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Administering ColdFusion MX



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ABOUT THIS BOOK

Administering ColdFusion MX is intended for anyone who needs to configure and manage their ColdFusion development environment.

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Developer resources

Macromedia, Inc. is committed to setting the standard for customer support in developer education, documentation, technical support, and professional services. The Macromedia website is designed to give you quick access to the entire range of online resources. The following table shows the locations of these resources:

| Resource | Description | URL |
|--------------------------------------|--|---|
| Macromedia website | General information about Macromedia products and services | http://www.macromedia.com |
| Information on ColdFusion | Detailed product information on ColdFusion and related topics | http://www.macromedia.com/coldfusion |
| Macromedia ColdFusion Support Center | Professional support programs that Macromedia offers | http://www.macromedia.com/support/coldfusion |
| ColdFusion Online Forums | Access to experienced ColdFusion developers through participation in the Online Forums, where you can post messages and read replies on many subjects relating to ColdFusion | http://webforums.macromedia.com/coldfusion/ |
| Installation Support | Support for installation-related issues for all Macromedia products | http://www.macromedia.com/support/email/isupport |
| Training | Information about classes, on-site training, and online courses offered by Macromedia | http://www.macromedia.com/support/training |
| Developer Resources | All the resources that you need to stay on the cutting edge of ColdFusion development, including online discussion groups, Knowledge Base, technical papers, and more | http://www.macromedia.com/desdev/developer/ |
| Reference Desk | Development tips, articles, documentation, and white papers | http://www.macromedia.com/v1/developer/TechnologyReference/index.cfm |
| Macromedia Alliance | Connection with the growing network of solution providers, application developers, resellers, and hosting services creating solutions with ColdFusion | http://www.macromedia.com/partners/ |

About Macromedia ColdFusion MX documentation

The ColdFusion documentation is designed to provide support for the complete spectrum of participants. The print and online versions are organized to let you quickly locate the information that you need. The ColdFusion online documentation is provided in HTML and Adobe Acrobat formats.

Printed and online documentation set

The ColdFusion documentation set consists of the following titles:

| Book | Description |
|--|--|
| <i>Installing ColdFusion MX</i> | Describes system installation and basic configuration for Windows NT, Windows 2000, Solaris, Linux, and HP-UX. |
| <i>Administering ColdFusion MX</i> | Describes how to use the ColdFusion Administrator to manage the ColdFusion environment, including connecting to your data sources and configuring security for your applications. |
| <i>Developing ColdFusion MX Applications with CFML</i> | Describes how to develop your dynamic web applications, including retrieving and updating your data, using structures, and forms. |
| <i>Getting Started Building ColdFusion MX Applications</i> | Contains an overview of ColdFusion features and application development procedures. Includes a tutorial that guides you through the process of developing an example ColdFusion application. |
| <i>Using Server-Side ActionScript in ColdFusion MX</i> | Describes how Macromedia Flash movies executing on a client browser can call ActionScript code running on the ColdFusion server. Includes examples of server-side ActionScript and a syntax guide for developing ActionScript pages on the server. |
| <i>Migrating ColdFusion 5 Applications</i> | Describes how to migrate a ColdFusion 5 application to ColdFusion MX. This book describes the code compatibility analyzer that evaluates your ColdFusion 5 code to determine any incompatibilities within it. |
| <i>CFML Reference</i> | Provides descriptions, syntax, usage, and code examples for all ColdFusion tags, functions, and variables. |
| <i>CFML Quick Reference</i> | A brief guide that shows the syntax of ColdFusion tags, functions, and variables. |
| <i>Working with Verity Tools</i> | Describes Verity search tools and utilities that you can use for configuring the Verity K2 Server search engine, as well as creating, managing, and troubleshooting Verity collections. |
| <i>Using ClusterCATS</i> | Describes how to use Macromedia ClusterCATS, the clustering technology that provides load-balancing and failover services to assure high availability for your web servers. |

Viewing online documentation

All ColdFusion documentation is available online in HTML and Adobe Acrobat Portable Document Format (PDF) files. To view the HTML documentation, open the following URL on the web server running ColdFusion: http://web_root/cfdocs/dochome.htm.

ColdFusion documentation in Acrobat format is available on the ColdFusion product CD-ROM.

Getting answers

One of the best ways to solve particular programming problems is to tap into the vast expertise of the ColdFusion developer communities on the ColdFusion Forums. Other developers on the forum can help you figure out how to do just about anything with ColdFusion. The search facility can also help you search messages from the previous 12 months, allowing you to learn how others have solved a problem that you might be facing. The Forums is a great resource for learning ColdFusion, but it is also a great place to see the ColdFusion developer community in action.

Contacting Macromedia

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Technical support

Macromedia offers a range of telephone and web-based support options. Go to <http://www.macromedia.com/support/coldfusion> for a complete description of technical support services.

You can make postings to the ColdFusion Support Forum (<http://webforums.macromedia.com/coldfusion>) at any time.

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CHAPTER 1

Administering ColdFusion

This chapter presents an overview of the ColdFusion Administrator and how you can use it to manage your development environment. For procedures, see the Administrator's online Help.

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- [About the ColdFusion Administrator](#) 2
- [Accessing user assistance](#) 2
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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, Professional, or Enterprise.

The default location for the ColdFusion Administrator login page is:

`http://servername/cfide/Administrator/index.cfm`

In the previous URL, *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 is 8500: `http://servername:8500/cfide/Administrator/index.cfm`.

If your ColdFusion Administrator is on a remote computer, use the DNS name or IP address of the remote host.

To access the ColdFusion Administrator, enter the username and password that you used when you installed ColdFusion.

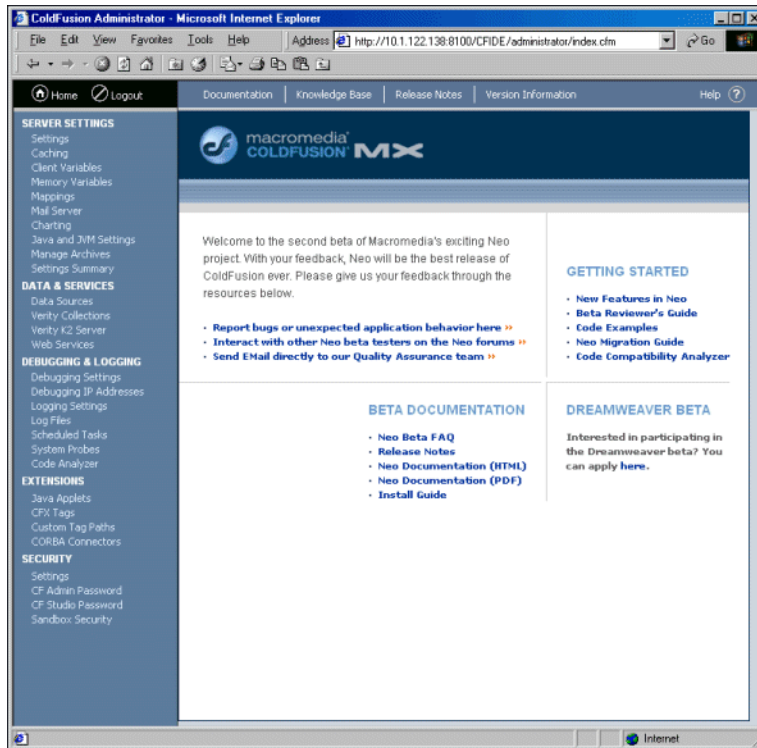
Accessing user assistance

You can obtain assistance from the ColdFusion Administrator in the following ways:

- **Online Help** You access the context-sensitive online Help by clicking the question-mark icon on any ColdFusion Administrator page. 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.
- **Documentation** Click the link to access the entire ColdFusion documentation set, which is available as HTML files.
- **Examples** The example applications provide samples for you to learn about ColdFusion.
- **Knowledge Base** You can access the collection of articles about ColdFusion from the Macromedia website.
- **Support Forums** You can browse (or post to) the searchable online collection of ColdFusion questions and answers at the Macromedia website.

Administrator layout

The home page of the ColdFusion Administrator includes links to Documentation, the Macromedia Servers TechNotes Knowledge Base, Release Notes, Version Information, online Help, and Code Examples:



The tasks that you perform in the ColdFusion Administrator are grouped into the following sections. Each section contains links to pages for managing aspects of the system:

- **Server Settings** Manage whitespace, client and memory variables, locking, and mappings. Register a mail server and configure mail logging. Configure your JVM, the ColdFusion charting and graphing engine, and create and manage archives.
- **Data & Services** Configure data sources, Verity collections, and the Verity K2 Server. Define mappings to web services.
- **Debugging & Logging** Manage options that can assist you in troubleshooting your ColdFusion applications. Manage scheduled tasks, system probes, and a variety of log files and server statistics. Run the Code Compatibility Analyzer to assist you in migrating older ColdFusion applications.
- **Extensions** Configure and register Java Applets, CORBA ORBs, and CFX Tags.
- **Security** Control passwords for ColdFusion Administrator and Remote Data Source (RDS) access. Restrict the use of resources, such as data sources.

For more information about each section, see [Chapter 2, “Basic ColdFusion MX Administration”](#) on page 7.

Server Settings section

The Server Settings section contains the following areas:

- **Settings** Manage the number of simultaneous requests, request timeouts, whitespace, and handlers.
- **Caching** Manage caching options for memory, database connection time, the number of cached queries, and using a trusted template cache.
- **Client Variables** Configure an external data source, the operating system registry, or web browser cookies to store client variables. These can use and store information about a client browsing your site to provide customized page content.
- **Memory Variables** Specify timeout values for Application and Session variables. These variables are stored in RAM and maintain information throughout a ColdFusion session.
- **Mappings** Create logical aliases for physical directories on your server. One of your first tasks after installing ColdFusion is to configure the mapping for your web server.
- **Mail Server** Configure the mail server that ColdFusion uses to send dynamic mail messages using SMTP (Simple Mail Transfer Protocol).
- **Charting** Specify caching and thread settings for the ColdFusion charting and graphing engine.
- **Java and JVM Settings** Manage Java Virtual Machine settings such as paths, heap sizes, and implementation options.
- **Archives and Deployment** Create and deploy application archives.
- **Settings Summary** View the status of all ColdFusion configuration settings. You can navigate to a particular area of the ColdFusion Administrator by clicking its name.

Data & Services section

The Data & Services section contains the following pages:

- **Data Sources** Create and manage your data sources. You can specify login parameters, connection information, and restrict certain SQL operations. For more information, see [Chapter 3, “Data Source Management”](#) on page 29.
- **Verity Collections** Create and manage your Verity collections. Search engines for your ColdFusion applications use these indexes of various files within specified directories.
- **Verity K2 Server** Configure the Host Name and Port settings for your K2 Server. This specialized server is optimized for high-performance Verity searches.
- **Web Services** Define a mapping to the location of a web service.

Debugging & Logging section

The Debugging & Logging section contains the following pages:

- **Debugging Settings** Enable and configure information to help you diagnose ColdFusion page failures. You can return information on items such as template stack, database activity, and variable values.
- **Debugging IP Addresses** Control which IP addresses receive debug messages.
- **Logging Settings** Specify the directory for your log files, and whether to write some ColdFusion log messages to the operating system's logging facility (such as EventLog for Windows and syslog for UNIX).
- **Log Files** Search, view, download, schedule, archive, or delete a file from a list of all available log files.
- **Scheduled Tasks** Add, edit, or delete scheduled tasks. These tasks are helpful for such items as daily reports, inventories, and statistical reports.
- **System Probes** Manage probes that monitor your application's status. If a potential problem is detected, a system probe can send an alert e-mail message and execute a recovery script.
- **Code Analyzer** Evaluate application code for potential incompatibilities between ColdFusion MX and ColdFusion Server 5.

Extensions section

The Extensions section contains the following pages:

- **Java Applets** Register, edit, or delete Java applets. You must register a Java applet prior to adding it to your CFFORM forms using the `cfapplet` tag.
- **CFX Tags** Register, edit, or delete C++ and Java custom tags.
- **Custom Tag Paths** Register the paths that contain your custom tags.
- **CORBA Connectors** Register, edit, or delete CORBA connectors. You can also specify ORB initialization options.

Security section

The Security section contains the following pages:

- **CF Admin Password** Set the password for the administrator
- **RDS Password** Set the password for Dreamweaver MX and CF Studio users connecting to ColdFusion.
- **Sandbox Security** Restrict access to ColdFusion resources such as data sources, tags, functions, files and directories, and IP addresses.

For more information, see [Chapter 4, “Administering Security”](#) on page 49.

CHAPTER 2

Basic ColdFusion MX Administration

This chapter explains the basic ColdFusion MX administration tasks, following the structure of the ColdFusion Administrator sections.

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Initial administration tasks

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

| Task | Description |
|--------------------------------|---|
| Establish database connections | <p>ColdFusion applications require data source connections to query and write to databases. To create, verify, edit, and delete database connections, use the Data Sources pages in the Administrator.</p> <p>For more information, see Chapter 3, “Data Source Management” on page 29.</p> |
| Specify directory mappings | <p>Directory mappings redirect relative file paths to physical directories on your server. To specify server-wide directory aliases, use the Mappings page in the Administrator.</p> <p>For more information, see “Mappings page” on page 13.</p> |
| Configure debugging settings | <p>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 of the Administrator.</p> <p>For more information, see “Debugging Settings page” on page 19.</p> |
| Set up e-mail | <p>E-mail lets ColdFusion MX and ColdFusion applications send automated mail messages. To configure an e-mail server and mail options, use the Mail Server page of the Administrator.</p> <p>For more information, see “Mail Server page” on page 13.</p> |
| Change passwords | <p>You might have to change the passwords that you set for the ColdFusion Administrator and ColdFusion Studio during ColdFusion MX installation. To change passwords, use the Basic Security pages of the Administrator.</p> <p>For more information, see “CF Admin Password page” on page 27 and “RDS Password page” on page 27.</p> |
| Configure Java settings | <p>Java and Java applets require configuring Java settings, such as JVM paths. To change Java settings, use the Java and JVM Settings page of the Administrator.</p> <p>For more information, see “Extensions section” on page 25.</p> |
| Restrict tag access | <p>Some CFML tags might present a potential security risk for your server. To disable certain tags and tag attributes system-wide, use the Tag Restrictions page of the Administrator.</p> <p>For more information, see “Administering Security” on page 49.</p> |

Server Settings section

The Server Settings section lets you manage client and memory variables, mappings, charting, and archiving. You also configure mail and Java settings in this section.

Settings page

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

| Setting | Description |
|------------------------------------|---|
| Limit simultaneous requests | Enter a number to limit simultaneous requests to ColdFusion MX. When the server reaches the limit, requests are queued and handled in the order received. Limiting the number of simultaneous requests can improve performance. |
| Timeout requests after [n] seconds | Enable this option to prevent unusually lengthy requests from using up server resources. Enter a limit to the time that ColdFusion MX waits before terminating a request. Requests that take longer than the timeout period are terminated. |
| Use UUID for cftoken | Specify whether to use a universally unique identifier (UUID), rather than a random number, for a cftoken. |
| Enable Whitespace Management | Enable this option to compress runs of spaces, tabs and carriage return/line feeds. Compressing whitespace can significantly compact the output of a ColdFusion page. |
| Missing Template Handler | Specify a template to execute when ColdFusion MX cannot find a requested page. |
| Site-wide Error Handler | Specify a page to execute when ColdFusion MX encounters an error while processing a request. |

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:

| Setting | Description |
|---|---|
| Template cache size (number of templates) | Enable this option to limit the memory reserved for template caching. For best performance, set this to a value that is large enough to contain your application's 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 JVM size. |

| Setting | Description |
|---|--|
| Trusted cache | Enable this option if you want ColdFusion MX to use cached templates without checking whether they changed. For sites that are not updated frequently, using this option minimizes file system overhead. |
| Limit the maximum number of cached queries on the server to [n] queries | Enable this option by entering 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, you must provide a limit for the number of cached queries. You enable cached queries with the <code>cachedwithin</code> or <code>cachedafter</code> attributes of the <code>cfquery</code> tag. |

Client Variables page

Client variables let you store user information and preferences between sessions. Using information from client variables, you can customize page content for individual users.

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

- In a data source

If your data source uses a bundled JDBC driver, ColdFusion can automatically create the necessary tables. If your data source uses the ODBC Socket or a third-party JDBC driver, you must manually create the necessary CDATA and CGLOBAL database tables. For more information, see *Developing ColdFusion MX Applications with CFML*.

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

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

You can override settings specified in the Client Variables page using the attributes of the `cfapplication` tag. For more information, see *Developing ColdFusion MX Applications with CFML*.

The following table compares these storage options:

| Storage type | Advantages | Disadvantages |
|-----------------|--|--|
| Data source | <ul style="list-style-type: none"> • Can use existing data source • Portable: not tied to the host system or operating system | <ul style="list-style-type: none"> • Requires database transaction to read/write variables • More complex to implement |
| Browser cookies | <ul style="list-style-type: none"> • Simple implementation • Good performance • Can be set to expire automatically • Client-side control | <ul style="list-style-type: none"> • Users can configure browsers to disallow cookies • ColdFusion MX limits a cookie's data to 4 KB • Netscape Navigator allows only 20 cookies from one host; ColdFusion MX uses three cookies to store read-only data, leaving only 17 cookies available |
| System registry | <ul style="list-style-type: none"> • Simple implementation • Good performance • Registry can be exported easily to other systems • Server-side control | <ul style="list-style-type: none"> • Possible restriction of the registry's maximum size limit on Windows in the Control Panel • Integrated with the host system: not practical for clustered servers • Solaris, Linux, and HP-UX registries are text files. Their registries deliver slow performance and low scalability. |

Migrating client variable data

To migrate your client variable data to another data source, you should know the structure of the database tables that store this information. Client variables stored externally use two small database tables, like those 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.

Tip: The ColdFusion Administrator can create client variable tables for data sources that use bundled JDBC drivers. For more information, see the online Help.

Sample table creation page

<!-- Create the Client variable storage tables in a datasource.
This example applies to Microsoft Access databases -->

```
<cfquery name="data1" datasource="#DSN#">
CREATE TABLE CDATA
(
    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 use the Memory Variables page of the ColdFusion Administrator to enable application and session variables server-wide. By default, application and session variables are enabled when you install ColdFusion MX. If you disable either type of variable in the Memory Variables page, you cannot use them in a ColdFusion application.

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

Note: Timeout values that you specify for application variables override the timeout values set in `Application.cfm`.

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 *Developing ColdFusion MX Applications with CFML*.

Mappings page

You 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 processed by ColdFusion MX with the `cfinclude` and `cfmodule` tags. If you save CFML pages outside of the `web_root` (or whatever directory is mapped to `/`), you must add a mapping to the location of those files on your server.

Assume that the `/` mapping on your server points to `C:\CFusionMX\wwwroot`, but all your ColdFusion header pages reside in `c:\2002\newpages\headers`. In order for ColdFusion MX to find your header pages, you must add a mapping in the ColdFusion Administrator that points to `c:\2002\newpages\headers` (for example, add a mapping for `/headers` that points to `c:\2002\newpages\headers`). In the ColdFusion pages located in `C:\CFusionMX\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, please consult your web server's documentation.

Mail Server page

You use the Mail Server page of the ColdFusion Administrator to specify a mail server to send automated e-mail messages. ColdFusion MX supports the Simple Mail Transfer Protocol (SMTP) for sending e-mail messages and the Post Office Protocol (POP) for retrieving e-mail messages from your mail server. To use e-mail messaging in your ColdFusion applications, you must have access to an SMTP server and/or a POP account.

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 is extremely busy or has a large queue, delivery could occur after some delay.

Note: For more information about the `cfmail` tag, see *Developing ColdFusion MX Applications with CFML*.

Mail Connection Settings area

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

| Setting | Description |
|-------------------------------|---|
| Mail Server | Lets you enter a valid mail server for sending dynamic SMTP mail messages in the text box. 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. |
| 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. |
| Connection Timeout (seconds) | Enter the number of seconds that ColdFusion should wait for a response from the mail server. |
| Spool Interval (seconds) | Enter the number of seconds at which you want the mail server to process spooled mail. |
| Verify Mail Server Connection | To have ColdFusion verify that it can connect to your specified mail server after you submit this form, enable this option. You receive an error message if the connection fails. Note: Whether or not you use this option, send a test mail message when you finish your mail settings. |

Mail Logging Settings area

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

| Setting | Description |
|--|--|
| Error Log Severity | From the drop-down list box, select the type of SMTP-related error message to write to a log file. The options are: Debug, Warning, Debug, Information, and Error. |
| Log all e-mail messages sent by ColdFusion | Enable this option to save to a log file the To, From, and Subject fields of all e-mail messages. |

ColdFusion MX writes sent mail and mail error logs to either of the following directories:

- `\cfusion\Log`, in Windows
- `/opt/coldfusion/log`, on Solaris, Linux, and HP-UX

The following table describes the e-mail log files:

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

Charting Settings page

The ColdFusion charting and graphing engine lets you produce highly customizable business graphics, in a variety of formats, using the `cfchart` tag. You use the Charting page in the Administrator to control characteristics of the engine.

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

| Setting | Description |
|-----------------------------------|--|
| Cache Type | Set the cache type. Charts can be cached either in memory or to disk. In memory caching is faster, but more memory intensive. |
| Maximum number of images in cache | 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. |

Java and JVM Settings page

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

| Setting | Description |
|---------------------------|--|
| Java Virtual Machine Path | The absolute file path to the location of the Java virtual machine (JVM): <code>jvm.dll</code> in Windows or <code>jvm.so</code> in Solaris, Linux, and HP-UX. |
| Initial Memory Size | The JVM initial heap size. Default is 8196 MB. |
| Maximum Memory Size | The JVM maximum heap size. Default is 512 MB. |
| Class Path | The file path(s) to the directories that contain the Java classes used by ColdFusion MX. Use a comma-delimited list for multiple entries; for example, <code>c:\foo;d:bar</code> |
| JVM Arguments | The arguments to the JVM. Use a space to separate multiple entries; for example, <code>-Xint -Xincgc</code> |

Before ColdFusion saves your changes, it saves a copy of the current `jvm.config` file as `jvm.bak`. If you r changes prevent ColdFusion from restarting, use `jvm.bak` to restore your system. For more information, see the online Help.

Archives and Deployment page

The Archives and Deployment 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 quickly and easily. The complete list of archivable information includes the following:

- Name and file location
- Server settings
- ColdFusion mappings
- Data sources
- Verity collections
- Scheduled tasks
- 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 MX server or to a ColdFusion MX 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 in the Administrator lets you configure various archive system settings that apply to all archive and deploy operations. For more information, see the online Help.

Settings Summary page

The Settings Summary page shows all ColdFusion configuration settings. Click a group name to open that group's Administrator section, where you can edit settings.

Data & Services section

The Data & Services section of the Administrator is the interface between you, ColdFusion MX, data sources, and Verity 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 MX. For more information, see Chapter 3, “Data Source Management” on page 29 . |
| Create and maintain Verity collections | The Verity Collections page lets you create and delete Verity collections and perform maintenance operations on collections that you create. For more information, see “Verity Collections page” on page 17 . |
| Register a Verity K2 Server with ColdFusion MX | The Verity K2 Server page lets you register a K2 Server to use with ColdFusion MX. For more information, see Working with Verity Tools . |
| Define mappings for web services | Web services let you produce and consume remote application functionality over the internet. For more information, see “Web Services page” on page 18 . |

Data Sources page

The Data Sources page lets you create, edit, and delete data sources. Before you can use a database in a ColdFusion application, you must register the data source in the ColdFusion Administrator. For more information, see [Chapter 3, “Data Source Management” on page 29](#).

Verity Collections page

The Verity Development Kit (VDK) provides indexing and searching technology to create, populate, and manage *collections* of indexed data that are optimized for fast and efficient site searches. It is available on the Verity Collections page.

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 the chapters about the `cfindex`, `cfsearch`, and `cfcollection` tags in *Developing ColdFusion MX Applications with CFML*.

ColdFusion lets you manage your collections from the Administrator. You can index, repair, optimize, purge, or delete Verity collections that are connected to ColdFusion.

You use the buttons along the bottom of the Connected Verity Collections table to perform the following actions:

| Action | Description |
|----------|---|
| Index | Analyzes the files in a collection and assembles metadata and pointers to the files. |
| Repair | Re-indexes a collection to fix broken links and update indexes. |
| 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. |

Note: Before performing management operations, ensure that the K2 Server is not using the collections. For more information, see *Working with Verity Tools*.

Verity K2 Server page

For faster searching, configure a K2 Server in the ColdFusion Administrator. The high-performance K2 Server caches collection information so that your searches retrieve documents more quickly. The Verity K2 Server delivers rapid search results in a highly efficient and scalable architecture.

For more information on configuring and using K2 Server with ColdFusion, see *Working with Verity Tools*.

Web Services page

You can use web services to produce and consume remote application functionality over the Internet. The ColdFusion Administrator lets you register web services so that you do not have to specify the entire Web Services Description Language (WSDL) URL when you reference the web service. The first time you reference a web service, ColdFusion automatically registers it in the Administrator.

When you register a web service, you can shorten your code and change a web service's URL without editing your code. For more information, see *Developing ColdFusion MX Applications with CFML*.

Debugging & Logging section

You use the Debugging Settings and Debugging IPs pages of the Administrator to configure ColdFusion MX to provide debugging information for every application page requested by a browser. You specify debugging preferences using the pages as follows:

- On the Debugging Settings page, select debugging output options. If debugging is enabled, the output appears in block format after normal page output.
- On the Debugging IPs page, restrict access to debugging output. If a debugging option is enabled, debugging output is visible to all users by default.

This section also includes pages for managing your Log Files, Scheduled Tasks, System Probes, and the Code Compatibility Analyzer.

Debugging Settings page

The Debugging Settings page provides the following debugging options:

| Setting | Description |
|---|---|
| Enable Debugging | Enables the ColdFusion debugging service. |
| Select Debugging Output Format | Select a format of: <ul style="list-style-type: none">• classic.cfm - The format available in ColdFusion 5 and earlier. It provides a basic view and few browser restrictions.• dockable.cfm - A dockable tree-based debugging panel. For details about the panel and browser restrictions, see the online Help. |
| Report stack trace to a depth of [n] rows | Reports execution times. The stack trace shows a hierarchical tree of executed templates, includes, modules, and custom tags that were executing at the time of the exception. The default is 5. A blank value or 0 implies no limit. |
| 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 through the use of the <code>cftrace</code> tag. |
| Variables | Displays information about parameters, URL parameters, cookies, session, and CGI variables in the debugging output. |
| Enable Robust Exception Information | Lets visitors view detailed information in the exceptions page, including: the template's physical path and URI, the line number and snippet, the SQL statement used (if any), the Data Source Name (if any), and the Java stack trace. |

| Setting | Description |
|--------------------------------|--|
| Enable Performance Monitoring* | Enables the standard NT Performance Monitor application to display information about a running ColdFusion Application Server. |
| Enable CFSTAT* | Shows performance information on platforms that do not support the NT Performance Monitor. For more information, see “Using the cfstat utility” on page 20 . |

* Restart ColdFusion MX after changing this setting.

Using the cfstat utility

The cfstat command-line utility provides real-time performance metrics for ColdFusion. Using a socket connection to obtain metric data, the cfstat utility displays the information that ColdFusion writes to System Monitor without actually using the System Monitor application. The following table lists the metrics that cfstat returns:

| Metric abbreviation | Metric name | Description |
|---------------------|------------------------------|---|
| Pg/Sec | Page hits per second | The number of ColdFusion pages processed per second. You can reduce this by moving static content to HTML pages. |
| DB/Sec | Database accesses per second | The number of database accesses per second made by ColdFusion. Any difference in complexity and resource load between calls is ignored. |
| CP/Sec | Cache pops per second | The number of ColdFusion template cache pops per second. A cache pop occurs when ColdFusion ejects a cached template from the template cache to make room for a new template. |
| 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 spend waiting for ColdFusion to process them. Lower values, which you can achieve with efficient CFML and enhanced caching, are better. |

| Metric abbreviation | Metric name | Description |
|----------------------------|-----------------------------------|---|
| AvgReq Time | Average request time | A running average of the time, in milliseconds, that ColdFusion spends to process a request (including queued time). Lower values, which you can achieve with efficient CFML, are better. |
| AvgDB Time | Average database transaction time | A running average of the time ColdFusion spends on database-related processing of ColdFusion requests. |
| Bytes In/Sec | Bytes incoming per second | The number of bytes ColdFusion read in the last second (not an average). |
| Bytes Out/Sec | Bytes outgoing per second | The number of bytes ColdFusion wrote in the last second (not an average). |

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

Your `cfusionmx\bin` directory contains the `cfstat` utility. From that directory, type `cfstat` and use the following available switches:

| Switch | Description/Comment |
|---------------|--|
| -n | Suppress column headers (useful for saving output to a file). |
| -s | Display output in a single line (delay display of the first line so <code>cfstat</code> can display meaningful values in the per-second counters). |
| # | Where # is an integer, delay display output by # seconds. If you do not specify an integer, <code>cfstat</code> returns one line. |
| -h | Web server hostname (localhost is the default). |
| -p | Web server listening port number (80 is the default). |

The following figure shows cfstat output in a Windows 2000 environment:

```

Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:\>cd cfusion\bin
C:\CFusion\BIN>cfstat 3

Pg/Sec  DB/Sec  CP/Sec  Reqs  Reqs  Reqs  AvgQ  AvgReq  AvgDB  Bytes  Bytes
Now Hi   Now Hi   Now Hi   Q'ed  Run'g  TO'ed  Time  Time   Time  In/Sec Out/Sec
0 0     0 0     0 0     0 0     0 0     5 570  0     0 0
0 0     0 0     0 0     0 0     0 0     5 570  0     0 0
0 0     0 0     0 0     0 0     0 0     5 570  0     0 0
0 0     0 0     0 0     0 0     0 0     5 570  0     0 0
0 0     0 0     0 0     0 0     0 0     5 570  0     0 0
^C
C:\CFusion\BIN>

```

Debugging IP Addresses page

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

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

Logging Settings page

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

| Setting | Description |
|---|--|
| Log directory* | Directory to which error log files are written. |
| Maximum file size (kb) | Set the maximum file size for log files. Once a file hits this size, it will be automatically archived. |
| Maximum number of archives | Set the maximum number of log archives to create. After reaching this limit, files will be deleted in order of oldest to newest. |
| Use operating system logging facilities | Log messages using your operating system logging facility (EventLog in Windows; syslog on Solaris, Linux, and HP-UX). ColdFusion log messages are also written to the standard ColdFusion MX log files. |
| Log slow pages taking longer than [n] seconds | Log 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 server.log. |

| Setting | Description |
|------------------------------------|---|
| Log all CORBA calls | Log all CORBA calls. |
| Enable logging for scheduled tasks | Log ColdFusion Executive task scheduling. |

* Restart ColdFusion MX after changing this setting.

Log Files page

The Log Files page of the Administrator lets you perform operations on log files, such as searching, viewing, downloading, archiving, and deleting.

Click on 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.

For more information, see the online Help.

The following table describes the ColdFusion MX log files:

| Log | Description |
|-----------------|--|
| rdservice.log | Records errors occurring in the ColdFusion Remote Development Services (RDS). This service provides remote HTTP-based access to files and databases. |
| application.log | Records every ColdFusion MX error reported to a user. Application page errors, including ColdFusion MX syntax, ODBC, and SQL errors are written to the log file. |
| webserver.log | Records errors that occur in the web server and the ColdFusion MX stub. |
| exceptions.log | Records stacktraces for exceptions that occur in the server. |
| 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. |
| server.log | Records errors for ColdFusion MX. |
| 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 sent by ColdFusion MX. |

Scheduled Tasks page

You use the Scheduled Tasks page to schedule the execution of local and remote web pages and to generate static HTML pages. The scheduling facility is useful for applications that do not require user interactions or customized output. ColdFusion developers use this facility to schedule daily sales reports, corporate directories, statistical reports, and so on.

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 MX renders the static page with information generated by the scheduled event. 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. You can run a scheduled task daily, at a specified interval, or between specified dates.

The Schedule Task page lets you create, edit, and delete scheduled tasks. For more information, see the online Help.

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 in 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 logs/probes.log. The System Probes page also displays the status of each probe.

You 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 will not run if the ColdFusion MX server on which they are hosted crashes, or if the host web server crashes or otherwise does not respond.

Code Compatibility Analyzer page

The Code Compatibility Analyzer evaluates your ColdFusion pages for potential incompatibilities between ColdFusion MX and ColdFusion Server 5. For more information, see *Migrating ColdFusion 5 Applications*.

Extensions section

You use the Extensions section of the Administrator to configure ColdFusion MX to work with other technologies, such as Java and CORBA. This section contains the Java Applets, CFX Tags, Custom Tag Paths, and CORBA Connectors pages.

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, you must register them in the Java Applets page.

When your applet is registered with ColdFusion MX, using the `cfapplet` tag in your CFML code is very simple, because all parameters are predefined. Simply enter the applet source and the form variable name you want to use.

Note: Parameters set in the `cfapplet` tag override parameters defined in the Java Applets page.

For more information, see the online Help.

CFX Tags page

Before you can use a CFX tag in ColdFusion applications, you must register it. You 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) in Windows; as shared objects (so/sl) on Solaris, Linux, and HP-UX
- Using Java interfaces defined within the `cfx.jar` file

For more information, see the online Help.

Custom Tag Paths page

You use the Custom Tag Paths page of the Administrator to add, edit, and delete custom tag directory paths. The default custom tag path is under the installation directory. To use custom tags in another path, register the path on this Administrator page.

For more information, see the online Help.

CORBA Connectors page

You use the CORBA Connectors page of the Administrator to register, edit, and delete CORBA connectors. You must register CORBA connectors before using them in your ColdFusion applications. You must also restart the server when you are done with the CORBA Connector configuration.

ColdFusion MX loads ORB libraries dynamically 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 `cfusionmx/runtime/lib`.

The following table contains information about the libraries and connectors:

| Operating System | Vendor | ORB | ColdFusion connector | ORB library |
|------------------|---------|----------------|---|-------------|
| Windows NT | Borland | VisiBroker 4.5 | coldfusion.runtime.corba.VisibrokerConnector (embedded) | vbjorb.jar |
| Solaris | Borland | VisiBroker 4.5 | coldfusion.runtime.corba.VisibrokerConnector (embedded) | vbjorb.jar |
| HP-UX | Borland | VisiBroker 4.5 | coldfusion.runtime.corba.VisibrokerConnector (embedded) | vbjorb.jar |

Note: Macromedia will provide implementations of the connectors for some of the popular ORBs. For those that are not supported, Macromedia will make the source available under NDA to a select group of third-party candidates and/or ORB vendors.

The following lines are an example of a CORBA connector configuration for VisiBroker:

```
ORB Name          visibroker
ORB Class Name    coldfusion.runtime.corba.VisibrokerConnector
ORB Property File c:\neo\cfusion\lib\vbjorb.properties
Classpath         [blank]
```

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

```
org.omg.CORBA.ORBClass=com.inprise.vbroker.orb.ORB
org.omg.CORBA.ORBSingletonClass=com.inprise.vbroker.orb.ORB
SVCnameroot=namingroot
```

Security section

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

For more information on security, see [Chapter 4, “Administering Security”](#) on page 49.

CF Admin Password page

You use the CF Admin Password page of the Administrator to enable and disable password-restricted access to the Administrator, and to change the Administrator password.

RDS Password page

You use the RDS Password page to enable and disable password-restricted access to server resources from Dreamweaver MX or ColdFusion Studio using Remote Development Services (RDS), and to change the password.

Sandbox Security page

The Sandbox Security page has two areas—Enable ColdFusion Security and Sandbox Settings.

Enable ColdFusion Security Settings area

Use this area to enable ColdFusion security. Once enabled, you can secure ColdFusion in the following ways:

- **Administrative access** Protects access to Administrator pages with a password.
- **Application development** Protects access to data sources and files with passwords and blocks access to some sensitive ColdFusion tags.
- **Application deployment** Prevents applications from executing several ColdFusion tags that could be used to update, delete, or manipulate server files.

Sandbox Settings area

Sandbox security uses the location of your ColdFusion pages to determine functionality. A **sandbox** is a designated area (files or directories) 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:

- Data sources
- Tags
- Functions
- Files and directories
- IP ports

Custom Extensions

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.

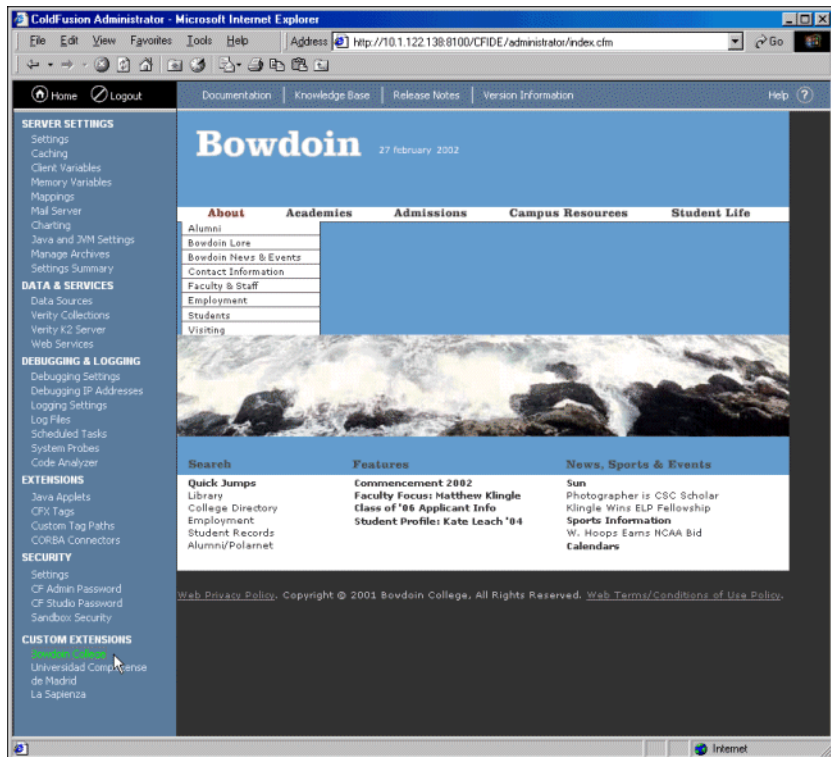
Note: You must create a link for the Custom Extensions section to appear in the Administrator.

To extend the Administrator, create a file that contains the HTML link code, followed by a
, with a separate line for each link. Do not include other HTML code, such as <head> or <body> tags. Save this file as `extensionscustom.cfm` in the Administrator root directory (`/CFIDE/Administrator/`).

For example, the following file adds to the Administrator 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="content">Universidad
  Complutense de Madrid</a><br>
<a href="http://www.uniroma1.it/" target="content">La Sapienza</a><br>
```

When you click a link, the contents of the page appear in the main pane of the Administrator, as in the following figure:



CHAPTER 3

Data Source Management

This chapter describes the configuration options for ColdFusion data sources. For basic information on data sources and connecting to databases, see *Developing ColdFusion MX Applications with CFML*.

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About JDBC

JDBC is a Java API (Application Programming Interface, an interface between application programs and the operating system) that you use to execute SQL statements. JDBC enables an application, such as ColdFusion, to interact with a variety of relational databases, without using interfaces that are database- and platform-specific.

Note: JDBC is not an acronym; however, it is often believed to stand for Java DataBase Connectivity.

The following table describes the four types of JDBC drivers:

| Type | Name | Description |
|------|-------------------------------------|--|
| 1 | JDBC-ODBC bridge | <p>Translates JDBC calls into ODBC calls, and sends them to the ODBC driver.</p> <p>Advantages Allows access to many different databases.</p> <p>Disadvantages The ODBC driver, and possibly the client database libraries, must reside on the ColdFusion server computer. Performance is also below par.</p> <p>Macromedia does not recommend this driver type unless your application requires specific features of these drivers.</p> |
| 2 | Native-API/ partly Java driver | <p>Converts JDBC calls into database-specific calls.</p> <p>Advantages Better performance than Type 1 Driver.</p> <p>Disadvantages The vendor's client database libraries must reside on the same computer as ColdFusion.</p> <p>Macromedia does not recommend this driver type unless your application requires specific features of these drivers.</p> |
| 3 | JDBC-Net pure Java driver | <p>Translates JDBC calls into the middle-tier server, which then translates the request to the database-specific native-connectivity interface.</p> <p>Advantages No need for vendor's database libraries to be present on client computer. Can be tailored for small size (faster loading).</p> <p>Disadvantages Database-specific code must be executed in the middle-tier.</p> |
| 4 | Native-protocol/ all-Java driver | <p>Converts JDBC calls into the network protocol used directly by the database.</p> <p>Advantages Fast performance. No special software needed on the computer on which you run ColdFusion.</p> <p>Disadvantages Many of these protocols are proprietary, requiring a different driver for each database.</p> |

Supplied drivers

The following table shows the database drivers supplied with ColdFusion and where you can find more information:

| Driver | Type | Reference |
|---------------------------------|------|--|
| DB2 UDB for OS/390 | 4 | “Connecting to DB2 UDB for OS/390” on page 36 |
| DB2 Universal Database 6.2, 7.2 | 4 | “Connecting to DB2 Universal Database 6.2, 7.2” on page 37 |
| Informix 9.x | 4 | “Connecting to Informix 9.x” on page 38 |
| Microsoft Access | 3 | “Connecting to Microsoft Access” on page 39 |
| Microsoft SQL Server 7.x, 2000 | 4 | “Connecting to Microsoft SQL Server 7.x, 2000” on page 41 |
| MySQL | 4 | “Connecting to MySQL” on page 43 |
| ODBC Socket | 3 | “Connecting to ODBC Socket” on page 44 |
| Oracle R3 (8.1.7), Oracle 9i | 4 | “Connecting to Oracle R3 (8.1.7), Oracle 9i” on page 45 |
| Other | | “Connecting to other data sources” on page 46 |
| Sybase 11.5, 11.9, 12.0, 12.5 | 4 | “Connecting to Sybase 11.5, 11.9, 12.0, and 12.5” on page 47 |

Adding data sources

In the ColdFusion Administrator, you configure your data sources to communicate with ColdFusion. Once you add a data source to the Administrator, you access it by name in any CFML tag that establishes database connections; for example, `cfquery`. During a query, the data source tells ColdFusion which database to connect to and what parameters to use for the connection.

The ColdFusion Administrator organizes all the information about a ColdFusion MX server's database connections in a single, easy-to-manage location. In addition to adding new data sources, you can use the ColdFusion Administrator to correct for changes to your database, such as relocation, renaming, or changes in security permissions.

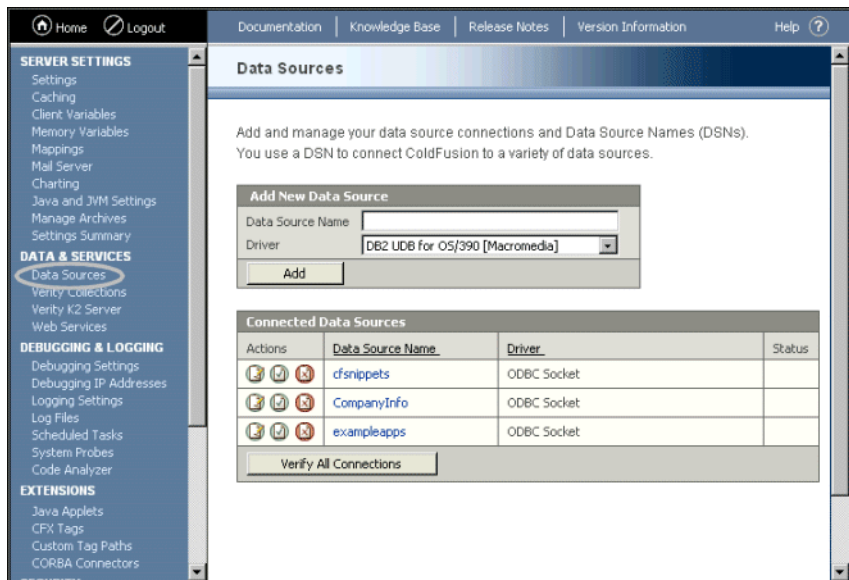
Adding data sources in the Administrator

You use the ColdFusion Administrator to quickly add a data source for use in your ColdFusion applications. When you add a data source, you assign it a data source name (DSN) and set all information required to establish a connection.

Note: ColdFusion includes several data sources that are configured by default, including `cfsnippets`, `CompanyInfo`, and `exampleapps`. This procedure should not be necessary to work with these data sources.

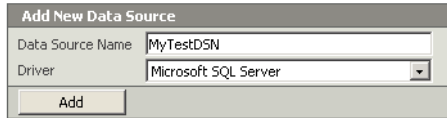
To add a data source:

- 1 In the ColdFusion Administrator, select **Data & Services > Data Sources**.



- 2 Under Add New Data Source, enter a Data Source Name; for example, `MyTestDSN`.

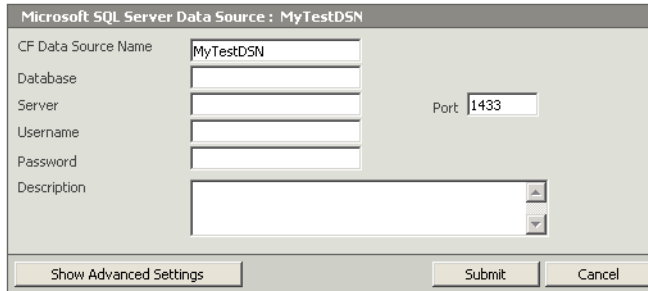
- 3 Select a Driver from the drop-down list box; for example, Microsoft SQL Server.



The screenshot shows a dialog box titled "Add New Data Source". It has two input fields: "Data Source Name" with the text "MyTestDSN" and "Driver" with a dropdown menu showing "Microsoft SQL Server". Below these fields is an "Add" button.

- 4 Click Add.

A form for additional DSN information appears. The available fields in this form depend on the Driver that you selected.



The screenshot shows a dialog box titled "Microsoft SQL Server Data Source : MyTestDSN". It contains several input fields: "CF Data Source Name" (MyTestDSN), "Database", "Server", "Port" (1433), "Username", "Password", and "Description". At the bottom, there are three buttons: "Show Advanced Settings", "Submit", and "Cancel".

- 5 In the Database field, enter the name of the database; for example, Northwind.
- 6 In the Server field, enter the network name or IP address of the server that hosts the database, and enter any required Port value; for example, the bullwinkle server on the default port.
- 7 If your database requires login information, enter your Username and Password.
Tip: The omission of required username and password information is a common reason why a data source fails to verify.
- 8 (Optional) Enter a Description.

- (Optional) Click Show Advanced Settings to specify any ColdFusion-specific settings; for example, to configure which SQL commands will interact with this data source.

Microsoft SQL Server Data Source : MyTestDSN

CF Data Source Name:

Database:

Server: Port:

Username:

Password:

Description:

Select Method:

Limit Connections: Enable the limit of simultaneous connections

Maintain Connections: -- Maintain connections across client requests.

Timeout (min): Interval (min):

Disable Connections: -- Suspend all client connections.

Login Timeout (sec):

CLOB: -- Enable long text retrieval (CLOB).

BLOB: -- Enable binary large object retrieval (BLOB).

Long Text Buffer (chr):

Blob Buffer(bytes):

Allowed SQL: SELECT Create GRANT
 INSERT DROP REVOKE
 UPDATE ALTER Stored Procedures
 DELETE

- Create Submit to create the data source.

| Connected Data Sources | | | |
|------------------------|------------------|----------------------|--------|
| Actions | Data Source Name | Driver | Status |
| | cfsnippets | ODBC Socket | |
| | CompanyInfo | ODBC Socket | |
| | exampleapps | ODBC Socket | |
| | MyTestDSN | Microsoft SQL Server | OK |

ColdFusion automatically verifies that it can connect to the data source.

11 (Optional) To verify this data source later, click the verify icon:



Note: To check the status of all data sources available to ColdFusion, click Verify All Connections.

Specifying connection string arguments

You can use the ColdFusion Administrator to specify connection string arguments for data sources that use the Microsoft Access, ODBC Socket, MySQL, or DB2 drivers. In the Advanced Settings page for one of these drivers, enter name=value pairs separated by a semicolon in the Connection String field. The following figure shows how to specify the application name and workstation ID for an ODBC Socket connection to SQL Server:

A screenshot of the 'Advanced Settings' dialog box in the ColdFusion Administrator. The dialog has a title bar with 'Hide Advanced Settings', 'Submit', and 'Cancel' buttons. It contains several fields and checkboxes:

- 'Username' field with the value 'sa'.
- 'Password' field, which is empty.
- 'Connection String' field with the value 'APP=RaiseGenerator;WSID=TWriter01'.
- 'Limit Connections' section with a checked checkbox and the text 'Enable the limit of 0 simultaneous connections'.
- 'Maintain Connections' section with a checked checkbox and the text '-- Maintain connections across client requests.'.
- 'Timeout (min)' field with the value '20'.
- 'Interval (min)' field with the value '7'.

The Administrator configures the following ODBC connection string:

```
DSN=odbcdsnname;APP=RaiseGenerator;WSID=TWriter01
```

In the preceding string, `odbcdsnname` is the name of the ODBC DSN. This is the string that the Microsoft Access or ODBC Socket driver uses to connect to the data source at runtime.

Note: The `connectstring` tag attribute is not supported in ColdFusion MX.

Adding data source notes and considerations

When adding data sources to ColdFusion MX, keep these guidelines in mind:

- Data source names should be all one word.
- Data source names can contain only letters, numbers, and the underscore.
- Data source names should not contain special characters.
- Although data source names are not case-sensitive, you should use a consistent capitalization scheme.

A data source must exist in the ColdFusion Administrator before you use it on an application page to retrieve data.

Connecting to DB2 UDB for OS/390

Use the settings in the following table to connect ColdFusion to DB2 UDB for OS/390 data sources:

| Setting | Description |
|-----------------------|--|
| CF Data Source Name | The data source name (DSN) used by ColdFusion to connect to the data source. |
| Server | The name of the server that hosts the database that you want to use. If the database is local, enclose the word local in parentheses. |
| Port | The number of the TCP/IP port that the server monitors for connections. |
| Username | The user name that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a user name—for example, in a <code>cfquery</code> tag. |
| Password | The password that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a password—for example, in a <code>cfquery</code> tag. |
| Description | (Optional) A description for this connection. |
| Connection String | A field that passes database-specific parameters, such as login credentials, to the data source. |
| Maintain Connections | ColdFusion establishes a connection to a data source for every operation that requires one. Enable this option to improve performance by caching the data source connection. |
| Timeout (min) | The maximum number of minutes after the data source connection is made that you want ColdFusion to cache a connection after it is used. |
| Interval (sec) | The time (in seconds) that the server waits between cycles to check for expired data source connections to close. |
| Disable Connections | If selected, suspends all client connections. |
| Login Timeout (sec) | The number of seconds before ColdFusion times out the data source connection login attempt. |
| CLOB | Select to return the entire contents of any CLOB/Text columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Long Text Buffer setting. |
| BLOB | Select to return the entire contents of any BLOB/Image columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Blob Buffer setting. |
| LongText Buffer (chr) | The default buffer size; used if Enable binary large object retrieval (BLOB) is not selected. Default is 65000 bytes. |
| BLOB Buffer (bytes) | The default buffer size; used if Enable binary large object retrieval (BLOB) is not selected. Default is 65000 bytes. |
| Allowed SQL | The SQL operations that can interact with the current data source. |

Connecting to DB2 Universal Database 6.2, 7.2

Use the settings in the following table to connect ColdFusion to DB2 Universal Database 6.2, 7.2 data sources:

| Setting | Description |
|-----------------------|--|
| CF Data Source Name | The data source name (DSN) used by ColdFusion to connect to the data source. |
| Database | The name of the database. |
| Server | The name of the server that hosts the database that you want to use. If the database is local, enclose the word local in parentheses. |
| Port | The number of the TCP/IP port that the server monitors for connections. |
| Username | The user name that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a user name—for example, in a <code>cfquery</code> tag. |
| Password | The password that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a password—for example, in a <code>cfquery</code> tag. |
| Description | (Optional) A description for this connection. |
| Connection String | A field that passes database-specific parameters, such as login credentials, to the data source. |
| Maintain Connections | ColdFusion establishes a connection to a data source for every operation that requires one. Enable this option to improve performance by caching the data source connection. |
| Timeout (min) | The maximum number of minutes after the data source connection is made that you want ColdFusion to cache a connection after it is used. |
| Interval (sec) | The time (in seconds) that the server waits between cycles to check for expired data source connections to close. |
| Disable Connections | If selected, suspends all client connections. |
| Login Timeout (sec) | The number of seconds before ColdFusion times out the data source connection login attempt. |
| CLOB | Select to return the entire contents of any CLOB/Text columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Long Text Buffer setting. |
| BLOB | Select to return the entire contents of any BLOB/Image columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Blob Buffer setting. |
| LongText Buffer (chr) | The default buffer size, used if Enable Long Text Retrieval(CLOB) is not selected. Default is 65000 bytes. |
| BLOB Buffer (bytes) | The default buffer size, used if Enable binary large object retrieval (BLOB) is not selected. Default is 65000 bytes. |
| Allowed SQL | The SQL operations that can interact with the current data source. |

Connecting to Informix 9.x

Use the settings in the following table to connect ColdFusion to Informix 9.x data sources:

| Setting | Description |
|-----------------------|--|
| CF Data Source Name | The data source name (DSN) used by ColdFusion to connect to the data source. |
| Database | The database to which this data source connects. |
| Informix Server | The name of the Informix database server to which you want to connect. |
| Server | The name of the server that hosts the database that you want to use. If the database is local, enclose the word local in parentheses. |
| Port | The number of the TCP/IP port that the server monitors for connections. |
| Username | The user name that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a user name—for example, in a <code>cfquery</code> tag. |
| Password | The password that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a password—for example, in a <code>cfquery</code> tag. |
| Description | (Optional) A description for this connection. |
| Maintain Connections | ColdFusion establishes a connection to a data source for every operation that requires one. Enable this option to improve performance by caching the data source connection. |
| Timeout (min) | The maximum number of minutes after the data source connection is made that you want ColdFusion to cache a connection after it is used. |
| Interval (sec) | The time (in seconds) that the server waits between cycles to check for expired data source connections to close. |
| Disable Connections | If selected, suspends all client connections. |
| Login Timeout (sec) | The number of seconds before ColdFusion times out the data source connection login attempt. |
| CLOB | Select to return the entire contents of any CLOB/Text columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Long Text Buffer setting. |
| BLOB | Select to return the entire contents of any BLOB/Image columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Blob Buffer setting. |
| LongText Buffer (chr) | The default buffer size, used if Enable Long Text Retrieval(CLOB) is not selected. Default is 65000 bytes. |
| BLOB Buffer (bytes) | The default buffer size; used if Enable binary large object retrieval (BLOB) is not selected. Default is 65000 bytes. |
| Allowed SQL | The SQL operations that can interact with the current data source. |

Connecting to Microsoft Access

Use the settings in the following table to connect ColdFusion to Microsoft Access data sources:

| Setting | Description |
|----------------------|---|
| CF Data Source Name | The data source name (DSN) used by ColdFusion to connect to the data source. |
| Database File | The password required to connect to the data source. |
| System Database File | If you want to secure access to the specified database file, click Browse Server to locate and enter a database that contains database security information. The system database is usually located in winnt\system32\system.mdw. |
| Use Default Username | If selected, ColdFusion does not pass a user name or password when requesting a connection. The Microsoft Access driver uses the default user name and password. |
| Description | (Optional) A description for this connection. |
| Default Username | The user name that the driver uses to connect to the data source if an application requests a connection without supplying a username. |
| Default Password | The password that the driver uses to connect to the data source if an application requests a connection without supplying a password. |
| Username | The user name that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a user name—for example, in a <code>cfquery</code> tag. |
| Password | The password that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a password—for example, in a <code>cfquery</code> tag. |
| Page Timeout | The time (in tenths of a second) before a request for a ColdFusion page times out. |
| Max Buffer Size | The total number of bytes that ColdFusion uses to cache application pages. Enter a value to optimize ColdFusion performance. |
| Connection String | A field that passes database-specific parameters, such as login credentials, to the data source. |
| Maintain Connections | ColdFusion establishes a connection to a data source for every operation that requires one. Enable this option to improve performance by caching the data source connection. |
| Timeout (min) | <p>The maximum number of minutes after the data source connection is made that you want ColdFusion to cache a connection after it is used.</p> <p>The Timeout setting does not return a connection to the cache after a specified period of time, regardless of how infrequently it is used. The default is "" or 0, which means that the connection timeout is never enforced.</p> |
| Interval (sec) | The time (in seconds) that the server waits between cycles to check for expired data source connections to close. |

| Setting | Description |
|-----------------------|--|
| Disable Connections | If selected, suspends all client connections. |
| Login Timeout (sec) | The number of seconds before ColdFusion times out the data source connection login attempt. |
| CLOB | Select to return the entire contents of any CLOB/Text columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Long Text Buffer setting. |
| BLOB | Select to return the entire contents of any BLOB/Image columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Blob Buffer setting. |
| LongText Buffer (chr) | The default buffer size, used if Enable Long Text Retrieval(CLOB) is not selected. Default is 65000 bytes. |
| BLOB Buffer (bytes) | The default buffer size, used if Enable binary large object retrieval (BLOB) is not selected. Default is 65000 bytes. |
| Allowed SQL | The SQL operations that can interact with the current data source. |

Connecting to Microsoft SQL Server 7.x, 2000

Use the settings in the following table to connect ColdFusion to Microsoft SQL Server 7.x, 2000 data sources:

| Setting | Description |
|----------------------|--|
| CF Data Source Name | The data source name (DSN) used by ColdFusion to connect to the data source. |
| Database | The database to which this data source connects. |
| Server | The name of the server that hosts the database that you want to use. If the database is local, enclose the word local in parentheses. |
| Port | The number of the TCP/IP port that the server monitors for connections. |
| Username | The user name that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a user name—for example, in a <code>cfquery</code> tag. |
| Password | The password that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a password—for example, in a <code>cfquery</code> tag. |
| Description | (Optional) A description for this connection. |
| Select Method | Determines whether server cursors are used for SQL queries. The Direct method provides more efficient retrieval of data when you retrieve record sets in a forward-only direction and you limit your SQL Server connection to a single open SQL statement at a time. This is typical for ColdFusion applications. The Cursor method lets you have multiple open SQL statements on a connection. This is not typical for ColdFusion applications, unless you use pooled statements. |
| Maintain Connections | ColdFusion establishes a connection to a data source for every operation that requires one. Enable this option to improve performance by caching the data source connection. |
| Timeout (min) | The maximum number of minutes after the data source connection is made that you want ColdFusion to cache a connection after it is used. |
| Interval (sec) | The time (in seconds) that the server waits between cycles to check for expired data source connections to close. |
| Disable Connections | If selected, suspends all client connections. |
| Login Timeout (sec) | The number of seconds before ColdFusion times out the data source connection login attempt. |
| CLOB | Select to return the entire contents of any CLOB/Text columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Long Text Buffer setting. |

| Setting | Description |
|-----------------------|--|
| BLOB | Select to return the entire contents of any BLOB/Image columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Blob Buffer setting. |
| LongText Buffer (chr) | The default buffer size, used if Enable Long Text Retrieval(CLOB) is not selected. Default is 65000 bytes. |
| BLOB Buffer (bytes) | The default buffer size, used if Enable binary large object retrieval (BLOB) is not selected. Default is 65000 bytes. |
| Allowed SQL | The SQL operations that can interact with the current data source. |

Connecting to MySQL

Use the settings in the following table to connect ColdFusion to MySQL data sources:

| Setting | Description |
|-----------------------|--|
| CF Data Source Name | The data source name (DSN) used by ColdFusion to connect to the data source. |
| Database | The database to which this data source connects. |
| Server | The name of the server that hosts the database that you want to use. If the database is local, enclose the word local in parentheses. |
| Port | The number of the TCP/IP port that the server monitors for connections. |
| Username | The user name that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a user name—for example, in a <code>cfquery</code> tag. |
| Password | The password that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a password—for example, in a <code>cfquery</code> tag. |
| Description | (Optional) A description for this connection. |
| Connection String | A field that passes database-specific parameters, such as login credentials, to the data source. |
| Maintain Connections | ColdFusion establishes a connection to a data source for every operation that requires one. Enable this option to improve performance by caching the data source connection. |
| Timeout (min) | The maximum number of minutes after the data source connection is made that you want ColdFusion to cache a connection after it is used. |
| Interval (sec) | The time (in seconds) that the server waits between cycles to check for expired data source connections to close. |
| Disable Connections | If selected, suspends all client connections. |
| Login Timeout (sec) | The number of seconds before ColdFusion times out the data source connection login attempt. |
| CLOB | Select to return the entire contents of any CLOB/Text columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Long Text Buffer setting. |
| BLOB | Select to return the entire contents of any BLOB/Image columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Blob Buffer setting. |
| LongText Buffer (chr) | The default buffer size, used if Enable Long Text Retrieval(CLOB) is not selected. Default is 65000 bytes. |
| BLOB Buffer (bytes) | The default buffer size, used if Enable binary large object retrieval (BLOB) is not selected. Default is 65000 bytes. |
| Allowed SQL | The SQL operations that can interact with the current data source. |

Connecting to ODBC Socket

Use the settings in the following table to connect ColdFusion to ODBC Socket data sources:

| Setting | Description |
|-----------------------|--|
| CF Data Source Name | The data source name (DSN) used by ColdFusion to connect to the data source. |
| ODBC DSN | Select the ODBC DSN to which you want ColdFusion to connect. |
| Description | (Optional) A description for this connection. |
| Username | The user name that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a user name—for example, in a <code>cfquery</code> tag. |
| Password | The password that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a password—for example, in a <code>cfquery</code> tag. |
| Connection String | A field that passes database-specific parameters, such as login credentials, to the data source. |
| Maintain Connections | ColdFusion establishes a connection to a data source for every operation that requires one. Enable this option to improve performance by caching the data source connection. |
| Timeout (min) | The maximum number of minutes after the data source connection is made that you want ColdFusion to cache a connection after it is used. |
| Interval (sec) | The time (in seconds) that the server waits between cycles to check for expired data source connections to close. |
| Disable Connections | If selected, suspends all client connections. |
| Login Timeout (sec) | The number of seconds before ColdFusion times out the data source connection login attempt. |
| CLOB | Select to return the entire contents of any CLOB/Text columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Long Text Buffer setting. |
| BLOB | Select to return the entire contents of any BLOB/Image columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Blob Buffer setting. |
| LongText Buffer (chr) | The default buffer size, used if Enable Long Text Retrieval(CLOB) is not selected. Default is 65000 bytes. |
| BLOB Buffer (bytes) | The default buffer size, used if Enable binary large object retrieval (BLOB) is not selected. Default is 65000 bytes. |
| Allowed SQL | The SQL operations that can interact with the current data source. |

Connecting to Oracle R3 (8.1.7), Oracle 9i

Use the settings in the following table to connect ColdFusion to Oracle R3 (8.1.7), Oracle 9i data sources:

| Setting | Description |
|-----------------------|--|
| CF Data Source Name | The data source name (DSN) used by ColdFusion to connect to the data source. |
| SID Name | The Oracle System Identifier that refers to the instance of the Oracle database software running on the server. 'ORCL' is the default. |
| Server | The name of the server that hosts the database that you want to use. If the database is local, enclose the word local in parentheses. |
| Port | The number of the TCP/IP port that the server monitors for connections. |
| Username | The user name that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a user name—for example, in a <code>cfquery</code> tag. |
| Password | The password that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a password—for example, in a <code>cfquery</code> tag. |
| Description | (Optional) A description for this connection. |
| Maintain Connections | ColdFusion establishes a connection to a data source for every operation that requires one. Enable this option to improve performance by caching the data source connection. |
| Timeout (min) | The maximum number of minutes after the data source connection is made that you want ColdFusion to cache a connection after it is used. |
| Interval (sec) | The time (in seconds) that the server waits between cycles to check for expired data source connections to close. |
| Disable Connections | If selected, suspends all client connections. |
| Login Timeout (sec) | The number of seconds before ColdFusion times out the data source connection login attempt. |
| CLOB | Select to return the entire contents of any CLOB/Text columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Long Text Buffer setting. |
| BLOB | Select to return the entire contents of any BLOB/Image columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Blob Buffer setting. |
| LongText Buffer (chr) | The default buffer size, used if Enable Long Text Retrieval(CLOB) is not selected. Default is 65000 bytes. |
| BLOB Buffer (bytes) | The default buffer size, used if Enable binary large object retrieval (BLOB) is not selected. Default is 65000 bytes. |
| Allowed SQL | The SQL operations that can interact with the current data source. |

Connecting to other data sources

Use the settings in the following table to connect ColdFusion to data sources that do not appear in the drop-down list of drivers:

| Setting | Description |
|-----------------------|--|
| CF Data Source Name | The data source name (DSN) used by ColdFusion to connect to the data source. |
| JDBC URL | The JDBC Connection URL for this data source. |
| Driver Class | The class (1, 2, 3, or 4) of the driver. |
| Driver Name | (Optional) The name of the driver. |
| Username | The user name that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a user name—for example, in a <code>cfquery</code> tag. |
| Password | The password that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a password—for example, in a <code>cfquery</code> tag. |
| Description | (Optional) A description for this connection. |
| Maintain Connections | ColdFusion establishes a connection to a data source for every operation that requires one. Enable this option to improve performance by caching the data source connection. |
| Timeout (min) | The maximum number of minutes after the data source connection is made that you want ColdFusion to cache a connection after it is used. |
| Interval (sec) | The time (in seconds) that the server waits between cycles to check for expired data source connections to close. |
| Disable Connections | If selected, suspends all client connections. |
| Login Timeout (sec) | The number of seconds before ColdFusion times out the data source connection login attempt. |
| CLOB | Select to return the entire contents of any CLOB/Text columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Long Text Buffer setting. |
| BLOB | Select to return the entire contents of any BLOB/Image columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Blob Buffer setting. |
| LongText Buffer (chr) | The default buffer size, used if Enable Long Text Retrieval(CLOB) is not selected. Default is 65000 bytes. |
| BLOB Buffer (bytes) | The default buffer size, used if Enable binary large object retrieval (BLOB) is not selected. Default is 65000 bytes. |
| Allowed SQL | The SQL operations that can interact with the current data source. |

Connecting to Sybase 11.5, 11.9, 12.0, and 12.5

Use the settings in the following table to connect ColdFusion to Sybase 11.5, 11.9, 12.0, and 12.5 data sources:

| Setting | Description |
|----------------------|--|
| CF Data Source Name | The data source name (DSN) used by ColdFusion to connect to the data source. |
| Database | The database to which this data source connects. |
| Server | The name of the server that hosts the database that you want to use. If the database is local, enclose the word local in parentheses. |
| Port | The number of the TCP/IP port that the server monitors for connections. |
| Username | The user name that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a user name—for example, in a <code>cfquery</code> tag. |
| Password | The password that ColdFusion passes to the JDBC driver to connect to the data source if a ColdFusion application does not supply a password—for example, in a <code>cfquery</code> tag. |
| Description | (Optional) A description for this connection. |
| Select Method | Determines whether server cursors are used for SQL queries. The Direct method provides more efficient retrieval of data when you retrieve record sets in a forward-only direction and you limit your Sybase connection to a single open SQL statement at a time. This is typical for ColdFusion applications. The Cursor method lets you have multiple open SQL statements on a connection. This is not typical for ColdFusion applications, unless you use pooled statements. |
| Maintain Connections | ColdFusion establishes a connection to a data source for every operation that requires one. Enable this option to improve performance by caching the data source connection. |
| Timeout (min) | The maximum number of minutes after the data source connection is made that you want ColdFusion to cache a connection after it is used. |
| Interval (sec) | The time (in seconds) that the server waits between cycles to check for expired data source connections to close. |
| Disable Connections | If selected, suspends all client connections. |
| Login Timeout (sec) | The number of seconds before ColdFusion times out the data source connection login attempt. |
| CLOB | Select to return the entire contents of any CLOB/Text columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Long Text Buffer setting. |

| Setting | Description |
|-----------------------|--|
| BLOB | Select to return the entire contents of any BLOB/Image columns in the database for this data source. If unchecked, ColdFusion retrieves the amount specified in the Blob Buffer setting. |
| LongText Buffer (chr) | The default buffer size, used if Enable Long Text Retrieval(CLOB) is not selected. Default is 65000 bytes. |
| BLOB Buffer (bytes) | The default buffer size, used if Enable binary large object retrieval (BLOB) is not selected. Default is 65000 bytes. |
| Allowed SQL | The SQL operations that can interact with the current data source. |

CHAPTER 4

Administering Security

ColdFusion security lets you secure a number of ColdFusion MX resources with password access and perform sandbox security. This chapter describes configuration options for ColdFusion security.

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About ColdFusion security

Security is especially important in web-based applications, such as those you develop in ColdFusion. You implement security throughout your ColdFusion environment, in ColdFusion Markup Language (CFML) and in the ColdFusion Administrator. ColdFusion has two main security categories: user (or programmatic) and sandbox (file and directory-based). For more information about user security, see *Developing ColdFusion MX Applications with CFML*.

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

- Enable or disable ColdFusion security, on the **Security > Sandbox Security** page.
- Configure password protection to access the ColdFusion Administrator.
- Configure password protection for Remote Data Source (RDS) access.
- Restrict access to ColdFusion tags, functions, and enterprise resources (for example, data sources).

Security and ColdFusion edition differences

If you have the Enterprise Edition of ColdFusion MX, you can configure several security sandboxes. If you have the Standard Edition of ColdFusion MX, you can configure the root security sandbox.

In the Enterprise Edition of ColdFusion MX, when you click the **Security > Sandbox Security** page link, it opens the following page:

Sandbox Security Permissions

Click the button on the right to update Security Settings...

Enable ColdFusion Security
Security Settings let users enable and disable access to ColdFusion tags, functions, and enterprise resources like data sources.
Note: You must restart the ColdFusion application server to enable this setting.

Click the button on the right to update Security Settings...

Sandbox Settings
If you define security permissions for sub-directories, they will not inherit their parent directory's permissions; i.e. if you define a further set of permissions for the sub-directory `/utils/manager`, templates in this directory would not honor the permissions of the parent directory `/utils`. Conversely, a sub-directory `/utils/controls`, which does not define any security permissions, will inherit the permissions of its parent `/utils`.

To assist you, new sandboxes will begin as copies of the default sandbox. This is only to help enforce your security policy during creation. Sandboxes do not inherit their permissions from a parent after creation.

Add Security Sandbox

New Sandbox, or pick one to copy from

Defined Directory Permissions

| Actions | Directory |
|---------|-------------------------|
| | (Root Security Context) |
| | /CFIDE/administrator/* |

Default security behavior

The ColdFusion Administrator installs with secure access enabled. The password that you enter during installation is saved as the default. When you open the Administrator for the first time, you are prompted to enter the password.

If you configured password protection for RDS access when you installed ColdFusion, you are prompted for the password when you attempt to access ColdFusion MX from Dreamweaver MX, HomeSite+, or ColdFusion Studio.

Sandbox security is not enabled by default. You must enable it on the **Security > Sandbox Security** page before you can configure it.

ColdFusion Administrator password protection

Password protection for accessing the ColdFusion Administrator helps guard against unauthorized modifications of ColdFusion MX, and Macromedia highly recommends using passwords. You can disable password protection by clearing the check box on the **Security > CF Admin Password** page. You can also change the password on that page by entering a new password twice.

RDS password protection

You can enable file and data source security for RDS access from the **Security > RDS Password** page. You can also change the password on that page by entering a new password twice.

If you enable this security, you rely on web server security settings to set permissions to ColdFusion application and document directories. In addition, you rely on your database settings to control access to data sources.

Using sandbox security

Sandbox security 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. 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. For example, consider the following directories:

```
D:\Leaders  
D:\Leaders\Roman  
D:\Leaders\Roman\Pompey
```

By default, the sandbox settings of the Leaders directory are inherited by the Roman and Pompey directories. If you define sandbox settings for the Roman directory, these settings are inherited by the Pompey directory; the Leaders directory maintains its original settings.

This hierarchical arrangement of security permits the rapid 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.

These are the resources that you can restrict:

- **Data Sources** Data sources connect ColdFusion applications to databases.
- **CF Tags** These ColdFusion tags interact with other components of the server environment, such as the mail server.
- **CF Functions** These ColdFusion functions have read or write access to files.
- **Files/Dirs** Using a parent and child directory model, you restrict permissions based on the path.
- **IP/Ports** You restrict pages in a sandbox from accessing entire IPs, a specific port, or port range with the tags that call third-party resources.

About directories and permissions

ColdFusion file permissions are based on the Java security model. A dash (-) indicates all files in the present directory and any child directories, including files in any child directories; an asterisk (*) indicates all files in the present directory and a list of child directories, but not files.

Consider the following file structure:

```
C:\foo\bar.txt  
C:\pat\riots\c.txt  
C:\pat\riots2\d.txt  
C:\pat\a.txt
```

The following table shows the relationship between file path and the affected files or directories:

| File path | Affected files or directories |
|----------------|---|
| C:\foo\bar.txt | C:\foo\bar.txt |
| C:\pat\- | C:\pat\riots\c.txt C:\pat\riots2\d.txt C:\pat\a.txt |
| C:\pat* | C:\pat\riots\ C:\pat\riots2\ C:\pat\a.txt |
| C:\pat\ | C:\pat\ |

The following table shows the relationship between permissions of a file and of a directory:

| Permission | Affect on files | Affect 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 |

You combine the file path and permissions settings to secure permissions on files and directories; for example, setting the read permission on C:\pat* lets you do the following tasks:

- List all files in the C:\pat\riots\ directory.
- List all files in the C:\pat\riots2\.
- Read the C:\pat\a.txt file.

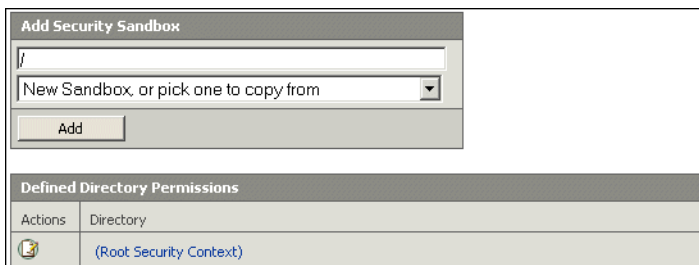
Adding a sandbox

The Root Security Content is the default sandbox for your ColdFusion MX server. If your security requirements are minimal and you do not need additional sandboxes, configure the default sandbox so that the child directories will inherit its security settings.

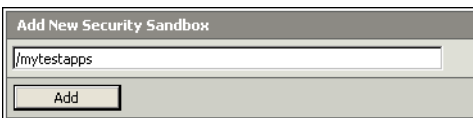
To add a sandbox:

- 1 Open the **Security > Sandbox Security** page in the ColdFusion Administrator.

The Root Security Context appears in the list of Defined Directory Permissions, as the following figure shows:






- 2 In the Add Security Sandbox box, enter the name of the new sandbox. This name can be a relative URL or a webserver mapping. In this example, mytestapps corresponds to C:\Neo\wwwroot\mytestapps.



- 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, as in the following figure:

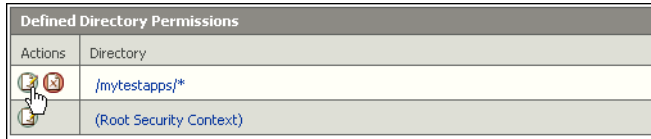
| Defined Directory Permissions | |
|---|-------------------------|
| Actions | Directory |
|   | /mytestapps/* |
|  | (Root Security Context) |

Configuring a sandbox

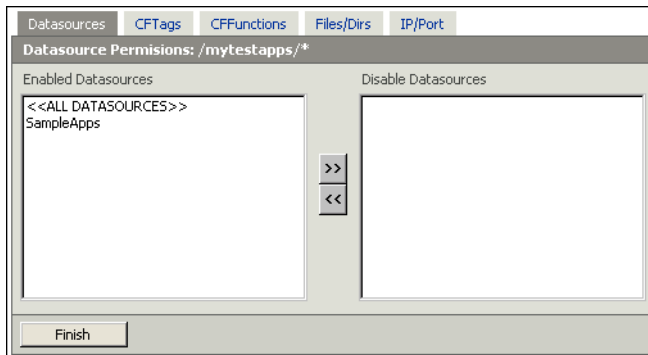
You use the ColdFusion Administrator to configure a sandbox.

To configure a sandbox:

- 1 Open the **Security > Sandbox Security** page in the ColdFusion Administrator.
- 2 In the list of Defined Directory Permissions, click the name or the Edit icon for the directory that you want to edit.



As in the following figure, several tabs appear, which subsequent steps discuss:

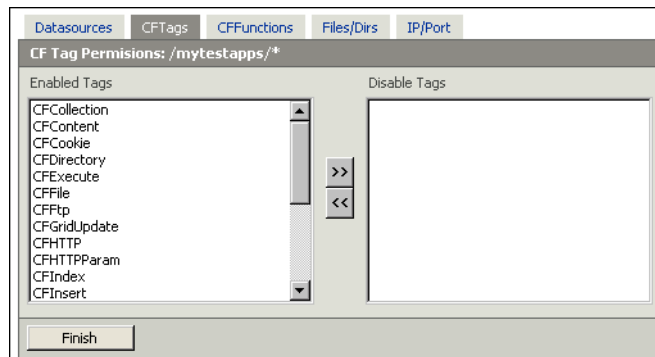


- 3 To disable a data source, in the left column of the Data Sources tab, highlight the data source, and click the right arrow.

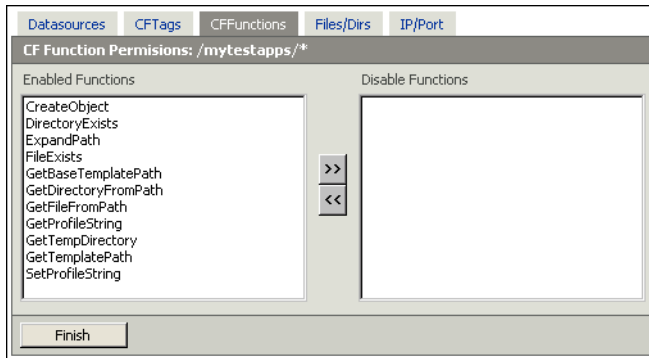
By default, ColdFusion pages in this sandbox can access all data sources.

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

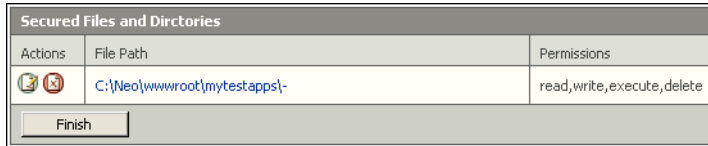
- 4 Click the CFTags tab.



- 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.



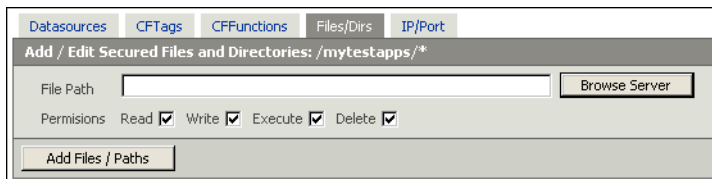
- 7 To disable functions, in the left column of the CFFunctions tab, highlight the functions, and click the right arrow.
By default, ColdFusion pages in this sandbox can access all listed functions.
- 8 Click the Files/Dirs tab.
- 9 In the Secured Files and Directories list, verify that the file path is correct.



The character after the backslash is important. A dash (-) indicates all files in the present directory and any child directories, including files in any child directories; an asterisk (*) indicates all files in the present directory and a list of child directories, but not files.

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, you must use file-based permissions.

- 10 To enable files or directories, in the File Path box, enter or browse to the files or directories to enable; for example, C:\pix.

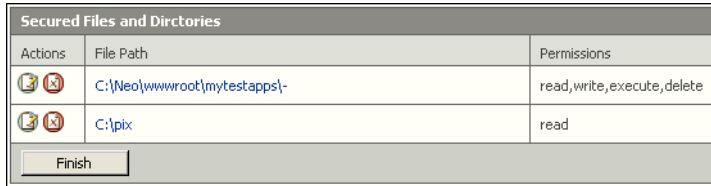


11 Select the permissions.

For example, select the Read check box for ColdFusion pages within the mytestapps sandbox to read files in the C:\pix directory.

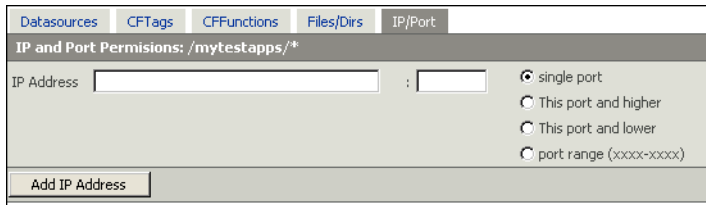
Note: This behavior differs from other tabs, such as CFTags, where you select items to disable.

12 Click Add Files/Paths.



The file path and its permissions appear in the Secured Files and Directories list.

13 Click the IP/Port tab.



These settings let you prevent ColdFusion pages in this sandbox from accessing IPs and ports with the tags that call third-party resources, such as `cfmail`, `cfpop`, `cfldap`, `cfhttp`, and so on.

Note: These settings have no effect on an end user's ability to browse sites; they affect access to a ColdFusion page with certain tags. If a ColdFusion page does not use, for example, `cfhttp`, any sandbox restriction on `cfhttp` has no effect.

14 To prevent these ColdFusion tags from accessing an IP address at a port or range of ports, enter the IP Address and port or port range that the tags can access.

Note: By default, these ColdFusion tags in this sandbox can access all IPs at all ports. For example, to deny this sandbox access to 207.88.220.3 on ports 80 and higher, perform the following steps:

- a In the IP Address field, enter 207.88.220.3.
- b In the Port field, enter 79, and click This Port and Lower.

You disabled access by these ColdFusion tags for this and all other IPs and ports.

Tip: 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.

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