not need to configure Flex as indicated in the following steps.) The information in the keystore is encrypted and can be accessed only with the password that you specify. To create the keystore, use the Java keytool utility, which is included in the Java Runtime Environment (JRE).

#### Enable SSL

- 1 Create the keystore.
- 2 Configure Flex.
- 3 Enable SSL in the ColdFusion Administrator.

#### Create the keystore

- ? To generate the SSL server (ColdFusion) keystore file, use the keytool utility, with a command similar to the following:

```
keytool -genkey -v -alias FlexAssembler -dname "cn=FlexAssembler" -keystore cf.keystore -keypass mypassword -storepass mypassword
```

The following table describes the parameters of the keytool utility:

Parameter	Description
-alias	The name of the keystore entry. You can use any name for this, as long as you are consistent when referring to it.
-dname	The Distinguished Name, which contains the Common Name (cn) of the server.
-keystore	The location of the keystore file.
-keypass	The password for your private key.
-storepass	The password for the keystore. The encrypted storepass is stored in ColdFusion configuration files.
-rfc	Generates the certificate in the printable encoding format.
-file	The name of the keystore file.
-v	Generates detailed certificate information

Place the certificate you created in the file that the JVM uses to determine what certificates to trust. The file in which you place the certificate (usually named cacerts), is located in the JRE, in the lib/security folder.

#### Configure Flex

- 1 To export the keystore to a certificate, use the keytool utility, with a command similar to the following:

```
keytool -export -v -alias FlexAssembler -keystore cf.keystore -rfc -file cf.cer
```



- 2 To import the certificate into the JRE cacerts file for your server, use the keytool utility, with a command similar to the following:

```
keytool -import -v -alias FlexAssembler -file cf.cer -keystore C:\fds2\UninstallerData\jre\lib\security\cacerts
```

### Debugging and Logging section

Use the Debugging Settings and Debugging IPs pages to configure ColdFusion to provide debugging information for every application page that a browser request. Specify debugging preferences by using the pages as follows:

- On the Debugging Output Settings page, select debugging output options. If debugging is enabled, the output appears in block format after normal page output.
- On the Debugging IP Addresses page, restrict access to debugging output. If a debugging option is enabled, debugging output is visible to all users by default.
- On the Logging Settings page, specify a directory for error log files that can contain useful debugging information.

**Note:** Enabling debugging affects performance. It is advised that you do not enable debugging on a production server.

### Debugging Output Settings page

The Debug Output Settings page provides the following debugging options:

Option	Description
Enable Robust Exception Information	Displays detailed information in the exceptions page, including the physical path and URI of the template, the line number and snippet, the SQL statement used (if any), the data source name (if any), and the Java stack trace.
Enable Request Debugging Output	Enables the ColdFusion debugging service.
Select Debugging Output Format	Controls debugging format. Select either of the following formats: <ul style="list-style-type: none"> <li>• classic.cfm - The format available in ColdFusion 5 and earlier. It provides a basic view and few browser restrictions.</li> <li>• dockable.cfm - A dockable tree-based debugging panel. For details about the panel and browser restrictions, see the online Help.</li> </ul>
Report Execution Times	Reports execution times that exceed a specified time limit.
General Debug Information	Show general information about the ColdFusion MX version, template, timestamp, user locale, user agent, user IP, and host name.
Database Activity	Shows the database activity for the SQL Query events and Stored Procedure events in the debugging output.
Exception Information	Shows all ColdFusion exceptions raised for the request in the debugging output.
Tracing Information	Shows trace event information in the debugging output. Tracing lets you track program flow and efficiency using the cftrace tag.
Timer Information	Shows output from the cftimer tag.
Flash Form Compile Errors And Messages	(Development use only) Displays ActionScript errors in the browser when Flash forms are compiling, and affects the display time of the page.

Variables	Displays information about parameters, URL parameters, cookies, sessions, and CGI variables in the debugging output.
Enable Performance Monitoring(Server configuration only)	Enables the standard NT Performance Monitor application to display information about a running server. TIP: Restart ColdFusion after you change this setting.
Enable CFSTAT(Server configuration only)	Shows performance information on platforms that do not support the NT Performance Monitor. For more information, see <a href="#">Using the cfstat utility</a> . TIP: Restart ColdFusion after you change this setting.

### Using the cfstat utility

The cfstat command-line utility provides real-time performance metrics for ColdFusion. The cfstat utility uses a socket connection to obtain metric data. You can use the cfstat utility to display information that ColdFusion writes to the System Monitor without using the System Monitor application. The following table lists the metrics that the cfstat utility returns:

Metric abbreviation	Metric name	Description
Pg/Sec	Page hits per second	The number of ColdFusion pages processed per second. You can reduce this limit by moving static content to HTML pages.
DB/Sec	Database accesses per second	The number of database accesses per second that ColdFusion makes. Any difference in complexity and resource load between calls is ignored.
Req Q'ed	Number of queued requests	The number of requests that are currently waiting for ColdFusion to process them. Lower values, which you can achieve with efficient CFML, are better.
Req Run'g	Number of running requests	The number of requests that ColdFusion is currently actively processing.
Req TO'ed	Number of timed out requests	The total number of ColdFusion requests that have timed out. Lower values, which you can achieve by aggressive caching, removing unnecessary dynamic operations and third-party events, are better.
AvgQ Time	Average queue time	A running average of the time, in milliseconds, that requests wait for ColdFusion to process them. Lower values, which you can achieve with efficient CFML and enhanced caching, are better. Averages are displayed for the last two completed requests.
AvgReq Time	Average request time	A running average of the time, in milliseconds, that it takes ColdFusion to process a request (including queued time). Lower values, which you can achieve with efficient CFML, are better. Averages are displayed for the last two completed requests.

AvgDB Time	Average database transaction time	A running average of the time that ColdFusion spends on database-related processing of ColdFusion requests. Averages are displayed for the last two completed requests.
Bytes In/Sec	Bytes incoming per second	The number of bytes that ColdFusion read in the last second (not an average).
Bytes Out/Sec	Bytes outgoing per second	The number of bytes that ColdFusion wrote in the last second (not an average).

Before you use the cfstat utility, ensure that you selected the Enable Performance Monitoring option in the ColdFusion Administrator (on the Debugging & Logging > Debugging Settings page). If you select this option, restart ColdFusion for this change to take effect.

#### cfstat options

The cf\_root/bin directory contains the cfstat utility. From that directory, type **cfstat** and use the following switches:

Switch	Description	Comment
-n	Suppress column headers.	Useful for saving output to a file.
-s	Display output in a single line.	Display a single line and delay display of the first line so the cfstat utility can display meaningful values in the per-second counters.
#	Where # is an integer, display output every # seconds.	If you do not specify an integer, the cfstat utility returns one line. Specify this switch with or without the s switch.
-x	Display extended output breaking of different request threads.	Available in ColdFusion Enterprise. It is ignored in ColdFusion Standard.
-port	Allows you to specify the port to which ColdFusion listens for cfstat communications.	When using cfstat from two different ColdFusion server instances, their port numbers of the said server instances should be explicitly specified.

This example runs the cfstat utility and displays a new line every 20 seconds:

```
cfstat 20
```

#### Debugging IP Addresses page

Use the Debugging IP Addresses page to restrict debugging output to one or more IP addresses. You can add and remove IP addresses.

To add a debugging IP address,

- 1 In the Debugging IP Addresses page, enter an IP address that you want to receive debugging output. The default IP address is 127.0.0.1.
- 2 Click Add.
- 3 (Optional) To add the IP address of the computer you are using, click Add Current. The list below the IP Address field shows the IP addresses that you added. To remove a debugging IP address:
- 4 Select an IP address from the list.
- 5 Click Remove Selected. The address no longer appears in the list.

### Debugger Settings page

**Note:** If you do not specify IP addresses, and debugging options are active, ColdFusion displays debugging output for all users.

### Debugger Settings page

To use the ColdFusion Debugger that runs in Eclipse, select the Allow Line Debugging option. Specify the port and the maximum number of simultaneous debugging sessions. Specify the debugger port in the JVM settings of your application server, for example:

```
-Xrunjdpw:transport=dt_socket,server=y,suspend=n,address=#portNum#
```

To stop a currently running debugging session, click Stop Debugging. For the changes that you specify on this page to take effect, restart the ColdFusion server.

### Logging Settings page

Use the Logging Settings page of the Administrator to change ColdFusion logging options. The following table describes the settings:

Option	Description
Log Directory	Specifies the directory to which error log files are written. TIP: Restart ColdFusion after you change this setting.
Maximum File Size (kb)	Sets the maximum file size for log files. When a file reaches this limit, it automatically is archived.
Maximum Number Of Archives	Sets the maximum number of log archives to create. When they reach this limit, files are deleted in the order of oldest to newest.
Log Slow Pages Taking Longer Than n Seconds	Logs the names of pages that take longer than the specified interval to process. Logging slow pages can help you diagnose potential problems or bottlenecks in your ColdFusion applications. Entries are written to the server.log file.
Log All CORBA Calls	Logs all CORBA calls.
Enable Logging For Scheduled Tasks	Logs ColdFusion Executive task scheduling.

### Log Files page

The Log Files page lets you perform operations on log files, such as searching, viewing, downloading, archiving, and deleting. Click a Log File icon located in the Actions column of the Available Log Files table, to search, view, download, archive, or delete a log file. Use the Logging Settings page to enable or disable administrative logging options, as the following table describes:

Option	Description
Log directory	Select this option to change the location where ColdFusion log files are written. The location that you specify in this field must have sufficient disk space and security privileges for the ColdFusion system service.
Maximum file size (KB)	Set the maximum file size for log files. When a file reaches this size, ColdFusion automatically archives it.
Maximum number of archives	Set the maximum number of log archives to create. After reaching this limit, ColdFusion deletes files in order of oldest to newest.

(UNIX only) Use operating system logging facilities	Select this option to log messages using the UNIX syslog logging facility. ColdFusion also writes log messages to the standard ColdFusion log files.
Log slow pages taking longer than n seconds	Specify the number of seconds that ColdFusion waits before logging the names of pages that take longer than the specified interval to process. Logging slow pages can help you diagnose potential problems in your ColdFusion applications. ColdFusion writes entries to server.log.
Log all CORBA calls	Select this option to log all CORBA calls.
Enable logging for scheduled tasks	Select this option to log ColdFusion Executive task scheduling.

The following table describes the ColdFusion log files:

Log file	Description
rdservice.log	Records errors that occur in the ColdFusion Remote Development Service (RDS). RDS provides remote HTTP-based access to files and databases.
application.log	Records every ColdFusion error reported to a user. Application page errors, including ColdFusion syntax, ODBC, and SQL errors, are written to this log file.
exception.log	Records stack traces for exceptions that occur in ColdFusion.
scheduler.log	Records scheduled events that have been submitted for execution. Indicates whether task submission was initiated and whether it succeeded. Provides the scheduled page URL, the date and time executed, and a task ID.
eventgateway.log	Records events and errors related to event gateways.
migration.log	Records errors related to upgrading from a previous version of ColdFusion.
migrationException.log	Records errors related to running ColdFusion applications after upgrading from a previous version of ColdFusion.
server.log	Records errors for ColdFusion.
customtag.log	Records errors generated in custom tag processing.
car.log	Records errors associated with site archive and restore operations.
mail.log	Records errors generated by an SMTP mail server.
mailed.log	Records messages that ColdFusion sends.
flash.log	Records entries for Flash Remoting.

#### Enable/Disable logging

Use the icon for start/stop in the Actions column of the Log Files page to stop/start logging for a particular log type.

#### Filter log content

- 1 To open the Log Filter, click Launch Filter on the Log Viewer page.
- 2 In the Log Filter dialog box, specify one or more of the following options:

Option	Description
Show Serverity	Select one or more severity levels to filter.
Keywords	Enter one or more words in the Keywords text box. Click the Find drop-down list box, and select one of these options: exact phrase, any words, or all words.
Applications	If applicable, enter the application name to filter. If applicable, the application name appears as the fifth (entry) column in the log file.
Thread IDs	The thread identification numbers are used by Adobe Technical Support personnel to track and troubleshoot problems. The thread identification string appears as the fourth entry (column) in a log file.
Most Recent	Specifies the relative age of included messages.
Date Range	To display the log content for a specific date range, enter the start and end dates. Enter the dates in year-month-day format ( YYYY-MM-DD). For example, to specify April 21, 2002, enter: 2002-04-21.
Time Span	To show the log content for a specific time range, enter the start and end times. Enter the time span in hour-minute-second format ( HH:MM:SS). For example, to specify 2:00 P.M., enter 14:00:00.

? To begin the filter process, click one of the following options:

- Show Matches Displays results that match the filter criteria specified on the tab.
- Hide Matches Displays results that exclude any information that matches the filter criteria specified on the tab.

Log files introduced in ColdFusion 9.0.1

You can generate log files for the following services in ColdFusion 9.0.1:

- http
- ftp
- web service
- Portlet
- Derby
- Feed

### System Probes page

System probes help you evaluate the status of your ColdFusion applications. Like scheduled tasks, they access a URL at a specified interval, but they can also check for the presence or absence of a string in the URL. If the URL contents are unexpected, or if an error occurred while accessing the URL, the probe can send an e-mail alert to the address specified on the System Probes page. The probe can also execute a script to perform a recovery action, such as restarting the server. All probe actions are logged in the logs/probes.log file. The System Probes page also displays the status of each probe. Use the buttons in the Actions column in the System Probes table to perform the following actions:

Action	Description
Edit	Lets you edit the probe.

Run	Runs the probe immediately, even if it was previously disabled.
Enable/Disable	Starts and stops the probe from automatically executing at its specified interval.
Delete	Deletes the probe.

Because probes run as scheduled ColdFusion tasks, they do not run if the server on which they are hosted crashes, or if the host web server crashes or otherwise does not respond.

### System Probes page

Use the System Probes page to manage the ColdFusion system probes that were created to monitor the availability of a resource in your website.

Item	Description
Define New Probe	Click this button to create a probe configuration.
Actions	Click these buttons to run, edit, delete, or disable an existing probe configuration.
Probe Name	Shows the names of the ColdFusion probes created.
Status	Shows the current operating state of one or more configured probes per URL, as follows: <ul style="list-style-type: none"> <li>OK, if the probe is active</li> <li>Failed, if a probe is unable to access the URL specified.</li> <li>Disabled, if the probe is disabled.</li> <li>Unknown, if the probe is inactive and has not run since the last server restart.</li> </ul>
Interval	Shows the period between probes.
URL	Identifies the URL path that each probe is monitoring.
Notification	Notification Email Recipients Specify the e-mail address of the recipient if a probe fails to connect to the specified URL.
Email	Specify the e-mail address of sender. By default, this address is the address specified on the Mail Server page.
Probe.cfm URL	Specifies the probe.cfm page that is located in the CFIDE directory. ColdFusion requires this page to successfully execute probe configurations.
Probe.cfm Username	If the CFIDE directory is secured, the user name for that directory is required.
Probe.cfm Password	If the CFIDE directory is secured, the password for that directory is required.

### Suspend probe operation

In the System Probes table, select the name of the probe to suspend, and click the Disable Probe icon.

### Add/Edit System Probe page

**1** In the ColdFusion Administrator navigation pane, click System Probes. The System Probes page appears.

**2** In the System Probes page, do one of the following:

- Define a new probe. Click Define New Probe. The Add/Edit System Probe page appears.
- Edit an existing probe configuration. Locate and click the probe name. The Add/Edit System Probe page appears.

**3** In the Add/Edit System Probe page, specify or edit the following settings:

Option	Description
Probe Name	Provide a name for the probe configuration.
Frequency	Select the schedule for running this probe: <ul style="list-style-type: none"> <li>• How often (hours, minutes, seconds) the probe verifies the availability of the URL resource.</li> <li>• The duration (start and end times) the probe runs to verify the URL resource.</li> </ul>
URL	Identifies the URL path that each probe is monitoring.
User Name	Name If the URL is a secured path, specify the user name.
Password	If the URL is a secured path, specify the password.
Timeout (sec)	Specify the time, in seconds, to indicate how long the probe should wait before registering a failure.
Proxy Server	If this request must be routed through a proxy server, enter the URL and port number of that proxy server.
Port	Port number of the proxy server.
Probe Failure	Select this option to identify the arguments used to test the URL resource.
Failure Actions	Specify one or both of the following actions to occur when detecting a failure: <ul style="list-style-type: none"> <li>• Send an e-mail notification Select to instruct ColdFusion to send an e-mail message when detecting a failure. ColdFusion uses the e-mail address specified on the System Probe page.</li> <li>• Execute the program To run a program when the probe fails, specify the path and name of the program.</li> </ul>
Publish	Select to write output results to a file.
File	If the publish option is selected, specify the output filename.
Reolve URL	Select to maintain links to internal URLs remain intact.

### Code Analyzer page

The Code Analyzer page evaluates your ColdFusion pages for potential incompatibilities between ColdFusion 10 and previous versions of ColdFusion. It reviews the CFML pages that you specify and informs you of any potential compatibility issues. Additionally, the Code Compatibility Analyzer detects unsupported and deprecated CFML features, and outlines the required implementation changes that ensure a smooth migration. Use the analyzer as follows:

**1** In the left navigation pane, select Debugging & Logging > Code Analyzer.



- 2 Enter or browse to a directory that contains the ColdFusion pages to analyze.
- 3 (Optional) Click Advanced Options to specify the following items:
  - Whether to analyze subdirectories.
  - The file types to analyze (separate multiple files with semicolons).
  - Whether to filter by severity. All reports error and info data, Error reports code that will not execute properly, and Info reports that you should consider editing, but will execute properly; for example, deprecated tags.
  - Whether to validate CFML. Reports invalid syntax in your CFML; for example, a comment that has an opening ColdFusion comment tag, and a closing HTML tag.
  - The product features to analyze.

### License Scanner page

The License Scanner page searches the local subnet to find other running instances of ColdFusion. You can use this information to determine whether the ColdFusion instances within the subnet are licensed appropriately.

The ColdFusion Administrator uses universal datagram protocol (UDP) multicast to collect license and version information from all ColdFusion instances running within the subnet.

### Server Monitoring section

The Server Monitoring section lets you run the following:

- Server Monitor
- Multiserver Monitor

The Server Monitor is an Adobe SWF application that lets you track activities on a ColdFusion Server. You can identify information about the server, including requests, queries, memory usage, and errors. You can start and stop collecting server information and take snapshots of the server.

The Multiserver Monitor is another SWF application. It lets you track the status of several servers.

### Extensions section

Use the Extensions section of the Administrator to configure ColdFusion to work with other technologies, such as Java and CORBA.

### Java Applets page

The Java Applets page of the Administrator lets you register applets and edit and delete applet registrations. Before you can use Java applets in your ColdFusion applications, register them in the Java Applets page.

When your applet is registered with ColdFusion, using the cfapplet tag in your CFML code is simple, because all parameters are predefined: Enter the applet source and the form variable name to use.

This page has the following areas:

- **Register New Applet:** Registers a Java applet to include in your ColdFusion applications.
- **Actions:** Click the Edit icon to edit registration fields of a Java applet. Click the Delete icon to remove the registration of a Java applet.
- **Applet:** Click the name of a Java applet to view or edit the registration fields for that applet.
- **\*Code:\*** Identifies the name of the file that contains the applet subclass.
- **Method:** If applicable, this column identifies the method name used in the name attribute of the cfapplet tag.
- **Code Base:** This area identifies the directory that contains the applet components.

To register or modify a Java applet in ColdFusion, use the Add/Edit Registered Java Applet page. Registering an applet lets you use the cfapplet tag.

Register a Java applet or modify the registration

- 1 If you are registering a new Java applet, install the Java class files and any other files required for the class. Make a note of the installation path, because you must specify the code base arguments when you register the applet.
  - 2 To access the Add/Edit Registered Java Applet page:
    - For new registration, select Extensions > Java Applets, and click Register New Applet. The Add/Edit Registered Java Appletpage appears.
    - For existing registration, in the Registered Java Applets table, click the name of the Java applet registration that you want to view or modify.
- ? On the Add/Edit Registered Java Applet page, specify or modify the following information:

Option	Description
Applet Name	Provide a name for the Java applet.
Code	Identify the name of the file that contains the applet subclass. This filename is relative to the code base URL. The *.class file extension is not required.
Code Base	Provide the URL of the code base; the directory that contains the applet components. The applet class files must be located within the web browser root directory; for example, <code>http://&lt;servername&gt;/classes</code> . Note that this field is not required if the Java applet components are contained in a JAR file. For more information, see the Archive option.
Archive	(Optional) If the Java applet components are stored in a jar file, enter the jar filename in the Archive text box.
Method	(Optional) Specify the method name in the applet that returns a string value. This method name is used in the name attribute of the cfapplet tag to populate a form variable with the method's value. If the applet has no method, leave this field blank.
Height	Enter a measurement in pixels for the vertical space for the applet.
Width	Enter a measurement in pixels for the horizontal space for the applet.
Vspace	Enter a measurement in pixels for the space above and below the applet.
Hspace	Enter a measurement in pixels on each side of the applet.
Align	Select an alignment option.
Not supported message	Specify a message that will be displayed by browsers that do not support Java applets. You can override this message with a different message notsupported attribute in the cfapplet tag.
Parameter name	Enter a name for each required applet parameter. Your Java applet typically provides the parameter name needed to use the applet. Enter each parameter in a separate parameter field.
Value	Enter a default value for every parameter name specified. Click Add to add the values for the parameters. Your applet documentation provides guidelines on valid entries.

## CFX Tags page

Before you can use a CFX tag in ColdFusion applications, register it. Use the CFX Tags page to register and manage ColdFusion custom tags built with C++ and Java. You can build CFX tags in the following two ways:

- Using C++ as a dynamic link library (DLL) on Windows or as shared objects (.so or .sl extension) on Solaris and Linux
- Using Java interfaces defined in the cfx.jar file The page has the following areas:

Area	Description
Register Java CFX	Click this button to register a CFX Java tag that you want to include in your ColdFusion applications.
Register C++ CFX	Click this button to register a CFX C++ tag that you want to include in your ColdFusion applications.
Actions	Click the Edit icon to edit the registration fields of a CFX tag. Click the Delete icon to remove the registration of a CFX tag.
Tag Name	Click the name of a CFX tag to view or edit the tag's registration fields.
Type	Identifies the type of language used to build the CFX tag (C++ or Java).
Description	Identifies the use of the CFX tag.

### Add/Edit CFX Java Tag page

Option	Description
Tag Name	Enter the tag name (after the cfx_prefix). Provide a name for the CFX tag that you are registering.
Class Name	Enter the class name (without the .class extension) that implements the interface. The class file should be accessible from the Class Path setting on the <a href="#">Java and JVM page</a> . You typically package the .class file in a .jar file and save it in the cf_root/lib (server configuration) or cf_webapp_root/WEB-INF/cfusion/lib (J2EE configuration) directory.
Description	Provide a message that identifies the use of this CFX tag.

### Add/Edit CFX C++ Tag page

Option	Description
Tag Name	Provide a name for the CFX tag that you are registering. Tag names must be prefixed with cfx_.
Server Library (.dll)	Enter the path to the library, or click Browse Server to locate the library that you want to use.
Procedure	Enter the procedure that implements the CFX tag. The procedure name must correspond with the procedure associated with the DLL or shared object you have specified. Notice that procedure names are case sensitive.
Keep Library Loaded	Select this option to retain the library in RAM.
Description	In this text box, provide a message that identifies the use of this CFX tag.

### Custom Tag Paths page

Use the Custom Tag Paths page of the Administrator to add, edit, and delete custom tag directory paths.

By default, all custom tags are stored under the `cf_root/CustomTags` (server configuration) or `cf_webapp_root/WEBINF/cfusion/CustomTags` (J2EE configuration) directory. However, you can specify additional paths to your custom tag locations by using this page. The following table describes the areas on the page:

Area	Description
New Path	Specify the path of your custom tags.
Browse Server	Click to browse your system for the location of your custom tags.
Add Path	Click to add the path specified in the path text box.
Actions	Click Exit to edit or Delete to remove a selected path.
Path	Identifies the custom tag paths registered in ColdFusion.

### CORBA Connectors page

Use the CORBA Connectors page to register, edit, and delete CORBA connectors. Register CORBA connectors before you use them in ColdFusion applications and restart the server when you finish configuring the CORBA connector.

ColdFusion loads object request broker (ORB) libraries dynamically by using a connector, which does not restrict ColdFusion developers to a specific ORB vendor. The connectors depend on the ORB runtime libraries provided by the vendor. A connector for Borland Visibroker is embedded within ColdFusion. Make sure that the ORB runtime libraries are in `cf_root/runtime/lib` (server configuration) or `cf_webapp_root/WEB-INF/cfusion/lib` (multiserver and J2EE configurations). The following table contains information about the libraries and connectors:

Operating System	Vendor	ORB	ColdFusion connector	ORB library
Windows NT and later	Borland	VisiBroker 4.5	<code>coldfusion.runtime.corba.VisibrokerConnector</code> (embedded)	<code>vbjorb.jar</code>
Solaris	Borland	VisiBroker 4.5	<code>coldfusion.runtime.corba.VisibrokerConnector</code> (embedded)	<code>vbjorb.jar</code>

Example of a CORBA connector configuration for VisiBroker:

ORB Name	<code>visibroker</code>	ORB Class Name	<code>coldfusion.runtime.corba.VisibrokerConnector</code>	ORB Property File	<code>c:\ColdFusion10\runtime\cfusion\lib\vbjorb.properties</code>	Classpath	[blank]
----------	-------------------------	----------------	---	-------------------	--	-----------	---------

ColdFusion includes the `vbjorb.properties` file, which contains the following properties that configure the ORB:

<code>org.omg.CORBA.ORBClass=com.inprise.vbroker.orb.ORB</code>	<code>org.omg.CORBA.ORBSingletonClass=com.inprise.vbroker.orb.ORB</code>
<code>SVCnameroot=namingroot</code>	

### Event Gateways section

The Event Gateways section of the Administrator lets you configure event gateway settings, gateway types, and gateway instances.

ColdFusion event gateways are ColdFusion elements that let ColdFusion react to or generate external events or messages in an asynchronous manner. Event gateways let a ColdFusion application handle information that does not come through an HTTP request. For example, you can use event gateways to handle instant messages, short messages from mobile devices, or messages sent to a TCP/IP port. ColdFusion includes several event gateways, including an SMS (Short Message Service) gateway for sending short, often text, messages to and from wireless devices, such as mobile phones or pagers and a gateway for the XMPP (Extensible Messaging and Presence Protocol) instant messaging protocol.

### Event Gateways Settings page

The Event Gateways Settings page lets you configure settings for all event gateways, and start or stop the Short Message Service (SMS) test server. The following table describes the settings:

Option	Description
Enable ColdFusion Event Gateway Services	Specifies whether the service is enabled. Changing this setting restarts the service.
Event Gateway Processing Threads	Specifies the maximum number of threads used to execute ColdFusion functions when an event arrives. A higher number uses more resources, but increases event throughput.
Maximum Number Of Events To Queue	Specifies the maximum number of events allowed on the event queue. If the queue length exceeds this value, gateway events are not be added to the processing queue.
Start/Stop SMS Test Server	Starts and stops the short message service (SMS) test server.

### Gateway Types page

The Gateways Types pages let you configure the types of gateways available on your system. After you configure a type, you can create any number of gateway instances of that type.

Option	Description
Type Name	Specifies a name for the event gateway type (for example, SMS for the SMS event gateway).
Description	Specifies a description for the gateway type.
Java Class	Specifies the fully qualified name of the gateway class full Java class name (for example, coldfusion.eventgateway.sms.SMSGateway for the SMS event gateway).
Startup Timeout nSeconds	Specifies a startup timeout, in seconds.
Stop on Startup Timeout	If enabled, ColdFusion stops the gateway class if it times out on startup. If disabled, ColdFusion logs a warning message when the timeout value is exceeded.

The following table describes the event gateway types that ColdFusion includes:

Gateway type	Description
CFML	Triggers asynchronous events from ColdFusion.
DataManagement	Lets a ColdFusion application notify a Flex destination about changes in the data that the destination manages.
DataServicesMessaging	Sends messages to and receive messages from Flex applications.

FMS Gateway	Modifies data through the ColdFusion application or the Flash client, and reflects the change in the Flash Media Server shared object.
SMS	Used to send and receive SMS messages.
SAMETIME	Used to send and receive instant messages through Lotus SameTime.
XMPP	Used to send and receive instant messages through the Extensible Messaging and Presence Protocol (XMPP).
Samples	Sample gateway types, including the following: <ul style="list-style-type: none"> <li>• DirectoryWatcher - Watches a directory for file changes.</li> <li>• JMS - Acts as a Java Messaging Service consumer or producer.</li> <li>• Socket - Listens on a TCP/IP port.</li> </ul>

### Gateway Instances page

The Gateway Instances page lets you configure ColdFusion event gateway instances to direct events from various sources to ColdFusion components (CFCs) that you have written. The following table describes the settings:

Option	Description
Gateway ID	A name for the event gateway instance. You use this value in the ColdFusion GetGatewayHelper and SendGatewayMessage functions.
Gateway Type	The event gateway type.
CFC Path	The absolute path to the listener CFC that handles incoming messages.
Configuration File	(Optional) Configuration file, if necessary for the event gateway instance.
Startup Mode	The event gateway startup status, as follows: <ul style="list-style-type: none"> <li>• Automatic - Start the event gateway when ColdFusion starts.</li> <li>• Manual - Do not start the event gateway with ColdFusion, but allow starting it from the Gateway Instances page.</li> <li>• Disabled - Do not allow the event gateway to start.</li> </ul>

### Security section

The Security section of the Administrator lets you configure the security frameworks of ColdFusion.

For more information on security, see [Administering ColdFusion Security](#).

RDS page

Use the RDS page to enable and disable password-restricted RDS access to server resources from Adobe Macromedia Dreamweaver MX , Adobe Macromedia HomeSite+ , ColdFusion Extensions for Eclipse, or the ColdFusion Report Builder, and to change the RDS password. You can also configure all users to use a single RDS password, or allow only users defined in the User Manager to have access through RDS. The minimum character limit is 5 and the maximum character limit is 50. In ColdFusion 10, you can enable/disable RDS using ColdFusion Administrator. That is, you can modify the settings that you made at the time of installation using ColdFusion Administrator. The RDS page on the ColdFusion Administrator (Security > RDS) lets you enable/disable RDS service.

#### Sandbox security page

You use the Sandbox Security page (called Resource Security in the Standard Edition) to specify security permissions for data sources, tags, functions, files, directories, IP addresses, ports, and runtime permissions. Sandbox security uses the location of your ColdFusion pages to determine functionality. A sandbox is a designated area (CFM files or directories that contain CFM files) of your site to which you apply security restrictions. By default, a subdirectory (or child directory) inherits the sandbox settings of the directory one level above it (the parent directory). If you define sandbox settings for a subdirectory, you override the sandbox settings inherited from the parent directory. Use sandbox security to control access to the following:

- Data sources
- Tags
- Functions
- Files and directories
- IP addresses and ports You can also edit runtime permissions for ColdFusion pages.

**Note:** If you have enabled sandbox security and want to use the Administrator API, enable access to the CFIDE/adminapi directory.

For details, see [Using sandbox security](#)

#### User Manager page

Use the User Manager page to specify the user name, password, description, access rights, exposed services, sandboxes, and allowed roles for individual users. This page is especially useful for web hosting when multiple ColdFusion applications are on one server, each maintained by a different user or organization. You can grant access to the ColdFusion Administrator, which also grants access to the Administrator API. If the administrator revokes the role of a user while the user is logged in, the revocation takes effect only when the user logs in again. The default user ID of an administrator is admin. To change the administrator user ID, add the following in the neo-security.xml file, replacing admin with the user ID to use:

```
<var name='admin.userid.root'> <string>admin</string> </var>
```

#### Add a user

The User Manager lets you create users that have individually tailored access to portions of the ColdFusion Administrator, the Administrator API, or RDS access.

**Note:** To grant ColdFusion Administrator permissions to multiple users, in addition to creating users on the User Manager page, you must select the Separate Username And Password Authentication option on the Security > Administrator page. Similarly, you must select the Separate Username And Password Authentication option on the RDS page to grant RDS access to multiple users.

- 1 In Security > User Manager, click Add User.
- 2 Specify the username, password, and then confirm the password.
- 3 Optionally, enter a description.

#### 4 Select the following options:

- Allow RDS access
- Allow Administrative access: Select one of the following: Administrator Console & API Access and API Access Only.

#### 1 Select the ColdFusion Administrator pages that you want the user to be able to access.

#### 2 Select any sandboxes that you want the user to be able to access.

#### 3 Select the services that you want the user to be able to access.

#### 4 Click Add User.

**Note:** To select multiple contiguous sandboxes or roles, press the Shift key while making selections. To select multiple noncontiguous sandboxes or roles, press the Control key while making selections.

After you create a user, you must log into the ColdFusion Administrator using both a username and password. The default username for the root administrator is admin. To change it, you must edit the neo-security.xml file by changing the string "admin" in admin.userid.root, as follows:

```
<var name="admin.userid.root"> <string>admin</string> </var>
```

When you grant access to specific Administrator pages, the user sees only those pages after logging in to the Administrator. When you grant Administrator API access and select roles, the user can access the API only for the pages you specified. For information editing existing user configuration, see Edit User Configuration.

#### User Sandboxes

If you change the pages or sandboxes to which a user is allowed access while that user is logged in to the Administrator, the changes take effect only after the user logs out, and then logs in again. For details about creating sandboxes, see [Administering ColdFusion Security](#).

#### Exposed Services

ColdFusion exposes existing enterprise services as web services. You can access these services using SOAP and AMF/Flash remoting. You can select the services available to a user from the Exposed Services section. By default, all the services are listed in the Allowed Services list box. Press CTRL and select the services that you do not want the user to avail and click the >> button. Now, click Edit User to implement the changes to the user settings. The following are the exposed services:

- Allowed services: Mail Service, Document Service, PDF Service, Image Service, Chard Service, POP Service,
- Prohibited services: Exchange Service You can secure the exposed services to prevent access by unknown applications or users. This can be done by configuring the client IP address range to which services are accessible. Also, you can set up user access control for the services. On the Security > User Manager page, you can select the services available to a user from the Exposed Services section. By default, all the services are listed in the Prohibited Services list box. Press CTRL and select the services that you want the user to avail and click the << button. Now, click Edit User to implement the changes to the user settings.

#### Edit user configuration

In the User Manager page, click either the user name like in the User column or the Edit icon in the Action column. The User Manager page opens in Edit mode, where you can reconfigure the user account settings such as password, RDS Administrator access, adding sandboxes, and resetting the exposed services for the user.

**Note:** You would not be able to reset the user authentication type in the edit mode.

#### Allowed IP Addresses



Specify client IP addresses that have the permission to access exposed services.

Also see [IP Restriction for CFIDE URLs](#).

### **Packaging and Deployment section**

The Packaging and Deployment section of the Administrator lets you create and deploy CAR files. You can also create J2EE EAR or WAR files that include an existing ColdFusion application and the ColdFusion runtime system.

### **ColdFusion Archives page**

The ColdFusion Archives page includes tools that let you archive and deploy ColdFusion applications, configuration settings, data source information, and other types of information to back up your files faster. The complete list of archivable information includes the following:

- Name and file location
- Server settings
- ColdFusion mappings
- Data sources
- Solr collections
- Scheduled tasks
- Event gateway instances
- Java applets
- CFX tags
- Archive to do lists

After you archive the information, you can use the Administrator to deploy your web applications to the same ColdFusion server or to a ColdFusion server running on a different computer. Additionally, you can use these features to deploy and receive any ColdFusion archive file electronically. The Archive Settings page lets you configure various archive system settings that apply to all archive and deployment operations. For more information, see the Online Help.

#### **Build an archive**

To archive a definition,

- 1** To access the ColdFusion Archives page, select Packaging and Deployment > ColdFusion Archives in the left navigation pane of the ColdFusion Administrator.
- 2** On the ColdFusion Archives page, locate the name of the archive definition that you want to archive, and then click the Build Archive icon. The Archive Wizard appears.
- 3** In the Archive Wizard, review the archive summary information, and then click Next to continue. The Choose Archive File Location page appears.
- 4** In the Choose Archive File Location page, do the following:
  - In the File Name text box, specify the full path where you want to store the archive, followed by the name of the archive. The archive name must have a .car extension.

- For U NIX users only: If you must run this archive as a privileged user, select the Run This Archive As A Specific User option, and then enter any system account name in the User name text box and the corresponding account password in the Password text box. The user name and password must match the existing user name and password for this system; the archive process will run as that user. If the user name and password do not match the existing user name and password for this system account, the build procedure fails.
- ? Click Next to create the archive. When the archive operation completes, one of the following archive messages appears:
- **Build Successful:** The archive was successfully created and stored in the location that you specified in step 4. Click OK and then click Close on the wizard page.
  - **Build Failed:** The archive was not created. To determine the cause of the problem, review the information appearing on the page, and click Details to further analyze the cause of the problem.

### J2EE Archives page

ColdFusion lets you create an EAR or WAR file that contains an entire application. This archive file contains the ColdFusion web application, settings for ColdFusion (such as data source definitions), the CFM pages used by your application (text or compiled Java), and optionally, the ColdFusion Administrator. This feature lets you quickly create an archive file that a J2EE administrator can use to deploy your ColdFusion application.

J2EE archives are different from ColdFusion archives (CAR) files. For information on CAR files, see [ColdFusion Archives page](#).

**Context root** Because the J2EE environment supports multiple, isolated web applications running in a server instance, each J2EE web application running in a server is rooted at a unique base URL, called a context root (or context path). The J2EE application server uses the initial portion of the URL (that is, the portion immediately following `http://_hostname_`) to determine which web application processes an incoming request. For example, if you are running ColdFusion with a context root of `cfmx`, you display the ColdFusion Administrator using the URL `http://_hostname_/cfmx/CFIDE/administrator/index.cfm`. Most J2EE application servers allow one application in each server instance to use `/` (forward slash) for the context root. The Remote Development Services (RDS) web application is not required if you use a context root of `/`.

The J2EE Archives page lets you create an enterprise application archive (EAR) file or web application archive (WAR) file that contains the following items:

- The ColdFusion web application.
- Server settings, such as data sources and custom tag paths.
- The CFML pages of your application, stored in the root directory of the ColdFusion web application. With this EAR or WAR file, a J2EE administrator can deploy your ColdFusion MX application to a J2EE application server.

**Note:** If you are creating a cluster of server instances when running the multiserver configuration, use this page to create the WAR or EAR files required to create each of the servers in the cluster.

You can create a J2EE archive regardless of whether you are running ColdFusion MX in the server configuration or the J2EE configuration. However, you must be running the J2EE configuration to deploy an EAR or WAR file.

Option	Description
Archive Name	Specifies a name for the J2EE archive definition. This is also the name given to the EAR or WAR file.
Application Directory	Specifies the location of the CFM files to be included beneath the web root of the ColdFusion web application.

Distribution Directory	Specifies the directory where ColdFusion places the EAR or WAR file. ColdFusion uses the name archivename.ear or archivename.war, depending on the archive type.
Archive Type	Specifies whether ColdFusion creates a Web Application Archive (WAR) file or an Enterprise Application Archive (EAR) file.
Context Root (valid for EAR)	If you create an EAR file, you can optionally specify a context root for the ColdFusion web application. The default is an empty context root. For more information, see <a href="#">J2EE Archives</a> . If you create a WAR file, the context root is handled in an application-server-specific manner. In some application servers, the default context root is the name of the WAR file; in others, you specify the context root using the deploy tool or through a server-specific configuration file.
Serial Number	Specifies a valid serial number for ColdFusion Enterprise Edition.
Previous Serial Number (if Upgrade)	Specify the serial number of the previous ColdFusion installation.
Include COM Support	Include COM Support Specifies whether to include the modules that provide COM support. Omitting COM support reduces the size of the archive by about 12 MB.
Disable Debugging	Specifies whether to disable debugging in the ColdFusion web application.
Include CFML Source	Specifies whether to use the original CFM files or to convert the pages to Java bytecode.
Include CF Administrator	Specifies whether to include the modules and directories for the ColdFusion Administrator (the CFIDE directory structure). Omitting the ColdFusion Administrator reduces the size of the archive by about 2 MB.
Configure Data Sources to be Included in Archive	Specifies the data sources to include in the J2EE archive. Use the Right and Left Arrow buttons to select and remove data sources. Use the Double Arrow buttons to select and remove all data sources with one click.

### Enterprise Manager section

The Enterprise Manager section of the Administrator lets you create Tomcat server instances with ColdFusion already deployed, register remote Tomcat server instances, and create clusters of Tomcat server instances.

### Instance Manager page

The Instance Manager page lets you view the local and remote Tomcat servers that can be accessed by a cfusion server running. From this page you can access pages that define new, local, Tomcat servers and register existing Tomcat servers running on remote computers, as follows:

- **Add New Instance** Create a Tomcat server and automatically deploy a copy of the current ColdFusion MX application into that server.
- **Register Remote Instance** Define an existing remote Tomcat server to the Instance Manager for adding these servers to a cluster. It is not mandatory to run the remote Tomcat server instance when you define it to the Instance Manager. However, it must be running before you can add it to a cluster. **Edit ColdFusion Server:** Modify built-in web server settings for a server instance.

Available servers

Area	Description
Actions	Lets you start, stop, restart, and delete a Tomcat server.
Name	Specifies the Tomcat server name. If the server is started, you can click this name to open a browser window to the Tomcat server's web root.
Server Directory	Specifies the server directory.
HTTP Port	Specifies the port for the built-in web server.
Remote Port	The remote port for the server instance.
Host	Specifies the host name or IP address for the server instance.
Cluster	Cluster Specifies the name of the cluster that contains the server.

- By default, the Instance Manager deploys a copy of the current cfusion application (data sources, settings, administrator password, and so on).
- You can optionally use the Create from EAR/WAR option to create a server with a previously archived application.

### Cluster Manager page

The Cluster Manager page in ColdFusion Administrator lets you create and manage clusters of Tomcat servers, each containing the same ColdFusion application.

- 1 Add a cluster by typing a name in the Cluster Name box, and clicking Add. This creates a cluster and adds it to the Configured Clusters table.
- 2 Add servers to the cluster by clicking the Edit icon next to the cluster name in the Configured Clusters table. This displays the Edit Cluster Page.

#### Edit Cluster Page

The Edit Cluster page in ColdFusion Administrator lets you define the server instances for a cluster and to customize cluster settings.

#### Managing clusters

Manage clusters using the ColdFusion Administrator. If your ColdFusion application uses session replication, sticky sessions are not typically required.

When session replication is enabled, Tomcat propagates session-variable information to all servers in the cluster every time a session variable changes. Consider whether the application's business requirements require session replication and whether your network incurs the increased traffic before enabling session replication. Consider using client variables instead of session variables.

In the ColdFusion Administrator, click Enterprise Manager > Cluster Manager. The sticky sessions and session replication options require the use of J2EE Sessions by all instances participating in the cluster. To enable J2EE sessions, go to the Memory Variables page and enable the Use J2EE session variables option. Do this for each server in the cluster.

- 1 Enter a cluster name and then click Add.
- 2 Click the cluster name and move the servers to the cluster based on the requirement.
- 3 (If required) Edit the multicast port. Multicast port is used to group the cluster members together. Default value of multicast port is 45564. After you create a cluster, the port is added in the `cf_install_dir\cfusion\config\cluster.xml` file. For more information on multicast port, see <http://tomcat.apache.org/tomcat-6.0-doc/config/cluster-membership.html>.

4 Specify if you need sticky session. Sticky session ensures that after a session is established on an instance, all future requests from the client are mapped to that instance.

5 Click Submit.

Adding a remote instance to a cluster

To add a remote instance to a cluster, add the cluster block to the remote instances server.xml. Then, register the remote instance and add the instance to the cluster. For more information on configuring clusters on Tomcat, see <http://tomcat.apache.org/tomcat-5.5-doc/cluster-howto.html>.

1 Register the remote instance to the local machine.

2 Create a cluster in the local machine.

3 Open the cf\_install\_dir\_instance-name\_runtime\conf\server.xml file of the remote instance.

4 Add the following block between the entries `</host> }` and `{{</engine>`:

```
<Cluster className="org.apache.catalina.ha.tcp.SimpleTcpCluster"
channelSendOptions="8">
<Manager notifyListenersOnReplication="true" expireSessionsOnShutdown="false"
className="org.apache.catalina.ha.session.DeltaManager">
</Manager>
<Channel className="org.apache.catalina.tribes.group.GroupChannel">
<Membership port="45565" dropTime="3000" address="228.0.0.4"
className="org.apache.catalina.tribes.membership.McastService" frequency="500">
</Membership>
<Receiver port="4003" autoBind="100" address="auto" selectorTimeout="5000"
maxThreads="6" className="org.apache.catalina.tribes.transport.nio.NioReceiver">
</Receiver>
<Sender className="org.apache.catalina.tribes.transport.ReplicationTransmitter">
<Transport className="org.apache.catalina.tribes.transport.nio.
PooledParallelSender">
</Transport>
</Sender>
<Interceptor className="org.apache.catalina.tribes.group.interceptors.
TcpFailureDetector">
</Interceptor>
<Interceptor className="org.apache.catalina.tribes.group.interceptors.
MessageDispatch15Interceptor">
</Interceptor>
</Channel>
<Valve className="org.apache.catalina.ha.tcp.ReplicationValve" filter="">
</Valve>
<Valve className="org.apache.catalina.ha.session.JvmRouteBinderValve">
</Valve>
<ClusterListener className="org.apache.catalina.ha.session.JvmRouteSessionIDBinderListener">
</ClusterListener>
<ClusterListener className="org.apache.catalina.ha.session.
ClusterSessionListener">
</ClusterListener>
</Cluster>
```

5. In the entry, update the membership port with the multicast port of the cluster.

6. Using the ColdFusion Administrator of the local host, add the local instance and the remote instance to the cluster.

7. Restart all the instances.

**Server Update section**

In ColdFusion 10 or higher, the ColdFusion Administrator lets you verify and make product updates from the browser-interface itself.

### Updates page

Verify if there are any product updates using the ColdFusion Administrator (Server Update > Update). The updates can include hot fixes and security hot fixes for ColdFusion 10. The Updates page has the following options:

- **Available updates:** Click Check for Updates to see if any updates are available for installation. With ColdFusion 10, you can receive a notification when a new hot fix is available for download by subscribing to RSS feeds using the following URL: [http://www.adobe.com/support/coldfusion/downloads\\_updates.html](http://www.adobe.com/support/coldfusion/downloads_updates.html). For a multi-server setup, when you apply the updates from the main instance, you have option to select all local instances to which you may opt to apply hot fix. By default, update applies only to the main instance. If you apply the updates from a newly created local instance, the hot fix is applied only to that specific instance. You have to apply the hot fix to other instances from the main instance or individually from each instance. Before the update, the main ColdFusion instance automatically stops. But you have to manually stop all other instances (for which you want to apply the updates).
- **Download:** Downloads and places the file in <cf\_home>/hf-updates/ for later installation.

**Note:** If your server is behind a firewall or has no outbound internet access, note that you can download the hotfix file from another machine via this URL: <http://download.adobe.com/pub/adobe/coldfusion/xml/updates.xml>. You can then place the hotfix file on the ColdFusion server and apply the hotfix either with the Admin interface or via the command-line. If you place it in a locally web-accessible location, you can even configure the updater settings to point to that local URL as the location for ColdFusion to find the updates. See the discussion on the "settings" section, below. Similarly, if you're behind a proxy and would need to specify proxy information for ColdFusion to access the public hotfix URL, you can provide that information (proxy host, port, user, and password) by modifying the jvm.config on the ColdFusion server where the Administrator is being used. Again, for more on information about both of these options, as well as many answers to 50 common or helpful questions about the updater, see this blog entry from Adobe engineer Krishnap: <http://www.krishnap.com/2012/09/coldfusion-10-hotfix-update-installer.html>

- **Download and install:** Downloads the hot fix and performs a silent installation.

**Note:** This option does not apply to J2EE installations. Also, in the case of multi-server installations, you have to select the server on which you want to install the hot fix.

- **Installed updates:** Lists all updates to ColdFusion 10 that you have installed. For multi-server setup, it shows the list of updates to the instance to which you have logged in from the ColdFusion Administrator. Use the option Uninstall to remove the installed hot fix (if needed).
- **Settings:** Provides options to specify update preferences such as update notifications or if to automatically check for updates. If you have set up a local update site, you can also specify URL of that site to get updates. To do this, populate the updates.xml (see the following sample) and then update the URL in the Administrator (Server Update > Updates > Settings > Update Site > Site URL). For example, <http://IPAddress:Port/updates/updates.xml>. The following is a sample updates.xml:

```

<?xml version="1.0" encoding="UTF-8"?>
<rss version="2.0">
<channel>
<title>ColdFusion_10_Update</title>
<description>Upload_description</description> <item>
<title>Hot_Fix_Name</title>
<description>Hotfix_Description</description>
<pubDate>Tue, 19 Oct 2011 11:09:11 -0400</pubDate>
<cfhf_id>HotFix_ID</cfhf_id>
<cfhf_type>Cumulative</cfhf_category>
<cfhf_updatelevel>Integer indicating Hotfix Chronology</cfhf_updatelevel>
<cfhf_filename>Hotfix_installer_file_name</cfhf_filename>
<cfhf_technotelink>Link_to_Technote</cfhf_technotelink>
<cfhf_servers>
<cfhf_server version="10,0,0">
<cfhf_downloadlink>http://localhost:8500/updates/install1060811.jar
</cfhf_downloadlink> <cfhf_checksum>20f33dd56597b68c3634be08116bc84a</cfhf_checksum>
<cfhf_filename>hotfix_1.jar</cfhf_filename>
<cfhf_installinput>
<OPTIONAL_![CDATA[ HTML for input fields ]]>
</cfhf_installinput>
</cfhf_server>
</cfhf_servers>
</item>
</channel>
</rss>

```

Download hot fix for later installation

- 1** Ensure that JRE is in your system path, or directly access Java from the installation directory of ColdFusion.
- 2** Access the downloaded files from the following location:<cf\_home>/hf-updates/
- 3** At command prompt, do the following:

For standalone installations

Platform	Description
On Windows(Installation possible in either GUI or Silent mode)	<p><b>In GUI mode:</b></p> <ul style="list-style-type: none"> <li>• At command prompt, run the following command: java -jar&lt;jar-file-name&gt;. This launches the hot fix installer.</li> <li>• Follow the on-screen instructions.<b>In Silent mode:</b></li> <li>• At command prompt, run the following command:java -jar&lt;jar-file-name&gt; -i silent -f &lt;install_properties_file_path&gt;. Installation occurs silently. The following is a sample properties file:</li> </ul>
On Linux/Solaris/UNIX(Installation possible in either console or silent mode)	<p><b>In Console mode:</b></p> <ul style="list-style-type: none"> <li>• At command prompt, run the following command:java -jar&lt;jar-file-name&gt;. The console appears with instructions.</li> <li>• Follow the instructions provided in the console.<b>In Silent mode:</b></li> <li>• At command prompt, run the following command:java -jar&lt;jar-file-name&gt; -i silent -f &lt;install_properties_file_path&gt;. Installation occurs silently. The following is a sample properties file:</li> </ul>
On Mac OSX(Installation possible in either GUI, Silent, or Console mode)	<p><b>In GUI mode:</b></p> <ul style="list-style-type: none"> <li>• At command prompt, run the following command:java -jar&lt;jar-file-name&gt; -i GUI. This launches the hot fix installer.</li> <li>• Follow the on-screen instructions.<b>In Console mode:</b></li> <li>• At command prompt, run the following command: java -jar&lt;jar-file-name&gt;. The console appears with instructions.</li> <li>• Follow the instructions provided in the console.<b>In Silent mode:</b> At command prompt, run the following command:java -jar&lt;jar-file-name&gt; -i silent -f &lt;install_properties_file_path&gt;. Installation occurs silently. The following is a sample properties file:</li> </ul>

By default, after applying the hotfix, servers are restarted. If you do not want the servers to restart, additionally, provide the following command:

- **For console and GUI mode:** Run the following argument: DDONOT\_START\_SERVERS\_POST\_INSTALL=true
- **For silent installation:** Add the property DONOT\_START\_SERVERS\_POST\_INSTALL=true to the properties file.

For J2EE installations





Platform	Description
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<p>On Windows(Installation possible in either GUI or Silent mode)</p>	<p><b>In GUI mode (for exploded EAR/WAR deployment):</b></p> <ul style="list-style-type: none"> <li>• At command prompt, run the following command:java -jar &lt;jar-file-name&gt;. This launches the hot fix installer.</li> <li>• Follow the on-screen instructions.<b>In GUI mode (for unexploded EAR/WAR deployment):</b></li> <li>• At command prompt, run the following command:java -jar &lt;jar-file-name&gt; -DINSTALL_FILES_OUTSIDE_CF=true. This launches the hot fix installer.</li> <li>• Follow the on-screen instructions.<b>In Silent mode (for exploded EAR/WAR deployment):</b></li> <li>• At command prompt, run the following command:java -jar &lt;jar-file-name&gt; -i silent -f &lt;install_properties_file_path&gt;. Installation occurs silently. The following is a sample properties file:  *In Silent mode (for unexploded EAR/WAR deployment):*First, install the hotfix files outside your EAR/WAR on your system and then manually update the EAR/WAR.</li> <li>• At command prompt, run the following command:{{java -jar&lt;jar-file-name&gt; -i silent -f&lt;install_properties_file_path&gt;}}Installation occurs silently. The following is a sample properties file:</li> </ul>
---	--

<p>On Linux/Solaris/UNIX(Installation possible in either console or silent mode)</p>	<p><b>In Console mode (for exploded EAR/WAR deployment):</b></p> <ul style="list-style-type: none"> <li>• At command prompt, run the following command:java -jar &lt;jar-file-name&gt;. The console appears with instructions.</li> <li>• Follow the instructions provided in the console.<b>In Console mode (for unexploded EAR/WAR deployment):</b></li> <li>• At command prompt, run the following command: java -jar &lt;jar-file-name&gt; - DINSTALL_FILES_OUTSIDE_CF=true. The console appears with instructions.</li> <li>• Follow the instructions provided in the console.<b>In Silent mode (for exploded EAR/WAR deployment):</b></li> <li>• At command prompt, run the following command:{{ java -jar&lt;jar-file-name&gt; -i silent -f &lt;install_properties_file_path&gt;}}. Installation occurs silently. The following is a sample properties file:  *In Silent mode (for unexploded EAR/WAR deployment):*First, you install the hotfix files outside your EAR/WAR on your system and then manually update the EAR/WAR.</li> <li>• At command prompt, run the following command:{{java -jar&lt;jar-file-name&gt; -i silent -f&lt;install_properties_file_path&gt;}}Installation occurs silently. The following is a sample properties file:</li> </ul>
--	--

<p>On Mac OSX(Installation possible in either GUI, Silent, or Console mode)</p>	<p><b>In GUI mode (for exploded EAR/WAR deployment):</b></p> <ul style="list-style-type: none"> <li>• At command prompt, run the following command:{{java -jar&lt;jar-file-name&gt; -i GUI}}This launches the hot fix installer.</li> <li>• Follow the on-screen instructions.<b>In GUI mode (for unexploded EAR/WAR deployment):</b></li> <li>• At command prompt, run the following command:java -jar &lt;jar-file-name&gt; -DINSTALL_FILES_OUTSIDE_CF=true -i GUI. This launches the hot fix installer.</li> <li>• Follow the on-screen instructions.<b>In Console mode (for exploded EAR/WAR deployment):</b></li> <li>• At command prompt, run the following command:{{java -jar&lt;jar-file-name&gt;}}The console appears with instructions.</li> <li>• Follow the instructions provided in the console.<b>In Console mode (for unexploded EAR/WAR deployment):</b></li> <li>• At command prompt, run the following command:java -jar &lt;jar-file-name&gt; -DINSTALL_FILES_OUTSIDE_CF=true. The console appears with instructions.</li> <li>• Follow the instructions provided in the console.<b>In Silent mode (for exploded EAR/WAR deployment):</b></li> <li>• At command prompt, run the following command:java -jar &lt;jar-file-name&gt; -i silent -f &lt;install_properties_file_path&gt;. Installation occurs silently. The following is a sample properties file:  *In Silent mode (for unexploded EAR/WAR deployment):*First, you install the hotfix files outside your EAR/WAR on your system and then manually update the EAR/WAR.</li> <li>• At command prompt, run the following command:{{java -jar&lt;jar-file-name&gt; -i silent -f&lt;install_properties_file_path&gt;}}Installation occurs silently. The following is a sample properties file:</li> </ul>
---	--

**Note:** When you create a new instance from ColdFusion Administrator, hot fixes applied to the default instance is automatically applied to the new instance that you create.

#### Uninstalling from command prompt

1. If you have installed from command prompt in Console or UI mode, from the ColdFusion root directory, run the following command:

```
<CF_ROOT>\jre\bin\java -jar <CF_ROOT>\cfusion\hf-updates\hf-11-xxxx\uninstall\uninstaller.jar
```

(Modify the command according to your path/OS/Hotfix)

2. If you have installed from the ColdFusion Administrator, from the ColdFusion root directory, run the following command:

```
<CF_ROOT>\jre\bin\java -jar <CF_ROOT>\cfusion\hf-updates\hf-11-xxxx\uninstall\uninstaller.jar
```

3. If you have installed the hotfix using silent installation on your own, uninstallation can also be done silently. Run the following command:

```
<CF_ROOT>\jre\bin\java -jar <CF_ROOT>\cfusion\hf-updates\hf-11-xxxx\uninstall\uninstaller.jar -i SILENT
```

Even though you have installed hotfix to 5 instances using a single script, there is only one hotfix uninstaller for all these 5 instances for a given update (Usually this is under cfusion instance. It can be under other instances if cfusion was not opted for HF). When you invoke the previously mentioned commands, it will uninstall the hotfix from all the 5 instances.

#### Custom Extensions section

You can extend the functionality of the ColdFusion Administrator by adding links to other web applications and sites. These links appear under the Custom Extensions section in the left navigation pane of the Administrator.

#### Extend the Administrator

- 1 Create a file that contains the HTML link code, followed by a <BR>, with a separate line for each link. Do not include other HTML code, such as <head> or <body> tags. The target attribute is required for each link; if you specify target="content", the page appears in the main pane of the Administrator. If you specify any other value for the target attribute, the page appears in a new window.
- 2 Save this file as extensionscustom.cfm in the Administrator root directory (/CFIDE/administrator/). For example, the following file adds links for Bowdoin College, Universidad Complutense de Madrid, and La Sapienza:

```
<a href="http://www.bowdoin.edu/" target="content">Bowdoin College</a><br> <a href="http://www.http://www.ucm.es/" target="_blank">Universidad Complutense de Madrid</a><br> <a href="http://www.uniroma1.it/" target="_blank">La Sapienza</a><br>
```

When you click a link, the page appears. Alternatively, you can extend the ColdFusion Administrator by editing the wwwroot/CFIDE/administrator/custommenu.xml file.

#### Administrator API

You can use the Administrator API to perform most ColdFusion Administrator tasks programmatically. The Administrator API consists of a set of ColdFusion components (CFCs) that contain methods you call to perform Administrator tasks. For example, you use the setMSQL method of datasource.cfc to add a SQL Server data source. The CFCs for the Administrator API are located in the cf\_web\_root/CFIDE/adminapi directory. Each CFC corresponds to an area of the ColdFusion Administrator, as the following table shows:

CFC	Description
accessmanager.cfc	Specify the user name, password, description, access rights, sandboxes, and allowed roles for individual users.
administrator.cfc	Contains basic Administrator functionality, including login, logout, the Migration wizard, and the Setup wizard. You must call the login method before calling any other methods in the Administrator API.
base.cfc	Base object for all other Administrator API CFCs.
collection.cfc	Managa ColdFusion collections. Actions include reloading collections and enabling highlighting for collections.
datasource.cfc	Add, modify, and delete ColdFusion data sources.
debugging.cfc	Manage debug settings
eventgateway.cfc	Manage event gateways
extensions.cfc	Manage custom tags, mappings, CFXs, applets, CORBA, and web services.
flex.cfc	Manages Data Services integration settings
office.cfc	Manage OpenOffice settings.
mail.cfc	Manage ColdFusion mail settings.
runtime.cfc	Manage runtime settings for fonts, cache, charts, configuration, and other settings.
scheduler.cfc	Manages Scheduler tasks Services integration settings like finding task, updating task, and enabling cluster management.
security.cfc	Manage passwords, RDS, and sandbox security.
serverinstance.cfc	Start, stop, and restart Tomcat servers. This CFC only works for Developer and Enterprise editions only.
servermonitoring.cfc	Perform many of the Server Monitor tasks programmatically.

The adminapi directory also contains an Application.cfm file and two subdirectories.

**Note:** If you are using sandbox security, enable access to the cf\_web\_root/CFIDE/adminapi directory to use the Administrator API.

Following are the styles of methods in the Administrator API:

- **Method arguments** When setting complex or varied values, the Administrator API uses method arguments.
- **Getting and setting simple values** When setting simple values, such as true or false debug settings, the Administrator API uses get and set property methods. To view the methods, method arguments, and documentation for the Administrator API CFCs, use the CFC Explorer. For example, to view datasource.cfc when running in the server configuration, open a browser to <http://localhost:8500/CFIDE/adminapi/datasource.cfc>.

Use the Administrator API

#### 1 Instantiate administrator.cfc:

```
<cfscript> // Login is always required. adminObj = createObject("component",cfide.adminapi.administrator);
```

**Note:** You can instantiate administrator.cfc and call the login\_ method in a single line of code, as the following example shows: \_

```
createObject("component","cfide.adminapi.administrator").login("admin");
```

**Note:** You can log in as a user other than administrator, but with proper permissions, as follows. Provide the user name after the password.

```
createObject("component","cfide.adminapi.administrator").login("#password#"#"#username#")
```

- 2 Call the administrator.cfc loginmethod, passing the ColdFusion Administrator password or the RDS password:

```
adminObj.login("admin");
```

- 3 Instantiate the desired CFC:

```
myObj = createObject("component","cfide.adminapi.debugging");
```

- 4 Call the desired CFC method (this example enables debugging):

```
myObj.setDebugProperty(propertyName="enableDebug", propertyValue="true");
```

## Examples

The following example adds a SQL Server data source:



```
<cfscript>
// Login is always required. This example uses two lines of code.
adminObj = createObject("component","cfide.adminapi.administrator");
adminObj.login("admin");
// Instantiate the data source object.
myObj = createObject("component","cfide.adminapi.datasource");
// Create a DSN.
myObj.setMSSQL(driver="MSSQLServer",
name="northwind_MSSQL",
host = "xx.x.xxx.xx",
port = "1433",
database = "northwind",
username = "sa",
login_timeout = "29",
timeout = "23",
interval = 6,
buffer = "64000",
blob_buffer = "64000",
setStringParameterAsUnicode = "false",
description = "Northwind SQL Server",
pooling = true,
maxpooledstatements = 999,
enableMaxConnections = "true",
maxConnections = "299",
disable_clob = true,
disable_blob = true,
disable = false,
storedProc = true,
alter = false,
grant = true,
select = true,
update = true,
create = true,
delete = true,
drop = false,
revoke = false );
</cfscript>
```

The following example adds the same SQL Server data source, but uses the argumentCollection attribute to pass all method arguments in a structure:

```

<cfscript>
// Login is always required. This example uses a single line of code.
createObject("component","cfide.adminapi.administrator").login("admin");
// Instantiate the data source object.
myObj = createObject("component","cfide.adminapi.datasource");
// Required arguments for a data source.
stDSN = structNew();
stDSN.driver = "MSSQLServer";
stDSN.name="northwind_MSSQL";
stDSN.host = "xx.x.xxx.xx";
stDSN.port = "1433";
stDSN.database = "northwind";
stDSN.username = "sa";
// Optional and advanced arguments.
stDSN.login_timeout = "29";
stDSN.timeout = "23";
stDSN.interval = 6;
stDSN.buffer = "64000";
stDSN.blob_buffer = "64000";
stDSN.setStringParameterAsUnicode = "false";
stDSN.description = "Northwind SQL Server";
stDSN.pooling = true;
stDSN.maxpooledstatements = 999;
stDSN.enableMaxConnections = "true";
stDSN.maxConnections = "299";
stDSN.enable_clob = true;
stDSN.enable_blob = true;
stDSN.disable = false;
stDSN.storedProc = true;
stDSN.alter = false;
stDSN.grant = true;
stDSN.select = true;
stDSN.update = true;
stDSN.create = true;
stDSN.delete = true;
stDSN.drop = false;
stDSN.revoke = false;
//Create a DSN.
myObj.setMSSQL(argumentCollection=stDSN);
</cfscript>
<!--- Optionally dump the stDSN structure. --->
<!---
<cfoutput>
<cfdump var="#stDSN#">
</cfoutput>
--->

```

## Web Server Management

You can connect Adobe ColdFusion to the built-in web server and to external web servers, such as Apache, IIS, and Sun ONE Web Server (formerly known as iPlanet).

## About web servers in ColdFusion

The web server is a critical component in your ColdFusion environment, and understanding how ColdFusion interacts with web servers can help you administer your site. ColdFusion provides the following web server options:

- **Built-in web server** A Coyote is Tomcat's HTTP Connector component that supports the HTTP 1.1 protocol for the web server or application container. Coyote listens for incoming connections on a specific TCP port on the server and forwards the request to the Tomcat Engine. Tomcat Engine processes the request and send back a response to the requesting client. For more information, see [Using the built-in web server](#).
- **External web server** A customized web server connector module that forwards requests for ColdFusion pages from an external web server to ColdFusion. For more information, see [Using an external web server](#).

## Using the built-in web server

The ColdFusion server configuration is built on top of Tomcat, also called the built-in web server. The built-in web server is useful in the following cases:

- **Coexistence/transition** The built-in web server lets you run a previous version of ColdFusion (using an external web server) and ColdFusion (using the built-in web server) on the same computer while you migrate your existing applications to ColdFusion.
- **Development** If your workstation runs ColdFusion but does not run an external web server, you can still develop and test ColdFusion applications locally through the built-in web server. All web servers listen on a TCP/IP port, which you can specify in the URL. By default, web servers listen for HTTP requests on port 80 (for example, <http://www.adobe.com> and <http://www.adobe.com:80> are the same). Similarly, port 443 is the default port for https requests. By default in the server configuration, the built-in web server listens on port 8500. For example, to access the ColdFusion Administrator through the built-in web server, specify [http://\\_servername\\_:8500/CFIDE/administrator/index.cfm](http://_servername_:8500/CFIDE/administrator/index.cfm).

Whenever possible, configure your external web server as part of the ColdFusion installation, except for the two cases mentioned previously (coexistence with a previous ColdFusion version, and when the computer has no web server). If you select the built-in web server by mistake, run the Web Server Configuration Tool manually to configure your external web server after the installation. For information about the Web Server Configuration Tool, see [Web server configuration](#). If you enable the built-in web server during the installation process and the port is already in use, the installer automatically finds the next-highest available port and configures the built-in web server to use that port. To determine the port number used by the built-in web server, open the `cf_root/runtime/conf/server.xml` file in a text editor and examine the port attribute of the connector. For example, `<Connector port="8504" protocol="org.apache.coyote.http11.Http11Protocol">`. Keep in mind the following when using the built-in web server:

- The default web root when using the built-in web server is `cf_root/cfusion/wwwroot` (server configuration). By default, the ColdFusion Administrator (CFIDE directory) is under this web root.
- If you want the built-in web server to serve pages from a different web root directory, define a virtual mapping in the `cf_root/cfusion/runtime/conf/server.xml` file. Search for the string, "To add virtual directory." Uncomment the entry context path below. To add a virtual directory, add the aliases attribute as shown below:

```
<Context path="/" docBase="<absolute_path_to_CF_install_directory>\wwwroot"
WorkDir="<cf_home>\runtime\conf\Catalina\localhost\tmp"
aliases="/path1=<absolute_path_to_directory1>, /path2=<absolute_path_to_directory2>"></Context>
```

**Note:** If you have CFML pages under your external web server's root, ensure that ColdFusion is configured to serve these pages through the external web server. If you did not configure ColdFusion\_ to use an external web server, your external web server serves ColdFusion Markup Language (CFML) source code for ColdFusion pages saved under its web root.\_

## Using an external web server

ColdFusion uses the Tomcat web server connector to forward requests from an external web server to the ColdFusion runtime system.

When a request is made for a CFM page, the connector on the web server opens a network connection to the Tomcat proxy service. The ColdFusion runtime system handles the request and sends its response back through the proxy service and connector. The web server connector uses web-server-specific plug-in modules, as the following table describes:

Web server	Connector details
------------	-------------------

Apache	<p>The Web Server Configuration Tool adds the following elements to the Apache httpd.conf file:</p> <ul style="list-style-type: none"> <li>• A LoadModule directive defines the connector.</li> <li>• An AddHandler directive tells Apache to route requests for ColdFusion pages through the connector. For Apache 2.x, the connection module is mod_jk.so.</li> </ul>
IIS	<p>The Web Server Configuration Tool adds the following elements at either the global level (default) or website level:</p> <ul style="list-style-type: none"> <li>• Creates a folder 1 in cf_root\config\wsconfig, that contains all connector-related files.</li> <li>• Creates a virtual directory Jakarta in cf_root\config\wsconfig (in IIS).</li> <li>• Adds an entry, tomcat, under the {{ ISAPI FILTERS }}. This points to cf_root\config\wsconfig\1\isapi_redirect.dll.</li> <li>• Adds an entry, tomcat, to cf_root\config\wsconfig\1\isapi_redirect.dll with permission allowed under ISAPI and CGI Restrictions. This is applicable for global sites in IIS manager.</li> <li>• Adds the following isapi handlers: cfcHandler, cfmHandler, cfmlHandler, cfrHandler, and cfswfHandler.</li> <li>• For debugging issues, set the log level to debug, in the isapi_redirect.properties file present in the {{cf_roots\config\wsconfig\1\ }} directory.</li> <li>• To disable webserver buffer, change the is_buffer_enable to false in the cf_root\config\wsconfig\1\isapi_redirect.properties file. Do this if you want cflush to work over an IIS connector. If your application does not use cflush, set this to true. This may increase the performance.</li> </ul>
Sun ONE Web Server	<p>The Web Server Configuration Tool adds the following elements to Sun ONE Web Server configuration files:</p> <ul style="list-style-type: none"> <li>• Creates a folder 1 in the ColdFusion10\config\wsconfig folder that contains all connector-related files.</li> <li>• Adds the following entry in the magnus.conf file of Sun ONE. Change the log level to {{ debug }} for debugging issues.</li> </ul> <p>Adds the entries for all extensions in the obj.conf file of Sun ONE. For example,</p>

*Note:* Note that the connector needs to be re-configured, if new sites are added after the connector has been configured with the 'All Sites' option in IIS.

## Web server configuration

ColdFusion uses the Web Server Configuration Tool to configure an external web server with the modules and settings that the connector requires connect to ColdFusion. You can run the Web Server Configuration Tool through either the command-line interface or the graphical user interface (GUI). In either case, the Web Server Configuration Tool configures your external web server to interact with a ColdFusion server.

### Using GUI mode

The Web Server Configuration Tool includes a GUI mode, which you can use to specify external web server configuration settings through a graphical interface.

*Note:* When you use the Web Server Configuration Tool in GUI mode, select the Configure Web Server for ColdFusion Applications check box.

### Run the Web Server Configuration Tool in GUI mode

- 1 Open a console window.

*Note:* In Windows, to start the Web Server Configuration Tool, select Start > All Programs > Adobe > ColdFusion 2016 > Web Server Configuration Tool.

- 2 Change to the cf\_root/cfusion/runtime/bin.
- 3 Start the Web Server Configuration Tool using the wsconfig.exe (Windows) or wsconfig (UNIX) command. The Web Server Configuration Tool window appears.
- 4 Click Add.
- 5 Select Configure Web Server For ColdFusion Applications.
- 6 Provide the application server host and the application server cluster.

*Note:* The server or cluster does not have to reside on the web server computer. In this case, enter the IP address or server name of the remote computer.

- 7 In the Web Server Properties area, enter web-server-specific information, and click OK.
- 8 (Optional) The web server connector does not serve static content (such as HTML files and images) from the built-in web server's root directory. If your ColdFusion web application has an empty context root  and you want to serve pages from the built-in web server's root directory, you can create a web server mapping to the corresponding directory under the built-in web server.

### Using the command-line interface

- 1 Open a console window.
- 2 Change to the cf\_root/runtime/bin (server configuration) directory.
- 3 Execute the wsconfig.exe (Windows) or wsconfig (UNIX) command:

```
wsconfig.exe [-options]
./wsconfig [-options]
```

The following table describes the options:

Option	Description
-ws	Specifies the web server, as follows: <ul style="list-style-type: none"> <li>• IIS</li> <li>• Apache</li> <li>• SunOne The web server name you supply is not case sensitive.</li> </ul>
{{-dir}}	Specifies the path to the configuration directory (SunONE config).
-site	Specifies the IIS website name (case-sensitive). Specify All or 0 to configure the connector at a global level, which applies to all IIS websites.
{{-host}}	Specifies the ColdFusion server address. The default value is localhost.
-norestart	Specifies not to restart the web server.
-cluster	Specifies the Tomcat cluster name. Use this option to define a connection to a Tomcat cluster instead of a single server.
-l	Enables verbose logging for the connector.
-upgrade	Upgrades existing configured connectors with newer modules from a newer wsconfig.jar file.
-service	Specifies the Apache Windows service name. The default value is Apache.
-bin	Specifies the path to the Apache server binary file (apache.exe in Windows, httpd on UNIX).
-script	Specifies the path to the Apache UNIX control script file (apachectl, but slightly different with certain Apache variants, such as Stronghold).
-v	Enables verbose output from the Web Server Configuration Tool.
-list	Lists all configured web servers.
-list -host server-host	Lists all Tomcat servers on the specified host.
-remove	Removes a configuration. Requires the ws and either the dir or site options.
-uninstall	Removes all configured connectors.
{{-h}}	Lists all parameters.

### Using the batch files and shell scripts

The ColdFusion server configuration includes batch files and shell scripts that implement typical command-line connector configurations. These files are in the `cf_root/bin/connectors` directory. For example, the `IIS_connector.bat` file configures all sites in IIS to site 0, which establishes a globally defined connector so that all sites inherit the filter and mappings.

If you use Apache or Sun ONE Web Server, use these files as prototypes, editing, and saving them as appropriate for your site.

## Command-line interface examples

- 1 Configure a specific IIS site:

```
cf_root/runtime/bin/wsconfig.exe -ws iis -site "web31" -v
```

On systems where all sites run ColdFusion, there is generally no need to configure an individual site.

- 2 Configure all existing IIS sites (ISPs):

```
cf_root/runtime/bin/wsconfig.exe -ws iis -site 0 -v
```

- 3 Configure Apache on UNIX #1:

```
cf_root/runtime/bin/wsconfig -ws Apache -bin /opt/apache2/bin/httpd -script /opt/apache2/bin/apachectl -dir /opt/apache2/conf -v
```

- 4 Configure Apache on UNIX #2:

```
cf_root/runtime/bin/wsconfig -ws Apache -bin /usr/bin/httpd -script /usr/bin/httpd -dir /etc/httpd/conf -coldfusion -v
```

- 5 Configure Apache in Windows:

```
cf_root/runtime/bin/wsconfig.exe -ws apache -dir "c:\program files\apache group\apache2\conf" -coldfusion -v
```

- 6 Configure Sun ONE Web Server on UNIX:

```
cf_root/runtime/bin/wsconfig -ws sunone -dir [path to config] -coldfusion -v
```

## Configuration files

Each time you run the Web Server Configuration Tool, it creates a configuration file and directory. For example, the first time you run the tool in the server configuration, it creates files under `cf_root/config/wsconfig/1`; the second time, it creates `cf_root/config/wsconfig/2`; and so on. Each of these subdirectories contains the appropriate platform-specific connector module and web-server-specific supporting files.

## Backing up connector files

WS Config backs up the connector files when you un-configure or reconfigure the connector. It helps you to compare the new connector files with the backed up files and redo the required customization.

All files available under connector directory (`../ColdFusion/config/wsconfig/magicnumber`) are backed up in a directory named `magicnumber.1` or `magicnumber.2` and so on, depending on the number of previous backup directories that are available for same connector. These directories are available in backup directory (`../ColdFusion/config/wsconfig/backup`). For instance, if you are about to un-configure a connector which is configured under `../wsconfig/2/`, its files are backed up in `../wsconfig/backup/2.1`. If this is the second time you are un-configure the connector, then `../wsconfig/backup/2.1` is already present. In that case files are saved under `../wsconfig/backup/2.2`.

**Note:** In case of Apache connector, `mod_jk.conf`, which is present in Apache conf directory is also backed up under `../wsconfig/backup/2.2` directory. Also, if you are un-configure from command line then connector is backed up by default but if you are un-configure using WS Config UI tool, you get an option to either accept or deny the backup before un-configure the connector. This is valid for all connectors and in all the supported platforms.



## Sample configuration files

The following are some examples of connector-specific web server properties that help describe the web server configuration file parameters. These examples assume that Tomcat and the web server are on the same computer.

### Apache configuration file

The following is a typical httpd.conf file for an installation of ColdFusion on the same computer as an Apache 2.0 web server. The httpd.conf file includes the following entry:

```
Include "Apache_install\Apache Software Foundation\Apache2.2\conf\mod_jk.conf"
```

The mod\_jk.conf file has the following:

```
# # Load mod_jk module
LoadModule jk_module "CF_install\config\wsconfig\1\mod_jk.so"
# Where to find workers.properties
JkWorkersFile "CF_install\config\wsconfig\1\workers.properties"
JkMountFile "CF_install\config\wsconfig\1\uriworkermap.properties"
# Where to put jk logs
JkLogFile "CF_install\config\wsconfig\1\mod_jk.log"
# Where to put jk shared memory
JkShmFile "CF_install\config\wsconfig\1\jk_shm"
# Set the jk log level [debug/error/info]
JkLogLevel info
# Select the timestamp log format
JkLogStampFormat "[%a %b %d %H:%M:%S %Y] "
AddHandler jakarta-servlet .cfm .cfml .cfc .cfr .cfswf
Alias /CFIDE "CF_install\cfusion\wwwroot\CFIDE"
<Directory "CF_install\cfusion\wwwroot\CFIDE">
Options Indexes FollowSymLinks
AllowOverride None
Order allow,deny
Allow from all
</Directory>
<Files ~ ".hbmxml$" >
Order allow,deny
Deny from all
</Files>
```

### Sun ONE configuration file

The following is a typical obj.conf file for iPlanet, or Sun ONE Web Server:

```
Init fn="load-modules" shlib="CF_install/config/wsconfig/2/nsapi_redirect.dll" funcs="jk_init,jk_service" Init
fn="jk_init" worker_file="CF_install/config/wsconfig/2/workers.properties" log_level="info"
log_file="CF_install/config/wsconfig/2/nsapi.log" shm_file="CF_install/config/wsconfig/2/jk_shm"
```

The following is a typical magnus.conf file for iPlanet, or Sun ONE Web Server:

```

<Object name="default">
NameTrans fn="assign-name" from="/*.hbmxml" name="jknsapi"
NameTrans fn="assign-name" from="/*.jsp" name="jknsapi"
NameTrans fn="assign-name" from="/*.sws" name="jknsapi"
NameTrans fn="assign-name" from="/*.cfswf" name="jknsapi"
NameTrans fn="assign-name" from="/*.cfr" name="jknsapi"
NameTrans fn="assign-name" from="/*.cfc/*" name="jknsapi"
NameTrans fn="assign-name" from="/*.cfc" name="jknsapi"
NameTrans fn="assign-name" from="/*.cfml" name="jknsapi"
NameTrans fn="assign-name" from="/*.swc" name="jknsapi"NameTrans fn="assign-name"
from="/*.cfm/*" name="jknsapi"
NameTrans fn="assign-name" from="/*.cfm" name="jknsapi"
NameTrans fn="assign-name" from="/*.as" name="jknsapi"
NameTrans fn="assign-name" from="/*.mxml" name="jknsapi"
NameTrans fn="assign-name" from="/*.cfml/*" name="jknsapi"
NameTrans fn="assign-name" from="/rest/*" name="jknsapi"
NameTrans fn="assign-name" from="/flex-internal/*" name="jknsapi"
NameTrans fn="assign-name" from="/flashservices/gateway/*" name="jknsapi"
NameTrans fn="assign-name" from="/cform-internal/*" name="jknsapi"
NameTrans fn="assign-name" from="/CFFileServlet/*" name="jknsapi"
NameTrans fn="assign-name" from="/cffileservlet/*" name="jknsapi"
NameTrans fn="assign-name" from="/flex2gateway" name="jknsapi"
NameTrans fn="assign-name" from="/flex2gateway/*" name="jknsapi"
NameTrans fn="assign-name" from="/CFFormGateway/*" name="jknsapi"
NameTrans fn="assign-name" from="/cformgateway/*" name="jknsapi"
NameTrans fn="pfx2dir" from="/CFIDE" dir="C:/ColdFusion2016/cfusion/wwwroot/CFIDE"
AuthTrans fn="match-browser" browser="*MSIE*" ssl-unclean-shutdown="true"
NameTrans fn="ntrans-j2ee" name="j2ee"
NameTrans fn="pfx2dir" from="/mc-icons" dir="C:/Program Files/Oracle/WebServer7/lib/icons"
name="es-internal"
PathCheck fn="uri-clean"
PathCheck fn="check-acl" acl="default"
PathCheck fn="find-pathinfo"
PathCheck fn="find-index-j2ee"
PathCheck fn="find-index" index-names="index.html,home.html,index.jsp"
ObjectType fn="type-j2ee"
ObjectType fn="type-by-extension"
ObjectType fn="force-type" type="text/plain"
Service method="(GET|HEAD)" type="magnus-internal/directory" fn="index-common"
Service method="(GET|HEAD|POST)" type="*~magnus-internal/*" fn="send-file"
Service method="TRACE" fn="service-trace"
Error fn="error-j2ee"
AddLog fn="flex-log"
</Object>

```

## Multihoming

You typically use the Web Server Configuration Tool to configure a connection between the web server and ColdFusion server running on the same computer. However, you can use the web server connector to route requests to multiple virtual sites to a single ColdFusion server. This is known as multihoming.

In a multihomed environment, you have multiple virtual hosts (also known as virtual sites) connected to a single ColdFusion server. You might use these virtual hosts for separate applications, such as Human Resources (HR), payroll, and marketing, or for separate users in a hosting environment.

Multihoming configuration tasks include:

- **Enabling access to the ColdFusion Administrator** If any of the applications under a virtual host need to access the ColdFusion Administrator, create a web server mapping (Alias directive in Apache) for /CFIDE that points to the original CFIDE directory. Alternatively, you can copy the entire CFIDE directory to the virtual website.
- **Enabling access to the cfform.js file** If you do not create a web server mapping for /CFIDE, and any of the applications under a virtual host use the cfformtag, enable the virtual host to find the JavaScript files under the CFIDE/scripts directory. To enable access to the scripts, use one of the following options:
  - Copy the original\_web\_root/CFIDE/scripts directory to a CFIDE/scripts directory on your virtual host.
  - Modify all cfform tags to use the scriptsrc attribute to specify the location of the cfform.js file.
- **Disabling the cacheRealPath attribute** To ensure that ColdFusion always returns pages from the correct server, disable Cache Web Server Paths in the Caching page of the ColdFusion Administrator. The procedures you perform to enable multihoming differ for each web server.

## IIS

When you use IIS, you run the IIS Administrator to create additional websites and run the Web Server Configuration Tool. You store ColdFusion pages under the web root of each virtual website.

### Connect multiple virtual sites on IIS to a single ColdFusion server

- 1 Use the IIS Administrator to create virtual websites, as necessary. The web root directory should enable read, write, and execute access. For more information, see your IIS documentation.
- 2 Configure DNS for each virtual website, as described in your IIS documentation.
- 3 Test each virtual website to ensure that HTML pages are served correctly.
- 4 Run the Web Server Configuration Tool, as follows:
  - GUI - Select IIS for the Web Server, select All from the IIS Web Site drop-down list, and select the Configure Web Server for ColdFusion Applications check box.
  - Command line - Specify the -site 0 option, as the following server configuration example shows:  
`cf_root/runtime/bin/wsconfig.exe -ws iis -site 0 -v`
- 5 Test each virtual website to ensure that ColdFusion pages are served correctly.

## Apache

When you use Apache, you modify the apache\_root/conf/httpd.conf file to create virtual hosts and run the Web Server Configuration Tool. You store ColdFusion pages under the web root of each virtual website.

### Connect multiple Apache virtual hosts on a web server to a single ColdFusion server

- 1 Configure DNS for each virtual website, as described in your web server documentation.
- 2 Open the apache\_root/conf/httpd.conf file in a text editor and create virtual hosts, as necessary. For more information, see your Apache documentation. For example:

```

...
NameVirtualHost 127.0.0.1
<VirtualHost 127.0.0.1>
ServerAdmin admin@yoursite.com
DocumentRoot "C:/Program Files/Apache Group/Apache2/htdocs"
ServerName SERVER02
ErrorLog logs/error.log
</VirtualHost>
<VirtualHost 127.0.0.1>
ServerAdmin admin@yoursite.com
DocumentRoot "C:/Program Files/Apache Group/Apache2/htdocs2"
ServerName mystore
ErrorLog logs/error-store.log
</VirtualHost>
<VirtualHost 127.0.0.1>
ServerAdmin admin@yoursite.com
DocumentRoot "C:/Program Files/Apache Group/Apache2/htdocs3"
ServerName myemployee
ErrorLog logs/error-employee.log
</VirtualHost>
...

```

- 3 Test each virtual host to ensure that HTML pages are served correctly.
- 4 Run the Web Server Configuration Tool, as follows:
  - GUI - Specify Apache for the Web Server, specify the directory that contains the httpd.conf file, and select the Configure Web Server for ColdFusion Applications check box.
  - Command line - Specify -wsapache and the directory that contains the httpd.conf file, as the following example shows:

```
cf_root/runtime/bin/wsconfig.exe -ws apache -dir "c:\program files\apache group\apache2\conf" -v
```
- 5 Restart Apache. You store ColdFusion files for each virtual host in the directory specified by the DocumentRoot directive.
- 6 Test each virtual host to ensure that ColdFusion pages are served correctly.

**Note:** On Ubuntu, the bundled Apache Server will be configured with ColdFusion. The request for CFFileServlet and other servlet mapping requests will fail. This is because the default Apache Server running on 80, uses default virtual host. So the connector configuration with bundled Apache Server needs additional steps for user to manually add JkMountFile entry of uriworkermap.properties found in mod\_jk.conf to default virtual host setting found in /etc/apache2/sites-available/default.

## Configuring ColdFusion Connector with Apache Virtual Hosts (Community Video)

Click this [link](#) to access the video.

## Sun ONE Web Server and iPlanet

When you use Sun ONE Web Server version 6, you use the Server Administrator to create virtual servers and run the Web Server Configuration Tool. You store ColdFusion pages under the web root of each virtual server.

**Note:** Earlier versions of Sun ONE/iPlanet creates separate server instances for each site. Run the Web Server Configuration Tool once for each site.

## Connect multiple Sun ONE Web Server virtual hosts to a single ColdFusion server

- 1 Using the Sun ONE Web Server Administrator, create virtual web servers for ColdFusion to use. For more information, see your Sun ONE Web Server documentation.
- 2 Configure DNS for each virtual website, as described in your web server documentation.
- 3 Test each virtual server to ensure that HTML pages are served correctly.
- 4 Run the Web Server Configuration Tool, as follows:
  - GUI - Specify Sun ONE for the web server, specify the directory that contains the obj.conf and magnus.conf files, and select the Configure Web Server for ColdFusion Applications check box.
  - Command line - Specify -ws sunone and the directory that contains the obj.conf file, as the following example shows:
 

```
cf_root/runtime/bin/wsconfig -ws sunone -dir [path to config] -coldfusion -v
```
- 5 Test each virtual server to ensure that ColdFusion pages are served correctly.

## Deploying ColdFusion Applications

Adobe ColdFusion includes archive and deployment options that let you package applications and create archive files.

Archive and deployment options

ColdFusion includes the following archive and deployment options.

- **ColdFusion archive files** You can package your ColdFusion application's pages, data sources, and settings in a ColdFusion Archive (CAR) file. For more information, see [Packaging applications in CAR files](#).
- **J2EE archives** You can package your ColdFusion application as an Enterprise Application Archive (EAR) or Web Application Archive (WAR) file for easy deployment to a J2EE application server. For more information, see [Packaging applications in J2EE archive files](#).
- **Cfcompile utility** The cfcompile utility lets you precompile the ColdFusion pages of your application, into Java class files. In addition, you can compile ColdFusion pages to bytecode and save this bytecode in files with the CFM, CFC, or CFR extension. For more information, see [Using the cfcompile utility](#).

Packaging applications in CAR files

CAR files let you archive and deploy website configuration information, files, and applications. Use this feature to deploy your website applications to another location or to back up your files quickly and easily. You can manage CAR files using the Packaging & Deployment > ColdFusion Archives area of the ColdFusion Administrator. You can migrate code from ColdFusion 8 and ColdFusion 9 to ColdFusion 10

**Note:** CAR file archiving and deployment is different from J2EE archiving and packaging through EAR and WAR files.

Perform the following steps when you archive and deploy site information:

- 1 Create the archive definition. Identify the type of information to archive about a site. You can archive almost anything about the site, including directories, files, CFX tags, ColdFusion mappings, Solr collections, automated tasks, and server settings. Each archive definition that you create is assigned a name. You use this name each time you build or deploy its content.
  - 2 Build the archive. Select the name of the archive definition and specify a location to which you store the CAR file.
- Deploy the archive. Specify the location of the CAR file and the location to which you restore the contents.

**Note:** ColdFusion\_ does not deploy Administrator and RDS passwords, nor does it unpack archives created in earlier versions of ColdFusion\_

For more information on creating, building, and deploying CAR files, see ColdFusion Administrator online Help.

**Note:**

While packaging your datasource setting in a CAR file keep the following in your mind, if there are data sources with the following drivers:

- MS Access,
- MS Access with Unicode, and
- Derby

or any other data sources referring to a directory path, CAR deployment does not show directory translation for these.

To fix this, do the following:

Go to Administrator and edit the data sources or use AdminAPI to edit those data sources.

OR

Back up the CAR file, un-archive it and then open file server\_setting.xml.

In server\_setting.xml, change the directory path for the required data sources.

#### Packaging applications in J2EE archive files

When running ColdFusion in the J2EE configuration, you deploy the ColdFusion application, in enterprise application archive (EAR) or web application archive (WAR) format, on a J2EE application server. You then create your ColdFusion application, configuring resources (such as data sources), and storing CFM, CFC, and CFR files in the web application root or in the web server root. In earlier ColdFusion versions, your J2EE administrator had to redo each of these steps when deploying your ColdFusion application onto a production J2EE server.

The ColdFusion Administrator lets you create an EAR or WAR file that contains the entire application. This archive file contains the ColdFusion web application, settings for ColdFusion (such as data source definitions), and the CFM, CFC, and CFR files that your application uses.

#### Application packaging

The J2EE Archive feature lets you quickly create an archive file that a J2EE administrator can use to deploy your ColdFusion application.

Add a new archive definition and create an archive file

- 1** Open the ColdFusion Administrator.
- 2** Specify a unique name for the archive file (no extension) in the Archive Name field.
- 3** Click Add. The Add New Archive screen appears.
- 4** Specify archive settings on the Add New Archive screen.
- 5** Click Create. ColdFusion creates an EAR or WAR file in the specified application distribution directory. The following table describes the settings you make when creating or modifying an archive:

Setting	Description
Archive Type	Select EAR or WAR.
Context Root (EAR only)	<p>Each J2EE web application running in a server is rooted at a unique base URL, called a context root (or context path). The J2EE application server uses the initial portion of the URL (that is, the portion immediately following</p> <p><code>http://hostname</code></p> <p>) to determine which web application services an incoming request. For example, if you are running ColdFusion with a context root of <code>cfmx</code>, you display the Administrator using the URL</p> <p><code>http://_hostname_/cfmx/CFIDE/administrator/index.cfm</code></p> <p>Most J2EE application servers allow one application in each server instance to use a forward slash <input checked="" type="checkbox"/> for the context root. The Remote Development Services (RDS) web application is not required if you use a context root of <code>/</code>.</p>
Serial Number	Specifies a ColdFusion Enterprise Edition serial number. If you do not specify a valid ColdFusion Enterprise Edition serial number when creating the archive file, it is deployed as an Enterprise Edition evaluation version, which reverts to the Developer Edition after 30 days.
COM Support	If your application doesn't use COM support, you can reduce the size of the archive file by omitting the supporting files.
Debugging	If the current ColdFusion server is running with debugging enabled, you can disable debugging in the application contained in the archive file.
Include CFML Source	You can optionally deploy Java bytecode instead of CFML source code. For more information, see <a href="#">Sourceless distribution</a> .
ColdFusion Administrator	If your application does not require modification by using the ColdFusion Administrator, you can reduce archive size and reduce security issues by omitting the Administrator files.
Data sources	Specifies the data source definitions to include in the archive file.

### Deployment considerations

After the archive file is created, you deploy by using standard ColdFusion J2EE configuration deployment techniques. For more information, see [Installing an EAR file or WAR files in Installing the JEE Configuration](#) of [Installing ColdFusion](#).

### Post-deployment considerations

Depending on your application, the resources that it uses, and the environment in which it is deployed, you may need to perform post-deployment configuration, as follows:

- **Mappings** The ColdFusion mappings in the archived application refer to directories on the original computer. If those directories do not exist on the deployment computer, modify the ColdFusion mappings by using the ColdFusion Administrator or the Administrator API.
- **Serial number** J2EE deployment is a ColdFusion Enterprise feature. To upgrade to the Enterprise Edition, use the ColdFusion Administrator or the Administrator API to enter a serial number. For more information on the Administrator API, see [Administrator API](#).

Using the `cfcompile` utility

You can use the `cfcompile` utility for the following purposes:

- **Precompiling ColdFusion pages** Precompile your application's CFM pages into Java class files. At runtime, ColdFusion does not have to compile CFM pages.
- **Sourceless distribution** Create CFM pages as Java bytecode. You can deploy these CFM pages instead of CFML source code. The `cfcompile` utility is located in the `cf_root/bin` (server configuration) or `cf_webapp_root/WEB-INF/cfusion/bin` (J2EE configuration) directory. Before you can use the `cfcompile` utility in the J2EE configuration, set the `CFUSION_HOME`, `J2EEJAR`, and `WEBINF` variables in the `cfcompile.sh/cfcompile.bat` file.

#### Precompiling ColdFusion pages

You can use the `cfcompile` utility to precompile ColdFusion pages (CFM, CFC, and CFR files). This can enhance initial page loading time at runtime. Use the following command to compile ColdFusion pages into Java classes:

```
cfcompile webroot [directory-to-compile]
```

The following table describes these parameters:

Parameter	Description
webroot	Fully qualified path to the web server root; for example, <code>C:\inetpub\wwwroot</code> or <code>C:\coldfusion10\cfusion\wwwroot</code> .
directory-to-compile	Fully qualified path to the directory where the files to be compiled are located. This directory must be under the web root directory. If not specified, all ColdFusion templates in the web root directory are compiled.

#### Sourceless distribution

You can use the `cfcompile` utility with the `deploy` option to create ColdFusion pages (CFM, CFC, and CFR files) that contain Java bytecode. You can then deploy the bytecode versions of the ColdFusion pages instead of the original CFML source code. Use the following command to compile CFML files into bytecode format that you can deploy instead of CFML source code:

```
cfcompile -deploy webroot directory-to-compile output-directory
```

The following table describes these parameters:

Parameter	Description
webroot	Fully qualified path to the web server root; for example, <code>C:\inetpub\wwwroot</code> or <code>C:\coldfusion10\cfusion\wwwroot</code> .
directory-to-compile	Fully qualified path to the directory where the files to be compiled are located. This directory must be under the web root directory. This is required for the <code>deploy</code> option.
output-directory	Fully qualified path to the directory to contain the compiled deployable files. This cannot be the same directory as the source directory.

After you run the `cfcompile` utility, perform the following steps:

- 1 Back up your original CFML files
- 2 Copy the generated bytecode CFML files to the original directory
- 3 Deploy the application.



**Note:** The J2EE Archive screen of the ColdFusion\_ Administrator lets you create an EAR or WAR file that contains bytecode versions of your application's CFML files.\_

## Administering ColdFusion Security

You can secure many Adobe ColdFusion resources using password authentication and configure sandbox security.

About ColdFusion security

Security is especially important in web-based applications, such as those you develop in ColdFusion. ColdFusion developers and administrators must fully understand the security risks that could affect their development and runtime environments so they can enable and restrict access appropriately. Whether you have an e-commerce site where customers enter credit card information or a global collaboration site where users share confidential data, you should understand the security risks that could threaten your web applications.

- **Snooping and eavesdropping:** Someone can monitor data sent over the public connections of the web.
- **User impersonation:** Someone can impersonate a trusted user to gain access to information that only the trusted user should see or download.
- **Unauthorized access:** Unauthorized users can gain access to sensitive information. This security risk is the most complex because the Internet links every computer to one large network. Completely allowing or disallowing access to a given system or data source is relatively straight-forward, but allowing the partial access required for an application to be useful remains risky. For example, a bank can easily publish a public, freely accessible site with general banking information. Creating an account maintenance site where users have exclusive access to their own personal account information is more difficult. ColdFusion provides a highly secure environment for web application development and deployment. It helps you reduce security risks in the following ways:
  - **Encryption:** Use of the Secure Sockets Layer (SSL) protocol prevents snooping, eavesdropping, and message tampering as information passes between clients and servers. SSL, which is supported by most web servers, encrypts Internet protocols (such as HTTP) with public key cryptography. A private key resides on the server to decrypt inbound data and encrypt outbound data. After the key is installed, the web server automatically handles encryption and decryption.
  - **Authentication:** Authentication checks whether someone is a valid system user. It prompts a user for a unique login or user name, and a password or personal identification number (PIN).
  - **Access Control:** Authenticated users have access to particular features or components based on security clearance, group affiliation, or other criteria specified by the developer. You can implement development security by requiring a password to use the ColdFusion Administrator and a password for Remote Development Services (RDS), which allows developers to develop CFML pages remotely. You implement runtime security in your CFML pages and in the ColdFusion Administrator. ColdFusion has the following runtime security categories:
    - **User security** Programmatically determine the logged-in user and allow or disallow restricted functionality based on the roles assigned to that user. For more information about user security, see ColdFusion security features in *Securing Applications in the Developing ColdFusion Applications*.
    - **Sandbox security** Using the ColdFusion Administrator, define the actions and resources that the ColdFusion pages in and below a specified directory can use.

**Note:** In ColdFusion 11, you can configure multiple security sandboxes irrespective of the edition that you are using. However, for the previous versions (ColdFusion 10 or older), you can configure multiple security sandboxes only when you are using the Enterprise Edition.

The Security area in the Administrator lets you do the following tasks:

- Configure password protection for the ColdFusion Administrator. For more information, see [Administering ColdFusion Security](#).
- Configure password protection for RDS access. For more information, see [Administering ColdFusion Security](#).
- Enable, disable, and customize ColdFusion security, on the Security > Sandbox Security page (called Resource Security page in the Standard edition). For more information, see [Administering ColdFusion Security](#).

#### Using password protection

Password protection restricts access to the ColdFusion Administrator and to a ColdFusion server when you attempt access through RDS security.

#### ColdFusion Administrator password protection

Secure access to the ColdFusion Administrator is enabled by default. The password that you enter during installation is saved as the default. You are prompted to enter this password whenever you open the Administrator. Password protection for accessing the Administrator helps guard against unauthorized modifications of ColdFusion, and Adobe recommends using passwords. You can disable or change the Administrator password on the Security > CF Admin Password page.

#### Configurable seed for password encryption

You can specify a new seed value to encrypt data source passwords. To modify the default seed value assigned by ColdFusion or to change the value you specified,

- 1 In the ColdFusion Administrator, got to Security > Administrator and then in the Password Seed section, specify the new seed value between 8-500 characters.
- 2 Click Submit Changes.

**Note:** When you modify the seed value, all data source connections are reset. Therefore, Adobe recommends that you perform this task when the server is idle or at the initial phase (after installation).

#### RDS password protection

If you configured password protection for RDS access when you installed ColdFusion, you are prompted for the password when you attempt to access ColdFusion from Dreamweaver MX 2004, HomeSite+, or the ColdFusion Report Builder. You can disable RDS or change the RDS password on the Security > RDS Password page.

**Note:** Disabling RDS also disables the applet that the ColdFusion Administrator uses in file-related dialog boxes.

If you use RDS security, you rely on web server and operating system security settings to set permissions for ColdFusion application and document directories.

#### Enhancing ColdFusion Security on Windows

To enhance security for the ColdFusion server on Windows, restrict access to the following files to selected ColdFusion users:

- /cfusion/lib/seed.properties
- /cfusion/lib/password.properties
- /cfusion/lib/license.properties
- /cfusion/bin/passwordreset.bat
- /cfusion/bin/cf-passwordreset.jar

## Exposing services to users

ColdFusion exposes many existing enterprise services as web services. You can access these services using SOAP and AMF/Flash remoting. The following are the exposed services:

- cfpdf
- cfImage
- cfdocument
- cfmail
- cfpop
- cfchart
- upload service You can secure the exposed services to prevent access by unknown applications or users. This can be done by configuring the client IP address range to which services are accessible. Also, you can set up user access control for the services. On the Security > User Manager page, you can select the services available to a user from the Exposed Services section. By default, all the services are listed in the Prohibited Services drop-down list. Press CTRL and select the services that you want the user to avail and click the << button. Now, click Edit User to implement the changes to the user settings.

## Configure IP address to access exposed services

To configure IP addresses to access exposed services:

- 1 Go to Security > Allowed IP Addresses
- 2 To add an IP address, specify the IP address in the IP addresses field and click Add.
- 3 To remove an IP address, select the IP address from the View/Remove Selected IP Addresses for Exposed Services list.
- 4 Click Remove Selected to remove the IP addresses.

## Restricting access to ColdFusion Administrator

You can restrict access to ColdFusion Administrator.

**Note:** By default, localhost and all IP addresses can access ColdFusion server.

To add IP addresses that must be allowed access:

- 1 Go to Security > Allowed IP Addresses > Add/Remove IP Addresses which will have Administrator access.
- 2 In the IP Address text box, specify the IP addresses.
- 3 Click Add.
- 4 Repeat the procedures to add more IP addresses. Regular expressions are supported. That is, if you specify 10...\*, all IP addresses starting with 10. are allowed access.

## Enabling Secure Profile for ColdFusion Administrator

ColdFusion allows you to secure ColdFusion server furthermore by enabling or disabling selected settings on the ColdFusion Administrator. When installing ColdFusion, you can enable Secure Profile by selecting the option when prompted on the Secure Profile screen. Further, you could provide a comma separate list of IP addresses that may be allowed to access the ColdFusion Administrator.

Administrator settings affected by enabling Secure Profile

	Administrator Settings	Path	Default Admin Profile	Secure Profile	Changes to the setting post migration to ColdFusion 10
1	Use UUID for cftoken	<b>Server Settings &gt; Settings</b>	Enabled	Enabled	Overwritten
2	Disable access to internal ColdFusion Java components	<b>Server Settings &gt; Settings</b>	Disabled	Enabled	Overwritten
3	Enable Global Script Protection	<b>Server Settings &gt; Settings</b>	Enabled	Enabled	Overwritten
4	Maximum size of post data	<b>Server Settings &gt; Settings</b>	20MB	20MB	Overwritten
5	Missing Template Handler	<b>Server Settings &gt; Settings</b>	No Value	Custom missing error template	Retained if specified
6	Site-wide Error Handler	<b>Server Settings &gt; Settings</b>	No Value	Custom site-wide error template	Retained if specified
7	Request Queue Timeout Page	<b>Server Settings &gt; Request Tuning</b>	No value	Custom error template	Retained if specified
8	Cookie Timeout	<b>Server Settings &gt; Memory Variables</b>	15767000 minutes	1440 minutes	N/A
9	Disabling updating of ColdFusion internal cookies using ColdFusion tags/functions	<b>Server Settings &gt; Memory Variables</b>	Disabled	Enabled	N/A
10	Enable WebSocket Server	<b>Server Settings &gt; WebSocket</b>	Enabled	Disabled	N/A
11	Start Flash Policy Server	<b>Server Settings &gt; WebSocket</b>	Enabled	Disabled	N/A
12	Allowed SQL (all settings)	<b>Data &amp; Services &gt; Data Sources &gt; database &gt; Advanced Settings</b>	Enabled	Create, Drop, Alter, Grant, Revoke, Stored Procedures are disabled	Retained if specified
13	Enable Robust Exception Information	<b>Debugging &amp; Logging &gt; Debug Output Settings</b>	Disabled	Disabled	Overwritten
14	Enable CFSTAT	<b>Debugging &amp; Logging &gt; Debug Output Settings</b>	Enabled	Disabled	Overwritten
15	Select the type of Administrator authentication	<b>Security &gt; Administrator</b>	Use a single password only	Separate user name and password authentication (allows multiple users)	N/A
16	Enable RDS Service	<b>Security &gt; RDS</b>	Configurable at install time	Disabled	N/A

17	Select the type of RDS authentication	<b>Security &gt; RDS</b>	Use a single password only	Separate user name and password authentication (allows multiple users)	N/A
18	Enable ColdFusion Sandbox Security	<b>Security &gt; Sandbox Security</b>	Disabled	Disabled	Overwritten
19	Allowed IP addresses for ColdFusion Administrator access	<b>Security &gt; Allowed IP Addresses</b>	Not available at install time	Available at install time	N/A

**Note:** Secure Profile disables Directory Browsing for a stand alone ColdFusion installation with built-in web server.

### COMMUNITY CONTRIBUTED HELP

The page above explains that if the "secure profile" option is taken during installation, ColdFusion will set the 3 error handlers to a value that is shown above merely as "Custom missing error template".

More specifically, and particularly if anyone may remove them from the CF Admin and need to add them back, the three templates can be found in this directory in your installation:

C:\ColdFusion10\cfusion\wwwroot\CFIDE\administrator\templates, and are named (in the order listed above):

- secure\_profile\_error.cfm
- missing\_template\_error.cfm
- request\_timeout\_error.cfm

So for instance, to put the "default" "secure" sitewide error handler back in place, provide this value for the CF Admin>Settings>Site-wide Error Handler:

- /CFIDE/administrator/templates/secure\_profile\_error.cfm

Changes in Secure Profile (ColdFusion 11)

When installing ColdFusion Server, you can enable Secure Profile by selecting the option when prompted on the Secure Profile screen. Further, you could provide a comma separate list of IP addresses that may be allowed to access the ColdFusion Administrator. This feature has been available from ColdFusion 10. In ColdFusion 11, Secure Profile has been enhanced to handle access to other internal components too. For instance, you can set restrictions for following URLs:

- CFIDE/main/\*
- CFIDE/adminapi/\*
- CFIDE/administrator/\*
- CFIDE/componentutils/\*
- CFIDE/wizards/\*
- CFIDE/servermanager/\*

To allow IP addresses to access the internal ColdFusion components, perform the following tasks:

- 1** Login to ColdFusion Administrator
- 2** Click Security > Allow IP Addresses
- 3** Go to **Allow IP Addresses for accessing ColdFusion Administrator and ColdFusion Internal Directories** section and add grant access to individual IP address to access the internal components as shown in the following figure:

## Security > Allowed IP Addresses

Specify client IP addresses that should be allowed to invoke exposed services. This can be individual IP addresses, IP address ranges of the form 10-30, or \* wild cards. Both IPv4 and IPv6 addresses are supported. To include an IP address in the list, enter the address and click Add. To delete an IP address from the list, select the address and click Remove Selected. When no IP addresses are selected, no user can invoke exposed services

**Allowed IP Addresses for Exposed Services**

IP Address

If you have configured an external web server, you can also restrict access to the ColdFusion Administrator and ColdFusion Internal Directories at the connector-level by modifying the `iprestriction.properties` file available under the connector folder. For instance, `<cf_root>/config/wsconfig//iprestriction.properties`.

**Note :** You will need to restart the external web server after modifying the `iprestriction.properties` file.

### Using sandbox security

Sandbox security (called Resource security in the Standard Edition) uses the location of your ColdFusion pages to control access to ColdFusion resources. A sandbox is a designated directory of your site to which you apply security restrictions. Sandbox security lets you specify which tags, functions, and resources (for example, files, directories, and data sources) can be used by ColdFusion pages located in and under the designated directory. To use sandbox security in the J2EE editions, the application server must be running a security manager (`java.lang.SecurityManager`) and you define the following JVM arguments (for Tomcat, this is the `java.args` line in the `cf_root/cfusion/bin/jvm.config` file):

```
-Djava.security.manager "-Djava.security.policy=cf_root/WEB-INF/cfusion/lib/coldfusion.policy" "-Djava.security.auth.policy=cf_root/WEB-INF/cfusion/lib/neo_jaas.policy"
```

**Note:** Sandbox security is not enabled by default. You enable it on the Security > Sandbox Security page before ColdFusion enforces the settings.

### Using multiple sandboxes (Enterprise Edition only)

By default, a subdirectory of a sandbox inherits the settings of the directory one level above it. However, if you define a sandbox for a subdirectory, the subdirectory no longer inherits settings from the parent, completely overriding the parent directory's sandbox settings. For example, consider the following directories:

```
C:\inetpub\wwwroot C:\inetpub\wwwroot\sales C:\inetpub\wwwroot\rnd C:\inetpub\wwwroot\rnd\dev C:\inetpub\wwwroot\rnd\dev
```

If you define a sandbox for the wwwroot directory, the settings also apply to the sales and rnd directories. If you also define a sandbox for the rnd directory, the rnd sandbox settings also apply to the dev and qa directories. The wwwroot and sales directories maintain their original settings, and the rnd settings override the wwwroot directory settings for the rnd directory and subdirectories. This hierarchical arrangement of security permits the configuration of personalized sandboxes for users with different security levels. For example, if you are a web hosting administrator who hosts several clients on a ColdFusion shared server, you can configure a sandbox for each customer. This prevents one customer from accessing the data sources or files of another customer.

Resources that you can restrict

You can restrict the following resources:

- **Data Sources** Restrict the use of ColdFusion data sources.
- **CF Tags** Restrict the use of ColdFusion tags that manipulate resources on the server (or on an external server), such as files, the registry, Lightweight Directory Access Protocol (LDAP), mail, and the log.
- **CF Functions** Restrict the use of ColdFusion functions that access the file system.
- **Files/Dirs** Enable tags and functions in the sandbox to access files and directories outside the sandbox.

**Note:** To use the Administrator API when sandbox security is enabled, allow access to the cf\_web\_root/CFIDE/adminapi directory.

- **Server/Ports** Specify the servers, ports, and port ranges that the ColdFusion tags that call third-party resources can use. For more information, see the Administrator online Help.

**Note:** When you run ColdFusion in the J2EE configuration on IBM WebSphere, the Files/Dirs and Server/Ports tabs are not enabled.

About directories and permissions

When you enable access to files outside the sandbox, you specify the filename. When you enable access to directories outside the sandbox, you specify directoryname\_indicator\_, where indicator is a dash or asterisk, as follows:

- A backslash followed by a dash (-) lets tags and functions access all files in the specified directory, and recursively allows access to all files in subdirectories.
- A backslash followed by an asterisk (\*) lets tags and functions access all files in the specified directory and also lets tags and functions access a list of subdirectories. However, this option denies access to files in any subdirectories. You can also specify the actions that ColdFusion tags and functions can perform on files and directories outside the sandbox. The following table shows the relationship between the permissions of a file and a directory:

Permission	Effect on files	Effect on directories
Read	View the file	List all files in the directory
Write	Write to the file	Not applicable
Execute	Execute the file	Not applicable
Delete	Delete the file	Delete the directory

Add a sandbox (Enterprise Edition only)

ColdFusion Enterprise Edition lets you define multiple security sandboxes.

- 1 Open the Security > Sandbox Security page in the ColdFusion Administrator. The Sandbox Security Permissions page appears.
- 2 In the Add Security Sandbox box, enter the name of the new sandbox. This name must be either a ColdFusion mapping (defined in the Administrator) or an absolute path.

- 3 Select New Sandbox from the drop-down list to create a sandbox based on the default sandbox, or select an existing sandbox to copy its settings to your new sandbox.
- 4 Click Add. The new sandbox appears in the list of Defined Directory Permissions.

#### Configure a sandbox

Before you begin security sandbox configuration, analyze your application and its usage to determine the tags, functions, and resources that it requires. You can then configure the sandbox to enable access to the required resources and disable use of the appropriate tags and functions. For example, if the applications in the sandbox do not use the cfregistry tag, you can safely disable it.

**Note:** In the Standard Edition, the Root Security Context is the only sandbox without any initial list of defined directory permissions.

- 1 Open the Security > Sandbox Security page (Security > Resource Security page in the Standard Edition) in the ColdFusion Administrator.
- 2 (Enterprise Edition only) In the list of Defined Directory Permissions, click the name or Edit icon for the directory. A page with several tabs appears. This is the initial page in the Standard Edition. The remaining steps describe the use of each tab.
- 3 To disable a data source, in the left column of the Datasources tab, highlight the data source, and click the right arrow. By default, ColdFusion pages in this sandbox can access all data sources.

**Note:** If <<ALL DATASOURCES>> is in the Enabled Datasources column, any data source that you add is enabled. If you move <<ALL DATASOURCES>> to the Disabled Datasources column, any new data source is disabled.

- 4 Click the CFTags tab.
- 5 To disable tags, in the left column of the CFTags tab, highlight the tags, and click the right arrow. By default, ColdFusion pages in this sandbox can access all listed tags.
- 6 Click the CFFunctions tab.
- 7 To disable functions, in the left column of the CFFunctions tab, highlight the functions, and click the right arrow. By default, ColdFusion pages in this sandbox can access all listed functions.
- 8 Click the Files/Dirs tab.
- 9 To enable files or directories, in the File Path box, enter or browse to the files or directories; for example, C:\pix. A file path that consists of the special token <<ALL FILES>> matches any file. For information on using the backslash-hyphen (-) and backslash-asterisk (\*) wildcard characters, see About directories and permissions.
- 10 Select the permissions. For example, select the Read check box to let ColdFusion pages in the mytestapps sandbox read files in the C:\pix directory.
- 11 Click Add Files/Paths. When you edit an existing sandbox, this button reads Edit Files/Paths. The file path and its permissions appear in the Secured Files and Directories list.
- 12 In the Secured Files and Directories list, verify that the file path is correct. The character after the backslash is important. For information, see About directories and permissions.

**Note:** The Files/Dirs tab works together with the file-based permissions of the operating system. To restrict a user from browsing another user's directory, use file-based permissions.

- 13 Click the Server/Ports tab.



**14** To turn off default behavior (global access to all servers and ports), enter the IP addresses and port numbers that pages in this sandbox can connect to by using tags that access external resources (for example, cfmail, cfpop, cfldap, cfhttp, and so on). You can specify an IP address, a server name (such as [www.someservername.com](http://www.someservername.com)), or a domain name (such as someservername.com). You can optionally specify a port restriction.

**Note:** This behavior differs from other tabs, such as CFTags, where you select items to disable. If you set any values in this tab, external-resource tags executed in this sandbox can access only the specified servers and ports.

For example, to allow this sandbox access to 207.88.220.3 on ports 80 and lower, perform the following steps:

- a** In the IP Address field, enter 207.88.220.3.
- b** In the Port field, enter 80, and click This Port and Lower.

**Note:** To deny access by these ColdFusion tags to an entire site, enable access for a local resource, such as your local mail server, FTP server, and so on.

**15** Click Finish to save changes to the sandbox.

#### Sandbox Considerations

##### Using OpenOffice within Sandbox

Grant permissions in sandbox for the following filepaths:

- D:\ColdFusion10\cfusion\runtime\servers\lib Read
- D:\ColdFusion10\cfusion\runtime\servers\lib- Read
- D:\ColdFusion10\cfusion\runtime\lib- Read
- D:\ColdFusion10\cfusion\runtime\lib Read
- C:\Program Files\OpenOffice.org 3\ Read, Execute
- C:\Program Files\OpenOffice.org 3- Read , Execute

##### Using Caching within Sandbox

For disk-based caching to work inside a sandbox, the sandbox must provide read/write permission to the disk cache directory. This can be the default directory (java.io.tmpdir) or a user-configured directory as identified by the diskStore property. The diskStore property in cf\_root\lib\ehcache.xml is used to specify the directory for disk cache (<diskStore path="java.io.tmpdir"/>). Use the following code to identify the temp directory:

```
<cfscript> writeoutput("Temp Dir : " & createobject("java","java.lang.System").getProperty("java.io.tmpdir")); </cfscript>
```

Also, read permission must be granted to cf\_root\lib\ehcache.xml for certain functions that read from/write to ehCache.xml to work. For example, cacheGetProperties and cacheSetProperties.

##### Using Service CFCs within Sandbox

Grant the following permissions:

- execute permission to cf\_root\CustomTags\com\adobe\coldfusion
- read permission to cf\_root\WEB-INF\cftags\META-INF>taglib.tld

## Basic Troubleshooting and FAQs

You can perform some tests to avoid experiencing trouble as you begin your work with ColdFusion. Verify the following:

- **Web server is running:** Before you install ColdFusion, ensure that your web server is installed and running. You can do this by loading a page in your web browser using the HTTP protocol.
- **ColdFusion is running:** After you install ColdFusion, use the ColdFusion Administrator to ensure that ColdFusion is running.
- **Change ColdFusion user account:** In Windows, ColdFusion runs under the host System account by default. If ColdFusion application pages do not have access rights to interact with resources (remote data sources, other application pages, COM objects), you must run ColdFusion under a specific account that provides the necessary access rights. For details, see [Change ColdFusion user account](#).
- **Analyze activity in log files:** ColdFusion log files contain valuable information that can help you identify problems with ColdFusion or with application pages in your site. For details, see [Analyze server activity in log files](#).

Verify that the web server is running

Before you install ColdFusion, ensure that your web server is installed and running.

- 1 Open a web browser.
- 2 In the address line, enter the URL for a web page or site. For example, if the file `myindex.htm` is in your web document root directory, load the page in your browser, using the localhost URL, as follows:  
**`http://127.0.0.1/myindex.htm`** or **`http://127.0.0.1:8500/myindex.htm`** (built-in web server)
- 3 Press Enter. If the web server is running, the page appears, otherwise, an error message appears.

Verify that ColdFusion is running

**Note:** To run ColdFusion Administrator, you must enable cookies in your browser.

- 1 Open a web browser.
- 2 In the address line, enter the appropriate URL, as follows:
  - If ColdFusion is installed on a local server:**`http://localhost/CFIDE/administrator/index.cfm`**
  - If ColdFusion is installed on a remote server:**`http://hostname/CFIDE/administrator/index.cfm`**where, `hostname` is the name of the server on which ColdFusion resides. If you are using the internal web server, specify `{{hostname}:8500`.

**Note:** On UNIX, the ColdFusion Administrator URL is case-sensitive. Ensure that you enter the address as shown.

- 3 Press Enter. If ColdFusion is running, the ColdFusion Administrator opens. If you use ColdFusion Administrator security, a password prompt appears.

Change ColdFusion user account

On a Windows platforms, ColdFusion runs under the host System account by default. However, ColdFusion application pages may not have the access rights required to interact with other resources, such as remote data sources, other application pages, and COM objects. Therefore, you must run ColdFusion under a specific account that provides the necessary access rights.

- 1 Click Start > Control Panel > Administrative Tools > Services.
- 2 Select the ColdFusion 11 Application Server, right-click and select Properties.

- 3 In the Logon As frame, select the This Account option, and enter the appropriate account user name and password information.
- 4 Click OK to save the information.
- 5 Click Close to close the Services window.
- 6 Restart the service for the changes to take effect.

#### Analyze server activity in log files

Log files generated by ColdFusion can help you monitor the activity of your server and ColdFusion applications. For details about setting your logging preferences. You can use the Log Viewer to analyze information in your log files so that you can troubleshoot your ColdFusion performance or repair problem pages in your site. For example, depending on your logging preferences, you can identify pages in your applications that take longer than a specified length of time to process.

#### Frequently asked questions

##### How will I uninstall ColdFusion?

**Note:** This discussion does not apply when deploying ColdFusion on a JEE server. To uninstall ColdFusion on a JEE server, uninstall the ColdFusion ODBC service on your Windows system (if installed, during installation of ColdFusion) and undeploy the ColdFusion application.

Uninstalling ColdFusion deletes all ColdFusion program files and related components from your system.

#### Remove ColdFusion from Windows

- 1 Select Start > Settings > Control Panel > Add/Remove Programs > ColdFusion.
- 2 Click Remove. A dialog box confirms that you want to uninstall.
- 3 To begin uninstalling, click Yes.
- 4 When the program completes, restart your computer. ColdFusion is removed from your server.

#### Remove ColdFusion patches from ColdFusion Administrator

- 1 Log in to ColdFusion Administrator.
- 2 Go to Server Updates > Updates > Installed Updates.
- 3 To begin uninstalling the latest patch, click the Uninstall button.

**Note:** Uninstalling ColdFusion patches from the ColdFusion Administrator is not supported for JEE deployments.

#### Remove ColdFusion from UNIX

- 1 Log in as root.
- 2 Enter the following command to go to the cf\_root/uninstall directory: `cd cf_root/uninstall`
- 3 Enter the following command: `{./ uninstall.sh}` ColdFusion is removed from your server.

#### How will I change ColdFusion Administrator password?

You can set or change the password that restricts access to ColdFusion Administrator pages as follows:

- 1 Select Security > Administrator in the navigation pane.
- 2 Select the type of Administrator authentication. The options are:
  - Use a single password only (default)
  - Separate user name and password authentication (allows multiple users)

- No authentication need (not recommended)
- 1** In the Root Administrator Password section, specify the new password in the New Password box. The password can have a maximum of 50 characters.
- 2** In the Confirm Password box, confirm your new password.
- 3** Click Submit Changes.

What will I do if I forget Administrator password or Administrator component password

- 1** Go to the folder cfusion\bin.
- 2** Do the following:
  - **On Windows:** Run passwordreset.bat
  - **On Mac/Linux:** Run passwordrest.sh
- 3** At prompt, specify the details.

How will I start and stop ColdFusion?

**Note:** This discussion does not apply when deploying ColdFusion on a JEE server.

During installation, you typically start ColdFusion services and processes, and configure them to start and run whenever you start your system. After you perform any of the following actions in the ColdFusion Administrator, stop and restart ColdFusion services:

- Enable or disable security.
- Change any option in the Java and JVM Settings page.
- Enable performance monitoring options, which enable you to use the native Windows performance monitor. During setup, ColdFusion is installed as a set of system services, which typically start automatically at system startup.

Stop or start ColdFusion server services manually

- 1** Open the Services control panel window. If a service is running, its status is Started. If it is not running, no status appears.
- 2** To stop a service, select it and click Stop. A prompt asks you to verify that you want to stop the service; click Yes. The status of the service is no longer Started.
- 3** To start a service, select it and click Start. Its status is Started.
- 4** To restart a service: select it and click Restart. This is identical to stopping and starting a service.
- 5** Click Close. The Services window closes.

Configure ColdFusion server to start automatically or manually

- 1** In the Services control panel window, double-click a service. The window for the service opens.
- 2** For Startup Type, select Automatic or Manual.
- 3** Click OK. The configuration is saved.
- 4** Click Close. The Services window closes.

How do I configure Windows performance monitor?

**Note:** This discussion does not apply when deploying ColdFusion on a JEE server.

Performance Monitor overview

If you install ColdFusion in Windows, you can use the Windows Performance Monitor utility to track the performance of your server. This utility installs automatically as part of the ColdFusion installation, and works with a set of counters to monitor server performance. The following are the available ColdFusion counters: that you can enable in the Windows Performance Monitor:

- Average database transaction time
- Average queue time
- Average request time
- Bytes incoming per second
- Bytes outgoing per second
- Database hits per second
- Page hits per second
- Cache pops per second
- Number of queued requests
- Number of running requests
- Number of timed out requests

**1** Select the Enable Performance Monitoring option on the Debug Output Settings page. For quick details, see Enable performance monitoring.

**2** Configure the Performance Monitor.

Enable performance monitoring

If you install ColdFusion in Windows, you can use the Debugging Output Settings page to enable performance monitoring through the Windows Performance Monitor utility. To enable performance monitoring,

**1** In the Debug Output Settings page, select the Enable Performance Monitoring option.


**2** Click Submit Changes.

**3** Restart ColdFusion for your changes to take effect. After you enable performance monitoring, you can configure the Performance Monitor.

Configuration

After you enable performance monitoring, you can configure the Performance Monitor.

**1** Open the Performance Monitor window by selecting Start > Control Panel > Administrative Tools > Performance.

**2** Click the Add  button. The Add Counters window appears.

**3** In the Performance Object drop-down list box, select ColdFusion Server. In the Counter list, select the counters that you want to use. To select multiple counters, hold down the Control key as you click.

**4** Click Add. The Performance Monitor begins to run. The display attributes apply to all counters.

**5** Click Close.

How will I use Multiserver Monitor?

The ColdFusion Multiserver Monitor lets you keep track of activities on multiple ColdFusion servers. You can quickly see the status of several servers, and view detailed information about each server. To add a server to those you are monitoring,

**1** Click the Launch Multiserver Monitor button.

- 2 Click Add Server.
- 3 Enter the following:
  - The server name or IP address
  - The port through which you communicate with the server
  - The context root, if any
  - The user name and password to access the server
- 4 Click OK. To quickly see the status of all the servers you are monitoring, click Quick View. For each server you are monitoring, the Multiserver Monitor displays the server name, port, how long the server has been running, and whether there are any alerts. To see a detailed status of all the servers you are monitoring, click Detailed View. The detailed view lists each server. To see details about a server in the list, highlight it. The details appear at the bottom of the page. To see information about any server errors, click Errors.

**Note:** The errors listed on this page include only server errors. Application errors appear in the individual Server Monitor on the Summary page.

If you register some servers in the Multiserver Monitor served by 127.0.0.1, and then open a Multiserver Monitor served by localhost, the servers are not considered to be the same servers. This is because Flash creates different shared objects for these IP addresses. The information that is stored in these shared objects is saved using XOR encryption. The master password for the Multiserver Monitor is stored using SHA1 encryption.

#### How to set per application settings

You can set the following on a per-application basis:

- Mappings
- Custom tag paths These settings override the server-side settings in the ColdFusion Administrator for the specified application only. Specifying per application settings does not change the server-wide settings. To set per application settings, you must first enable per application settings on the Settings page of the ColdFusion Administrator. You then set the mappings or custom tag paths in the Application.cfc file. Custom Tags in per application settings override those defined in the ColdFusion Administrator. For example, if you have two custom tags of the same name and they are in different locations in the Administrator and per-application settings, the one in the per application settings is taken first.

**Note:** Per application settings are supported in applications that use an Application.cfc file only, not in applications that use an Application.cfm file. The per application settings do not work if you have disabled application variables on the Memory Variables page of the Administrator.

To set the mappings per application,

- 1 Select the Enable Per App Settings option on the Settings page of the ColdFusion Administrator.
- 2 Include code similar to the following in your Application.cfc file:

```
<cfset THIS.mappings["MyMap"]="c:\inetpub\myStuff">
```

or

```
<cfset StructInsert(THIS.mappings, "MyMap", "c:\inetpub\myStuff")>
```

To set the custom tag paths per application,

- 3 Select the Enable Per App Settings option on the Settings page of the ColdFusion Administrator.

#### 4 Include code similar to the following in your Application.cfc file:

```
<cfset customtagpaths = "c:\mapped1,c:\mapped2"> <cfset customtagpaths = ListAppend(customtagpaths,"c:\mapped3")> <cfset This.customtagpaths = customtagpaths>
```

#### How will I manage undelivered mails?

You can view a list of undelivered mails in the Server Settings > Mail > Undelivered Mail page. To access this page and manage your undelivered mails:

- 1 Click the View Undelivered Mail button from the Server Settings > Mails page.
- 2 In the Server Settings > Mail > Undelivered Mail page, you can perform the following tasks:
  - Sort mails
  - Select to view specific columns
  - Delete mails
- 3 Respool mails
  - 1 To sort the mails by Subject, Sender, To, File Size, and Date columns in ascending or descending order:
  - 2 Point to the column by which you want to sort the mails
  - 3 Click the down arrow and select the sorting order.
  - 4 To view selected columns on the Undelivered Mails page:
  - 5 Point to any column and click the down arrow.
  - 6 Click columns and deselect the columns that you do not want to view on the page. To delete or respool a mail, select the mail from the list and click Delete or Respool.

#### How will I view and search log content?

You can view and search log content using the Log Viewer page. This page identifies the content for each log file that you specified to view on the Log Files page. Use the Log Viewer

- 1 On the Log Files page, click the name of the log file. The Log Viewer page appears.
- 2 To filter the content on the Log Viewer page, click the Launch Filter button. The following table describes the areas on the Log Viewer page:

Area	Description
Launch Filter button	Click to open the Filter dialog box so you can customize the content in the log file viewer.
Searching file	Identifies the name of the log files that you are viewing.
View Raw Data	Shows the actual content of the log file message, including the HTML tags, if they exist. Many error messages are formatted with HTML tags that are rendered by the browser. If an HTML tag exists, the raw data shows the tag attributes <p>hello</p>, whereas not viewing the file using the raw data feature shows "hello."
Compact View	Trims the content of the error messages and increases the count of viewed log entries from 10 to 20 per page.
Number of messages or events	Shows the total number of messages with links to view the previous and next pages.
Date and Time	Identifies the date and time the event occurred.

Severity	Level of severity: Fatal (errors that terminate the application), Error (recoverable errors), Warning (cautionary information), and Information (details the status and settings of the ColdFusion server).
ThreadID	Identifies the thread identification number for the event. This string is used by Adobe Technical Support personnel to track and troubleshoot problems.
Application Name	If applicable, shows the name of the application.
Log Message	Describes the error that occurred.

How do I deploy an archive?

- 1 Select Packaging and Deployment > ColdFusion Archives in the left navigation pane of the ColdFusion Administrator. The ColdFusion Archives page appears.
- 2 In the Deploy an Existing Archive panel, specify the path to the CAR file to deploy:
- 3 Provide the full path of the archived filename (CAR file) to restore. Click the Browse Server button to select the full path of the archived filename (CAR).
- 4 Click Deploy. The Archive Summary Panel appears.
- 5 In the Archive Summary panel, review the archived content.
- 6 Click Next to proceed with restoring the archive. The Deploy Location panel appears (see step 5).

**Note:** (For UNIX users only) If you must run the deploy process as a privileged user, select the Run This Deployment As A Specific User option. Then enter any system account name in the User name text box, and the corresponding account password in the Password text box. The user name and password must match the existing user name and password for this system; the deployment process runs as that user. If the user name and password do not match the existing user name and password for this system account, the deployment procedure fails.

- 7 Specify a location, and click Deploy to restore the selected CAR file. One of the following archive messages appears:
  - Deploy Successful The selected CAR file was successfully restored in the specified Web Application directory. Click Close to exit from the Archive wizard.
  - Failed The deploy procedure was not successful. To determine the cause of the problem, review the information appearing on the page. To further analyze why a problem occurred, click the links located on the panel. Click Close to exit from the Archive wizard. If the deploy operation failed, verify that the restore Web Application directory was not corrupted during the restore operation. To restore archives to another system, the target system must have ColdFusion installed.

## WebSocket Enhancements (ColdFusion 11)

ColdFusion 10 implemented WebSocket by providing a messaging layer for the WebSocket protocol, which you can control using CFML and JavaScript. The messaging layer has features that make WebSocket reliable and scalable. Using WebSocket, you can develop real-time applications for stock, charting, online gaming, social networking, dashboard for various purposes, and monitoring.

As you are already aware of, WebSocket connections use the standard HTTP ports (80 and 443) for sending and receiving data packets. Due to this reason, WebSockets are mostly firewall-friendly since almost all firewall configurations allow net traffic on the HTTP ports. Hence the HTML5 WebSockets do not require new hardware to be installed, or new ports to be opened on internal networks.



When there is no proxy server, reverse proxy server, or a firewall between the browser and the ColdFusion Server, the WebSocket connection works perfectly, as long as both the server and the client understand the WebSocket protocol. However, most of the times, there will not be any direct connection between the server and the client. ColdFusion 11 has introduced the proxy support for WebSocket. There is a new proxy module (that runs inside IIS and Apache Web Server) that can intercept the ColdFusion WebSocket requests and redirect the requests to the ColdFusion Server.

What is new

ColdFusion 11 supports the following new features:

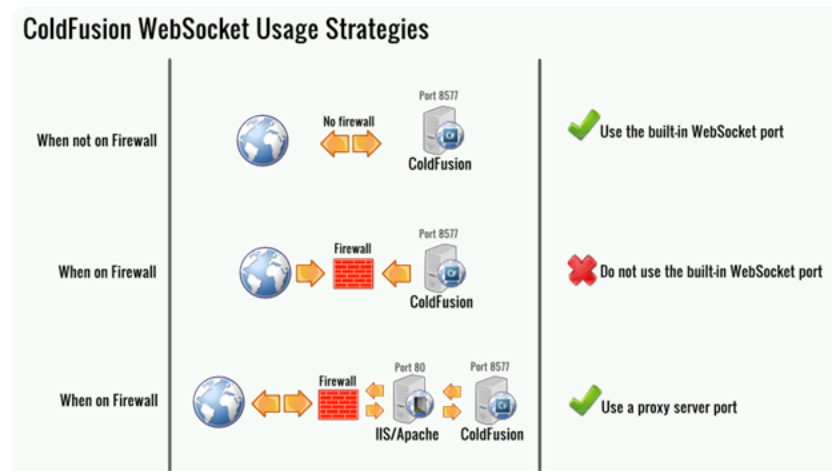
- **Proxy support** - Support is now provided for setting up a proxy server for using ColdFusion WebSockets.
- **SSL support** – Support is now provided for enabling SSL for ColdFusion WebSockets.
- **Cluster support** – Support is now provided for enabling the cluster support for ColdFusion WebSockets.

Using ColdFusion WebSockets

The support for WebSocket was available in the previous version of ColdFusion. What is new in ColdFusion 11 is the support for WebSocket proxy.

Consider the following usage strategies for WebSocket proxy:

- **Strategy 1: When you don't have a firewall configured** – You CAN use the WebSocket proxy
- **Strategy 2: When you have a firewall configured** – You MUST use the WebSocket proxy



### Strategy 1 - Using the built-in WebSocket server (ColdFusion 10)

For more information, see, <https://learn.adobe.com/wiki/display/coldfusionen/Using+ColdFusion+WebSocket>

Also, see:

- [Browsers and fallback](#)
- [ColdFusion and WebSocket](#)
- [How is WebSocket different from conventional communication models](#)
- [WebSocket communication models](#)
- [What is WebSocket](#)
- [Using WebSocket to broadcast messages](#)

- [Using WebSocket in point-to-point communication](#)
- [Error handling in ColdFusion WebSocket](#)
- [Using ColdFusion Administrator for WebSocket Configurations](#)
- [Browser support for WebSocket](#)

#### Strategy 2 - Using a proxy server for WebSockets (ColdFusion 11)

ColdFusion 11 has introduced the proxy support for WebSocket. There is a new proxy module (that runs inside IIS and Apache Web Server) that can intercept the ColdFusion WebSocket requests and redirect the requests to the ColdFusion Server.

You can use one of the following external servers along with the ColdFusion Server:

- IIS 8 or higher running on Windows 8 or Windows Server 2012
- Apache 2.2 or higher

The following steps enable you to quickly configure a WebSocket Proxy server for ColdFusion.

#### Step 1 – Configuring the external server

Before you begin setting up a WebSocket proxy, you need to configure the external server to support the WebSocket protocol.

##### Configuring IIS

For enabling WebSocket protocol for IIS, see [this document](#).

##### Configuring Apache Server

No configuration required.

#### Step 2 – Enabling WebSocket Proxy

You need to enable the WebSocket Proxy port at the server-level through the ColdFusion Administrator. Perform the following steps:

- 1** Go to the ColdFusion Administrator page.
- 2** Click Server **Settings** > **Web Socket**
- 3** Click **Enable WebSocket Service** and select **Use Proxy**:

## Server Settings > WebSocket

**Enable WebSocket Service**

**Use Proxy**  
ColdFusion WebSocket requests will be served by WebSocket proxy module configured with an external web server. Restart ColdFusion for the setting to take effect.

**Use Built-in WebSocket Server**  
ColdFusion WebSocket requests will be served by the built-in ColdFusion WebSocket server. Restart ColdFusion for the setting to take effect.

**Port**   
The port that the WebSocket server listens to for all incoming ColdFusion WebSocket requests. Restart ColdFusion for the setting to take effect.

**SSL Port**   
The port that the WebSocket server listens to for secure communication (SSL). Restart ColdFusion for the setting to take effect.

**Keystore**    
Location of the Keystore. Keystore contains the private key and certificate. The supported type is JKS(Java KeyStore) and pkcs12.

**Keystore Password**   
Password used to open the keystore to load public/private key.

**Max Data Size**  **KB**  
The maximum size of the data packet sent/received.

**Start Flash Policy Server**  
Enables Flash fallback if there is no native WebSocket support at the client side.

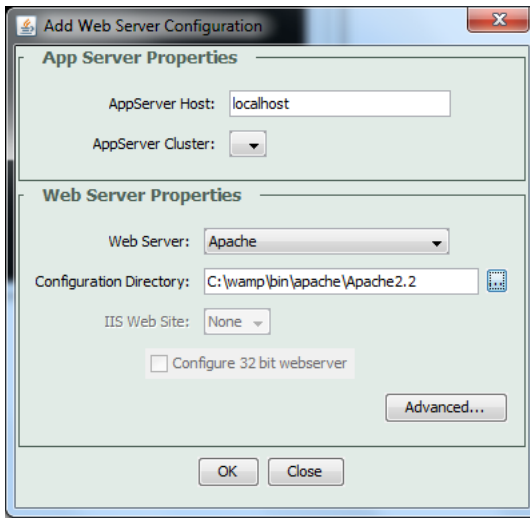
**Enable WebSocket cluster**  
**Multicast Port**   
The port that the WebSocket Cluster will use to broadcast node up/down events. Restart ColdFusion for the setting to take effect.

### Step 3 – Adding the external server

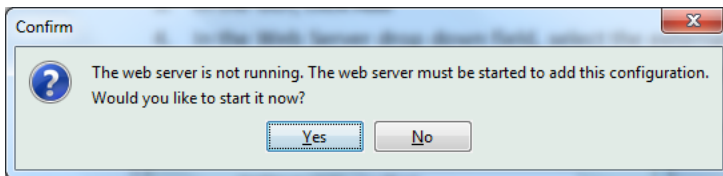
You need to configure the external Web Server connector with the ColdFusion Server using the wsconfig tool.

Perform the following tasks:

- 1 Go to <CF\_INSTALL\_HOME>/cfusion/runtime/bin
- 2 Run the wsconfig tool
- 3 In the GUI, click Add
- 4 In the **Web Server** drop down field, select the external server
- 5 In the **Configuration Directory** field, browse and select the path to the external server's configuration directory:
- 6 Click OK



? If the external server is not running, you will be prompted to start the server:

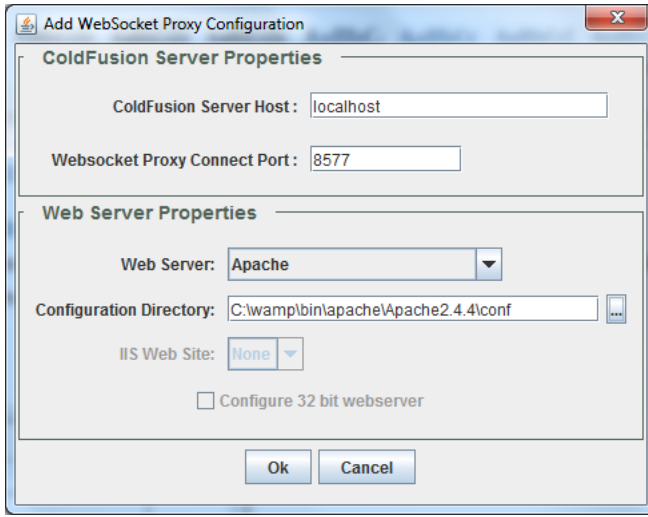


- 1 Click Yes to start the external server
- 2 Click Exit

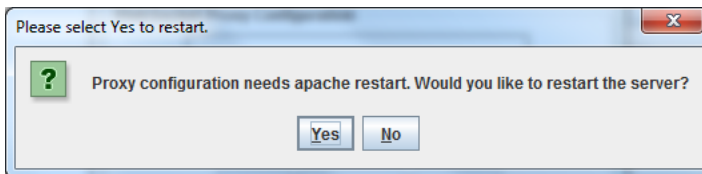
Step 4 - Setting up the WebSocket Proxy Server

ColdFusion 11 has introduced a new configuration tool, wsproxyconfig, which will allow you to quickly setup a WebSocket Proxy. Perform the following tasks:

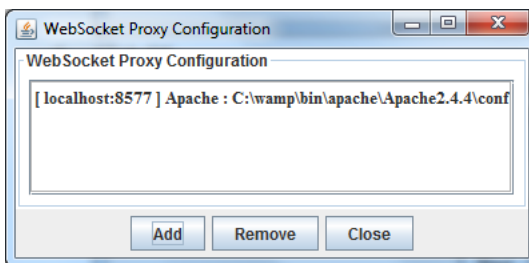
- 1 Go to <CF\_INSTALL\_HOME>/cfusion/bin
- 2 Run the wsproxyconfig tool
- 3 In the GUI, click Add
- 4 In the **Web Server** drop down field, select the external server
- 5 In the **Configuration Directory** field, browse and select the path to the external server's configuration directory:



- 1 Click OK
- 2 If the external server is not running, you will be prompted to start the server:



- ? Confirm the proxy configuration:



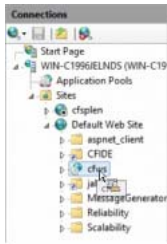
- ? Click Close

Step 5 – Verify the proxy configuration

After you have successfully configured the WebSocket Proxy, verify if the required proxy files are created at `<CF_INSTALL_HOME>/config/wsproxy/1`

You can also manually modify the config.ini file located at `<CF_INSTALL_HOME>/config/wsproxy/1`.

Also, a new application, **cfws** will be made available under the application root of the external servers:



The <cfwebsocket> tag supports a new attribute:

- **secure** – (Optional) If only secure port (SSL) is configured for the WebSocket server (for web service communication), all the WebSocket communication happens over the secure channel automatically. But in the case if both ports (non-SSL and SSL) are defined, if you require the communication to be set through a secured TCP socket, you must set secure to true. Default is false.

ColdFusion 11 has been enhanced to provide enterprise-level capabilities like real-time message broadcasting across cluster of nodes and SSL support for secure websocket communication (WSS protocol).

#### Cluster Support

If your application is running across various nodes and on publishing a message to a single node, you want the same to be broadcasted across all the nodes, you can use this feature.

For example, Node1 has two clients (C1 and C2) subscribed to the 'stock' channel. Similarly Node2 has two clients (C4, C6) and Node3 has two clients (C8, C10) also subscribed to the 'stock' channel. When client C1 tries to publish a message on this 'stock' channel, rather than just sending this message to just C1 and C2 only, the clients from other nodes C4, C6, C8, and C10 must also receive this message.

On using this feature, you can publish a message to all the subscribers of the channel across various nodes of the cluster by enabling cluster. To enable the feature, choose the cluster option and define the multicast port to broadcast node up and node down (events).

**Note:** The cluster support is not available in the standard edition.

#### JavaScript Functions

The following JavaScript functions were enhanced to auto-support the cluster functionality:

Functions	Argument	Return Type
<b>publish</b>	("channelname", messageBody, {filterOptions})	boolean
<b>getSubscriberCount</b>	("channelname")	boolean
<b>invokeAndPublish</b>	("channelName", cfcName, cfcMethod, [function_parameter] ,{custom_options})	boolean

#### publish

In ColdFusion 10, this function was enabled to send messages to a specific channel based on the filter criteria. In ColdFusion 11, this function is enhanced to send message to all nodes in a cluster by default.

```
Publish("channelname ", messageBody, {filterOptions});
```

#### getSubscriberCount

In ColdFusion 10, this function was enabled to get subscriber count from a specific channel based on the filter criteria. In ColdFusion 11, this function is enhanced to fetch the subscriber count from all nodes by default.

```
getSubscriberCount("channelname")
```

invokeAndPublish

Use this function for message publishing and CFC invocation to be executed as separate thread.

```
invokeandPublish("channelname", cfcName, cfcMethod, [function_parameter], {custom_options})
```

In-built ColdFusion functions

To further facilitate cluster support, the following in-built functions are enhanced for ColdFusion 11:

WSPublish

Trigger a message publish from the server without any input from client. A new parameter "Clustered" has been added to facilitate message broadcasting to all subscribers connected to multiple nodes.

```
wsPublish("channel name", messageBody [clustered])
```

Or

```
wsPublish("channel name", messageBody, {filterOptions}, [clustered]) <cfset wsPublish("publishdemochannel", "Welcome to publishdemo")/>
```

If the "clustered" parameter is not defined, then the default value will be taken based on the cluster <Enable/Disable> setup.

WSGetSubscribers

Fetches the subscriber information from all the configured nodes. A new parameter "Clustered" has been added to fetch subscriber information from all configured nodes.

```
WSGetSubscribers("channel")
```

Or

```
WSGetSubscribers("channName", [clustered]); <cfset wsgetSubscribers("stocks", true)>
```

If the "clustered" parameter is not defined, then the default value will be taken based on the cluster <Enable/Disable> setup.

WSGetAllChannels

Fetches the sub-channel information from all the configured nodes. A new parameter "Clustered" has been added to fetch sub-channel information from all configured nodes.

```
WSGetAllChannels("channel", clustered) <cfset wsgetAllChannels("stocks" true)>
```

If the "clustered" parameter is not defined, then the default value will be taken based on the cluster <Enable/Disable> setup.

Secure WebSocket communication (WebSocket over SSL)

The Websocket screen (Administrator Console > ColdFusion Administrator > Server Settings > WebSocket) has been enhanced in ColdFusion 11 with the following options:

- Enable SSL
- SSL port
- KeyStore File location
- KeyStore password

Option	Description
<b>Enable SSL</b>	Enables Secure Sockets Layer (SSL) for running WebSocket over SSL.
<b>KeyStore File location</b>	The location of keyStore in server's file system. For example, C:\OpenSSL\bin\keystore.jks.
<b>KeyStore password</b>	Password for the keyStore.
<b>SSL port</b>	Default port is 8543.

To enable Web socket cluster from the Administrator node, select Server Setting > Web Socket. In the Web Socket screen, select the Enable Web Socket Cluster check box and enter the Multicast Port details. In the Multicast Port field, the default Multicast Port 45566 is displayed. Change the port details if required. Make sure the multicast port value is same across all the nodes in the cluster.

## Security Enhancements (ColdFusion 11)

This document describes all the security enhancements made in ColdFusion 11. This update fixes a few security issues and has strengthened the Server. Some notable security enhancements are described in the following sections.

### Preventing attachment download for undelivered mails

Changes have been made to the ColdFusion Server to prevent downloading attachments of undelivered Emails. You can allow/disallow downloading of attachments for undelivered mails through the ColdFusion Administrator as follow:

- Login to ColdFusion Administrator
- Click Server Settings > Mail
- Go to Mail Spool Settings and check/uncheck **Allow downloading the attachments for undelivered emails**



### Mail Spool Settings

**Spool Interval(in seconds)**

Specifies the time the mail spooler waits to process spooled mail.

**Mail Delivery Threads**

Specifies the maximum number of simultaneous threads that ColdFusion uses to deliver spooled mail. A higher number indicates an increase in the volume of mail messages that are delivered.

**Spool mail messages for delivery to**

Select this check box to spool messages for delivery by the mail spooler (recommended). When not selected, the mail spooler attempts to deliver messages during page processing. Spooling to disk is more robust, because the messages are written to disk and are delivered even if you restart ColdFusion. Spooling to memory substantially increases performance, but it requires additional memory and places the messages in volatile storage.

**Maximum number of messages spooled to memory**

Specifies the maximum number of messages that ColdFusion holds in memory before switching to spooling messages to disk.

**Allow downloading the attachments for undelivered emails.**

Select this check box to allow downloading attachments for undelivered emails. It is recommended not to enable it in case undelivered email functionality is not being used.

[View Undelivered Mail](#)

### Changes in Administrator API

The Administrator API CFC, mail.cfc has also been updated with a new key **allowDownload** being added to GetMailProperty and SetMailProperty. You can use this API to enable/disable downloading attachments for undelivered mails programmatically. The CFC for this Administrator API are located in the cf\_web\_root/CFIDE/adminapi/mail.cfc.

### Sending encrypted mails using the <CFMail> tag

You can now start sending encrypted mails using the <cfmail> tag. The following list describes the new attributes added to this tag to support sending encrypted mails:

- **encrypt="true/false"** – Enable/disable sending encrypted mails.
- **recipientCert = <path>** – Provide the path to the recipient's public key certificate.
- **encryptionAlgorithm = <encryption\_algorithm>**– The algorithm to use to encrypt the mails. You can use one of the following algorithms:
  - DES\_EDE3\_CBC,
  - RC2\_CBC (default)
  - AES128\_CBC
  - AES192\_CBC
  - AES256\_CBC

For more information on the this tag, see the [<cfmail> tag](#) .

### Changes in Secure Profile

See [Administering ColdFusion Security](#).

Support for concurrent login sessions for the same user

You can login and access an application through multiple concurrent login sessions for the given user. This option is enabled by default. If you have any security concern, please disable this option in ColdFusion Administrator.

The following changes have been made to support multiple concurrent logins:

- A new attribute, `allowconcurrent` has been added to the `<cflogin>` tag to allow concurrent logins:

```
<cflogin allowconcurrent="true|false">
```

The default value is `true`. If **allowconcurrent** is set to `true`, the Server allows concurrent logins for a user.

- A new attribute, `session` has been added to the `<cflogout>` tag to select the right user to logout:

```
<cflogout session="all|current|others">
```

The default value is `current`. If **session** is set to `all`, all the authenticated sessions for the current user will terminate, if it set to `current`, only the current session will terminate, and if it set to `others`, except the current session all the other sessions will be terminated.

For administrator, to enable/disable concurrent login sessions, perform the following tasks:

- 1 Login to ColdFusion Administrator
- 2 Go to Security > Administrator Page
- 3 Select **Allow Concurrent Login Sessions for Administrator Console**

#### Password Seed

To specify a new seed value to encrypt data source passwords

New Seed  (8-character minimum and 500-character limit.)

#### Concurrent Login Session

**Allow concurrent login sessions for Administrator Console**

Note that by default concurrent login sessions will be enabled. Also, when the secure profile is enabled, concurrent login will be disabled.

Changes in Administrator API

The Administrator API CFC, `security.cfc` has also been updated with the following new APIs:

- **isAllowConcurrentAdminLogin** – Find out of concurrent login sessions are allowed
- **setAllowConcurrentAdminLogin** – Enable/Disable concurrent login sessions

You can use this APIs to enable/disable concurrent login sessions programmatically. The CFC for this Administrator API are located in the `cf_web_root/CFIDE/adminapi/security.cfc`.

**Note:** When secure profile is enabled on the Server, the ColdFusion Administrator will run in a single login session per username mode (concurrent mode disabled).

Support for PBKDF2 key derivation

See [GeneratePBKDFKey](#)

### Enabling Secure Profile

With ColdFusion 10 and above you can use Secure Profile to configure selected settings. Secure Profile can be enabled during installation. You can also provide a list of IP addresses which will be allowed to access Administrator Console. In ColdFusion 11, secure profile configuration facility is extended to the Administrator console to support post installation configuration.

To do this, from the ColdFusion Administration console, select from the ColdFusion Administrator console, Security > Secure Profile (displayed below) and click the Enable Secure Profile check box to use ColdFusion's recommended default secure profile settings.

### Administrator settings affected by enabling Secure Profile

A table indicating the current settings, Secure default Settings, and values at the time you enable secure profile are displayed.

Enable or disable using this check box to change between Secure and Normal modes respectively.

Secure Profile Settings Summary		
Setting Name	Current Value	Secure Default Value
Enable Robust Exception Information	true	false
RDS separate UserID Disabled	true	false
Start Flash Policy Server	true	false
Missing Template Error Handler		/CFIDE/administrator/templates/missing_template_error.cfm
Admin separate UserID Required	false	true
RDS Authentication Enabled	true	true
Disable access to internal ColdFusion Java components	false	true
Enable RDS	false	false
Maximum size of post data (MB)	20.0	20.0
Request Queue Timeout Page		/CFIDE/administrator/templates/request_timeout_error.htm
Session Cookie Timeout (Minutes)	15768000	1440
Admin Authentication Enabled	true	true
Use UUID for cftoken	true	true
Allow concurrent login sessions for Administrator Console	true	false
Disable updating of ColdFusion internal cookies	false	true
Enable WebSocket Server	true	false
Enable CFSTAT	true	false
Enable Global Script Protection	true	true
Allowed IP Addresses		Retained if specified at install
Site Error Handler		/CFIDE/administrator/templates/secure_profile_error.cfm
Disable create, drop, alter, grant, revoke, stored procedures for DSNs	drop,storedproc, revoke,create,alter,grant : true,true,true,true,true,true	drop,storedproc, revoke,create,alter,grant : false,false,false,false,false,false

**Note:** Secure Profile disables Directory Browsing for a stand alone ColdFusion installation with built-in web server. Directory browsing is not configured when Secure Profile is enabled/disabled from Administrator Console.

Also, when the secure profile is enabled, addtoken attribute's default value is false for the <cftolocation> tag.

## Using the ColdFusion Server Monitor

The ColdFusion Server Monitor lets you track activities on a ColdFusion Server. You can identify information about the server, including requests, queries, memory usage, and errors. You can start and stop collecting server information and take snapshots of the server.

To track the status of more than one ColdFusion server, use the Multiserver Monitor.

### Gathering information about ColdFusion servers

The Server Monitor and Multiserver Monitor provide information about your ColdFusion servers. Generally, the information that the Server Monitor provides is more detailed than the information that the Multiserver Monitor provides. However, the Multiserver Monitor provides a good way to track the status of multiple ColdFusion servers. The Server Monitor provides information about the following:

- Requests, queries, sessions, and threads
  - Response time
  - Memory usage
  - Alerts and errors
  - Snapshots of server information
- The Multiserver Monitor provides the following information:
- Requests
  - Response time
  - JVM memory usage
  - Alerts, errors, and time outs

### Starting the ColdFusion Server Monitor

The ColdFusion Server Monitor is a SWF application that you access from the ColdFusion Administrator. The Server Monitor begins gathering and displaying data when you start it.

The ColdFusion Multiserver Monitor is a SWF application that can provide information about more than one ColdFusion server. To gather detailed information about one ColdFusion server, use the Server Monitor. To gather information about several servers, use the Multiserver Monitor.

#### Start the ColdFusion Server Monitor

- 1 Start the ColdFusion Administrator.
- 2 Select Server Monitoring > Server Monitor, and then click Launch Server Monitor.

#### Start the ColdFusion Multiserver Monitor

- 1 Start the ColdFusion Administrator.
- 2 Select Server Monitoring > Server Monitor, and then click Launch Multiserver Monitor.

**Note:** The cross domain details need to be mentioned in the `crossdomain.xml` file and this file must be placed directly under `webroot`. Previously, this file was placed under `<webroot>/CFIDE/multiservermonitor-access-policy.xml`. For more information, see [www.adobe.com/devnet/flashplayer/articles/fplayer9\\_security.html](http://www.adobe.com/devnet/flashplayer/articles/fplayer9_security.html)

By default, server monitoring is turned off. To start and stop monitoring, profiling, and memory tracking, click the corresponding buttons in the top bar of the Server Monitor. The following table indicates what data the Server Monitor collects when you click the Start button:

Button	Action
Start Monitoring	Starts gathering information about all requests, including active requests, slowest requests, active sessions, cumulative server usage, highest hit counts, template cache status, request throttle data, requests that timed out, requests with errors, and server alerts. The Server Monitor does not gather information for requests that are excluded on the Filter Settings page.
Start Profiling	Starts gathering tag and function timing information for the Slowest Requests report; the CFML stack trace for the Active Requests report; information about active queries, slowest queries, cached queries, and query cache status; database pool status; and the most frequently run queries. This information gathering lets you find bottlenecks in your application. You can view details about each request that is slow or consumes a lot of memory. You can determine which tags and functions cause the request to run slowly and which variables consume the most memory. You can use this information on development servers. To gather the profiling information, turn on monitoring, profiling, and, if needed, memory tracking.
Start Memory Tracking	Starts gathering information about memory consumption, including overall memory usage, the queries and sessions that use the most memory, the memory usage of all application and server scopes, and profiling information on the largest variables on the Requests by Memory Usage report, if profiling is enabled. You must enable profiling to view query-related reports; you must enable profiling and memory tracking to view the Queries by Memory Usage report.
Reset All Statistics	Resets all statistics collected on the server.
Refresh	Updates the data for all the graphs, reports, and message boxes on the page.

*Note: Do not enable these options on the production server. Enabling them will slow the server considerably.*

## Viewing Server Monitor Reports

When you start the Server Monitor, the Overview page appears. To return to the Overview page from any other page, click **Overview**. By default, the Server Monitor retrieves data for graphs every 5 seconds; it retrieves data for reports every 30 seconds. All the graphs let you display either all the data collected, or the data collected for a specified recent period. The Server Monitor lets you control the detail, which you turn on and off with the following buttons:

- **Start Monitoring** Turns on all monitoring.
- **Start Profiling** Turns on monitoring of individual tags, functions, and query execution times.
- **Start Memory Tracking** Turns on tracking of memory that different scopes use. If Profiling is also on, the Server Monitor tracks the memory that individual tags, functions, and queries use. Turning on or off monitoring, profiling, and memory tracking determines which data the Server Monitor gathers. For example, all the query reports require that you turn on profiling. The performance effect of turning on monitoring and profiling is minimal; however the performance effect of memory tracking can be significant.

## Overview

The Overview page appears when you start the ColdFusion Server Monitor. It provides an indication of the overall performance of the server, and displays the following reports:

- **Average response time** Total response time divided by the number of requests. Click the drop-down list to view data collected since the server started, for the past 5 min, or for the past minute.
- **Requests per second** Number of requests per second. Click the drop-down list to view data collected since the server started, for the past 5 min, or for the past minute.
- **Slowest active requests** Lowest active requests that are slower than the threshold set on Slowest Requests page. The number of requests in the list depends on the report size set on the Slowest Requests page.
- **Alerts** Lists any alerts. To specify when an alert is generated, select Alerts > Alert Configuration. Alerts indicate whether your server is approaching an unresponsive state or if it is running slowly.
- **Last error** Most recent error that any application generates on the server that is in the included paths specified on the Filter Settings page. In addition, the Summary page lists the other reports available. To view a different report, click its name. The available reports are:
  - Requests with errors
  - Requests that timed out
  - Requests slower than 20 seconds
  - Requests that use more than 40MB
  - Sessions that exceed 4KB
  - Queries slower than 20 seconds
  - Queries slower than 10 seconds on average
  - Queries that exceed 20KB

## Statistics

### Request Statistics

The Request Statistics section contains the following reports:

#### Active Requests

The Active Requests report lists all currently active requests that take longer to load than the request interval for reports specified in the Refresh Interval setting. Requests include browser requests, CFC HTTP requests, web services, gateways, and Flash remoting. You can view a list, a detailed view, or a graph of active requests. The detailed view includes the CFML stack trace, which you can use to find deadlocked requests and where a long running request is blocked. To see all request graphs in one view, click Chart. The graph indicates the number of requests that the server is currently processing and the number of requests that are awaiting allocation of an application server thread to begin execution. If the graph indicates that many requests are queued, you might want to increase the size of the thread pool. Alternatively, if ColdFusion is deployed in a cluster, you may want to add a server instance for more efficient load balancing.

**Note:** *The Server Monitor includes LiveCycle Data Management Assemblers as Flash Remoting requests.*

#### Active ColdFusion Threads

The Active ColdFusion Threads report lists all currently active threads. You can view a list, a detailed view, or a graph of active threads.

#### Slowest Requests

The Slowest Requests report lists the slowest requests. You can specify the threshold that determines whether a request appears on this page. The lower the threshold, the more requests appear on the list. Use the Report Size option to limit the number of items in the list. You can view a list or a detailed view of the slowest requests. The detailed view includes the CFML stack trace. For more information, see [Request handling](#).

#### Slowest ColdFusion Threads

The Slowest ColdFusion Threads report lists the slowest ColdFusion threads. You can specify the threshold that determines whether a ColdFusion thread appears in this report. As the threshold decreases, the number of requests in the report increases.

#### Active Sessions

The Active Sessions report lists all active sessions. You can view a list, a detailed view, or a graph of active sessions. The graph displays the active sessions and the number of users logged in to the server.

#### Cumulative Server Usage

The Cumulative Server Usage report lists the requests that have cumulatively used the most CPU time on the server. Even if a request runs rapidly, if it runs frequently, it can consume a large proportion of CPU time. Tuning requests with high cumulative server time can provide server-wide performance benefits. You can view a list, a detailed view, or a graph of cumulative server usage. Use the Report Size option to limit the number of items in the list.

#### Highest Hit Counts

The Highest Hit Counts report lists the requests that have the highest hit count. You can view a list or a graph of requests with the highest hit count. Use the Report Size option to limit the number of items in the list.

#### Template Cache Status

The Template Cache status report shows information about the template cache to indicate how it is performing. The template cache is where ColdFusion stores compiled CFM and CFC templates in memory. When a template is executed for the first time, it is compiled to Java bytecode, and then stored in the template cache. As long as the template is unchanged, ColdFusion uses the compiled form of the template stored in the template cache. The Template Cache status page lets you monitor the cache-hit ratio, which indicates the number of cache hits in relation to the number of cache misses. Cache hits are the templates retrieved from the cache. Cache misses are the templates that must be compiled before being placed in the cache. A server that is performing well should have more cache hits than misses, which is a high cache-hit ratio. If the cache-hit ratio is too low, you might want to increase the cache size by selecting Server Settings > Caching in the ColdFusion Administrator. For more information, see [Caching](#). The Template Cache page also lets you monitor the number of templates in the cache, and the estimated memory that the cache occupies.

**Note:** The template cache count includes both the Least Recently Used (LRU) cache and the soft cache. As a result, the count can exceed the number configured in the ColdFusion Administrator.

#### Request Throttle Data

The Request Throttle Data report lists all requests that the ColdFusion server throttles. Requests are throttled when ColdFusion queues them, because not enough total memory is available to handle them. Requests smaller than the specified limit are not queued or counted as part of the total memory. Requests larger than the specified limit are counted as part of total memory and are queued if the request throttle-memory size of the request is exceeded. The default value is 4 MB. To change the throttle threshold and memory, select Server Settings > Settings in the ColdFusion Administrator.

#### Memory Usage

The Memory Usage section contains the following reports:

#### Memory Usage Summary

The Memory Usage Summary report displays a graph that shows the estimated memory consumption by persistent scopes on the server, including the server scope, the application scopes, and the session scopes. If your server is consuming too much memory, the graph provides information about which scope is using too much memory, and when the increased memory consumption began. Detailed reports let you examine estimated memory consumption for the server scope and all active application and session scopes. For more information, see [Variable memory usage](#).

***Note:** Memory usage information displayed in the Server Monitor is estimated and might vary from the actual memory usage. The information in the memory usage report is based on empirical estimates of how different Java types, and their corresponding ColdFusion types, consume memory. Use the information provided in the memory usage report as an indicator rather than an absolute measure. Also, the Server Monitor does not track COM objects for memory usage information.*

#### Requests by Memory Usage

The Requests by Memory Usage report lists the requests that use the most memory. You can view a list or a detailed view. The detailed view lists the variables that use the most memory during the execution of the request.

#### CF Threads by Memory Usage

The CF Threads by Memory Usage report lists the ColdFusion threads that use the most memory.

#### Queries by Memory Usage

The Queries by Memory Usage report lists the queries that use the most memory. When a query appears in this report, you might want to tune the query to reduce the size of the result set, or cache the query to reduce memory consumption and network traffic. This report does not include information about cached queries.

#### Sessions by Memory Usage

The Sessions by Memory Usage report lists the sessions that use the most memory.

#### Application Scope Memory Usage

The Application Scope Memory Usage report lists the application scopes that use the most memory. The detail lists the application scope variables that use the most memory.

#### Server Scope Memory Usage

The Server Scope Memory Usage page lists the server scope variables that use the most memory.

#### Database

The Database section contains the following reports:

##### Active Queries

The Active Queries report lists all currently active queries that take longer to load than the threshold specified on the Slowest Queries report. You can view a list or a detailed view.

##### Slowest Queries

The Slowest Queries report provides the Slowest Queries report and the Slowest Queries by Average report. Both reports let you identify queries by template name and line number. The slowest queries report shows specific instances of a query that is slow, along with the SQL statement for the query. The detail view includes the SQL statement. This information lets you determine why an instance of that query was slow. The Slowest Queries by Average report indicates queries that are slow on average. This report does not provide the SQL code for the queries because the SQL statement might vary from one instance of the query to another. Cached queries are not included in either report. To improve performance, tune the queries listed in these reports. If the result of a query is static, you can improve performance by caching the query using ColdFusion's query cache. For more information, see [Database response time](#).



## Cached Queries

The Cached Queries report lists the queries that were cached. You can view a list of cached queries or details about an individual query. If the execution time of a query is low, determine if you really need to cache it. If the execution count is high, tune the `cachedafter` and `cachedwithin` settings of the query.

## Query Cache Status

The Query Cache Status report graphs the number of cached queries, the estimated memory that the query cache consumes, and the query cache-hit ratio. Performance increases as the query cache-hit ratio increases. If the cache-hit ratio is too low, you might want to increase the size of the query cache. Alternatively, to analyze how your application uses the query cache, determine whether you can tune the `cachedAfter` and `cachedWithin` attributes of the `cfquery` tag. If the query cache is too large, determine if you can move some queries out of the cache.

## Pool Status

The Pool Status report lists the data sources, whether an application on the ColdFusion server is using the data source, and the number of connections. You can view a list of data sources or details about an individual data source.

## Most Frequently Run Queries

The Most Frequently Run Queries report lists the queries that were made the most. Even if individual instances of a query run rapidly, tuning queries with a high frequency can result in improved performance. This report does not provide information about cached queries. You can view a list of queries or details about an individual query.

## Errors

The Errors section includes the following reports:

### Requests with Errors

The Requests with Errors report lists the templates that generate an error. The report includes the path of the template, and the number of times errors occurred in that template. For the most recent error, the report indicates the time of the error, the error message, CFML stack traces, and Java stack traces. You can view a list of templates or details about an individual template. The detailed information includes the CFML stack trace.

### Requests Timed Out

The Requests Timed Out page lists the templates that timed out. The report includes the path of the template, the number of times the template timed out, the most recent response time for the template, the time when the template was most recently used, the most recent estimated request size, and the CFML stack trace. A Java stack trace is not provided because time outs can only occur within CFML. You can view a list of templates or details about an individual template. The detailed information includes the CFML stack trace.

## Alerts

The Alerts report lists all the snapshots that alerts generate.

### Alert Configuration

The Alert Configuration page lets you specify the thresholds for when to generate an alert. Alerts provide warnings of potential problems, including a slow server or an unresponsive server. The slow-server alert is triggered when the server's average response time exceeds a specified limit. The unresponsive-server alert is triggered when more than a specified number of threads are busy for more than a specified number of seconds. The unresponsive-server alert creates a snapshot file, which lets you determine where request threads are unresponsive. Both types of alert let you run a custom CFC when the alert is triggered, which lets you provide your own automated response to an alert condition. You can specify whether to send an e-mail notification when an alert is triggered, and to whom. You can also specify the user name and password to log in to the server that is specified on the Mail page of the ColdFusion Administrator.

## Snapshots

The Snapshots report lists all snapshots that are triggered. Snapshots include details about the ColdFusion server at the moment the snapshot is triggered. These details include:

- The time and reason the snapshot was triggered
- Whether profiling and memory tracking are enabled
- How many running and queued requests exist at the moment of the snapshot
- Information about memory usage, including:
  - JVM memory usage
  - Server, application, and session scope memory usage
  - Throttle-queue size and memory usage
- Information about cached queries
- Status of the database pool
- The Java stack trace Snapshots are triggered when one of the following occurs:
- You click Trigger Snapshot on the User Snapshots page of the Server Monitor
- The threshold for either an unresponsive server or a slow server is exceeded When you click Trigger Snapshot, the Server Monitor collects the information for the snapshot and saves it in a file named `snapshot_usrgen_timestamp.txt` in the `cf_root/logs/snapshots` folder. When the Server Monitor creates a snapshot, it saves the information in a file named `snapshot_sysgen_timestamp.txt` in the `cf_root/logs/snapshots` folder.

## Specifying Server Monitor Settings

To specify the settings to use to generate reports, click Settings. You can specify the following:

- How often to refresh Server Monitor reports
- How often to refresh Server Monitor graphs
- How often to calculate average response times
- Whether to show the entire template path To specify what file paths to exclude and include in monitoring and whether to monitor the ColdFusion Administrator, click Settings, and then click the Filter Settings tab. To specify what file paths to exclude from profiling, click Settings, and then click the Profiling Filter tab. By default, the Server Monitor collects information about all ColdFusion templates in the webroot directory and its subdirectories and in any directories specified on the Mappings page of the ColdFusion Administrator. However, you might not want to monitor all requests on the server. You specify a path to exclude so that the Server Monitor does not collect information about files in that directory or in any of its subdirectories. This capability is especially useful in restricting monitoring on production servers. Use the Include Paths option to monitor any subdirectories of an excluded directory. To specify an alias for a template path, click Settings, and then click the Aliasing tab.

## ColdFusion Server Monitor API

Use the Server Monitor API to programmatically retrieve all the data that the Server Monitor collects. The `servermonitoring.cfc` ColdFusion component contains methods that you call to perform Server Monitor tasks. For example, use the `getAverageResponseTime` method to get the average response time for the server.

To view the methods, method arguments, and documentation for the Server Monitor API, use the CFC Explorer. To do so, go to <http://localhost:8500/CFIDE/adminapi/servermonitoring.cfc>.

## Using the Server Monitor API

- 1 Instantiate administrator.cfc:

```
<cfscript>
adminObj = createObject("component","cfide.adminapi.administrator");
```

*Note:* You can instantiate administrator.cfc and call the login\_ method in a single line of code, as the following example shows:

```
createObject("component","cfide.adminapi.administrator").login("admin");
```

- 2 Call the administrator.cfc loginmethod, passing the ColdFusion Administrator password or the RDS password:

```
adminObj.login("admin");
```

- 3 Instantiate the Server Monitor CFC:

```
myObj = createObject("component","cfide.adminapi.servermonitoring");
```

- 4 Call the CFC method you want (this example uses getAverageResponseTime):

```
myObj.getAverageResponseTime();
```

## Example

The following example uses the Server Monitor API to list the data sources to which the ColdFusion Server is connected and the number of connections:

```
<cfscript>
// Login to the ColdFusion Administrator.
adminObj = createObject("component","cfide.adminapi.administrator");
adminObj.login("admin");
// Instantiate the Server Monitor object.
myObj = createObject("component","cfide.adminapi.servermonitoring");
// Get the dsn pool data array
dbpool = myObj.getDbPoolStats();
</cfscript>
<!--- List the data sources --->
The ColdFusion server is connected to the following data sources:<br />
<cfloop index="i" from="1" to="#ArrayLen(dbpool)#">
<cfoutput>#dbpool[i].DSN# #dbpool[i].TOTALCONNECTIONCOUNT#<br /></cfoutput>
</cfloop>
```

## Using the Server Monitor to improve server performance

The Server Monitor provides information that you can use to help improve the performance of your ColdFusion server.

### Find bottlenecks in your application during development

- 1 Turn on monitoring, profiling, and memory tracking.
- 2 Set the Slowest Request and Requests By Memory Usage report thresholds to zero (0).
- 3 Run your templates.
- 4 For each request, find the following:
  - The slowest tags and functions in the Slowest Requests report.
  - The largest variables in the Requests By Memory Usage report.

## JVM memory usage

Because ColdFusion is an enterprise Java application, the Java Virtual Machine (JVM) is the software component that most influences performance. Different JVMs from different vendors and different versions of the same JVM from the same vendor have different performance characteristics. You might benefit from changing the JVM that you are using with ColdFusion.

ColdFusion contains an embedded version of Tomcat as the application server and the Sun 1.6 version of the JVM. By contrast, ColdFusion for J2EE running on IBM WebSphere Application Server uses the JVM that WebSphere is configured to use.

To configure ColdFusion to use a different JVM, edit the `cf_root/runtime/lib/jvm.config` file with a text editor by modifying the value of `java.home` to point to the root directory of the JVM to use. Alternatively, you can switch to a different JVM in the ColdFusion Administrator on the Java and JVM Settings page.

Because switching the JVM changes the software environment significantly, do so first in a development or testing environment. Also, fully test your ColdFusion applications before you make the change on a production server.

The JVM performs memory management and can have a significant effect on your performance depending on how you configure the JVM. The most important settings for the JVM are the initial heap size and maximum heap size. The initial heap size represents the amount of memory that the JVM uses on startup; the maximum heap size represents the amount of memory that the JVM can use. You can modify these settings in the ColdFusion Administrator on the Java and JVM Settings page. The Initial Memory Size setting specifies the initial heap size; the Maximum Memory Size setting specifies the maximum heap size. The JVM arguments for initial heap size and maximum heap size are `-XmsNm` and `-XmxNm` respectively, where N is the size of the heap in megabytes (MB). These JVM arguments are stored in the `jvm.config` file, in the value of the `java.args` setting.

The default maximum heap size is set to 512 MB in ColdFusion. For best performance, set the initial heap size and the maximum heap size to the same value. Determining the optimal size for the heap to run the applications on your ColdFusion server results in improved performance. Setting the value too high can result in poorer performance because of the higher degree of garbage collection and internal memory management required for the larger heap. Conversely, setting the heap size too small can result in a `java.lang.OutOfMemoryError` error if your application tries to use more memory than is available to it.

The best way to find the optimal heap size is to run your application under simulated peak load with a large heap and monitor how much memory your application actually uses. If you find that your application uses only 180 MB of memory, for example, you might see performance benefit from reducing your heap size to 256 MB.

The `java.lang.OutOfMemoryError` error can occur in other, more complicated, conditions. One common cause of the error is when objects fill up the heap's permanent generation, which defaults to 64 MB. You can increase the value, for example, to 128 MB, by adding the following JVM argument to the Java and JVM Settings page of the ColdFusion Administrator:

**`-XX:MaxPermSize=128m`**.

Physical hardware memory is an important consideration when determining the optimal heap size. Setting the maximum heap size to a value that exceeds the amount of free physical memory causes severe performance degradation. For example, if you have only 512 MB of physical memory, do not set the maximum heap size to 512 MB. Because the operating system and other running applications use memory, much less than 512 MB of memory is available for the JVM process. It is important to have hardware that meets the requirements of your software application. For best results, run on server hardware with 1 GB or more of physical memory.

The Server Monitor Summary page monitors the JVM's memory usage. Use this information when determining the optimal heap size.

## Variable memory usage

Configure client variable storage to use cookies or an RDBMS for best performance when using client variables; you do this on the Client Variables page of the ColdFusion Administrator. Wherever possible, it is best to fully scope your variable names, especially when using the `isdefined()` function. For example, `<<cfif isdefined("variables.myvariable")>` performs much better than `<cfif isdefined("myvariable")>`.

To monitor how variables use memory, view the reports in the [Memory Usage](#) of the Server Monitor.

## Request handling

The Simultaneous Requests setting on the Settings page of the ColdFusion Administrator has the largest effect on how well an application performs under load. This setting dictates how many threads are used to simultaneously process incoming requests. For most applications, a good starting point for the optimal value for this setting is three per processor; you can set a dual processor computer to six simultaneous requests. To find the optimal value for this setting, test your application under load with different values until you find the value that provides the best performance under load. While you test your application, you can view the average response time on the Server Monitor Summary page and the reports in [Statistics](#).

## Caching

You can turn on the trusted-cache setting on the Caching page of the ColdFusion Administrator for production applications so that the server does not check the file system to see if the CFML source code changed since it was last compiled. This setting provides the benefit of minimizing system I/O, which has a major effect on performance. Set the template-cache size on the Caching page of the ColdFusion Administrator to be roughly equal to the number of ColdFusion templates that are normally used. To monitor how your settings affect performance, use the [Template Cache Status](#) in the Request Statistics section of the Server Monitor. In addition, use one of the following methods to cache wherever possible in your application:

- The `cfcache` tag
- Database query caching. Database caching can provide significant performance and scalability improvements, and is accomplished with the `cachedwithin` and `cachedafter` attributes of database tags that support them, such as the `cfquery` tag.
- Storing data in persistent scopes such as session, making it available for longer than a single request.

## Database response time

Wherever possible, it's best to allow database servers to handle data manipulation. Adding SQL code to handle this work is much more efficient than doing string manipulations or doing in-memory queries (query of queries). Additionally, stored procedures generally provide a higher level of performance than regular SQL queries. Converting queries in `cfquery` calls to stored procedures and using the `cfstoredproc` tag typically improves performance. To view database response time information, use the Database section of the Server Monitor (see [Database](#)).

## Setting up Server Manager client

Server Manager is an AIR-based desktop application that allows you to centrally manage multiple ColdFusion servers from one location. From the Server Monitoring page, you can download and install the Server Manager client AIR application.

For details about configuring the Server Manager client for ColdFusion server instances, see [Working with Server Manager](#).

## Configuring the Server monitoring settings

The monitoring server can be configured in one of the following ways:

- Use ColdFusion Administrator
- Manually edit neo-monitoring.xml and jetty.xml
- Use Admin API (servermonitoring.cfc)

### Using the ColdFusion Administrator

**Note:** The Server Monitoring Settings Page in the ColdFusion Administrator (Server Monitoring > Monitoring Settings) lets the following configurations:

- Enable monitoring server.  
**Note:** When you enable monitoring server and configure it to use SSL, include the following setting to java.args in the JVM.config file: Dcoldfusion.jsafe=true
- Specify the port on which monitoring server listens. The default port is 5500  
**Note:** If a server monitoring application is already running, the configuration mentioned here takes effect only after you relaunch the application.

### Manually editing neo-monitoring.xml and jetty.xml

neo-monitoring.xml

Go to the following location:cf\_root\lib (in the server configuration)orcf\_root/WEB-INF/cfusion/lib (in the J2EE configuration).Modify the value to true in the following code:<var name='ismonitoringserverenabled'><boolean value='false'/></var>

Jetty.xml

Modify Jetty.xml only if you have to change the port or if your connection uses HTTPS protocol.Go to the following location:cf\_root\lib (in the server configuration)orcf\_root/WEB-INF/cfusion/lib (in the J2EE configuration).You can specify the following configurations in the XML file:

- Port
- MaxThreads
- Logging

### For connections using HTTPS protocol

- 1 Open jetty.xml.
- 2 Remove or comment out the Set Connectors section.

```

<Call name="addConnector">
  <Arg>
    <New class="org.eclipse.jetty.server.nio.SelectChannelConnector">
      <Set name="host">0.0.0.0</Set>
      <Set name="port">5500</Set>
      <Set name="maxIdleTime">300000</Set>
      <Set name="Acceptors">2</Set>
      <Set name="statsOn">>false</Set>
      <Set name="lowResourcesConnections">10</Set>
      <Set name="lowResourcesMaxIdleTime">5000</Set>
    </New>
  </Arg>

```

### 3 Uncomment the Set SSL Connector section.

```

<Call name="addConnector">
  <Arg>
    <New class="org.eclipse.jetty.server.ssl.SslSelectChannelConnector">
      <Set name="host">0.0.0.0</Set>
      <Set name="port">5500</Set>
      <Set name="maxIdleTime">300000</Set>
      <Set name="Acceptors">1</Set>
      <Set name="AcceptQueueSize">100</Set>
      <Set name="Keystore">"path to keystore"</Set>
      <Set name="Password">OBF:1vny1z1o1x8e1vnw1vn61x8g1z1u1vn4</Set>
      <Set name="KeyPassword">OBF:1u2u1wml1z7s1z7a1wn11u2g</Set>
      <Set name="truststore">"path to keystore"</Set>
      <Set name="trustPassword">OBF:1vny1z1o1x8e1vnw1vn61x8g1z1u1vn4</Set>
    </New>
  </Arg>
</Call>

```

### 4 Specify the port and the keystore-related settings.

## Using Admin APIs

To programmatically configure the Server Monitoring server, use the `ServerMonitoring.cfc`. The following Administrator APIs are added in this release:

API	Description
<code>setMonitoringServerPort(port);</code>	Sets the port information for the monitoring server.
<code>getMonitoringServerPort();</code>	Gets details of the port to which the monitoring server listens.
<code>getMonitoringServerProtocol();</code>	Gets the protocol details for the monitoring server.
<code>enableMonitoringServer();</code>	Enables the monitoring server and starts it if not running.
<code>stopMonitoringServer();</code>	Stops the monitoring server.
<code>startMonitoringServer();</code>	Starts the monitoring server.
<code>disableMonitoringServer();</code>	Disables the monitoring server and stops it if it is running.
<code>isMonitoringServerEnabled();</code>	Indicates if the monitoring server is enabled.
<code>isMonitoringServerRunning();</code>	Indicates if the monitoring server is running.
<code>configureMonitoringServer(flag, port);</code>	Enables monitoring server and sets port information.

## Troubleshooting scenarios

### Multi-server monitoring

For multi-server monitoring, ensure that you specify the cross domain details in the `crossdomain.xml` in (CFRoot/MonitoringServer).

### Someone changes port in XML

The exception does not appear in the ColdFusion Administrator. You verify the log.

### Monitoring with SSL

You might encounter an error while starting Monitoring Server in SSL mode. To resolve this known issue, add the following in the `jvm.config`: `"-Dcoldfusion.disablejsafe=true"`

### Updating the threadpool

You can update the threadpool in the `jetty.xml`. Modify the threadpool in the Server Threadpool section of the XML file:

```
<Set name="ThreadPool">
<!-- Default queued blocking threadpool
-->
<New class="org.eclipse.jetty.util.thread.QueuedThreadPool">
<Set name="minThreads">2</Set>
<Set name="maxThreads">50</Set>
</New>
<!-- Optional Java 5 bounded threadpool with job queue
<New class="org.eclipse.thread.concurrent.ThreadPool">
<Set name="corePoolSize">50</Set>
<Set name="maximumPoolSize">50</Set>
</New>
-->
</Set>
```