Adobe ColdFusion Documentation

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Using ColdFusion Builder

Adobe® ColdFusion® Builder™ is built on top of Eclipse™, an open-source IDE (Integrated Development Environment). An IDE contains most of the tools that developers need within a single application. ColdFusion Builder provides tools for editing and validating code, managing files and projects, and debugging. The plug-in architecture of ColdFusion Builder lets you extend the functionality for your own needs.

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Adobe® ColdFusion® Builder™ is built on top of Eclipse™, an open-source IDE (Integrated Development Environment). An IDE contains most of the tools that developers need within a single application. ColdFusion Builder provides tools for editing and validating code, managing files and projects, and debugging. The plug-in architecture of ColdFusion Builder lets you extend the functionality for your own needs.

ColdFusion Builder runs on Microsoft® Windows® and Apple® Macintosh platforms. The installation configuration options let you install ColdFusion Builder as a standalone installation or as a set of plug-ins within an existing Eclipse workbench installation. For more information, see *Installing Adobe ColdFusion Builder*.

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ColdFusion Builder configurations

The ColdFusion Builder installer provides the following two configuration options:

- **Standalone ColdFusion Builder IDE Installation** Installs ColdFusion Builder as a standalone IDE (Integrated Development Environment) built on Eclipse™ 3.6.2
- **ColdFusion Builder plug-ins within Eclipse IDE**Installs ColdFusion Builder as a plug-in within an existing Eclipse or Adobe® Flash® Builder™ installation. This configuration is for users who already use the Eclipse workbench and want to add ColdFusion Builder plug-ins to their toolkit of Eclipse plug-ins.

> **Note**
>
> You must have Eclipse 3.6.2 or higher installed on your computer to install the plug-in configuration of ColdFusion Builder.

If you are not sure which configuration to use, follow these guidelines:

- If you already use and have Eclipse 3.6.2 or higher installed, select the plug-in configuration.
- If you do not have Eclipse 3.6.2 or higher installed, select the standalone configuration. This configuration also allows you to install other Eclipse plug-ins, so you can expand the scope of your development work in

the future.

The two configurations provide the same functionality. However, some menu names and the ways to access the menu commands sometimes differ slightly in the plug-in configuration.

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Activating ColdFusion Builder

When you start ColdFusion Builder, you are prompted to enter the product serial number. When you enter a valid product serial number, activation happens in the background the first time the software detects an Internet connection. For more information, visit the Adobe Product Activation Center at www.adobe.com/go/activation.

If you do not enter the product serial number when you start ColdFusion Builder, you can use the trial version of the full-featured ColdFusion Builder 2.0 for 60 days. After the trial expires, you need to purchase a license to continue using all the features. If not, ColdFusion Builder switches to a feature-limited Express Edition.

ColdFusion Builder Express Edition

The Express Edition lets you use ColdFusion Builder with the basic features such as editor, code assist, and syntax highlighting.But the following key features are not available in the Express Edition:

- Code assist for extensions
- Code insight
- Extension callback
- Connection to remote server
- Quick fix
- Debugging remote projects
- Refactoring
- ColdFusion search
- Code formatting
- FTP support
- Log viewer
- Local file browser
- Code hyperlinks
- Hover help
- Mobile development, inspection, debugging, and packaging

You can convert the Express Edition to a full-featured version by purchasing the license and specifying the product serial number.

Managing ColdFusion Builder licenses

If you are a single-license user you can use ColdFusion Builder on up to two computers. To use your ColdFusion Builder license on a different computer than your original two computers, deactivate the ColdFusion Builder license on one of the two computers. After which, you can use it on another computer. To deactivate the ColdFusion Builder license, select Help > Adobe ColdFusion Builder Deactivation.

Note

If you are uninstalling ColdFusion Builder, Adobe recommends that you first deactivate your license and then uninstall ColdFusion Builder.

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Updating ColdFusion Builder

Updates to ColdFusion Builder can include changes to security or new product functionality. Adobe recommends that you periodically check and install the updates, when available.

1. In Adobe ColdFusion Builder, select Help > Adobe ColdFusion Builder Updates. If any new updates are available, ColdFusion Builder downloads and installs the updates.
2. For the updates to take effect, restart ColdFusion Builder (standalone configuration) or restart Eclipse (plug-in configuration).

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Installing third-party Eclipse plug-ins

ColdFusion Builder provides integration with third-party Eclipse plug-ins that let you extend or customize your development environment. You can install the third-party Eclipse plug-ins on Windows and Mac OS X platforms.

> ⚠ **Note**
>
> To ensure that the plug-in installs correctly, add the Helios Update Site URL http://download.eclipse.org/releases/helios (or an equivalent Eclipse update site URL).

1. In Adobe ColdFusion Builder, select Help > Install New Software.
2. Click Add.
3. Enter the name and URL of the plug-in to install. For example, to install Subclipse version 1.0, enter the following URL: `http://subclipse.tigris.org/update_1.6.x`
4. Select the plug-ins to Install.
5. Click Next and follow the instructions in the Install wizard.
6. Click Finish.

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Getting started experience

ColdFusion Builder presents a dynamic getting started experience. Any time you start ColdFusion Builder, the Getting Started screen invites access to:

- Getting started tutorials
- Workflows
- Movie tutorials
- Notifications such as What is new in a release and details of ColdFusion and ColdFusion Builder releases and hot fixes
- Tips and tricks
- Useful resources
- Most used options such as Recently Open Files, Links to Open Project Wizard, Add server, Recommended extensions, and Install Extensions

You can choose to hide the Getting Started screen, and then later display it again.

Display the Getting Started screen

1. Select Help > Getting Started with ColdFusion Builder

Hide the Getting Started screen

1. Do either of the following:
    - Select the Don't Show Again option on the Getting Started screen
    - Uncheck the option Show welcome page on startup in the Preferences dialog box (Window > Preferences > ColdFusion > Startup)

Additional resources

- **ColdFusion Builder Start Page** ColdFusion Builder engineering team member Sandeep Paliwal elaborates on the getting started experience.

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ColdFusion Builder Help System

While you work in ColdFusion Builder, you can display context-sensitive Help for specific user interface elements of the workbench (views and dialog boxes) and language-reference help for code elements.

Eclipse Help System

The Eclipse Help system displays CFML reference Help for code elements. The Eclipse Help system also displays Help for any third-party plug-ins that you install or that come packaged with ColdFusion Builder.

The help content for the dialogs and wizards will be shown in a built-in browser just like how the help content for the CFML tags are rendered.

To open and view the Eclipse Help system, select Help > Help Contents.

Display CFML Reference Help

The *CFML Reference* is integrated into ColdFusion Builder, letting you quickly review the reference Help for a CFML tag or function.

- To open the Help topic for a CFML tag or function, do the following:

1. In the CFML editor, select a CFML tag element or function by highlighting or placing the pointer on the built-in tag or function name.
2. Press F1 (Windows) or the equivalent keyboard shortcut for Mac OS. A link to the Help page for the selected tag is displayed in the docked Help window.

> **Note**
>
> In Mac OS, when you press Command+Shift+/ to view Help for a CFML tag or function, generic editor Help appears in the docked Help window. To see the tag or function-specific Help, click the selected tag or function name in the CFML Editor again.

3. Click the Help page link. The Help page for the selected tag or function is displayed.

Set Help Preferences

You can set Help preferences to control how Help is displayed in the Eclipse Help system.

1. In ColdFusion Builder, select Window > Preferences.
2. In the Preferences dialog box, you see a tree-view structure on the left side. Select Help.
3. Set the following options, as required.

- **Open help search** Determines whether to display the help search in the Dynamic Help view window or in a browser. By default, in the Dynamic Help is selected.
- **Open help view documents** Determines where to display documents that are opened from links in Dynamic Help. By default, In-place is selected, and Help documents open in the Dynamic Help view window. To open Help documents in the ColdFusion Builder IDE editing area, select In the editor area.
- **Open help contents** Lets you display help in a web browser of your choice. By default, the embedded browser of the IDE displays Help. Select In an external browser and then select the Web Browser link to select your web browser.
- **Open window context help** Determines how to display context-sensitive Help links for an open window. By default, context-sensitive Help links are displayed in the Dynamic Help view which, when opened, is docked into the current perspective like all other views. To display context-sensitive Help links in an infopop (similar to a tooltip), select In An Infopop.
- **Open dialog context help** Determines how to display context-sensitive Help links for an open dialog box. By default, Help is displayed in the dialog box. To display context-sensitive Help links in an infopop (similar to a tooltip), select In An Infopop.

Use dynamic Help

Dynamic Help is docked to the current perspective and displays topics for the associated views and dialog boxes.

1. Select Help > Dynamic Help.

To change the default keyboard shortcut binding, select Window > Preferences > General > Keys, and change the associated binding for the Dynamic Help command. For more information on changing keyboard shortcuts, see CFML Editor keyboard shortcuts.

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Getting started with ColdFusion Builder

Using ColdFusion Builder, you can develop ColdFusion applications in a full-featured IDE that lets you complete the following tasks:

> **Note**
>
> Before getting started with the tasks, ensure that you are familiar with the ColdFusion Builder workbench and its capabilities and features. For more information, see ColdFusion Builder Workbench Basics.

- **Create ColdFusion projects:** Using the Project wizard, you can create a project and configure a local or remote server with it. For more information, see Creating a ColdFusion project.
- **Add and manage servers:** ColdFusion Builder includes integrated server management that allows you to manage your ColdFusion servers, the ColdFusion Administrator, and Server Monitor within ColdFusion Builder.You can configure both JRun and non-JRun servers. To manage your applications efficiently, ColdFusion Builder provides features such as virtual hosts, virtual directories, and URL prefixes. For more information on using these features and managing your servers, see Managing Servers.
- **Deploy remote projects over FTP connection:** ColdFusion Builder lets you manage both local and remote

servers. The remote servers can be connected either through RDS (Remote Data Services) or FTP (File Transfer Protocol) connection. For more information about deploying and synchronizing remote projects over FTP connection, see Deploy projects over FTP and Secure FTP connections.

- **Create ColdFusion pages, components, and interfaces:** ColdFusion Builder provides wizards that let you create resources such as, ColdFusion pages, ColdFusion components (CFCs), and interfaces. You can associate these resources to a project. For more information, see Add ColdFusion pages, interfaces, and components.
- **Write and edit your ColdFusion application source code using the CFML editor:** ColdFusion Builder provides code editors to edit CFML, HTML, JavaScript, and CSS code. Based on the type of code that you are editing, the appropriate editor is opened. For more information, see ColdFusion Builder editors.The editors provide many features, including code colorization, code assist, and Outline view, which help you navigate through your code. The CFML editor provides features such as code completion, code refactoring, and streamlined code navigation. ColdFusion Builder lets you use different colors and fonts to display your code in the editor. For more information on the complete feature-functionality of the CFML Editor, see Code Editing in ColdFusion Builder.
- **Write and edit SQL statements using the SQL Editor:** The CFML editor has an integrated SQL editor that lets you edit and write SQL statements. You can also set code colorization preferences for supported SQL statements. For more information on the SQL Editor, see SQL Editor.
- **Use and create CFML dictionaries:** ColdFusion Builder provides built-in CFML dictionaries that assist you with CFML code completion. CFML dictionaries are supported for ColdFusion versions 7, 8 and 9. You can also create your own custom CFML dictionary. For more information about using and creating dictionaries, see CFML Dictionaries.
- **Use ColdFusion Builder development views:** ColdFusion Builder provides many views that let you develop your applications easily.The RDS FileView lets you access and explore file systems on local and remote servers. The RDS DataView lets you access and explore local or remote data sources. For more information, see RDS FileView and RDS DataView.You can also query data on a local or remote data servers using the RDS Query Viewer. For more information, see RDS Query viewer.The Services Browser view lets you browse through CFCs and their methods within the server web root. You can access both local and remote CFCs and web services. For more information, see Services Browser view.The Snippets view and Outline view let you reuse and streamline your code. For more information, see Snippets view and Outline view.For more information about all the development views, see ColdFusion Builder Development perspective.
- **Use the ColdFusion debugger to debug applications:** ColdFusion Builder provides an integrated debugger with debugging views, like the Debug view and the Breakpoints view, which let you debug your applications. For more information about these views, see ColdFusion Debugging perspective.You can add breakpoints to your code, step into or over functions, and examine and evaluate expressions. You can debug files on both local and remote servers. For more information, see Debugging Applications.The Problems view, TailView view, and Console view detect syntax, server, and compilation errors and display them.
- **Use and develop ColdFusion Builder extensions:** Use the Extensions view to manage ColdFusion Builder extensions. You can develop extensions to generate code, design user interfaces, and perform basic CRUD (Create, Read, Update, and Delete) operations on the database. You can also develop extensions to perform custom actions such as opening files in the CFML Editor or inserting text in an open file. For more information about creating extensions, see ColdFusion Builder Extensions.ColdFusion Builder provides the ColdFusion Builder Extension Creator to guide you through the process of creating and packaging extensions. For more information, see Use ColdFusion Builder Extension Creator to create and package extensions.

  The following extensions come packaged with ColdFusion Builder.
  - Adobe CFC Generator
  - ActionScript Class Generator

    For more information on installing and using these extensions, see Using Extensions.

What’s New in ColdFusion Builder

New in ColdFusion Builder 3

ColdFusion Builder has gone through a lot of changes and enhancements and this section highlights those changes:

ColdFusion Debugging Perspective

The ColdFusion Debugging perspective (invoked through Run > Debug Configuration > Perspectives) contains tools to debug your ColdFusion applications as well as client-side applications. There are different views that let you add breakpoints to your code, step into functions, step over functions, or examine and evaluate expressions in your code. The editor works with the debugging tools to locate and highlight lines of code that need correction.

Debugging Perspective

Debugging mobile applications

See Debugging Mobile Applications

Bundled ColdFusion Server

See Bundled ColdFusion Server

Mobile Templates

ColdFusion Builder allows you to create a mobile application based on a pre-defined template. The template is basically a CFML file that can use third-party web frameworks like Bootstrap or jQuery Mobile. See Mobile Templates.

ColdFusion Builder Workbench Basics

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  - TailView view
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- ColdFusion Builder editors
- Customizing a perspective
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ColdFusion Builder is an Eclipse-based development environment that allows you to develop Adobe ColdFusion applications and run them on ColdFusion servers. You use it to develop ColdFusion applications using coding and debugging tools.

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About the workbench

The ColdFusion Builder workbench is a full-featured environment for developing Adobe ColdFusion applications. Much of the basic functionality of the ColdFusion Builder IDE comes from Eclipse. The ColdFusion Builder plug-ins add features and functionality for creating ColdFusion applications. The plug-ins also provide tools for modifying the IDE user interface and supply some core functionality to support application building.

Workbench The workbench is the ColdFusion Builder development environment.

The workbench contains three primary elements: perspectives, editors, and views. You use all three in various combinations at various points in the application development process. The workbench contains all the tools you use to develop applications.

Perspective A perspective is a group of views, editors, menus, and toolbars in the workbench. Essentially it is a special work environment that helps you accomplish a specific type of task. For example, ColdFusion Builder contains two perspectives. You use the ColdFusion Builder Development perspective to develop applications and the ColdFusion Debugging perspective to debug them.

For more information about perspectives, see About ColdFusion Builder perspectives.

Editor An editor allows you to edit various types of files. The editors available to you vary according to the number and types of Eclipse plug-ins installed. ColdFusion Builder contains editors for writing CFML, HTML, JavaScript, and Cascading Style Sheets (CSS) code. For more information about code editing in ColdFusion Builder, see ColdFusion Builder editors and Code Editing in ColdFusion Builder.

Views A view typically supports an editor. For example, when you edit CFML, the Outline view and Snippet view are also displayed in the ColdFusion Builder Development perspective. These views support the development of ColdFusion applications and are therefore displayed when a CFML file is opened for editing.

Some views support the core functionality of the workbench itself. For example, the File Explorer view allows you to manage files and folders within the workbench. The RDS Dataview and RDS Fileview display data sources, files, and directories on both remote and local servers.

The term *view* is synonymous with the term *panel* as it is used in Adobe Dreamweaver® and other Adobe development tools.

For more information about the views in the ColdFusion Builder Development perspective, see ColdFusion Builder Development perspective.

For more information about the views in the ColdFusion Debugging perspective, see ColdFusion Debugging perspective.

Workspace Not to be confused with *workbench*, a *workspace* is a defined area of the file system. The workspace contains the resources (files and folders) that make up your application projects. A workspace can contain multiple projects. You can work with only one workspace at a time; however, you can select a different workspace each time you start ColdFusion Builder. For more information, see Managing Projects.

Resource The general term *resource* applies to the files and folders in the projects in a workspace. For more information, see Add ColdFusion pages, interfaces, and components and Add other files.

Project All the resources that make up your applications are contained within projects. You cannot build an application in ColdFusion Builder without first creating a project. For more information, see Managing Projects.

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Workbench menus and toolbars

You access workbench commands through the menu bar, right-click context menus, toolbars, and keyboard shortcuts.

Workbench menus

The ColdFusion Builder workbench contains the following main menus:

File menu

The File menu lets you create, save, close, print, import, and export workbench resources and exit the workbench.

Menu command	Description
New	Creates a resource. Before you create a ColdFusion component, interface, or page, ensure that you have created a project to store these resources.
Open File	Open a file for editing. You can also open files that are not in the workspace.
Close	Closes the active editor. You are prompted to save changes before the file closes.
Close All	Closes all open editors. You are prompted to save changes before the files close.
Save	Saves the content of the active editor
Save As	Lets you save the contents of the active editor in a different filename and location
Save All	Saves the contents of all open editors.

Revert	Replaces the contents of the active editor with the previously saved contents.
Move	Moves the currently selected resources to a different project
Rename	Lets you change the name of the selected resource
Refresh	Refreshes the resource with the contents in the file system
Convert Line Delimiters To	Lets you convert line delimiters to the operating system applicable to your development or deployment platform: • Windows (default) • Unix • MacOS 9
Print	Prints the contents of the active editor
Switch Workspace	Opens the Workspace Launcher that lets you switch to a different workspace. When you switch to a different workspace, the workbench is restarted.
Restart	Restarts ColdFusion Builder
Import	Lets you import resources to the workbench using the Import wizard
Export	Lets you export resources from the workbench using the Export wizard
Properties	Displays the properties dialog box for the selected resource. The Properties For dialog box provides information about the path to the resource and the date of the last modification on the resource. It also provides information if the project's resources have inherited their encoding and line delimiters or if they are set to a particular value.
Recent File List	A list of the most recently accessed files in the workbench. You can open these files from the File menu by clicking the filename. You can control the number of files that must appear in this list using the Preferences dialog box.
Exit	Closes the open resources and exits the workbench

Navigate menu

The Navigate menu lets you locate and navigate through resources in your workbench.

Menu command	Description
Go Into	Lets you navigate within hierarchies of resources such that the selected resource is at the root. That is, when you select a folder within a project and select Go Into, only the selected folder (and artifacts within the folder) appear in the Navigation view. This command is useful in navigating through large-sized projects with complex hierarchies.
Go To	Lets you jump to a specific resource or display the hierarchy that appeared before the current display. For example, select the Go Into command for a resource, and then select Go To > Back. The Back command displays the same hierarchy from which you activated the Go Into command.
Open Declaration	Opens declaration for selected code element.
Quick Outline	Displays a quick view of the Outline view. A hierarchical view of the code structure of the page appears in a pop-up menu.
Open Resource	Lets you select a resource in the workspace and open it in an editor using the Open Resource dialog box
Show In	Lets you find and select the currently selected resource in another view. If an editor is active, these commands are used to select the resource that is currently being edited in another view.
Next	Lets you navigate to the next item in a list or table in the active view
Previous	Lets you navigate to the previous item in a list or table in the active view
Last Edit Location	Lets you jump to the last edit position in the active editor
Go To Line	Lets you jump to a specific line in the active editor
Back	Lets you move editor focus to a previously opened file.
Forward	Lets you return editor focus from the previous file.

Project menu

The Project menu lets you manage projects in the workbench.

Menu command	Description
Open Project	Opens the currently selected project. The selected project must be closed for this command to be available.
Close Project	Closes the currently open project]
Properties	Displays the project properties dialog box

Window menu

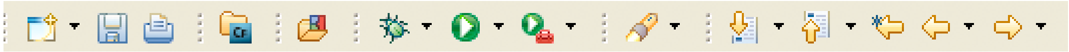
The Window menu lets you display, hide, and manage the various views, perspectives, and actions in the workbench.

Menu command	Description
New Window	Opens a new workbench window with the same perspective as the currently open perspective
New Editor	Opens an editor that is of the same type as the currently active editor
Open Perspective	Opens a new perspective in the workbench
Show View	Lets you select the views to display in the workbench
Customize Perspective	Lets you customize the currently selected perspective
Save Perspective As	Lets you save the currently selected perspective, creating your own customized perspective.
Reset Perspective	Lets you reset a customized perspective
Close Perspective	Closes the currently open perspective
Close All Perspectives	Closes all the open perspectives in the workbench
Navigation	Contains shortcuts to navigate between the views, perspectives, and editors in the workbench
Preferences	Lets you set you preferences for using the workbench. There are a number of preferences to configure the appearance of the workbench and the views and editors contained in the workbench.

Toolbars

Workbench toolbar

The workbench toolbar contains buttons for important and frequently used commands. These commands are also available from various ColdFusion Builder menus.



Workbench toolbar

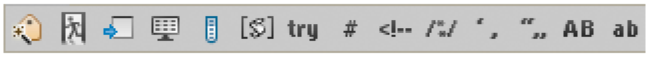
The following buttons appear in the workbench toolbar (shown left to right):

Button/command	Description
New	Displays a pop-up menu that displays all the types of projects and documents you can create.
Save	Saves the document that is open in the editor and currently selected
Print	Prints the document that is open in the editor and currently selected
New ColdFusion Project	Opens the wizard to create a ColdFusion project.
Open CFC	Lists all the CFCs that are available for projects displayed in the Navigator view.
Debug	Uses the project’s currently open file to begin a debugging session. You can also select other application files in the project from the attached pop-up menu.
Run	Runs the project’s currently open file. You can also select other application files in the project from the attached pop-up menu.
External Tools	Selects a custom launch configuration
Search	Searches for text strings and filename patterns for files in the project
Next Annotation	Allows you to select and move forward to code annotations
Previous Annotation	Allows you to select and move backward to code annotations

Last Edit Location	Takes you to the code element that you last edited in the currently open file.
Back To	Lets you move editor focus to a previously opened file.
Forward To	Lets you return editor focus from the previous file.

CFML Editor toolbar

The CFML Editor contains buttons that are user interface shortcuts to frequently used commands. These commands are also available from various ColdFusion Builder menus. Some buttons in the toolbar are shortcuts to frequently used code elements, and are context sensitive to the code that you enter in the CFML Editor.



CFML editor toolbar

Button/command	Description
Open Tag Editor	Opens the Tag Editor. For more information about using the Tag Editor, see Tag Editor.
Insert cfabort	Inserts the cfabort tag. This command is context sensitive to the script code.
Insert cfdump	Inserts the cfdump tag. This command is context sensitive to the script code.
Wrap in cfoutput	Wraps the selected code within the cfoutput tag.This command is context sensitive to the script code that you enter in the CFML Editor.
Insert cfset	Inserts the cfset tag.
Insert cfscript Block	Inserts a cfscript code block.
Wrap in cftry/cfcatch	Wraps the selected code within the cftry or cfcatch tag, depending on the code.This command is context sensitive to the script code.
Wrap in ##	Wraps the selected code within "#" marks.
Wrap/Unwrap in cfcomment	Comments or uncomments the selected code.
Wrap/Unwrap in /* */	Wraps or unwraps the selected code within ""/* */"" marks
Wrap in Single Quotes	Wraps the selected code within single quotation marks.

Wrap in Double Quotes	Wraps the selected within double quotation marks.
To Uppercase	Changes the text in the selected code to uppercase.
To Lowercase	Changes the text in the selected code to lowercase.

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About ColdFusion Builder perspectives

A perspective is a group of editors and views that support the completion of a task. ColdFusion Builder contains two perspectives: the ColdFusion Builder Development perspective and the ColdFusion Builder Debugging perspective.

Open and switch perspectives

When you open a file that is associated with a particular perspective, ColdFusion Builder automatically opens that perspective. That is, perspectives change automatically to support the task at hand. For example, when you create a ColdFusion project, the workbench displays the Development perspective. Similarly, when you start a debugging session, ColdFusion Builder switches to the Debugging perspective.

By default, perspectives open in the same window. To open a perspective in a new window, do the following:

1. Select Window > Preferences
2. In the tree view structure, select General > Perspectives.
3. Under Open a New Perspective, select In The Same Window.

You can manually switch perspectives by doing one of the following:

- Select Window > Open Perspective > Other from the main menu.
- Use the perspective bar in the main workbench toolbar.

Eclipse provides many predefined perspectives. So, if you use the plug-in configuration of ColdFusion Builder, you sometimes have additional perspectives.

You can access the other Eclipse perspectives by doing one of the following:

- Select Window > Open Perspective > Other from the main menu.
- Click in the perspective bar in the main workbench toolbar and select Other.

Set a default perspective

1. Select Window > Preferences.
2. In the tree view structure, select General > Perspectives.
3. Under Available Perspectives, select the perspective that you want to set as the default, and click Make Default.
4. Click OK.

The default perspective has the word "default" in parentheses after the perspective name.

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ColdFusion Builder Development perspective

You use the ColdFusion Builder Development perspective to create, edit, configure, and run ColdFusion applications in ColdFusion Builder. In addition, you can configure and manage local or remote ColdFusion servers.

The ColdFusion Builder Development perspective includes these views:

Outline view

The Outline view displays a hierarchy of elements in the file that is currently open in the editor. For example, it displays the functions in a CFC file and the tags in an HTML file.

You use Outline view to inspect and navigate the structure of your CFML, HTML, JavaScript, and CSS pages. If a page contains multiple code elements, you can use the Outline view to see a hierarchical view of the code structure of the page.

You can sort the elements in Outline view alphabetically or in the order of their definition in the page. You can choose to view all the code elements or view only specific code elements.

- The Outline view displays the structure of your CFML code. For example, each item in the Outline view can represent a CFML tag.
- Double-click an element in Outline view to directly go to that element in the editor, instead of scrolling through the entire code. When you select an item in Outline view, that item is highlighted in the editor, which makes it easier to navigate your code.
- Use the filter to search for a tag or element in the Outline view. Enter the name of the tag or element to search for in the Filter field. The matching strings are displayed in the Outline view.

To specify the CFML tags to be displayed in an Outline view, select ColdFusion > Editor profiles > Editor > Outline. Then select, add, or remove tags, as required.

RDS FileView and RDS DataView

To use Remote Data Services (RDS), enable RDS while installing the ColdFusion server. ColdFusion Builder provides views to access files and data sources on a remote server.

The RDS FileView displays the files and directories on both remote and local servers. The RDS DataView displays the data sources configured in a remote server.

When you add a ColdFusion server instance in ColdFusion Builder, it automatically becomes available in RDS FileView and RDS DataView.

Configure a remote server for RDS FileView

If you want to configure a remote server manually and then access its files and directories using RDS FileView, do the following:

1. Click RDS FileView in the upper-right corner of the ColdFusion Builder perspective.
2. Right-click in RDS FileView and select RDS Configuration.
3. Click New.
4. Specify remote server information such as the host name, port number, user name, and password.
5. Select Prompt For Password.
6. Click Test Connection to check that the RDS configuration is correct. Then, click OK.
7. Select the remote server from RDS FileView.
8. Specify the password for the remote server to view its files and directories.

Configure a remote server for RDS DataView

To configure a remote sever and access data sources from the remote server using RDS DataView:

1. Click RDS DataView.
2. Right-click in RDS DataView and select RDS Configuration.
3. Click New.
4. Specify the server information such as host name, port number, remote server user name, and password.
5. Select Prompt for Password.
6. Click Test Connection to check that the RDS configuration is correct. Then, click OK.
7. Expand the new server in RDS DataView to view data sources.

RDS Query viewer

The RDS Query viewer lets you create and run queries on a selected data source.

The RDS Query Viewer is available in the RDS DataView toolbar. To create and execute a query using the RDS Query viewer, do the following:

1. Click in RDS DataView to open RDS Query Viewer area.
2. Type the query in the blank area. You can also build a query by dragging tables and columns from the RDS DataView view into the RDS Query Viewer.
3. Select the server and data source from the drop-down list.
4. Click Execute Query. The results of the query are displayed in the RDS Query Viewer area.

   RDS query viewer

Right-click a table in the RDS DataView view and select Show Table Contents. You can view all the records of the selected table in the RDS Query Viewer.

Navigator view

The Navigator view displays ColdFusion projects and other projects, and allows navigation through the project's files and folders.

File view

The File view displays files and directories on the local computer where ColdFusion Builder is installed and allows you to create new files.

If you edit a file outside ColdFusion Builder, you can automatically refresh the file in ColdFusion Builder. To do so, select Window > Preferences > General > Workspace, and select Refresh Automatically.

The File view also lets you add FTP sites and browse files on the FTP server. ColdFusion projects can be associated with FTP connections so that you can easily upload, download, and synchronize files. For more information, see Deploy projects over FTP and Secure FTP connections.

Servers view

Displays the details of ColdFusion servers including server name, status, description, server type, server host, and port. You can use the Server view to perform these tasks:

- Add and delete a ColdFusion server
- Start and stop a server

- Launch Server Monitor
- Launch ColdFusion Server Administrator
- Open server log

For more information, see Managing Servers.

Source view and Default Browser view

The Source view displays the source code for files. The Default Browser View displays the output in an HTML or CFML page.

Console view

The Console view displays the status of the ColdFusion server and any messages from the ColdFusion server.

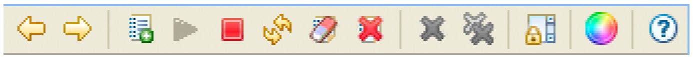
TailView view

The TailView view displays the Server log and Workspace log, and lets you easily navigate through the logs. To automatically display the logs, RDS must be configured and enabled.

After selecting a server, you can open logs from the shortcut in the button bar of the Server Manager. Select the log to open it in the TailView view. By default, the TailView view opens the Exception log. When you are in Server view, you can open the Exception log by right-clicking and selecting Open Log.

To manually open the logs, right-click in the TailView view and select Add. Browse to and select a log file on your computer's file system.

The Tailview view toolbar contains the following buttons (left to right) that let you manage multiple logs in different tabs.



TailView toolbar

Button/command	Description
Move Left	Moves the Server log or Workspace log to the left
Move Right	Moves the Server log or Workspace log to the right
Adds Log	Opens a log file on your computer's file system
Starts Watching Log File	Starts watching on a log file
Stops Watching Log File	Stop watching on a log file
Reloads The Log File	Reloads a log file
Clears Log File In Display	Removes the log file displayed in the TailView view, without deleting it from the computer's file system

Erases Log File On Disk	Remove a log file from the computer’s file system
Deletes Log Tab	Removes a log file from the computer’s file system
Deletes All Log Tabs	Removes all the log tabs from the TailView view
Scroll Lock	Prevents the Console view from scrolling.
Color Settings	Sets color preferences for displaying the log file in the TailView view

Services Browser view

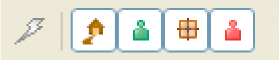
The Services Browser view lists the servers added in the Server Manager and lets you browse through ColdFusion components (CFCs), web services and their methods.

Browse ColdFusion components

The Services Browser view lists the following components:

- Components that the ColdFusion component browser lists. The ColdFusion component browser is located at *cf_root*/wwwroot/CFIDE/componentutils/componentdoc.cfm
- Components that are located in any directories specified in the ColdFusion Administrator Mappings page
- Components that are located in any directories specified in the ColdFusion Administrator Custom Tag paths page

The Services Browser view toolbar contains the following buttons (left to right) that let you filter methods in CFCs based on the access type - remote, public, package, and private.



Services browser toolbar

Button/command	**Description**
Show System CFCs	A toggle button that shows or hides system CFCs. System CFCs are stored within the server web root.
Show Remote	A toggle button that shows or hides methods with the access type - remote
Show Public	A toggle button that shows or hides methods with the access type - public
Show Package	A toggle button that shows or hides methods with the access type - package
Show Private	A toggle button that shows or hides methods with the access type - private

Manage web services

The Services Browser view lets you manage a list of web services by adding or deleting WSDL URLs from a list.

- To view the list of web services, click in the Services Browser view.
- To add a web service to the list, click ⊕, enter a valid WSDL URL, and click OK.
- To delete a web service, select the web service, and click ⊖.

When you are editing a ColdFusion file, you can use the Services Browser view to generate CFML code to run a web service or to create a web service object. Similarly, when you are editing an ActionScript file, you can use the Services Browser to generate ActionScript.To run or create a web service, do the following:

1. Place your pointer where you want to insert the code.
2. View the list of web services.
3. Highlight a web service or a method in a web service, right-click, and select:

- Insert CFObject to insert a web service.
- Insert CreateObject to create a web service.

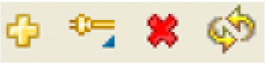
Extensions view

You use the Extensions view to perform the following tasks:

- Install and uninstall extensions
- Import and reload extensions

The Extensions view also displays details like the extension name and description of the installed extension.

The Extensions view toolbar contains the following buttons (left to right) that let you manage extensions in the Extensions view.



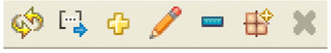
Extensions view toolbar

Button/command	Description
Install Extension From Archive File	Lets you select the Archive file to install and opens the Extension Install wizard to guide you through the installation.
Import Extension From Folder	Lets you select the folder that contains the extension files.
Uninstall Selected Extension	Uninstalls the selected extension.
View Details About Selected Extension	Displays details about the selected extension.

Snippets view

A code snippet is a piece of text that you can insert and reuse in your files, without having to type the text each time. You use the ColdFusion Snippet view to create and save code snippets, variables, and plain text. You can add code snippets to an existing or new document.

The Snippet view toolbar contains the following buttons (left to right) that let you manage code snippets in the Snippets view.



Code snippet toolbar

Button/command	Description
Refresh Snippet View	Refreshes the Snippet view
Insert The Selected Snippet	Inserts the selected snippet into the document
Create A New Snippet	Creates a code snippet
Edit The Selected Snippet	Lets you modify the selected code snippet
Delete The Selected Snippet	Deletes the selected code snippet
Create A New Snippet Package	Creates a snippet package to which you can add code snippets
Delete Selected Snippet Package	Deletes the selected snippet package only if it is empty. You cannot delete a snippet package that contains snippets.

Create a code snippet

1. In the Code Snippet area, click .
2. In the New Snippet dialog box, specify the snippet name, and the start and end blocks of code.
3. Click OK to create the code snippet.

Insert a code snippet

1. Move the cursor to the desired insertion point.
2. Select the code snippet from the Code Snippet area.
3. Click in the Code Snippet toolbar.

If you select code in the editor, and then insert a snippet, the snippet is wrapped between the start and end block of the selected code. If you insert a snippet without selecting code in the editor, the snippet is inserted at the current caret position. *caret* is the marker in the CFML editor that indicates where the next character appears.You can also edit or delete an existing code snippet or an entire code snippet package from the Code Snippet area.

Using trigger text to insert snippets

You can insert snippets in the CFML editor using trigger text. For example, you create a snippet and give it the trigger text "abc." To insert this snippet in the editor, you type `abc` and press Ctrl + J (Windows) or Command + J (Mac). The text `abc` is replaced with the associated snippet.

Specify the path to store snippets

Snippets are stored in a snippet’s directory as an XML file. By default, snippets are stored in the *workspace/.metadata/snippets* directory of your project workspace. To specify a different directory, do the following:

1. From the Windows menu, select Preferences.
2. In the tree view structure of the Preferences dialog box, select ColdFusion > Snippets.
3. Specify the path to the directory in which to store snippets.

System-defined snippet variables

Snippet variables are case sensitive. The following system-defined variables are available.

Variable	Description
`$${DATE}`	The system date with the year as a four-digit number. For example, 12/01/2009
`$${TIME}`	The system time using a 12-hour clock. For example, 03:15:05 PM
`$${DATETIME}`	The system date and time. For example, 12/01/2009 15:15:05 PM
`$${DAYOFWEEK}`	The full name of the day of the week. For example, Monday
`$${CURRENTFILE}`	The filename of the currently open file. For example, application.cfm
`$${CURRENTFOLDER}`	The fully qualified path of the currently open folder. For example, C:\workspace\myproject
`$${CURRENTPATH}`	The fully qualified path of the currently open file. For example, C:\workspace\myproject\application.cfm
`$${CURRENTPRJPATH}`	The project name of the currently open project. For example, myproject
`$${USERNAME}`	The name of the current user.
`$${MONTHNUMBER}`	The month, from 01 through 12.
`$${DAYOFMONTH}`	The day of the month from 01 through 31.
`$${DAYOFWEEKNUMBER}`	The day of the week as a number, from 1 through 7. Sunday is considered as the start of ther week. So, for example, Monday is 2.

`$${DATETIME24}`	The date and time using a 24-hour clock. For example, 12/01/2009 15:30:00
`$${YEAR}`	The current year as a four-digit number. For example, 2009
`$${YEAR2DIGIT}`	The current year as a two-didgit number. For example, 09

For example, to insert the current date, use the following system-defined variable:

```
Date: $${DATE}
```

User-defined snippet variables

User-defined variables prompt you for the variable name and default value. For example, the following user-defined variable prompts you to enter the author's name:

```
Author name: $${Author}
```

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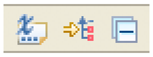
ColdFusion Debugging perspective

The ColdFusion Debugging perspective contains tools to debug your ColdFusion applications. There are different views that let you add breakpoints to your code, step into or over functions in your code, and examine and evaluate expressions. The editor works with the debugging tools to locate and highlight lines of code that need correction.

The ColdFusion Debugging perspective contains the following views:

Variables view

The Variables view toolbar contains the following buttons (left to right) that let you show the current variables, including the variable scope.



Variables view toolbar

Button/command	Description
Show Type Names	Displays the type of the variables
Show Logical Structure	This command is not supported in ColdFusion Builder

Collapse All	Collapses the information in the view to show only variable types

Debug Output Buffer view

The Debug Output Buffer contains two panes:

Browser Displays what appears in the browser during application execution. Specify the URL of the page that you want to debug.

> **Note**
>
> When you click the Home button, the URL that you specified as the Home Page URL in the Preferences dialog box (Window > Preferences > ColdFusion > Debug Settings) appears. For more information on editing the Debugger settings, see Specify debugger settings in ColdFusion Builder.

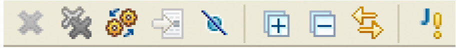
Server Output Buffer Displays the Debugger output in two views - source view and HTML view.

The Server Output Buffer pane displays an output only when the Debugger is suspended at breakpoint. The output that appears is only up to the suspended breakpoint.

> **Note**
>
> The Server Output Buffer displays the output even for a page that is executed using an external browser.

Breakpoints view

The Breakpoints view toolbar contains the following buttons (left to right) that let you manage breakpoints during a debugging session.



Breakpoint view toolbar

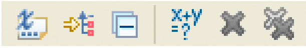
Button/command	Description
Remove Selected Breakpoints	Removes the selected breakpoint
Remove All Breakpoints	Removes all breakpoints
Show Breakpoints Supported by Selected Targets	Displays the breakpoints that you are currently debugging
Go to File for Breakpoint	Goes to the file in which the selected breakpoint is set
Skip All Breakpoints	Ignores all breakpoints

Expand All	Expands all the breakpoint information in the view
Collapse All	Collapses all the breakpoint information in the view
Link with Debug View	Highlights the selected breakpoint when the application stops execution in the Debug View
Add Java Exception Breakpoint	Lets you specify which Java exception to throw when you reach the selected breakpoint
Menu	Lets you specify the type of information to display in the Breakpoints view

Expressions view

The Expressions view lets you create expressions using variables and functions; you can inspect, evaluate, and watch these expressions. The Expressions view also lets you evaluate and watch variables that you selected in the Variables view.

The Expression view toolbar contains the following buttons (left to right) that let you create, evaluate, and watch expressions.



Expressions view toolbar

Button/command	Description
Show Type Names	Displays the type of the variables
Show Logical Structure	Displays the logical structure in the view
Collapse All	Collapses all expressions in the view
Create a New Watch Expression	Adds a watch expression
Remove Selected Expressions	Removes the selected variable or watch expression
Remove All Expressions	Removes all variables and watch expressions in the Expressions view

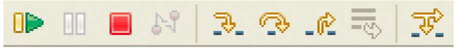
Outline view

The Outline view displays the current source file’s content in outline form. For more information, see Outline view.

Debug View

The Debug view keeps the results of each debug session. The Debug view shows the stack trace when the page execution is suspended at breakpoint or when stepping into or over code.

The Debug toolbar contains the following buttons (left to right):



Debug toolbar

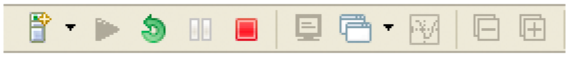
Button/command	Description
Resume	Resumes a debugging session
Suspend	Pauses a debugging session
Terminate	Stops a debugging session
Disconnect	Disconnects the debugger from the selected debug target when debugging remotely
Remove All Terminated Launches	Clears all terminated debug targets from the display
Step Into	Executes code line by line, including included code, UDFs, and CFCs
Step Over	Executes code line by line, excluding included code, UDFs, and CFCs
Step Return	Returns to the original page from which you entered the included code, UDF, or CFC
Drop to Frame	This command is not supported in ColdFusion Builder.
Use Step Filters/Step Debug	Ensures that all step functions apply step filters

Edit view

The Edit view displays the stacked source tabs, one tab for each source file that you have open.

Servers view

The Servers View lets you start, stop, and manage servers in ColdFusion Builder. You can also launch the ColdFusion Server Monitor and ColdFusion Server Administrator from the Servers View.



Servers view toolbar

The Servers view toolbar contains the following buttons (left to right) that let you manage servers.

Button/command	Description
Add Server	Adds a server

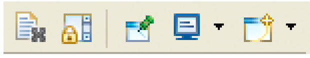
Start Server	Starts a server
Restart Server	Stops and starts a server
Pause Server	Pauses the server
Stop Server	Stops a server
Open Console/Shell	Opens a new console and displays a pop-up menu to select other servers
Open Log	Opens the server log in the TailView view

For more information about managing servers and using Servers view, see Using Servers View.

Console view

Console view displays the output from trace statements placed in your CFML code and also feedback, like status, warnings, and errors from the debugger itself.

The Console view toolbar contains the following buttons (left to right) that let you view and manage the trace statements in the Console view.



Console toolbar

Button/command	Description
Clear Console	Clears all content from the Console view
Scroll Lock	Prevents the Console view from scrolling
Pin Console	Prevents the console from refreshing its contents when another process is selected
Display Selected Console	Displays the selected console
Open Console	Opens a new console and displays a pop-up menu to select other console views

Problems view

As you enter code, the ColdFusion Builder compiler detects syntax and other compilation errors, and displays the errors in the Problems view. The Problems view shows errors only for CFML files that are open in ColdFusion Builder.

TailView view

The TailView view displays the server logs. For more information, see TailView view.

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Add views to the workbench

The workbench contains views besides the views associated with ColdFusion Builder's default development and debugging perspectives. These additional workbench views help you streamline the application development process.

1. To add a view to the workbench, select Window > Show View > Other > General

These optional views are categorized by type and are associated with distinct workbench functionality or with specific Eclipse plug-ins.

Several workbench views, like the Tasks, Bookmarks, and Search views, are valuable aids as you develop your applications in ColdFusion Builder.

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ColdFusion Builder editors

Editors are associated with resource types. As you open resources in the workbench, the appropriate editor is opened. The workbench is a document-centric (and project-centric) environment for developing applications.

Use the CFML editor to edit CFML files. For more information, see Code Editing in ColdFusion Builder.

Use the HTML editor to edit HTML code and the JavaScript editor to edit JavaScript code. The CSS editor lets you display and edit Cascading Style Sheets; you can then apply styles to the visual elements of your applications.

You can use the Link with Cursor feature to switch between the different editors based on the type of code you are editing. The editors provide many features, including code colorization, code assist, and Outline view, that help you navigate through your code and keep it valid.

As you enter CFML, HTML, JavaScript, and CSS code, hints are displayed to help you complete your code. This feature is called *Code Assist*. For more information, see Code Assist.

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Customizing a perspective

You can configure the layout of your perspective; that is, you can configure the views and editors that are visible in the perspective. For example, you can configure the Tasks view to be visible in one perspective, and hidden in another perspective. You can also configure several other aspects of a perspective, such as the following:

- File > New submenu items
- Window > Perspective > Other submenu items
- Window > Other Views submenu items
- Action sets (buttons and options) that appear in the toolbar and in the main menu

⚠ **Note**

Menu names differ slightly in the plug-in configuration of ColdFusion Builder.

Create a customized perspective

1. Open the perspective to modify.
2. Select Window > Customize Perspective.
3. Select the Shortcuts tab or the Commands Groups Availability tab, depending on the items that you want to add or remove in your customized perspective.
4. Use the check boxes to select the element that you want to be visible on menus and toolbars in the selected perspective.
5. Click OK.
6. Select Window > Save Perspective As.
7. In the Save Perspective As dialog box, enter a name for the modified perspective and click OK.

⚠ **Note**

When you save a modified perspective, ColdFusion Builder adds the name of the modified perspective to the Window > Open Perspective > Other menu.

Delete a customized perspective

You can only delete perspectives that you created. You cannot delete perspectives that are delivered with the workbench.

1. In ColdFusion Builder, select Window > Preferences.
2. In the Preferences dialog box, you see a tree-view structure on the left side.
3. In the tree-view structure, select General > Perspectives.
4. Under Available Perspectives, select the perspective that you want to delete.
5. Click Delete, and then click Yes to confirm the delete action.
6. Click OK.

Reset a customized perspective

After you have modified a perspective, you can restore it to its original layout.

1. In ColdFusion Builder, select Window > Preferences.
2. In the Preferences dialog box, you see a tree-view structure on the left side.
3. In the tree-view structure, select General > Perspectives.
4. Under Available Perspectives, select the modified perspective that you want to reset.
5. Click Reset, and then click OK.

Code Editing in ColdFusion Builder

- CFML Editor
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  - Editor preferences
    - Optimizing ColdFusion Builder performance
      - Code Assist
      - Typing
- Code Assist
  - Using Code Assist
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  - Code Assist for CFC pages
  - Code Assist for scoped variables using variable mapping
  - Code Assist for ColdFusion ORM
  - Code Assist for Application.cfm and Application.cfc files
  - Set CFML Editor Code Assist preferences
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  - CFC name resolution using server mapping
    - Specify server settings
  - CFML Dictionaries
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    - Smart tab navigation

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    - Refactoring methods
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- Add tasks to Task View
    - Add tasks
    - View tasks
    - Create a custom Task Tag
    - Removing tasks

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CFML Editor

ColdFusion Builder provides a CFML Editor that has feature-rich code editing capabilities for CFM, CFC, HTML, JavaScript, and CSS files. The CFML Editor assists you in writing code by including features like, code completion, and streamlined code navigation. The CFML Editor lets you use different colors and fonts to display your code in the workspace.

You can customize your development environment by setting editor profiles and preferences.

Editor profiles

An editor profile lets you group and save the following editor preferences under one profile.

- Code Assist
- Syntax Coloring
- Keys
- Outline
- Syntax Checking
- Typing
- Task

Editor profiles are useful when you have different editor preferences for various development needs. For example, you can select a set of preferences like Code Assist, code colorization, and keyboard shortcut preferences and save them under a single editor profile. You can apply all these settings at once by selecting the editor profile.

To create an editor profile, do the following:

1. Specify the different editor preferences that you want to set.
2. From the Window menu, select Preferences.
3. In the tree-view, select ColdFusion > Profiles, and click Create New Profile.
4. Enter a name for the profile. The current editor preference values that you set are saved under this profile.

You can also modify default settings and save the modified settings as a new profile. Additionally, you can also import or export profiles.

By default, ColdFusion Builder provides three editor profiles:

- Default - Sets the ColdFusion Builder default editor preferences
- Dreamweaver - Sets editor preferences similar to Dreamweaver editor preferences
- CFEclipse - Sets editor preferences similar to CFEclipse editor preferences

To select an editor profile, click the Active Profile drop-down list in the Profiles dialog box, and select the profile.

Editor preferences

1. From the Window menu, select Preferences.
2. In the tree-view, select ColdFusion > Profiles > Editor.

You can specify default filenames for the CFM and CFC files that you create. To remove any trailing whitespaces in the file, select Trim Spaces Before Saving Files.

You can also specify any text or boilerplate code that must appear, by default, in every CFM and CFC file. For example, suppose you want copyright information to appear in every CFC file that you create. In this case, you can specify the copyright text in the CFC tab under New File Settings.

The editor preferences that you can set include code assist, code colorization, keyboard shortcuts, outline view, syntax checking, and typing preferences.

Optimizing ColdFusion Builder performance

The preference options that you select affect the performance of ColdFusion Builder. For faster editor performance, you can apply preset editor preferences

To apply preset editor preferences, click Optimize Editor Preferences. The following preference settings are applied:

Code Assist

The following options are deselected.

- Automatically Display Code Assist When Typing
- Automatically Display SQL Code Assist When Typing
- Automatically Insert A Single Proposal
- Automatically Insert A Closing Tag

The following options are selected.

- Append Space After Inserting Selection
- Automatically Insert Equal Sign (=)
- Automatically Quote Attributes

Typing

- Enable Auto-insertion is selected.
- All the Auto-insert Matching Character For options are deselected.
- Auto-close Tags is selected as Never.

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Code Assist

⚠ **Note**

Code Assist is also called Content Assist. These terms are used interchangeably.

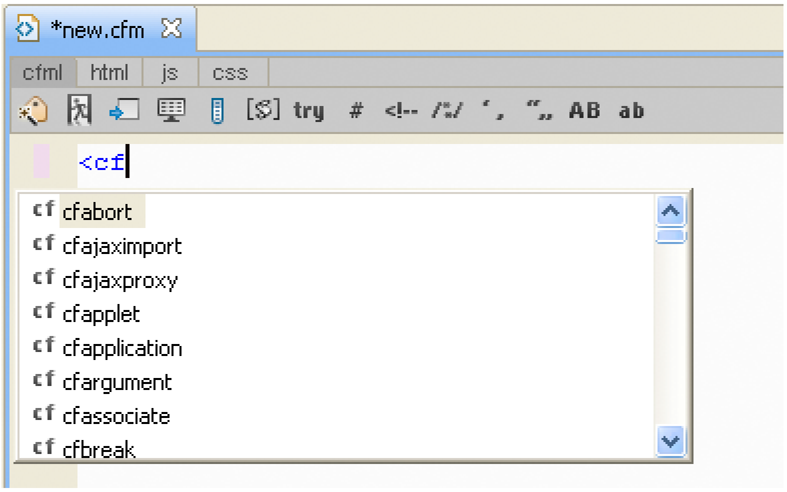
Code Assist is designed to assist you with code completion. Depending on the code that you enter, hints relevant to complete the code appear. As you type the code in the CFML editor, Code Assist prompts you with a list of valid CFML tags, parameters, and attributes. These suggestions appear in a pop-up menu. If you have HTML, JavaScript, or CSS content within the CFML code, Code Assist displays code completion hints for this code as well. Double-click or press Enter, to insert the code completion hint in the CFML Editor.

Code Assist is also available for script-based syntax; for example, code hints appear for functions and components in the script syntax. When you import Ajax libraries into ColdFusion projects, Code Assist is available even for the JavaScript code.

Using Code Assist

Code hints appear whenever the framework or language (CFML, HTML, JavaScript, and CSS) provides options for you to complete the current expression. For example, if you type within a CFML tag, you are prompted with a list of all the attributes of that tag.

In a CFML page, begin entering a CFML tag by typing:`<cf` Relevant code hints are displayed as follows:



Code hints

1. Navigate through the list of code hints using the Up Arrow and Down Arrow keys.
2. Select a code hint and press Enter. The selected tag is added to the editor.
3. As you continue to enter code, additional code hints are displayed. You can also press Ctrl+<Space> to display code hints while you enter a line of code.

The Smart Tag Assist feature of the CFML editor identifies if a tag attribute is already entered for a particular tag. If you have already entered a tag attribute, that attribute does not appear in the list of suggested attributes.

Code Assist for CFM pages

- Displays methods and component list when you use the `<cfinvoke>` tag in a CFM file.
- Displays a drop-down list of predefined attributes and values when you press <cf+Ctrl+<space>.
- Displays a list of components (CFC) that can be loaded using `createobject()` or the `<cfobject>` tag.
- Displays methods created in a CFC, which can be called using the component object created in a CFM. Also displays a list of methods of all extended CFC files.
- Displays a drop-down list of all built-in and user-defined functions.
- Provides a list of variables, like, struct, array, query. These variables are declared in a page. The variables also appear as Code Assist for attribute values.
- Displays all the queries created using `<cfquery>` or `queryNew()`. To view the recordset, type `<cfoutput query="">`, and press Enter. or use *queryname*. (that is, query name followed by dot).
- Includes the functions, variables, tags, and queries from another CFM page once it is included in the current CFM page using the {{<cfinclude> }}tag.
- Allows you to browse and select a file as the input value for an attribute of CFM tags. CFM tags that require a file as the input value include `<cfinclude>`, `<cfimage>`, `<cfdirectory>`, `<cfpdf>`, `<cffile>`, `<cfzip>`, `<cfspreadsheet>`, and `<cfcollection>`.

Code Assist for CFC pages

- Displays a list of components (CFC) that can be loaded using `createobject()`.
- Displays a list of components (CFC) that can be loaded using the `<cfobject>` tag.
- Displays methods created in a CFC, which can be called using the component object created in a CFM.Examples:
  - `<cfset obj1 = createobject("component", "c1")><cfset x = obj1.method1()>`
  - `<cfset obj2 = createobject("component", "c2").init()>`
  - `<cfset obj3 = new "c3"().method3()>`
  - `<cfinvoke component="c4" method="method4">`
- Displays a list of methods of all extended CFC files. The "extends" and "implements" keyword/attribute lists the available components and interfaces.

- Displays a list of components that can be extended in the current CFC file.

> ⚠ **Note**
>
> Code Assist is not supported for comments that are added to component properties. For example, Code Assist is not supported for a comment that you add to the numeric accountID property as follows:`/** @ – code assist is not supported here --*/`

- Displays a list of interfaces that can be used in a CFC with the `implement` keyword.
- Allows you to browse and select a file as the input value for an attribute of CFM tags or functions like `<cfif fileexists()>`. CFM tags that require a file as the input value include `<cfinclude>`, `<cfimage>`, `<cfdirectory>`, `<cfpdf>`, `<cffile>`, `<cfzip>`, `<cfspreadsheet>`, and `<cfcollection>`.

Code Assist for scoped variables using variable mapping

Many ColdFusion frameworks create CFCs during application startup and store these CFCs as scope variables. To provide Code Assist for such CFCs, ColdFusion Builder must determine the content and data type (fully qualified name of the CFC).

To enable Code Assist for CFCs that are stored in scoped variables, define a project-level mapping for the variable name and its corresponding CFC type. ColdFusion Builder uses this mapping information and displays a list of CFC methods for the mapped variable, without creating an object of that data type. For example, you can map `mycfc1` to `com.adobe.mycfcs.cfc1`. When you type `mycfc1` and press Ctrl+<space>, all the methods available for `com.adobe.mycfcs.cfc1` appear.

To configure a variable mapping, in the Properties dialog box, Specify the variable to map as `mycfc1` and the mapped to value as `com.adobe.mycfcs.cfc1`. For more information, see Configure variable mappings.

Code Assist for ColdFusion ORM

Object Relational Mapping (ORM) is a programming technique that lets you define a mapping strategy using object models. You can use Object Relational Mapping to store and retrieve data from a relational database.

ColdFusion Builder provides Code Assist for the following ColdFusion ORM settings:

- Entity names in `entityLoad`, `entityNew`, and `entityFindByPK` functions.
- Methods and properties returned by `entityLoad`, `entityNew`, and `entityFindByPK` functions.
- Code hyperlinks for entity names and methods.
- Data sources in `application.cfc`. For example, `<cfset this.datasource = >`.
- Table attribute of the `cfcomponent` tag.

For more information about using ColdFusion ORM, see ColdFusion ORM in the *ColdFusion Developer Guide*.

Code Assist for Application.cfm and Application.cfc files

Code Assist is available for Application.cfm and Application.cfc files.

Application.cfm is considered an included file and Code Assist is available for all variables and functions within the file.

For Application.cfc, Code Assist is available only for scoped variables that are declared in `onApplicationStart`.

Set CFML Editor Code Assist preferences

1. From the Window menu, select Preferences.
2. In the tree-view, select ColdFusion > Profiles > Editor > Code Assist.
    - You can select the Code Assist Dictionary version to assist with code completion. ColdFusion 9, ColdFusion 8, and ColdFusion MX7 dictionary versions are supported.
    - Select the Automatically Display Code Assist When Typing check box to automatically display Code Assist when typing.

        > ⚠ **Note**
        >
        > When editing large-sized files, you can deselect the Automatically Display Code Assist When Typing check box to improve performance of the editor. You can, however, display code hints while you enter a line of code by pressing Ctrl+<Space> or any other keyboard shortcut that is set.

    - You can choose to automatically quote attributes and select closing tags.

Code hyperlinks for CFCs and UDFs

Component names and UDFs are hyperlinked on Ctrl+hover. If you click the hyperlink, the corresponding code is opened in ColdFusion Builder. Code hyperlinks are available for:

- UDFs: local, included, and cfc.udfName
- Template in <cfinclude template="">
- CFCs in `createobject()`, `<cfobject>`, `<cfinvoke>`, `new` keyword, and `extends` attribute.

CFC name resolution using server mapping

Use ColdFusion Administrator to define server mapping for CFCs. The server mappings allow you to view these CFCs as part of Code Assist when you use the `extend` or `implement` keywords.

ColdFusion server mappings let `cfobject` and `cfinvoke` tags, or functions like `createObject` or `new,` access pages and find ColdFusion components outside the document root.

If you specify a path in these tags that starts with the mapping's logical path, ColdFusion looks for the CFC using the mapping's directory path. You can define server mapping for the CFCs using the ColdFusion Administrator. After mapping, you can view the CFCs in Code Assist when you use the `extend` or `implement` keywords, and `component` or `method` attributes. The CFCs suggested in Code Assist are resolved with their fully qualified names.

Once mappings are created for the CFC name resolution from the server, the server settings are cached and available even when the server is not running. The server settings are collected when the server is started or refreshed from ColdFusion Builder.

Specify server settings

1. From the Windows menu, select Preferences.
2. In the tree view structure, select ColdFusion > Server Settings.
3. Select the Build Server Settings check box and the Required check box to indicate the action for collecting server settings. For example, to collect server settings each time you start ColdFusion Builder, select the ColdFusion Builder Started check box.

CFML Dictionaries

ColdFusion Builder provides in-built dictionaries that assist you with CFML code completion. The CFML dictionary is an XML file that contains information about each tag and function contained in the library. For example, the CF9 dictionary file (cf9.xml) contains information about all the available CF9 tags and functions.

ColdFusion Builder provides dictionary support for ColdFusion 11, ColdFusion 10, ColdFusion 9, ColdFusion 8, and ColdFusion MX7 versions.

To select a dictionary version, do the following:

1. From the Window menu, select Preferences.
2. In the tree-view, select ColdFusion > Profiles > Editor > Code Assist.
3. Select the Code Assist Dictionary version drop-down list and select a dictionary version to assist with code completion.
4. Click Reload Dictionaries to reload all the dictionaries, including custom dictionaries.

Create custom CFML dictionaries

You can create a custom CFML dictionary (XML file) and make it available to use for Code Assist and Tag Editor within ColdFusion Builder.

1. Within the ColdFusion Builder installation, navigate to the following location:`\plugins\com.adobe.ide.coldfusion.dictionary_XXX\dictionary`
2. Create a folder called "Custom" within the Dictionary directory.
3. Create an XML file to describe the custom tags and functions. For example, in the XML file, you describe each tag within `<tag></tag>` elements, and enclose all the tag elements within `<dictionary></dictionary>`elements as follows:

```
<dictionary>
 <tags>
  !--
  cfabort
  showError = "error_message"
  -->
 <tag endtagrequired="false" name="cfabort" single="true"
 xmlstyle="false">
 <parameter name="showerror" required="false" type="String">
 </parameter>
 </tag>
 </tags>
 </dictionary>
```

   See the cf9.xml or cf8.xml files as reference to create the custom CFML dictionary.

Auto-insertion of required attributes

In the Code Assist (Window > Preferences > ColdFusion > Profiles > Editor > Code Assist), select Auto Insert Required Tag Attributes to insert the required attributes of a tag.

Note

This is the default setting.

For example, if you select `cfpdf "action=write"`, all the required attributes `destination`, `source,` and `name` are automatically inserted.

If the preference is not selected, the attributes are not inserted but only proposed.

Separate list of required and optional attributes

Code Assist prompts you with a list of tag attributes as follows:

- Shows required tag attributes at the top of the proposal list with check marks to indicate that the attributes are mandatory.
- A line separates the mandatory and optional attributes.

Proposals for createObject

Code Assist proposes all objects (and the corresponding arguments) supported by the function `createObject`.

Cyclic Code Assist proposals

In the Code Assist (Window > Preferences > ColdFusion > Profiles > Editor > Code Assist), select Cycling Code Assist Proposals for cyclical code assistance.

> ⚠ **Note**
>
> This is the default setting.

Consider the scenario where when you press Ctrl+<Space>:

- Variables, scopes, and UDFs are listed
- On this list, if you further press Ctrl+<Space>, all built-in functions are proposed
- On this list, if you further press Ctrl+<Space>, all proposals are listed.
- The cyclic proposals continue on subsequent use of Ctrl+<Space>.

> ⚠ **Note**
>
> Cyclic Code Assist does not appear if you manually specify a part of the text for which you want prompt.

Filter proposals containing text

In the Code Assist (Window > Preferences > ColdFusion > Profiles > Editor > Code Assist), select Filter Proposals Containing Text to filter proposals based on the text you specify.

> ⚠ **Note**
>
> This is the default setting.

All proposals that contain the filter text you specified are listed with selection set to the proposal that starts with the specified text.

Datatype-aware Code Assist

Shows Code Assist proposals based on expected data types.

For example, when you load Code Assist within the function `Abs`, it shows functions and variables of type numeric, Any, or complex data types such as array, struct, or component.

Auto-insertion of function arguments

When you insert a function, all required arguments are automatically inserted. By default, the first argument is selected.

Function context assist

- ColdFusion Builder displays function context assist whenever you load Code Assist inside function parameters.

> **Note**
>
> In ColdFusion Builder (the previous release), function context assist appears only after you insert functions from the Code Assist proposals.

- Parameter that you currently edit is highlighted in bold.
- Optional parameters are displayed inside `[]`.

Smart Code Assist for connection attributes

Smart Code Assist displays connection variables created for tags such as `cfexchangeconnection` and `cfftp`.

Usage-based Code Assist for cfloop

Based on the type of loop, the required attribute is auto-inserted. For example, if you loop over an array, the attribute `index` is auto-inserted.

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Select tag blocks of your choice

Use the shortcut Ctrl+Alt+B (Windows) or Command+Option+B (Mac) to select tag blocks. The enclosing tag block from the caret position is selected.

Retain the selection and repeat the shortcut for cumulative selection of code.

For example, in the following snippet, when you press Ctrl+Alt+B/Command+Option+B, the `cfform` tag block is selected. If you retain the selection and then press Ctrl+Alt+B/Command+Option+B, code selection is extended to the next level of enclosure. That is, the entire code block is selected.

```
<cffunction name="test">
<cfform name="form1">
<!--- caret position --->
</cfform>
```

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Jump to matching tag

Use the shortcut Ctrl+Alt+M (Windows) or Command+Option+M (Mac) to move the caret position from beginning to end or end to beginning of a tag block.

> ⚠ **Note**
>
> The caret position can be anywhere within the start or end tag (and not exactly on the tag name).

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Quick Fix

Quick Fix recognizes the usage of methods, classes, and CFC/CFM files in the code and helps you generate them.

For example, if you type a user-defined function {{test() }}that is not defined in the page or any included page, Quick Fix helps you generate the function. The function call is inserted in the file.

When you open/edit a file, ColdFusion Builder automatically identifies the function calls, CFCs, and CFMs that are not defined. A bulb icon appears in the left margin of the editor which, if clicked, prompts you to perform the appropriate quick fix.

> ⚠ **Note**
>
> The shortcut CTRL+1 also yields the same result.

You can turn off the Quick Fix by unchecking Enable Quick Fix (Window > Preferences > ColdFusion > Profiles > Editor > Syntax Checking).

Quick Fix helps you in the following scenarios:

- **Call to local UDF** in any language construct, for example `cfset` or `cfscript` assignment, function arguments, or any other expression. If you specify any arguments in the UDF, then Quick Fix also creates the arguments. Depending on where the function is called, ColdFusion Builder generates the code.Both tag and script-style syntax are supported, depending on the context. That is, Quick Fix generates a method in script-style if it is called in script-based syntax.
- **Method call on a CFC**, for example `cfc1.function1()`. If `function1` is not defined in CFC1, then Quick Fix creates it.
- **Create CFC from `createObject`, new, `cfobject`, and `cfinvoke`**. ColdFusion Builder provides options to create CFC with respect to wwwroot (if the server is associated with the project), project, or in a folder selected by the user.
- **Create CFM page from `cfinclude`** and `cfmodule`
- **Create CFCs and CFMs from extends and implement attributes**.

Example

```
<cfset o1 = new component1()>
<cfset st = structNew()>
<cfset result = getResults("abc", 10, st)>
<cfinclude template="test3.cfm" >
<cfscript >
    o2 = new component2();
 //Assume that component2 exists
    o2.someFunction();
</cfscript>
```

In the snippet, Quick Fix finds four unresolved issues and prompts action:

Line of code	Issue	Prompt
`<cfset o1 = new component1()>`	Component is not created	Create CFC
`<cfset result = getResults("abc", 10, st)>`	Function `getResults` does not exist	Create the function `getResults`
`<cfinclude template="test3.cfm" >`	test3.cfm does not exist	Create test3.cfm
`o2 = new component2();`	Component does not exist	Create `someFunction` in `component2`.

Additional resources

- **Quick Fix in ColdFusion Builder** ColdFusion Builder engineering team member Sagar Ganatra demonstrates the usage of Quick Fix.

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Code Formatter

You can change the look of your CFML code using Code Formatter. The feature helps you standardize indentation, line length, and the case of tags and attribute names. Code formatter formats both tag and script-based syntax.

You can

- Select a CFML file within a project and format its code.
- Format code of an open CFML file in editor.
- Select a section of code in CFML file and format.

In addition to CFM and CFC files, Code Formatter supports formatting of HTML, XML, CSS, and JavaScript code within a CFM or CFC file.

Formatting your code

1. In the editor, open the CFM or CFC file.

2. Do either of the following:

- Right-click and then select Format.
- Use the keyboard shortcut Ctrl+Shift+F (Windows) or Command+Shift+F (Mac)

> **Note**
>
> To format a section of the code, select it before step 2.

Customizing the preferences

Code Formatter has an off-the-shelf set of preferences defined in a profile. To customize the preferences, create a profile or modify the default profile after giving a new name.

1. In ColdFusion Builder, select Window > Preferences.
2. In the tree view, select ColdFusion > Profiles > Editor > Formatter.
3. Click Add to add a new profile or Edit to edit an existing profile after selecting the profile in the Active Profile.

> **Note**
>
> You cannot edit the default profile.

4. In the CFML Formatting Profile, add or modify the profile by setting the rules specified in the following table. The code formatting preferences are based on the rules. Each tab in the dialog box represents a rule.

Rule	Options to
General	• Specify if you want to maintain the case currently used for tags and attributes, or change it to upper or lowercase. • Append `/>` at the end of the tag, for example, modify `<cfargument …. >` as `<cfargument …. />`. Specify the tag to which you want to append `/>` and then click Add. • Place the closing tag for `cfoutput` (`</cfoutput>`) on a new line only if the content spans to multiple lines.
Indentation	• Specify the indentation details and the name of the tags for which you do not want to apply indentation.
White space	• Add white space based on your selections. • Add blank lines based on your selections. • Specify the number of blank lines that you want to retain.
Wrapping	• Specify the number of attributes in a line within a tag and set the column width. • Specify various constructs for wrapping.

Braces	• Specify if the curly braces are placed in the same or new line for component and function declarations and switch, if, else, and try blocks.

Sharing the preferences

You can share the formatting preferences in XML format.

Use the appropriate buttons in the Formatter section of the Preferences dialog box (Window > Preferences > ColdFusion > Profiles > Editor > Formatter) to export your preferences or import preferences shared by somebody.

Additional resources

- **CFML Code Formatter – An Introduction** ColdFusion Builder engineering team member Sandeep Paliwal explains how to enforce coding guidelines using CFML Code Formatter.

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Auto-formatting

ColdFusion Builder automatically indents lines of code and adjusts the ending tag, to improve readability.

Auto-formatting works in the following scenarios:

When you type code

- Indents when you press Enter with the cursor placed after
- > of the start tag
- Opening curly brace ({)
- > for closing tag.
- the closing tag if it is auto-completed while typing `</`.
- When closing, curly brace (}) is placed in alignment with the opening curly brace ({).

When you use Code Assist

- If you auto-insert closing tag, while typing forward slash (`/`), it is placed at the correct location with respect to the start tag.
- If you auto-insert closing tag, it is aligned to the start tag.

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Code colorization

ColdFusion Builder can highlight the syntax for CFML tag names, attributes, attribute values, keywords, comments, and various other elements in different colors. Code colorization is also supported in script-style coding. You can customize the color preferences and override the default Eclipse editor color preferences.

Set CFML Editor color preferences

1. From the Window menu, select Preferences.
2. In the tree-view, select ColdFusion > Profiles > Editor > Syntax Coloring.
    - You can import and export your color preferences as a COL file.

Set SQL Editor color preferences

1. From the Window menu, select Preferences.
2. In the tree-view, select ColdFusion > Profiles > Editor > Colors. Under Tokens, scroll down to SQL, and select color preferences for comments, keywords, and text.

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SQL Editor

The CFML editor has an integrated SQL editor that lets you edit, write, and execute SQL statements.

To use the SQL editor, you must have a server configured and running in ColdFusion Builder. The SQL editor does not support offline databases.

The SQL Editor supports Code Assist and code colorization for the following types of SQL statements:

- Select
- Insert
- Update
- Delete

> ⚠ **Note**
>
> For SQL statements within the cfquery tag, Code Assist is available in the CFML Editor itself. You need not open the SQL Editor for code completion hints.

Using SQL Editor

1. Do one of the following:
   - Right-click in the CFML editor, and select SQL Editor.
   - Use the keyboard shortcut Ctrl+Alt+S (Windows) or Command_Alt+S (Mac OS).
2. In the SQL Editor, select a server from the Server drop-down list and a database from the Datasources drop-down list.
3. Enter the SQL statement and do the following:
   - Click Execute Query to display the results of the SQL statement in the Query Result tab. You can execute only SELECT statements in the SQL Editor.
   - Click OK to insert the SQL statement in the CFML editor at the current caret position. *caret* is the marker in the CFML editor that indicates where the next character appears.
4. You can also copy SQL code blocks from the SQL Editor directly into the CFML editor by selecting the code block and pressing Shift+Enter.
5. To edit a SQL code block in the CFML editor, select the code block, right-click, and select SQL Editor. The selected code block appears in the SQL Editor.

For more information about basic SQL syntax and writing SQL statements, see Using SQLin the ColdFusion Developer Guide.

SQL Code Assist

SQL Code Assist is available only for database table names and field names in the SQL statement.

By default, SQL Code Assist is turned on in ColdFusion Builder, and code hints for SQL statements are automatically displayed in the CFML Editor. To turn off the automatic display of SQL Code Assist, do the following:

1. From the Window menu, select Preferences.
2. In the tree-view, select ColdFusion > Profiles > Editor > Code Assist.
3. Deselect Automatically Display SQL Code Assist When Typing.

Even with the automatic display of SQL Code Assist turned off, you can still get code hints within your SQL statements as follows:

1. Begin entering the SQL statement in the SQL editor and press Ctrl+<Space> to display the database table names or field names.
2. Navigate through the list of table names or field names using the Up Arrow and Down Arrow keys.
3. Select a table name or field name and press Enter. The selected table or field is added to the SQL statement.

ColdFusion Builder provides Code Assist for the `query` attribute of the `<cfoutput>` tag. For example, when you type, `<cfoutput query="">`, and press Ctrl+<Space> with the caret position between the double quotes "". A list of queries created in that file or included files appears.

Code Assist is also provided for query names that are used in expressions.

For example, if you create a query like:

```
<cfquery datasource="dsn1"name="q1">
Select id, firstName, lastName from employee
</cfquery>
```

When you type the expression `<cfset name = q1.>` and press Ctrl+<Space>, ColdFusion Builder displays the columns selected in that SQL query.

SQL Code colorization

In the CFML editor, SQL code colorization is supported only within the `cfquery` tag. You can colorize SQL keywords, comments, and text within the `cfquery` tag. Colorization is supported only for the following types of SQL comments:

- /* */
- _

To set SQL code colorization preferences, see Set SQL Editor color preferences.

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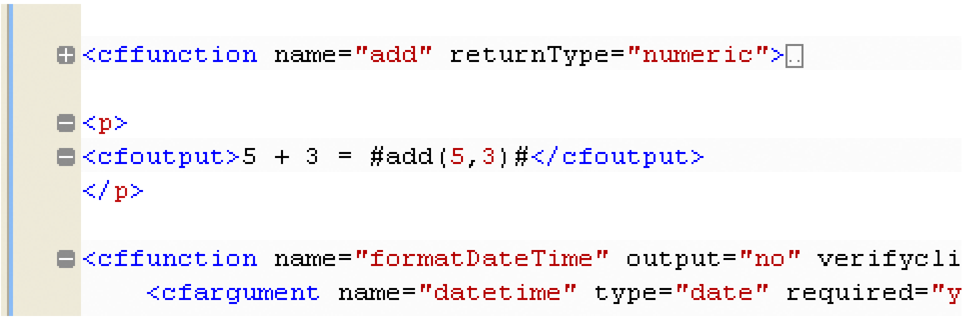
Code folding and unfolding

The CFML editor provides many shortcuts for navigating through your code. Shortcuts include folding and unfolding code blocks, opening the source of code definitions, and browsing and opening types. You can collapse and expand multiline code blocks to navigate, view, and manage complex code documents. In ColdFusion Builder, collapsing and expanding multiline code statements is called code folding and unfolding. You can use this feature in a CFM, CFC, or HTML file.

You can hide and display code blocks of your preference. The code folding that you define is saved and therefore is available for future sessions.

1. In the CFML Editor, click the fold icon (**-**) or the unfold icon (**+**) in the left margin of the editor.

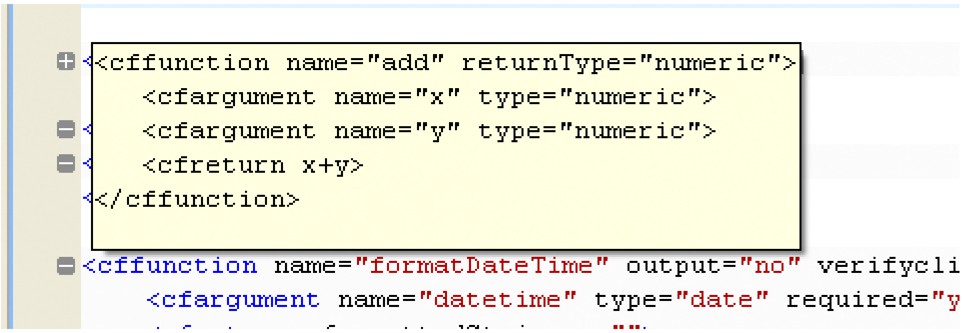


```
<cffunction name="add" returnType="numeric">

<p>
<cfoutput>5 + 3 = #add(5,3)#</cfoutput>
</p>

<cffunction name="formatDateTime" output="no" verifycli
    <cfargument name="datetime" type="date" required="y
```

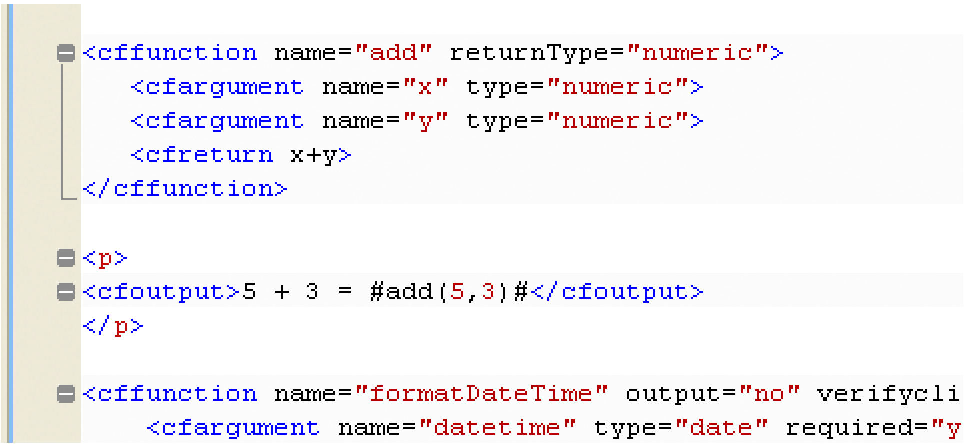
Folding a code block hides all but the first line of code.



```
<cffunction name="add" returnType="numeric">
   <cfargument name="x" type="numeric">
   <cfargument name="y" type="numeric">
   <cfreturn x+y>
</cffunction>

<cffunction name="formatDateTime" output="no" verifycli
    <cfargument name="datetime" type="date" required="y
```

Move the pointer over the unfold icon ⊕ to show the folded code in a tool tip.



```
<cffunction name="add" returnType="numeric">
   <cfargument name="x" type="numeric">
   <cfargument name="y" type="numeric">
   <cfreturn x+y>
</cffunction>

<p>
<cfoutput>5 + 3 = #add(5,3)#</cfoutput>
</p>

<cffunction name="formatDateTime" output="no" verifycli
    <cfargument name="datetime" type="date" required="y
```

Unfold a code block to make the code visible

2. By default, all the lines of code are expanded. To fold or collapse all the lines of code except the first line, right-click in the left margin of the editor. Then select Folding > Collapse All.

Add code folding

1. Select the block of code you want to hide.
2. Do either of the following:
    - Press Ctrl+Alt+F (Windows) or Command+Option+F (Mac)
    - Right-click and then select Source > Toggle Folding at Selection

Remove code folding

To remove code folding for a block of code,

1. Place the cursor on the first line of code and then repeat the steps used to fold the code.

> **Note**
>
> You cannot have multiple code folding starting with the same line of code.

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Syntax checking and highlighting

When you select a tag or code bracket in a CFM file, the matching pair of the tag or bracket is automatically highlighted.

If you type code that is not recognized as valid CFML code, you are notified in the following ways:

- A cross-mark appears next to the line of code.
  Hovering your pointer on the cross-mark gives more details about the error.
- The Problems view lists the errors

  Each message contains a brief description of the error, the file and folder in which the error occurs, and its line number in the file. When you double-click the error, the file is opened in the editor and the line of code is highlighted.

> **Note**
>
> Syntax errors are displayed only for open CFM files and are not displayed after you close a CFM file.

Depending on the nature and severity of the errors, your application sometimes does not run properly until the errors are corrected.

Syntax checking preferences

1. From the Window menu, select Preferences.
2. In the tree-view, select ColdFusion > Profiles > Editor > Syntax Checking.
3. Syntax checking is turned on by default. To turn off syntax checking, deselect Enable Syntax Checking.
4. To display syntax errors only when opening or saving a file, select Display Syntax Errors Only on File Save.
   While editing the file, all errors in the file are removed from the Problems view.

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Navigate through code

Code navigation

Use the shortcuts Ctrl + Shift + Up arrow key and Ctrl + Shift + Down arrow key (Windows) or Command + Shift + Up arrow key and Command + Shift + Down arrow key (Mac) to easily navigate inside your code.

Code navigation works for both tag and script-based syntax.

The following sections explain how code navigation functions in various scenarios:

In CFM files

Caret position changes from a user-defined function to the next or previous one.For example, in the following snippet, if the caret position is on or within `func1`, if you press Ctrl + Shift + Down arrow key, then the caret position moves to `func2` and selects the function name. From anywhere on or within `funct2, }}if you press Ctrl + Shift + Up arrow key, then the caret position changes to {{func1` function and selects the function name.

```
<cffunction name="func1">
</cffunction>
<cffunction name="func2">
</cffunction>
```

In CFC files

Caret position changes

- From a user-defined function to the next or previous one.
- To the top-level members of the CFC, for example to `cfproperty` directly inside the CFC. For example, in the following snippet, if you navigate from line number 1 (`<cfcomponent>`) downward, then caret position first changes to line 2 (`<cfproperty name="prop1">`), and further to line 4 (`<cffunction name="func1">`), and line 6 (`<cffunction name="func2">`). Moving upward, the caret position changes, taking the same path in the reverse order.When the caret position changes to `cfproperty`, the name is selected.

```
<cfcomponent>
<cfproperty name="prop1">
<cfset this.var1 = 100>
<cffunction name="func1">
</cffunction>
<cffunction name="func2">
</cffunction>
</cfcomponent>
```

In flow-control statements

For flow-control statements provided in CFScript (for example, in statements if-else, switch-case, and try-catch), in both CFC page and CFM page, caret position changes to the next or previous code blocks if the caret position is within any of these statements.For instance, if you press the same key combination within `cfif` tag, then caret position changes to the next `cfelseif` or `cfelse` statement.In the following example, if you navigate down from

- Line 1 (`<cffunction name="func1">`), caret position changes directly to line 10 (`<cffunction name="func2">`).
- Within `cfif` in line 2 (`<cfif a eq 10>`), caret position changes to line 4 (`<cfelseif a gt 10>`) and `cfelseif` is selected, provided the caret position is on line 2.
- Line 4 (`<cfelseif a gt 10>`), caret position changes to line 6 (`<cfelse>`)and `cfelse` is selected
- Line 6 (`<cfelse`), caret position changes to line 8 (`</cfif>`).
- Line 8 (`</cfif>`), caret position changes to line 10(`<cffunction name="func2">`) and `func2` is selected.

If you do a reverse navigation (Ctrl + Shift + Up arrow key),

- From line 6 (<`cfelse`), caret position changes to line 4 (<`cfelseif a gt 10`>) and {{cfelseif }}is selected.
- From line 10, caret position changes to line 1{{ (<cffunction name="func1">}}).

```
<cffunction name="func1">
<cfif a eq 10>
<cfset b = 10>
<cfelseif a gt 10>
<cfset b = 20>
<cfelse>
<cfset b = 30>
</cfif>
</cffunction>
<cffunction name="func2">
</cffunction>
```

Smart tab navigation

You can quickly navigate to the next (use Ctrl +] on Windows or Command +] on Mac) and previous (use Ctrl + [on Windows or Command + [on Mac) function argument or tag attribute.

If caret position is at function call or tag name, for downward navigation, the position changes to the first parameter/attribute value.

For nested function calls, caret position changes to the next or previous parameter when you reach the end/beginning of parameters.

Smart tab navigation is applicable to `cffunction` arguments also in the case of function definition, for example

```
<cfscript>function abc(int a, int b) access=”package” output=”false”</cfscript>
```

In this case, when the caret position is on `abc` or `function`, it navigates to `int a`, `int b` , `package`, and `false`.

Smart tab navigation applies to both tag-based and script-based syntax.

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Code refactoring

Code refactoring is the process of improving the source code of a program without changing the overall result. Generally, code refactoring improves code readability and maintainability.

ColdFusion Builder supports various refactoring techniques like renaming, searching, and previewing of CFCs, CFMs, and UDFs at the project and workspace levels.

Refactor CFC or CFM filenames

When you rename a CFC or CFM, you can refactor all valid instances of the CFM or CFC, including all references to the CFM or CFC.

1. Right-click the file in the Navigator pane.

2. Select Refactor > Rename.
3. Enter the new name and preview the changes. When you preview the changes, you can review the selected instances and deselect any instance that you do not want to rename.
4. To rename CFCs or CFMs across all projects in the workspace, select Update All Projects In The Workspaces.

> **Note**
>
> You cannot rename a CFC or CFM in HTTP or Web server URLs unless the server is registered and running.

To undo refactoring, use the keyboard shortcut Ctrl+Z (Windows) or Command+Z (Mac).

Refactor UDFs in CFC or CFM files

1. Open the CFM or CFC file in the editor.
2. Point to the function name, right-click, and select Refactor > Rename
3. Specify the UDF name and click OK.

> **Note**
>
> Currently, function renaming is supported only through the main function declaration and not from function calls.

Notes and considerations

- The location of a CFM or CFC file cannot be changed although the inherent Eclipse editor provides the capability to move files using the Move option.
- The CFML Editor does not support renaming a folder although Eclipse provides this option.

Refactoring methods

You can refactor methods created for application variables by creating variable mappings.

For example, consider a scenario where an application variable is defined for a CFC object as follows:

```
<cfset Application.appVar = createObject("component","abc.AppCFM.a")>
```

Say, you have a CFC function, `Method()`, that you call as follows:

```
<cfset Application.appVar.Method()>
```

To refactor the `Method()` function, create a variable mapping for the application variable `Application.appVar` as follows:

1. In the Navigator view, right-click the project and select Properties.
2. In the Properties dialog box, select ColdFusion Variable Mappings.
3. Click New, enter the following details in the Add Mappings dialog box:

- Variable Name: `Application.appVar`

- Mapped To: `abc.AppCFM.a`

Reference search

You can search for a CFC, CFM, or UDF in a project or workspace.

1. Right-click the project in the Navigator pane.
2. Click References and select Project or Workspace. The results are displayed in the Search window in ColdFusion Builder.

Other than searching for references at the project or workspace level, you can search for references while working in the CFML code editor. Right-click in the CFML editor and select References > File to search for file references. You can also search for references at the project and workspace level from within the CFML editor.

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Tag Editor

The Tag Editor assists you in adding tags and their attributes, even if you are not familiar with CFML. To use the Tag Editor in ColdFusion Builder, do the following:

1. Click the CFML tab in the Source area, if it is not already open.
2. Click the Tag Editor icon from the CFML toolbar. You can also open the Tag Editor by pressing the Ctrl+Shift+T.
3. If you do not know the tag, then search for the tag using the Tag Editor dialog box.
4. Specify the values for the tag attributes. The Tag Editor also displays values specific to an action attribute.
5. Click OK to add the tag to a CFML page.

> ⚠ **Note**
>
> The Tag Editor is context sensitive, so you can edit a tag by moving the cursor to the tag and pressing Ctrl+Shift+T. The Tag Editor for that tag is displayed, and you can specify or change the tag attributes.

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Typing preferences

When typing CFML tags, you can customize your typing preferences. You can specify preferences like the following:

- Auto-insert closing tags and matching characters (like, quotes and curly brackets)
- Auto-indent child tags on pressing Enter and replace whitespace with indentation character
- Auto-change the matching tag when you modify a pair tag
- Auto-suggest single quote and double quote when you quote attributes

Set CFML Editor typing preferences

Auto-insertion is enabled, by default. You can auto-insert matching characters for single and double quotes, brackets, and the ’#’ sign.

To turn off auto-insertion, do the following:

1. From the Window menu, select Preferences.
2. In the tree-view, select ColdFusion > Profiles > Editor > Typing.
3. Deselect Enable Auto-insertion.

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CFML Editor keyboard shortcuts

ColdFusion Builder lets you:

- Use a Quick Assist that displays a catalog of shortcuts related to wizards, tags, and custom shortcuts
- Create custom keyboard shortcuts
- Modify and remove shortcuts
- Search shortcuts for specific action based on filter text
- Export shortcuts in CSV format and import
- Restore defaults shortcut settings

Default shortcuts

Default shortcuts are the factory defaults listed in the Preferences dialog box (Window > Preferences > ColdFusion > Profiles > Keys).

You can import and export default shortcuts, but cannot change their name or description.

You can temporarily remove default shortcuts or modify them. When you click Restore Defaults in the Keys section of the Preferences dialog box, you lose all shortcuts you added, and any modifications. Also, the default shortcuts you deleted are restored.

Shortcut conventions

For ease of organizing and use, it would be a best practice to follow a standard format for your keyboard shortcuts. For the default shortcuts, ColdFusion Builder follows the following formats:

- For tags, Ctrl + T (Windows) or Command+T (Mac). For example, Ctrl + T, A (Windows) or Command+T, A (Mac) for `cfabort`.

> ⚠ **Note**
>
> The comma between Ctrl + T/Command+T and A indicates a sequence. That is, you have to first press Ctrl+T/Command+T, release the keys, and then press A for the shortcut to take effect.

- For wizard-related shortcuts, Ctrl+Alt+W (Windows) or Command+Option+W (Mac).

Similarly, follow a convention which can make your shortcuts intuitive.

Also, to avoid shortcut conflicts, ensure that you define unique key bindings.

Create custom keyboard shortcuts

1. In ColdFusion Builder, select Window > Preferences > ColdFusion > Profiles > Keys.
2. Click Add.
3. Specify a unique name and description for the shortcut.
4. In the Key Binding, specify the shortcut.Conflicts are listed if you do not specify a unique key binding.

5. In the Inserting Text box, specify the text that must be inserted in the editor when you use the shortcut. The section Define caret position explains how to use macros to specify the caret position in the inserted text.
6. Click Save and then OK to close the preferences.

Define caret position

You can use macros to define caret position in the text (for which you create the shortcut) when it appears in the editor.

In the Keys section of Preferences dialog box, when you insert the text, specify the `$${cp}` macro in the position where you want the cursor to appear.

For example, if you specify

```
if($${cp}){ <cfoutput>#A#</cfoutput>}
```

with the binding Alt + T, when you use the shortcut, the block of text is inserted in the editor with the cursor between the parentheses that follows{{ if}}.

Quick Assist

Quick Assist shows up the catalog of shortcuts for quick reference:

- Press Ctrl+T (Windows) or Command+T (Mac) to launch Quick Assist for tag-related shortcuts and custom keyboard shortcuts.
- Press Ctrl+Alt+T (Windows) or Command+Option+T (Mac) to launch Quick Assist for wizards-related shortcuts.
- Press the part of the custom keyboard shortcut that precedes comma. For example, assume that you have set the bindings Alt+T, A and Alt+T, B. Then, if you press Alt+T, Quick Assist lists both the shortcuts.

Additional resources

- **A cheat sheet of keyboard shortcuts in ColdFusion Builder** ColdFusion Builder engineering team member Sagar Ganatra lists all the shortcuts in ColdFusion Builder.
- **ColdFusion Search vs Eclipse Search** ColdFusion Builder engineering team member Kiran Sakhare provides a comparison between Eclipse Search and ColdFusion Builder search.
- **Keyboard shortcuts in ColdFusion Builder** ColdFusion Builder engineering team member Sagar Ganatra explains the keyboard shortcut enhancements in ColdFusion Builder 2.

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ColdFusion Builder Search

ColdFusion Builder Search provides specialized find and replace functionality to search text or tag. Apart from searching the current document, the scope of search can be any open document, selected resources in the Navigator pane, project, working set, workspace, local directory, FTP location, or RDS location. The feature also supports regular expressions and multi-line search.

To save time, you can run remote search in the background and continue with other tasks. The Search View provides the results with details of matches in each file you search.

ColdFusion Builder search applies only to the following file types: CFC, CFM, HTML, XML, CSS, and JS.

Performing search

1. Run the ColdFusion Search dialog box using either of the following options:
    - In an open document, use the shortcut Ctrl+F (Win) or Command+F (Mac).
    - From the Window menu, select Search > ColdFusion Search.

    > **Note**
    >
    > If you use this shortcut in any other context, for example, in a TXT file, the Eclipse Find/Replace dialog box appears instead. However, you can purposely open ColdFusion Search dialog box using the option Search > ColdFusion Search.

2. In the ColdFusion Search dialog box, specify the scope of your search. Depending on the scope, the search options vary.For example, the option Recurse subfolders (used to include subfolders in the search) applies only when your scope is FTP location, RDS location, or local directory.
3. (If the file is not open) To narrow down the search, specify the filename extension.
4. Do either of the following:
    - Specify the text to search and if necessary, the text to replace.
    - Specify the tag to search, and then

    a. Choose a tag and specify the conditions for search. For example, search for `cfimage` tag with attribute `source` containing `cf.jpg`.

    b. Click Add to add the condition to the list.

    c. Select an action, that you want to perform, when the tag is found (such as removing or replacing the tag). If applicable, specify any additional information necessary to perform the action. For example, setting a new attribute for `cfimage`thickness.

    > **Note**
    >
    > Actions apply only if you use Replace or Replace All.

5. Use the following options to expand or limit the search:
    - **Match Case:** Limits the search to text that exactly matches the case of the text you want to find.
    - **Match Whole Word:** Limits the search to text that matches one or more complete words.
    - **Search Backwards**
    - **Search Incrementally:** Lets you progressively search for and filter through text. When you specify search criteria, highlights the first occurrence of the typed characters.
    - **Use Regular Expressions:** Causes certain characters and short strings (such as ?, *, \w, and \b) in your search string to be interpreted as regular expression operators. For example, a search for the b\w*\b dog matches both the{{ black dog}} and the `barking dog.`
    - **Ignore White space:** Treats all whitespace as a single space for the purposes of matching. For example, with this option selected, `this text` would match `this text` and `this text` but not `thistext`. This option is not available when the Use Regular Expressions option is selected; you must explicitly write your regular expression to ignore whitespace.

    > **Note**
    >
    > The tags <p> and <`br`> are not treated as whitespace.

    - **Wrap Search:**Performs end-to-end search from the current cursor position.

    > **Note**
    >
    > Depending on the search scope, some options are disabled.

6. To search (and not perform any action), click Find or Find All.

- Find jumps to and selects the next occurrence of the search text (only) in the current document.If tag is selected, the tag block is highlighted.
- Find All lists the files and the number of matches in each file in the Search View.

1. To replace found text/perform action on tag, click Replace or Replace All.

Search options are saved when you close ColdFusion Builder.

ColdFusion Builder Search View

ColdFusion Builder Search View displays the search results of current search and maintains the history of previous searches.

ColdFusion Builder Search View

- Shows results only if the user clicks Find All.
- Displays results with folder hierarchy; click the file to see the search instances.
- Displays the line numbers for code if search criteria matches. Double-click the line to open the file and see the specific occurrence.
- Indicates if no matches are found.

Additional resources

- **ColdFusion Builder Search\Replace** ColdFusion Builder engineering team member Sagar Ganatra explains the features of ColdFusion Builder search.
- **Tag search** ColdFusion Builder engineering team member Sagar Ganatra explains how to find tags that match your search criteria.

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Add tasks to Task View

If you define tasks as CFML comments, the Task View (Window > Show View > Tasks) displays them based on the priority you set. The tasks are listed according to the default `TODO` and `FIXME` tags or the custom task tag prefix.

Add tasks

1. Open the CFM or CFC file in the editor.
2. Add the task in the format as shown in the following examples:

```
<!--- TODO: Fix the bug 268451 --->
```

or in `cfscript`

```
//TODO: Fix the bug 268451
```

and

```
/*TODO: Fix the bug 268451*/
```

View tasks

The Task View (Window > Show view > Tasks) displays the first line of the CFML task comments.The priority column indicates if the task is of high, normal, or low priority. High priority tasks are indicated using red color.Tasks in all open CFM files are displayed. Since the tasks are saved, they are displayed in the later sessions, when you open the files.

Create a custom Task Tag

1. Go to Window > Preferences > ColdFusion > Profiles > Editor > Task Tags.
2. Click New.
3. In the Add Task Tag dialog box, specify a unique name for the custom task tag and then select the priority.

Use the custom tags in the tasks you create as comments.

Removing tasks

Manually delete the tasks from the source code.This is unlike the tasks you manually create in the Task View, which can be deleted in the View itself.

Managing Servers

- Document root
- URL prefix
    - Usage Scenario
- Virtual host
- Virtual directory

Adding ColdFusion servers
- Add a local server
    - General Settings
    - Other Settings
    - Local Server Settings
        - URL Prefix
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- Adding a bundled ColdFusion server
- Add a remote server
    - Run the Admin server instance in the remote ColdFusion server
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        - Remote Server Settings
        - Install Extensions

Using Servers View
- Start, stop, restart, or delete a server
- Start ColdFusion Server Monitor
- Start ColdFusion Server Administrator

Import RDS server settings

The comprehensive Server Management feature of ColdFusion Builder lets you start, stop, and restart the ColdFusion server, and access the ColdFusion Administrator and Server Monitor from a single Servers view. For more information about the Servers view, see Using Servers View.

You add a server, and associate it with a project to debug or preview files in the project. You also associate a server with a project to install and run the extensions that are packaged with ColdFusion Builder. For more information about adding servers, see Adding ColdFusion servers.

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Understanding web server terminology

Before you set up and manage your server, read through the following topics to understand web server terms and concepts that are used in the documentation.

For detailed information about web servers and configuring them for ColdFusion, see Web Server Management in the *ColdFusion Administrator's Guide*

Document root

The term *Document Root* refers to a file system directory, from where your web server serves web pages. The term can vary from server to server, but the same concepts apply to most web servers.

URL prefix

A URL prefix maps a local file system resource with a URL.

In ColdFusion Builder, you use a URL prefix to preview or debug projects outside your web root or document root.

You can specify a URL prefix while creating a server, or by editing settings for an existing server. For more information, see URL Prefix.

You can also specify a URL prefix to an existing project or folder. For more information, see Set URL Prefix.

Usage Scenario

You have a project called "Project1". Project1 is configured to server1, whose document root is at C:\server1\MyDocs and URL is http://www.example1.com. Within Project1, you have a linked folder called "xyz". The folder xyz points to the document root of server2, which is C:\server2\MyDocs and the URL to access it is http://www.example2.com. You want to preview all the files within the xyz linked folder in ColdFusion Builder.In this scenario, to preview files within the xyz linked folder, you create a URL prefix. You create a URL prefix by specifying the following details:

- Absolute path: C:\server2\MyDocs\
- URL to access the xyz folder: http://www.example2.com

Virtual host

The term *Virtual Host* refers to the method of hosting multiple websites (domain names) on a single web server. The multiple websites are differentiated by their apparent host names. For example, you can run websites www.example1.com, www.example2.com, and www.example3.com, on a single IP address.

In the ColdFusion Builder context, you can use a single ColdFusion server to run multiple websites that are configured as virtual hosts on an external web server like IIS or Apache.

For information on how to configure virtual hosts in the web server, see the web server- specific documentation.

When you associate a project with a virtual host, ColdFusion Builder functionality like, previewing, debugging, Content Assist, and building extensions, is extended to all the folders and subfolders within the project.

Virtual directory

The term _Virtual Directory _refers to a folder that is not physically contained in the document root although it is accessible through the server URL. To create a virtual directory, you specify an alias for the folder’s path in the URL. The alias name is used to access resources within the folder.

Suppose the document root for your website (www.example.com) is c:\xyz\docs, and the folder that provides contents to your website is at d:\abc\content. Then, you define an alias for this folder called content. You can then access the website using the URL: http://www.example.com/content/

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Adding ColdFusion servers

You add a ColdFusion server to test projects or applications that you create in the ColdFusion Builder workspace. The ColdFusion server can be a development server for testing and running your applications before you deploy them on a production server. You can add a local or remote ColdFusion server.

Add a local server

In the Servers view, do one of the following:

- Right-click and select Add Server.
- Click .

Enter the following details in the ColdFusion Server Setup wizard:

General Settings

- Server Name: ColdFusion server name.
- Description: (optional) Description of the server.
- Application Server: Select the drop-down list and select JRun or select Other to configure a non-Jrun server.

> **Note**
>
> You cannot start, stop, or restart a non-JRun server within ColdFusion Builder.

- Host Name: Name of the ColdFusion server host. For example, localhost or 127.0.0.1.
- Select Is Local.

Other Settings

- Webserver Port: Specify the port number of the ColdFusion server instance you are configuring. The default port number of the ColdFusion server is 8500.
- Context root: (applicable only for JRun servers with JEE configuration) Enter the context root. The JEE environment supports multiple, isolated web applications running in a server instance. Hence, JEE web applications running in a server are each rooted at a unique base URL, called a context root (or context path).
- Application Server Name: (applicable only for JRun servers with JEE configuration) Name of the JRun Server on which ColdFusion is deployed.
- RDS User Name: (optional) If you are using RDS, specify the RDS user name.
- RDS Password: (optional) Specify the RDS password.

> **Note**
>
> You set the RDS password in the ColdFusion Administrator. Do not confuse the RDS password with the ColdFusion Administrator password, which is also managed through the ColdFusion Administrator.

- Select Enable SSL to enable SSL support in ColdFusion Builder. Servers registered in the Server Manager

can communicate using SSL.
- Select Auto Start and Auto Stop to automatically start and stop the ColdFusion server every time you launch and exit ColdFusion Builder.

Click Next.

Local Server Settings

Select the Local Server Settings tab, and specify the following local server settings, as applicable.

- Server Home: (applicable only for Server configuration deployments running on Windows) Browse and select the ColdFusion Server home directory. For example, C:\ColdFusion11\cfusion.
- Document Root: Browse and select the web root location. If ColdFusion is configured with a web server, say IIS, then select the document root of the web server; for example, c:\inetpub\wwwroot.This setting is required for previewing, debugging, and CFC name resolution in ColdFusion Builder.
- Version: (applicable only for Server configuration deployments running on Windows) Select the ColdFusion server version from the Version drop-down list.
- Windows Service: (applicable only for Server configuration deployments running on Windows) The Windows Service option is available only for Server configuration deployments, and not JEE configuration deployments of ColdFusion. If you want to start and stop the ColdFusion server using the Windows Service, select Use Windows Service To Start/Stop Server.

URL Prefix

(optional)

> ⚠ **Note**
>
> You don't necessarily have to specify a URL when creating a server. You can specify a URL prefix even after creating the server by editing the server settings in the Servers view. You can also specify a URL prefix to an existing project or folder; for more information, see Set URL Prefix.

Select the URL Prefix tab and enter the following details:

1. Local Path: Browse to or enter the path to the local file system resource.
2. URL prefix: Enter the URL prefix.
3. Click Add.

Virtual Host Settings

(optional)

> ⚠ **Note**
>
> When you specify a virtual host or virtual directory in ColdFusion Builder, corresponding settings must be specified in the configured web server. ColdFusion Builder does not validate these settings. So, if the settings in the web server are different from what you specify in ColdFusion Builder, ColdFusion Builder does not give an error.

To configure a virtual host, select the Virtual Host Settings tab, and do the following:

1. Click New and enter the following details in Virtual Host Settings section.
    a. Name: Specify a name for the virtual host. For example, vh1.

> ⚠ **Note**
>
> You can provide any name and not necessarily the name that you provide in the web server.

   b. Host Name: The virtual host name as specified in your IIS or Apache web server settings. For example, www.example1.comWhen you create a virtual host in ColdFusion Builder, the virtual host uses a naming convention *server name-virtual host name*. The Server drop-down list in Project properties displays the virtual host name using this naming convention. For example, if you created a virtual host named "vh1" in your ColdFusion server (localhost), the naming convention that ColdFusion Builder uses to identify the virtual host is "localhost-vh1".
   c. Port: The port assigned to the virtual host in the web server.
   d. Type: Select HTTP or HTTPS from the drop-down list.
   e. Document Root: Browse to or enter the home directory of the virtual host. For example, if your website www.example.com is mapped to the directory C:\abc on the Apache web server, enter C:\abc as the home directory.
2. (optional) To create a virtual directory, click Virtual Directory, and enter the following details.
   a. Alias: Specify an alias for the folder path.
   b. Location: Browse to or enter the folder path to which you want to specify an alias.For example, if the document root of your website (www.example.com) is c:\abc, and you want to include images from a folder available on d:\xyz\images. Then, you can define an alias called "images" for the folder path "d:\xyz\images". To understand more about virtual directories, see Virtual directory.
   c. Click Add.
   d. Click OK to add the virtual directory to the Virtual Directory Settings table.
3. Click Apply. The virtual host is added to the List Virtual Hosts table.

To modify the virtual host settings, select the virtual host from the List Virtual Hosts table, modify the settings, and click Update.

To understand more about virtual hosts, and its relevance in the ColdFusion Builder context, see Virtual host.

Install Extensions

Select Install Extensions to install the extensions that are packaged with ColdFusion Builder.

1. Browse and select the ColdFusion web root location.
2. Browse to a location within the web root to install the extension. The extension is installed in the Extensions directory within the selected location.

Click Finish to create the ColdFusion local server instance. For information on using these extensions, see Using Extensions.

Adding a bundled ColdFusion server

Bundled ColdFusion Server

Add a remote server

Before you add a remote server in ColdFusion Builder, do the following tasks, if you plan to use the feature within ColdFusion Builder to start/stop the remote instance.

Run the Admin server instance in the remote ColdFusion server

Depending on your remote server version and configuration, do the necessary tasks.

Server remote server version 7.0.2, 8.0.1

1. Unzip the file AdminServerComponents.zip to {CFHome}
   The following files are copied to {cfhome}/runtime/bin:

- adminstart.bat
- admin_jvm.config
- adminstart.sh
  The Admin Server instance is copied to {cfhome}/runtime/servers

1. Go to {cfhome}/runtime/bin and run adminstart.bat (for Windows) or adminstart.sh (for Mac OS)

Multi-server/JEE remote server version 7.0.2, 8.0.1

1. In the AdminServerComponents.zip file, unzip the following files to JRun_Home/bin:

- admin_jvm.config
- adminstart.bat (for Windows) or adminstart.sh (for Mac OS)

1. Go to JRun_Home/bin and run adminstart.bat (for Windows) or adminstart.sh (for Mac OS)

Server/Multiserver/JEE remote server version 9 and above

For ColdFusion 9 versions 9 and above, the Admin Server components are shipped by default and implemented if the Admin Server components are selected during installation.

- For Server configuration, go to {cfhome}/runtime/bin and run the adminstart script file.
- For multi-server configurations of ColdFusion 9 or earlier, go to JRun_Home/bin and run the adminstart script file.

Update security properties for the remote ColdFusion server

1. Go to {CFHome}/runtime/lib/security.properties
2. Update the values of jrun.subnet.restriction and jrun.trusted.hosts with the IP address of computer where ColdFusion Builder is installed. Alternatively, you can use the asterisk wildcard ⭐ as the IP address value, to allow the server to start and stop without any restriction.

Specify the remote server settings in ColdFusion Builder

In the Servers view, do one of the following:

- Right-click and select Add Server.
- Click .

Enter the following details in the ColdFusion Server Setup wizard:

General Settings

- Server Name: ColdFusion server name.
- Description: (optional) Description of the server.
- Application Server: Select the drop-down list and select CF+Tomcat Bundle (for CF 11 Server), or select JRun (for CF9 Server or earlier), or Other to configure another JEE server.

> ⚠ **Note**
>
> You cannot start, stop, or restart a JEE server within ColdFusion Builder.

- Host Name: Name of the remote server host.
- Select Is Remote.

> ⚠ **Note**
>
> When you enter a Host Name other than localhost or 127.0.0.1, Is Remote is automatically selected.

Other Settings

- Webserver Port: Specify the port number of the ColdFusion server instance you are configuring. The default port number of the ColdFusion server is 8500.
- Context root: (applicable only for JRun servers with JEE configuration) Enter the context root. The JEE environment supports multiple, isolated web applications running in a server instance. Hence, JEE web applications running in a server are each rooted at a unique base URL, called a context root (or context path).
- Application Server Name: (applicable only for JRun servers with JEE configuration) Name of the JRun Server on which ColdFusion is deployed.
- RDS User Name: (optional) If you are using RDS, specify the RDS user name.
- RDS Password: (optional) Specify the RDS password.

> ⚠ **Note**
>
> You set the RDS password in the ColdFusion Administrator. Do not confuse the RDS password with the ColdFusion Administrator password, which is also managed through the ColdFusion Administrator.

- Select Enable SSL to enable SSL support in ColdFusion Builder. Servers registered in the Server Manager can communicate using SSL.
- Select Auto Start to automatically start the ColdFusion server every time you launch ColdFusion Builder.

> ⚠ **Note**
>
> Auto Stop is not available for remote servers.

Click Next.

Remote Server Settings

1. Naming
   Port: Specify the naming port of the administrator server instance running
   on the remote server. By default, the naming port value is 2910.
   The naming port value is specified in {servers}/admin/SERVER-INF/jndi.properties. The
   port value of property java.naming.provider.url is the naming port/jndiport.
2. User Name: Specify the jmc user name, which is listed in the jrun-users.xml file.
3. Password: Specify the jmc password.
4. Document Root: Browse and select the web root location. If ColdFusion is configured with a web server, say IIS, then select the document root of the web server; for example, c:\inetpub\wwwroot.
5. Select the Mappings tab, and enter the following details. The mapping details are used for previewing and debugging files on the remote server.
   - Local path: Path that ColdFusion Builder uses to find projects or folders on the remote ColdFusion server.
   - Remote path: (optional if you specify the URL prefix) Path to the project on the remote ColdFusion server.
   - URL prefix: (optional if you specify the remote path) Enter the URL prefix. To understand more about a

URL prefix, and in what scenarios you can use a URL prefix, see URL prefix.

> **Note**
>
> You don’t necessarily have to specify a URL when creating a server. You can specify a URL prefix even after creating the server by editing the server settings in the Servers view. You can also specify a URL prefix to an existing project or folder; for more information, see Set URL Prefix.

- Click Add to add this mapping.

6. (optional) To configure a virtual host, select the Virtual Host Settings tab, and do as follows:

> **Note**
>
> When you specify a virtual host or virtual directory in ColdFusion Builder, corresponding settings must be specified in the configured web server. ColdFusion Builder does not validate these settings. So, if the settings in the web server are different from what you specify in ColdFusion Builder, ColdFusion Builder does not give an error.

- Click New and enter the following details in Virtual Host Settings section.

a. Name: Specify a name for the virtual host. For example, vh1.

> **Note**
>
> You can provide any name and not necessarily the name that you provide in the web server.

b. Host Name: The virtual host name as specified in your IIS or Apache web server settings. For example, www.example1.comWhen you create a virtual host in ColdFusion Builder, the virtual host uses a naming convention *server name-virtual host name*. The Server drop-down list in Project properties displays the virtual host name using this naming convention. For example, if you create a virtual host named "vh1" in your ColdFusion server (localhost), the naming convention that ColdFusion Builder uses to identify the virtual host is "localhost-vh1".
c. Port: The port assigned to the virtual host in the web server.
d. Type: Select HTTP or HTTPS from the drop-down list.
e. Document Root: Browse to or enter the home directory of the virtual host. For example, if your website www.example.com is mapped to the directory C:\abc on the Apache web server, enter C:\abc as the home directory.

- (optional) To create a virtual directory, click Virtual Directory, and enter the following details.

a. Alias: Specify an alias for the folder path.
b. Location: Browse to or enter the folder path to which you want to specify an alias.For example, if the document root of your website (www.example.com) is c:\abc, and you want to include images from a folder available on d:\xyz\images. Then, you can define an alias called "images" for the folder path "d:\xyz\images". To understand more about virtual directories, see Virtual directory.
c. Click Add.
d. Click OK to add the virtual directory to the Virtual Directory Settings table.

- Click Apply. The virtual host is added to the List Virtual Hosts table.

To modify the virtual host settings, select the virtual host from the List Virtual Hosts table, modify the settings, and click Update. To understand more about virtual hosts, and its relevance in the ColdFusion Builder context, see Virtual host.

Click Next.

Install Extensions

Select Install Extensions to install the extensions that are packaged with ColdFusion Builder.

1. Browse and select the ColdFusion web root location.
2. Browse and select the ColdFusion web root location on the remote ColdFusion server.
3. Browse to a location within the web root to install the extensions. The extensions are installed in the Extensions directory within the selected location.

Click Finish to add the remote ColdFusion server instance. For information on using these extensions, see Using Extensions.If the remote server is connected successfully, then the server status in ColdFusion Builder is displayed as Running. If the remote server is not connected successfully, the server status is displayed as Unknown. For more details about the error, see Console view.----
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Using Servers View

Use the Servers View to start, stop, and restart servers in ColdFusion Builder. You can also launch the ColdFusion Server Monitor and ColdFusion Server Administrator from the Servers View.

If the Servers View is not already displayed in the workbench, add the Servers View by selecting Window > Show View > Other. Then, in the Show View dialog box, select ColdFusion > Servers View.

Start, stop, restart, or delete a server

1. Right-click the server in Server View.
2. Select one of the following: Start Server, Stop Server, Restart Server, or Delete Server. Restart Server first stops and then starts the server.

Start ColdFusion Server Monitor

1. Right-click in the Server View.
2. Select Launch Server Monitor to open ColdFusion Administrator.
3. Specify the password.
4. Click OK to view the Server Monitor.

Start ColdFusion Server Administrator

1. Right-click in the Server View.
2. Select Launch ColdFusion Administrator.
3. Specify the username and password.
4. Click OK to view ColdFusion Administrator.

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Import RDS server settings

If you have an RDS server configured, you can import the RDS server settings directly and add your RDS server to the Servers view.

1. Right-click in the Servers view, and select Add Server.
2. Select Import Configuration From RDS Server, and select the RDS server that you want to add to the Server view from the drop-down list.
3. Click OK.
4. To modify the RDS settings, specify changes in the Modify ColdFusion Server Setup dialog box, and click Finish.

You can now associate the server with your project, and debug, preview, and test your project.

Managing Projects

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About projects

Projects contains resources such as ColdFusion components, interfaces, and HTML and CFML pages that are used to develop ColdFusion applications.

Each project is stored in a default workspace. The workspace stores your projects and other metadata. The preferred workspace location is the ColdFusion document root

You can associate a project with a ColdFusion server. By doing so, you can test the project before final deployment.

> ⚠ **Note**
>
> To preview files in your project using a web browser, ensure that you have set your project location to the ColdFusion document root.

To do any CFML development in ColdFusion Builder, you first create a ColdFusion project. To know more about creating a project in ColdFusion Builder, see Creating a ColdFusion project.

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Creating a ColdFusion project

The Project Builder wizard guides you through the steps of creating a ColdFusion project.

Enter project information

1. Right-click in the Navigator area and click New > ColdFusion Project.
2. In the Project Builder wizard, specify the project name.
3. To change the default project location, deselect Use Default Location.
4. Click Next to specify the ColdFusion server details.

Enter server details

1. Select a server from the Server pop-up menu. If you have not configured a ColdFusion server, then click Add Server to add a server. For more information about setting up a ColdFusion Server, see Adding ColdFusion servers.

   > ⚠ **Note**
   >
   > If the project is in the server web root, then the Sample URL box is automatically populated with the server URL. For example, http://127.0.0.1:8500/eval, where 127.0.0.1 is the server host, 8500 is the port number, and eval is the project name.

2. Specify your preview settings to use an external web browser by selecting a web browser installed on your computer. The internal browsers are selected, by default.
3. Click Next.

Add existing sources

1. In this step, you can:
   - Link existing resources folder to the project.
   - Select previously configured applications with the current project.
2. Click Add to select the folder to link to the project.
3. Click Finish to build a new ColdFusion project.

For more information about linking resources, see Link to resources outside the workspace.

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Configure properties for projects and servers

You can use the Properties dialog box in ColdFusion Builder to configure project properties and server settings.

To open this dialog box, right-click the project in the Navigator view and select Properties.

Configure project properties

1. Select ColdFusion Project from the left pane of the Properties dialog box. You can add and remove external projects as links here.

Configure variable mappings

You use variable mappings to provide Code Assist for component variables that are not defined in the file being edited or in the included files.

1. In the Properties dialog box, you see a tree-view structure on the left. Select ColdFusion Variable Mappings.
2. Click New.
3. In the Variable Name field, specify the name of the variable to map, for example, application.cfc1
4. In the Mapped To field, enter the fully qualified name of the project variable, for example, com.adobe.mycfcs.cfc1

Configure server settings

- To open the ColdFusion Server Settings page, select ColdFusion Server Settings in the left pane of the Properties dialog box.
- To create a ColdFusion Server instance, use the Servers pop-up menu.If you have already configured a server instance, you can assign it to your ColdFusion project. For more information about creating a server instance, see Adding ColdFusion servers.

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Add ColdFusion pages, interfaces, and components

ColdFusion Builder provides wizards that guide you through the creation of ColdFusion pages, interfaces, and components.

Create a ColdFusion page

1. Right-click the ColdFusion project in the Navigator.
2. Click New > ColdFusion Page.
3. In the New ColdFusion Page wizard, specify a name for the ColdFusion (CFM) page.
4. Click Finish.

Create a ColdFusion component

1. Right-click the ColdFusion project in the Navigator.
2. Click New > ColdFusion Component.
3. In the New ColdFusion Component wizard, specify the following:
    - Component name
    - Hint to identify the component (optional).
    - Any component that you want to extend.
    - Any interface that you want to implement.
4. Select the output type to be true or false.
5. Click Next.
6. Click Add to specify the component property details, such as the property name, display name, hint, and default value.

7. Enter or select a property type from the Type drop-down list.
8. (optional) Select Add Getter and select its access type from the Access drop-down list.
9. (optional) Select Add Setter and select its access type from the Access drop-down list.
10. Click OK to return to the New ColdFusion Component wizard.
11. To add functions to the ColdFusion component, click Add Function.
12. In the New Function wizard, specify the functions details, such as the function name, display name, hint, access type, return type, roles, and output type.
13. Click OK.
14. To add arguments to the selected function, click Add Argument.
15. In the New Function Argument dialog box, specify the argument name, display name, hint, argument type, and the default value of the argument.

> ⚠ **Note**
>
> The options for the argument type are the same as the argument type options for ColdFusion Interface.

16. Click OK.
17. Click Finish to create a ColdFusion component (CFC file).

> ⚠ **Note**
>
> You can use Outline View to navigate through the functions and tags that you add to your ColdFusion page or ColdFusion component.

Create a ColdFusion interface

1. Right-click the ColdFusion project in the Navigator.
2. Click New > ColdFusion Interface.
3. In the New ColdFusion Interface wizard, specify the interface name, hint, and display name.
4. To extend another interface, browse or specify the name of the CFC.
5. Click Add Functions to add a function and specify its details, such as the function name, function hint, return type, roles, and output (true or false).
6. Click Add Arguments to specify the arguments for the selected function. Enter or select an argument type from the Type drop-down list.
7. Click Finish to create a ColdFusion interface.

Add other files

You can also add the following types of files to your ColdFusion project:

- .html
- .js
- .css
- .lxr (lexer file)
- .col (colorization file)
- .sdoc (ScriptDoc file)
- Untitled versions of the preceding files

In addition, you can create generic text files, folders, and projects. You add these files to a project much as you add ColdFusion pages or components. To add any of these files to a project, do the following:

1. Right-click the project.
2. Select New > Other.

3. Expand Project Files to specify a filename or expand Untitled Files to create an untitled file.
4. Select the file that you want to create.
    - If you are creating an untitled file, click Finish.
    - If you selected Project Files, click Next and specify the filename. Then click Finish.

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Create CFM/CFC files outside the workspace

You can create CFM/CFC files outside the workspace using the File view.

1. In the File view, right-click the local folder in which you want to create the CFM/CFC file.
2. Select New > ColdFusion Page/ColdFusion Component/ColdFusion Interface and then specify the details.

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Set Launch Page

You can designate a specific file as the Launch Page for your project. This page is loaded when you run/debug a file in the project.

1. In the Navigator view, select the page to set as Start Page.
2. Right-click the page and then select Set As Start Page.

To disable a page from being the Launch Page,

1. In the Project View, right-click the project and then select Properties > ColdFusion Project.
2. In the Start Page Setting, deselect Use Start Page.

Dynamically generate Start Page URL for framework applications using extensions

See Extension support for setting Launch Page----

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Set URL Prefix

1. In the Navigator view, select the project or folder for which you want to specify a URL prefix.
2. Right-click the selected project or folder and select Set URL Prefix.
3. Enter the URL for the selected resource.

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Import, export, and delete projects

Import projects

You can import both ColdFusion and non-ColdFusion projects into ColdFusion Builder.

1. Right-click in the Navigator view and select Import.
2. In the Import wizard, select ColdFusion > Import Existing Projects.
3. In the Import ColdFusion Project dialog box, browse and select the project location. A list of all projects is displayed.

4. Click Refresh to search and refresh the project list.
5. Select Show All Projects to display all non-ColdFusion and non-ColdFusion Builder projects in the same location.
6. Select Add ColdFusion Nature To Non-ColdFusion Projects to apply ColdFusion Builder functionality, such as preview, editing, and debugging, to non-ColdFusion Builder projects.
7. Select the appropriate projects and click Finish.

> ⚠ **Note**
>
> Importing a project retains the project properties including the server details, launching settings, browser details, application details, and linked folders.

Export projects

You can export files and folders from a ColdFusion Builder or non-ColdFusion Builder project to a designated location. However, for ColdFusion Builder projects, ColdFusion Builder functionality like server settings, preferences, and such are not exported.

1. Right-click in the Navigator view and select Export.
2. In the Export wizard, select ColdFusion > Export.
3. In the Export Project dialog box, browse and select the location where you want to export the project.
4. Click Select All to export all files and folders within the project, or click Filter Types to specify the files that you want to export.
5. Click Finish to export your project to the designated location.

Delete projects

When you delete a project, you remove the project from the current workspace. You can also remove the project from your computer’s file system at the same time.

1. Right-click in the Navigator view and select Delete.
2. To remove the project from the workspace and the file system, select Delete Project Contents On Disk. The project is then permanently removed from the file system; you cannot undo the command.

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Cloak projects and files

In ColdFusion Builder, you can cloak or hide files, file types, and folders from all synchronization, upload, download operations. This feature is useful if you have a large directory of files that you want to exclude from your synchronization or uploads.

You can cloak a file or folder in two ways:

- Right-click the file or folder in the Navigator view and select Synchronize > Cloak this file type. To uncloak the file type, right-click the file or folder and select Synchronize > Uncloak this file type.
- Set up your preferences to cloak certain file types, using wildcards and regular expressions by performing the following actions:
    1. Right-click the file or folder in the Navigator view and select Synchronize > Advanced Cloaking Preferences.
    2. In the Preferences dialog box, click the ⊕ icon.
    3. In the Ignore File/Folder dialog box, specify the file or folder name.
    4. Click OK. The specified file or folder is displayed in the list of files on which cloaking has been applied.

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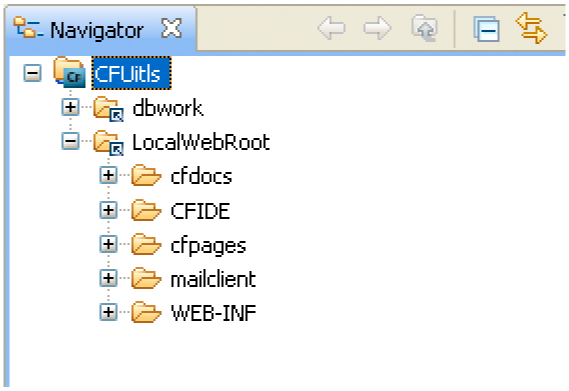
Link to resources outside the workspace

You can link to resources outside the project and workspace. This feature is useful when you have to use resources that are available on shared locations. The linked resource or the folder that contains linked resources appear as follows:



Link to resources outside workspace

1. In the Navigator view of ColdFusion Builder, right-click the project to add the linked resources to.
2. Select the resource that you want to link. For example, if you want to link to a folder, select New > Folder.
3. Enter a name for the resource that you are linking. If you do not enter a name, the default name of the resource is taken.
4. Click Advanced.
5. Select Link to folder in the file system. Enter or browse to the resource location.
6. Click Finish to link the resource to your project.

Use path variables to link to resources

When you link to resources, you can define path variables instead of providing the full path to where the resource is stored. You can define a path variable and then set the path to the resource that you want to link to.

1. In the Navigator view of ColdFusion Builder, right-click the project to add the linked resources to.
2. Select the resource that you want to link. For example, if you want to link to a folder, select New > Folder.
3. Enter a name for the resource that you are linking. If you do not enter a name, the default name of the resource is taken.
4. Click Advanced.
5. Select Link to folder in the file system. Enter or browse to the resource location.
6. Click Variables.
7. You can select an existing path variable or click New to create a path variable.

> **Note**
>
> The list of existing resource variables is also available by selecting Window > Preferences from the main menu and then selecting General > Workspace > Linked Resources. You can edit and create linked resource variables using the Linked Resources dialog box.

8. To create a path variable, enter a name for the resource and browse to or provide the full path to the resource. Click OK to add the path variable to the path.
9. Click Finish to link the resource to your project.

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Deploy projects over FTP and Secure FTP connections

ColdFusion Builder lets you deploy ColdFusion projects on a web server using File Transfer Protocol (FTP).

ColdFusion Builder also supports file transfers using Secure File Transfer Protocol (SFTP) and File Transfer Protocol Secure (FTPS) connections. SFTP and FTPS are a secure form of FTP, which encrypt the files that you send and receive to a remote server.

Create an FTP or secure FTP connection in ColdFusion Builder

1. Right-click the project in the Navigator view.
2. Click Synchronize > Create New Synchronize Connection.
3. Specify a name for the connection.
4. Select the ColdFusion project or file to deploy by selecting the Local drop-down list and the location that contains the file or project.
5. Select a remote server, and enter the following details in the New Connection Dialog Box.
    a. Site name: Name of the new remote site.
    b. Select the connection type.
    c. Server: URL of the site to connect to (for example, admin.myWebSite.com). You can also enter the IP address of the site.
    d. Username/Password: User name and password of the server.
    e. Use Public Key Authentication: This option is available only if you select SFTP as the connection type. Public key authentication lets you select a key-pair on your computer, and you copy the public key to the server.
    f. Remote path: If you want to connect to a subfolder under the root of the remote site, specify the folder path.
    g. Click Advanced Options to specify the following:
    - Port: If you want to use a port other than 22, specify the port.
    - If you want the FTP connect session to run in the background, select Use Passive Mode.
    - If you work in a team environment, you sometimes want to upload files that overwrite others' changes. If so, select Calculate Server/Client Time Offset Automatically as a precaution.

1. Click OK to add the FTP connection.

Upload, download, or synchronize projects, files, and folders

1. Right-click the project or file in the Navigator view and select Synchronize > Upload or Download.
2. From the Choose Site Connection dialog box, select the connection.
3. Click OK.

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Import Ajax libraries

1. In the Navigator view, right-click the project in which you want to import Ajax libraries, and click Import.
2. In the Import wizard, select ColdFusion > Ajax Library Import Wizard, and click Next.
3. Select the Ajax libraries that you want to import, and click Finish.

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Working with Flash Builder projects

To work with a Flash Builder project in ColdFusion Builder, import the Flash Builder project into ColdFusion Builder. After that, apply ColdFusion Builder functionality by selecting the Flash Builder project in the Navigator view, then right-click and select Apply ColdFusion Nature.

Applying ColdFusion Builder functionality to the Flash Builder project lets you preview, edit, and debug the Flash Builder project from within ColdFusion Builder.

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Developing AIR applications

Adobe ColdFusion Builder provides you with tools to create Adobe® AIR® projects, debug, package, and digitally sign Adobe AIR applications.

Create an AIR project

1. Select File > New > Project.
2. In the Create Project wizard, select HTML Projects > Adobe AIR Project, and click Next.
3. Enter the project name and the location of the files in the project.
4. Specify the HTML start page that contains the sandbox application code. You can also select non-application sandbox code. Click Next.
5. Specify the following properties of the application XML file, and click Next.
    - ID: Unique application ID that is the identifier string for the application.
    - Name: Application name
    - Filename: Name of the file and folder where the application is installed
    - Version: Application version
    - Icon: Icon files that represent the application. If you don't specify an icon, the operating system uses a default icon.
6. Specify the window style, dimension, sizing options, and click Next.
7. Select the AIR frameworks to import into the project, and click Next.
8. Select the Ajax JavaScript libraries that you want to import, and click Finish to create your AIR project.

Run and debug an AIR application

1. From the Navigator view, open the source file (Application.XML) for the application.
2. Click Run on the main toolbar to launch the AIR application.
3. To debug the application, click 🐞 in the workbench toolbar.

The application launches and runs in the ADL application (AIR Debugger Launcher). The ColdFusion debugger catches any breakpoints or runtime errors and you can debug the application like any other ColdFusion application. For more information, see Debugging Applications

Package and digitally sign an AIR application

When your application is complete and ready to be distributed, you package it into an AIR file. Packaging consists of the following steps:

1. From the Navigator view, right-click the AIR project that you want to package, and click Export.
2. In the Export wizard, select Adobe AIR > Adobe AIR Package, and click Next.
3. Select the AIR project and the application descriptor file.
4. You can select the default AIR SDK or configure a different Adobe AIR SDK, and click Next. To configure a

different AIR SDK, click Configure Adobe AIR SDKs, and select an AIR SDK. You can also add a new AIR SDK, or edit and remove an existing AIR SDK.

5. You can digitally sign your AIR application by selecting an existing digital certificate or by creating a self-signed certificate. Digitally signing your AIR application provides assurance to the users that the application has been signed with a trusted certificate and displays the publisher identity.
    a. Select Digitally Sign Exported AIR Application.
    b. Select an existing digital certificate, or click Configure Certificates to select a different digital certificate. Click Add to create a self-signed certificate.
    c. Specify the password for your digital certificate.
    d. If you select TimeStamp AIR Package, when signing the installation package, the AIR Developer Tool (ADT) automatically contacts a time-stamp authority to verify the time. The time-stamp information is included in the AIR file. An AIR file that includes a verified time stamp can be installed at any point in the future.
    e. Select Migrate AIR Application to migrate an AIR application to a new certificate. When you do so, sign the AIR file with both new and old certificates. Select the previous certificate from which you want to migrate and the previous certificate password.
    You also have the option of packaging your AIR application without a digital signature. To do so, deselect Digitally Sign Exported AIR Application. When you package your AIR application without a digital signature, an intermediate AIR file (.airi) is created. An intermediate AIR file cannot be deployed or installed. It is generally used for testing (by the developer) and can be launched using the AIR ADT command-line tool.
6. Click Next to optionally select files to exclude from the exported AIR file. By default, all the files are included.
7. Click Finish to generate the AIR file.

Debugging Applications

- Using ColdFusion debugger
    - Set up ColdFusion to use the Debugger
        - Set up debugging for J2EE configuration of ColdFusion
- Debugging your application
    - Create or edit launch configurations
    - Run the application
    - Set and remove breakpoints
        - ColdFusion breakpoints
        - Set a breakpoint in the code editor
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    - Start a debugging session
    - Manage the debugging session
        - Run code line by line
            - Step Into
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        - Inspect variables
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- Debugging remote applications

Debugging lets you examine and troubleshoot your application. When you debug, you can control when the application must stop at specific points in the code. You can also monitor important variables and test your code. Debugging uses a configuration to control how applications are launched. When you debug your application, you run the debug version of the application file.

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Using ColdFusion debugger

Before you use the ColdFusion Debugger, ensure that you do the following:

Set up ColdFusion to use the Debugger

Before you use the Debugger, ensure the following:

- A server is associated with the project or the project containing the files that you want to debug.
    1. In the Navigator view, right-click the project and select Properties.
    2. In the Properties dialog box, select ColdFusion Server Settings.
    3. Under Select Servers, ensure that a server is selected. If no server is selected, select the Servers drop-down list and select an available server, or select Add Server to configure a new server.
- RDS is enabled on the ColdFusion server, and you have specified the correct RDS configuration information in ColdFusion Builder.
- Debugging is enabled in ColdFusion Administrator.
    1. In ColdFusion Administrator, select Debugging & Logging > Debugger Settings.
    2. Select Allow Line Debugging.
    3. Specify the port to use for debugging. The default value is 5005.

4. Specify the maximum number of simultaneous debug sessions. The default value is 5.
5. Click Submit Changes.
6. To increase the time after which requests time out, do the following:
7. Select Server Settings > Settings.
8. Select Timeout Requests After (Seconds) and enter the required timeout value. For example, 300.
9. Click Submit Changes.
10. The debugger server listens for commands from ColdFusion Builder on a separate port than the one specified in step 3. By default, ColdFusion launches the debugger server with a random available port. This could be a problem if ColdFusion (and hence debugger server) is behind a firewall. Because, the firewall blocks the random port that the debugger is listening. To prevent this problem, specify a fixed debugger server port number and allow this port in the firewall. To set a fixed debugger server port number, specify the following JVM argument on the Java And JVM page of the ColdFusion Administrator (or the appropriate place for your J2EE Application Server). Replace portNumber with the port that you want to use:

    ```
    -DDEBUGGER_SERVER_PORT=portNumber
    ```

11. Restart ColdFusion. If you are running the J2EE configuration of ColdFusion, restart the server in debug mode with the debug port as specified.

Set up debugging for J2EE configuration of ColdFusion

1. If you are not running the server configuration of ColdFusion, specify Java debugging parameters in the configuration file or startup script of the application server you are running. The parameters must look like the following:

    ```
    -Xdebug -Xrunjdwp:transport=dt_socket,server=y,suspend=n,address=<port_number>
    ```

    Ensure that the port number you specify is the same port number specified on the Debugger Settings page of ColdFusion Administrator.If you are running the server configuration, ColdFusion writes these debugging parameters to the jvm.config file when you use the Debugger Settings page of the ColdFusion Administrator.

2. If you are not running the server configuration and your application server is not running on JRE 1.6, copy the tools.jar file of the JDK version that your application server is running to the \lib folder of ColdFusion. For example, if you are running JRun that runs on JRE 1.4, copy the tools.jar file of JDK 1.4 to the \lib folder of ColdFusion.
3. If you are running the server version of ColdFusion and you specify a JRE version other than JRE 1.6 in the jvm.config file, copy the tools.jar file of the JDK version specified in your jvm.config file to the \lib folder of ColdFusion.

Specify debugger settings in ColdFusion Builder

1. In ColdFusion Builder, select Window > Preferences.
2. In the tree view, select ColdFusion > Debug Settings.
3. Specify the home page URL that points to the page that appears in the Debug Output Buffer of the debugger when you click the Home button.
4. Specify the extensions of the types of files that you can debug and debugger scopes that you want the Debugger to recognize. To improve performance when debugging large files, deselect all scopes for which you do not require information.
5. Select Break On CFML Runtime Exception to stop the debugger on the line that causes a ColdFusion error.

6. Select Log An Exception To The Eclipse Error Log to display the server logs in the TailView view instead of showing a warning dialog.

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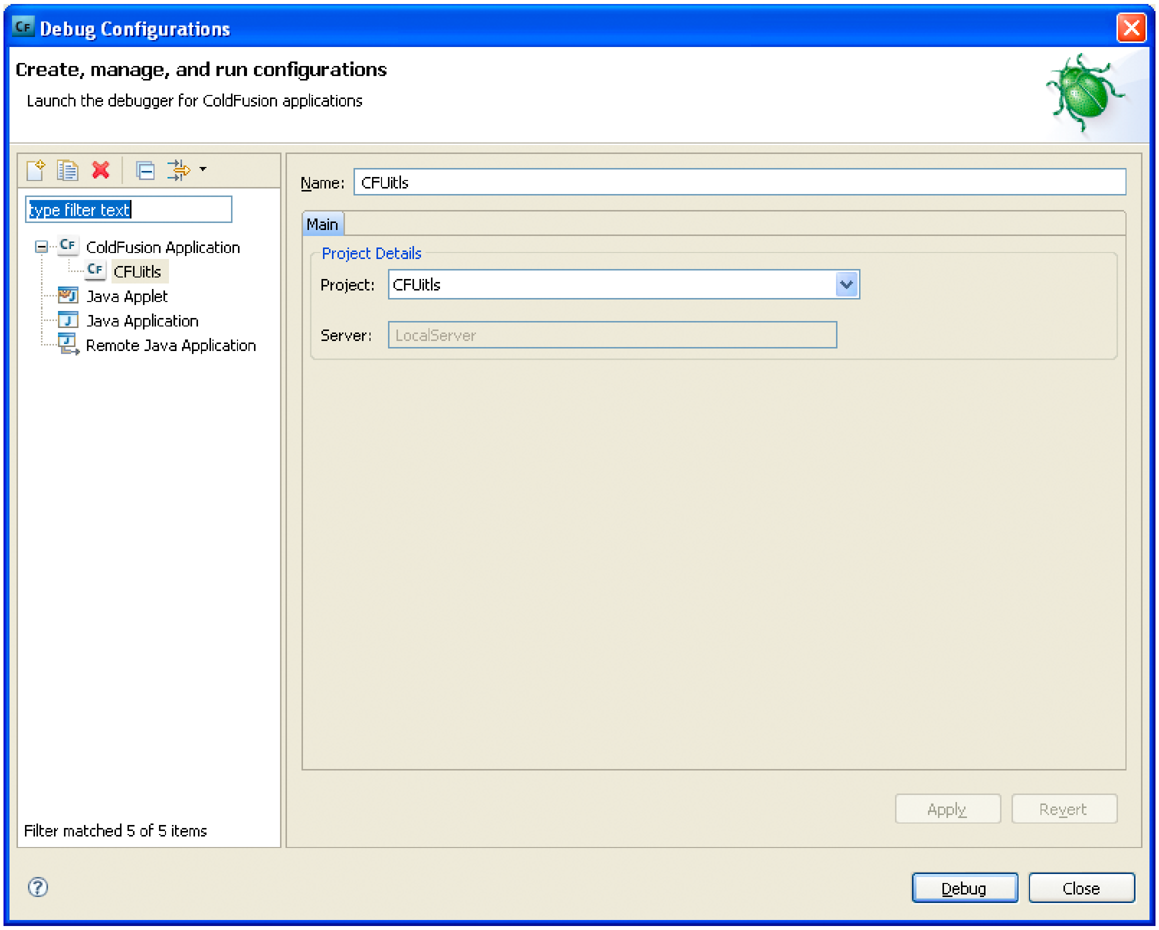
Debugging your application

After you enabled the debugger in the ColdFusion Administrator and configured the debugger in ColdFusion Builder, you can debug projects in ColdFusion Builder.

Create or edit launch configurations

When you debug a project in your application, ColdFusion Builder creates a project-specific launch configuration for the first time that you debug. The launch configuration automatically defines a project name (based on the project that you are debugging), main application file, and the path to debug the application.

Launch configurations are managed through the Create, Manage, and Run Configurations dialog box.



Debug Configurations

Create, manage, and run configurations

Launch the debugger for ColdFusion applications

Name: CFUitls

Project Details

Project: CFUitls

Server: LocalServer

Debug configuration

You can edit the default launch configuration that ColdFusion Builder creates.

1. Select the project to debug in the Navigator view.
2. You can access the launch configuration in the following ways:
   - Select Run > Debug or Run > Debug Configurations

    - Select 🐞 in the workbench toolbar.
    - Right-click the project and select Debug As > Debug Configurations.
3. Select the launch configuration to edit in the Debug Configurations dialog box.You can also create a launch configuration or base a new configuration on an existing configuration.
4. Click the Perspectives link to modify the launch configuration preferences, as required.

Run the application

Run the application that you want to debug before setting any breakpoints. Running the application before debugging compiles the application and improves performance during debugging.

1. Select the project to run in the Navigator view.
2. Select or modify the Run configuration using the Run Configurations dialog box. You can access this dialog box in the following ways:
    - Select Run > Run configurations.
    - Right-click the project and select Run As > Run Configurations.
3. Select the configuration to run or modify, if necessary.
4. Click Run.

The application is run in your computer’s default browser. To specify a different external browser, do as follows:

- (Windows) Right-click the project and select Properties. Go to ColdFusion Server Settings, and select a a web browser installed on your computer.
- (Mac) In the Preferences dialog box, select General > Web Browser, and select a web browser installed on your computer.

Set and remove breakpoints

You use breakpoints to control the running of your application so you can inspect your code and debug your application. You add breakpoints in the code editor and then manage them in the Breakpoints view. You can also set breakpoints as you write code or while you debug.

For more information about managing breakpoints using the Breakpoints view, see Breakpoints view.

ColdFusion breakpoints

ColdFusion breakpoints have the following four states in the ColdFusion debugger:

- **Enabled and Valid** This state indicates that the breakpoint is at a valid location. The breakpoint appears as a solid blue circle in the left margin of the CFML Editor. Code execution stops when this breakpoint is encountered.
- **Unresolved** ColdFusion sets the breakpoint for the page that is loaded in its memory. If you modify the page and do not run it, the source is no longer in sync with the page on the server. In this situation, ColdFusion sometimes does not know whether the line where you want to set the breakpoint is valid. A question mark ? represents this type of breakpoint.
- **Invalid** If ColdFusion determines that the CFML that you are editing in ColdFusion Builder is the same as the CFML in its memory, and that the breakpoint you have set is at an invalid line, the breakpoint appears as a red X.
- **Disabled** This state indicates that the breakpoint is disabled.

Set a breakpoint in the code editor

1. Open the ColdFusion Builder project that contains the code in which you want to set breakpoints.
2. Locate the line of code where you want to set a breakpoint, and do one of the following:

- Double-click in the marker bar along the left-edge of the editor.
- Select Run > Toggle Breakpoint or Run > Toggle Line Breakpoint.

> **Note**
>
> Toggle Method Breakpoint and Toggle Watchpoint are not supported in ColdFusion Builder.

3. You can set breakpoints in your CFML file to stop executing the page at particular points. When you set a breakpoint on a line, the CFML stops executing just before that line. For example, if you set a breakpoint on the third line in the following CFML page, execution stops before `<cfset myName = "Wilson">`.

```
<cfset yourName = "Tuckerman">
<cfoutput>Your name is #yourName#.</cfoutput>
<cfset myName = "Wilson"
```

A blue dot appears before the line on which you set the breakpoint.

You can also view a list of breakpoints set in the current project in the Breakpoints view of the ColdFusion Builder Debugging perspective.

Skip all breakpoints in the code editor

After setting breakpoints in your code, you can ignore all breakpoints at the time of debugging.

1. Open the ColdFusion Builder project that contains the code with breakpoints.
2. In the Breakpoints view toolbar, select Skip All Breakpoints.

Remove a breakpoint in the code editor

In the marker bar along the left-edge of the editor, double-click an existing breakpoint.

The breakpoint is removed from the marker bar and the Breakpoints view of the ColdFusion Builder Debugging perspective.

To remove all the breakpoints in the file, select Run > Remove all Breakpoints from the main toolbar menu.

Start a debugging session

1. In the Navigator view, select the project or file to debug.
2. You can start the debugging session in the following ways:
   - Select Run > Debug
   - Click 🐞 in the workbench toolbar.
   - Right-click the project and select Debug As > ColdFusion Application.

The Debug launch configuration is automatically created and launched.

> **Note**
>
> If you are debugging a page and then try to browse to or refresh that page, it can result in unexpected behavior in the Debugger.

Manage the debugging session

Use the Debug view to control the debugging of the application, to suspend, resume, or terminate the application, or to step into or over code.

For information about the various views in the ColdFusion Debug perspective, see ColdFusion Debugging perspective.

Run code line by line

You can use the Step Into, Step Over, and Step Return buttons to proceed through your CFML application line by line.

For the stepping process to work properly, clear the cache of compiled classes. To do so, recompile all CFML pages compiled with an earlier version of ColdFusion.

In large files, you sometimes find that stepping and breakpoints are slow. To improve performance, do the following:

1. In ColdFusion Builder, select Windows > Preferences.
2. In the tree view, select ColdFusion > Debug Settings
3. Deselect all scopes for which you do not require information.

Step Into

Use Step Into for UDFs, CFCs, custom tags, and included files. Avoid using Step Into on CFML tags such as the `cfset` tag. Step Into is more performance intensive than Step Over. When stepping into functions, tags, and files, the file must be displayed in one of the open projects. The file that you are stepping in must be in an open project.

Step Over

Use Step Over to proceed through your CFML application, bypassing included files, such as UDFs or CFCs.

Step Return

Use Step Return to return to the original page from which you entered the included file, such as UDFs or CFCs.

Inspect variables

As you run CFML code, you can see the values and scope of variables in the Variables view. Only variables whose scopes are what you selected in the Preferences dialog box appear in the Variables view. For more information about using the Variables view, see Variables view.

Watch expressions

Watch expressions are useful to watch critical variables that sometimes go out of scope when you step into a different function. You can create your own expressions to watch and evaluate. You can modify the expressions during the debugging session.

You can do the following in the Expressions view:

- Create a watch expression by right-clicking and selecting Add Watch Expression. You can then enter the expression in the Add Watch Expression dialog box.
- Ignore a watch expression that you’ve added by right-clicking the expression and selecting Disable.
- Edit a watch expression by right-clicking the expression and selecting Edit Watch Expression. You can then modify the expression.

For more information about using the Expressions view, see Expressions view.

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Debugging remote applications

If ColdFusion is running on a remote server, configure a remote server connection and specify a mapping between ColdFusion and ColdFusion Builder. Mapping ensures that ColdFusion Builder and ColdFusion are working on a copy of the same project or file.

1. To configure a remote server, see Add a remote server. Enter the RDS configuration information, as required.
2. In the Server view, right-click the server and select Edit Server. In the Mappings screen of the Server wizard, enter the following mapping details:

- Local Path: Path that ColdFusion Builder uses to find projects or folders on the remote ColdFusion server.
- Remote Path: Path to the project or folder on the remote ColdFusion server.

> **Note**
>
> You can specify multiple mappings between the remote ColdFusion server and ColdFusion Builder.

For example, if you are editing files in a ColdFusion project that points to D:\MyCoolApp and the corresponding files exist on a remote server at D:\Shared\websites\MyCoolSite. Then, create a mapping by specifying the local path as D:\MyCool App and the remote path as D:\Shared\websites\MyCoolSite.When you deploy the files to the ColdFusion server, you copy them to W:\websites\MyCoolSite\, which the ColdFusion server recognizes as D:\Shared\websites\MyCoolSite. The mapping in ColdFusion Builder specifies that the ColdFusion Builder directory is D:\MyCoolApp and the server is D:\Shared\websites\MyCoolSite. So, ColdFusion Builder translates the file path (D:\MyCoolApp\index.cfm) to a path that the ColdFusion server recognizes (D:\Shared\websites\MyCoolSite\index.cfm). To see more information about the interaction between the client and the server, add the following to the JVM arguments in the ColdFusion Administrator:

```
-DDEBUGGER_TRACE=true
```

In the Navigator view, select the project or file to debug and click 🐞 in the workbench toolbar.

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ColdFusion Builder Extensions

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About extensions

You can extend the ColdFusion Builder IDE (Integrated Development Environment) functionality to support various ColdFusion frameworks and code generation requirements. You develop ColdFusion Builder extensions to generate code, design dynamic user interfaces, and perform basic CRUD (Create, Read, Update, and Delete) operations on the database. The ColdFusion Builder extension is a structured component that adds context menus in the ColdFusion Builder IDE and handles events on these menus. You, the ColdFusion developer, can develop a ColdFusion Builder extension yourself or you can install an available extension.

To develop your own ColdFusion Builder extension, you create the configuration file and handler files. You define the context menus and events in the configuration file - IDE_Config.xml. For more information, see Developing extensions.

ColdFusion Builder lets you extend the IDE at various levels including creating user interfaces. For more information, see Creating user interfaces for extensions.

The extensions that are shipped along with ColdFusion Builder are Adobe CFC Generator and AS Class Generator. You can install and integrate these extensions with ColdFusion Builder. For more information, see Using Extensions.

ColdFusion Builder provides the ColdFusion Builder Extension Creator to guide you through the process of creating and packaging extensions. For more information, see Use ColdFusion Builder Extension Creator to create and package extensions.

Developing extensions

To develop a ColdFusion Builder extension, you create the following elements:

- Configuration file (IDE_config.xml)
- Handler files (CFM files)

You can create these elements by writing the code or by using the ColdFusion Builder Extension Creator wizard. For more information about using the ColdFusion Builder Extension Creator wizard, see Use ColdFusion Builder Extension Creator to create and package extensions.

Configuration file

Creating the configuration file (IDE_config.xml) is an important step in developing a ColdFusion Builder extension. You define all the elements of the configuration file within the {{application }}tag.

Specifying metadata elements

You use metadata elements to create an extension and specify information like, extension name, author, version, and extension description.

Use the following elements to specify application metadata in the configuration file.

Element	Description
`name`	The name of the extension.
`author`	The author's name.
`version`	The file version.
`email`	Specifies the e-mail address.

`description`	A brief description of the application. The description can be in plain text or you specify a path to an HTML file, which contains the application description. If you specify a path to an HTML file, store the HTML file in the Install directory within the extension.
`license`	License agreement displayed when installing the extension.The license agreement can be displayed in plain text or you specify a path to an HTML file, which contains the license agreement. If you specify a path to an HTML file, store the HTML file in the Install directory within the extension.

Example

```
<application>
 <name>ORM CFC Generator</name>
 <author>Adobe</author>
 <version>1.0</version>
 <email>user@xyz.com</email>
 <description>ORM CFC code Generator</description>
 <license>license.html</license>
</application>
```

Adding pages to the ColdFusion Builder Extension Installation wizard

When you define the Configuration file, you can specify code that adds screens to the ColdFusion Builder Extension Install wizard. You can use these screens to get user inputs. Generally, user inputs are required for performing any configuration tasks after installation.

You specify input details using the `input` tag; for information on how to specify input tags, see Specifying input types. The handler that is specified in the `handlerid` attribute of the `wizardtag` is called with the input details. You can also specify the height and width of the Install wizard using the `height` and `width` attributes of the `wizard` tag. You can specify the title for each page in the wizard using the `title` attribute of the `page` tag.

Syntax

```
<application>
<name>Name of the ColdFusion Builder extension</name>
<install>
<wizard height="" width="" handlerid="handlerID" >
<page title="Wizard page title" >
<input name="Input" ... />
<input name="Input" ... />
</page>
</wizard>
</install>
</application>
```

Example

In the following example, once the Extension Installation wizard finishes installing the extension, the handler ID, `postinstallhandler`, is called with the specified input details.

```
<application>
<name>ORM CFC Generator</name>
<install>
<wizard height="" width="" handlerid="postinstallhandler" >
<page title="Install settings" >
<input name="Mapping" ... />
<input name="Datasource" ... />
</page>
</wizard>
</install>
</application>
```

Extending IDE

You can extend the ColdFusion Builder IDE at the following levels:

- Adding context menus: You can add context menus to the following views:
  - Resource navigator
  - RDS Data view
  - Outline view
  - CFML Editor
- Handling workspace events: Currently `onprojectcreate` is the only supported event.
- Create views
- Contribute to Code Assist from extensions

You can specify handlers for the context menus and events to perform CRUD or code generation operations.

Specifying Handlers

ColdFusion Builder supports CFM handlers. In the ColdFusion Builder context, a handler is a file that contains code, which is run in response to an event or an action. You specify handlers within the `handlers` tag. Use the `handler id` attribute to associate the handler with an event or action. Specify all handler details within the `handlers` tag. For more details on specifying events and actions, see Specifying events and Specifying context-menus. All the handler files must be stored in the Handlers folder.

Syntax

```
<handlers>
 <handler id ="cfm" type="cfm" filename="filename" />
</handlers>
```

Attribute	Description
id	Handler ID

`type`	Specifies the handler type.The handler type you can specify is "CFM"
`filename`	The name of the CFM file

Note

You can specify only alphanumeric characters for the attribute values. Special characters are not allowed.

Example

```
<handlers>
 <handler id="cfcgenerator" type="CFM"
 filename="ormCFCGenerator.cfm" />
 <handler id="gridgenerator" type="CFM"
 filename="cfgridGenerator.cfm" />
</handlers>
```

Specifying events

Use the events tag to specify events. Currently, ColdFusion Builder only supports an event on project creation. The supported event type is `onprojectcreate`. Pass the required handler ID for the `onprojectcreate` event. When the event occurs, the handler associated with the handler ID is called.

All applications for which the `onprojectcreate` event is specified are listed under the list of applications in the Creating a ColdFusion project. When a user selects any of the listed applications, the associated handlers for the selected application are called. The `onprojectcreate` event is useful in creating a basic project structure for a given ColdFusion Builder extension.

Syntax

```
<events>
 <event
 type="onprojectcreate"
 handlerid="handler id" />
</events>
```

Attribute	Description
`type`	Specifies the event for which the handler runs.You can specify the event type="onprojectcreate"
`handlerid`	Specifies the handler ID to pass.

Note

You can specify only alphanumeric characters for the attribute values. Special characters are not allowed.

Example

```
<events>
 <event type="onprojectcreate"
 handlerid="projectCreationHandler" />
 </events>
```

New events added in ColdFusion Builder 2.0.1

onfilechangeineditor: Extension can listen for events when file changes in the editor

Assume that you move to a different document (by clicking the tab on editor) or by opening a document in the editor. It is now possible for the extension to know this. For this, a new event {{onfilechangeineditor, has been introduced. The event can }}be registered as follows:

```
<event  type=”onfilechangeineditor” handlerid=”any_handler_id/>
```

The information sent in the event message includes the following:

- `type`: `Event type` is `onfilechangeineditor`
- `project_path`: Absolute path of the project to which the file (that is opened in the editor) belongs.
- `file_path`: Absolute path of the file currently opened/switched to in the editor.
- `editor_name`: Name of the editor that opened the file. For CFML files, the name is Adobe CFML Editor..

The following is a sample output:

```
<?xml version="1.0" encoding="UTF-8"?>
<event>
 <ide version="2.0">
  <callbackurl>
   http://[ip_address:port]/index.cfm?extension=<Extension_Name>
  </callbackurl>
  <eventinfo type="onfilechangeineditor">
   <project>
    Extensions
   </project>
   <project_path>
    [project_path]
   </project_path>
   <file_path>
    [file_path]
   </file_path>
   <event>
    onfilechangeineditor
   </event>
   <editor_name>
    Adobe CFML Editor
   </editor_name>
  </eventinfo>
 </ide>
 <user>
 </user>
</event>
```

onRDSDataViewSelectionChange: Extension can listen for event when selection changes in the RDS data view

ColdFusion Builder sends different event information messages to the handler, depending on selection in the RDS Data view.For this, a new event, `onRDSDataViewSelectionChange` has been introduced. The event can be registered as follows:

```
<event  type=”onfilechangeineditor” handlerid=”any_handler_id/>
```

Node selected	Information Sent	Sample

Server	• `type`: The event type `onRDSDataViewSelectionChange`
	• `name`: Server name
	• `node_type`: Type of the node-server
		`<?xml version="1.0" encoding="UTF-8"?>`
		
		`<event>`
		`<ide version="2.0">`
		`<callbackurl>http://[ip_address:port]/index.cfm?extension=<Extension_Name></callbackurl>`
		`<eventinfo type="onRDSDataViewSelectionChange">`
		
		`<event>onRDSDataViewSelectionChange</event>`
		`<name>LocalCF9</name>`
		`<node_type>server</node_type>`
		`</eventinfo>`
		`</ide>`
		`<user></user>`
		`</event>`

Data source	- `type`: The event type `onRDSDataViewSelectionChange`
	- `name`: Data source name
	- `parent_node`: Name of parent node. That is, the name of the server to which the datasource belongs.
	- `node_type`: Type of the node-data source.
		`<?xml version="1.0" encoding="UTF-8"?>`
		
		`<event>`
		`<ide version="2.0">`
		`<callbackurl>http://[ip_address:port]/index.cfm?extension=<Extension_Name></callbackurl>`
		`<eventinfo type="onRDSDataViewSelectionChange">`
		
		`<event>onRDSDataViewSelectionChange</event>`
		`<name>AUTHORS</name>`
		`<parent>Tables</parent>`
		`<node_type>table</node_type>`
		`</eventinfo>`
		`</ide>`
		`<user></user>`
		`</event>`

Table Group	• `type`: Event type, `onRDSDataViewSelectionChange`
	• `name`: Table group name
	• `parent_node`: Name of parent node. That is, the name of the data source to which this table group belongs
	• `node_type`: Type of the node-group.
		`<?xml version="1.0" encoding="UTF-8"?>`
		
		`<event>`
		`<ide version="2.0">`
		`<callbackurl>http://[ip_address:port]/index.cfm?extension=<Extension_Name></callbackurl>`
		`<eventinfo type="onRDSDataViewSelectionChange">`
		
		`<event>onRDSDataViewSelectionChange</event>`
		`<name>Tables</name>`
		`<parent>cfbookclub</parent>`
		`<node_type>group</node_type>`
		`</eventinfo>`
		`</ide>`
		`<user></user>`
		`</event>`

Table	• `type`: Event type, `onRDSDataViewSelectionChange`
	• `name`: Table name
	• `parent_node`: Name of parent node. That is, the data source to which the table belongs.
	• `node_type`: Type of the node-table.
		`<?xml version="1.0" encoding="UTF-8"?>`
		
		`<event>`
		`<ide version="2.0">`
		`<callbackurl>http://[ip_address:port]/index.cfm?extension=<Extension_Name></callbackurl>`
		`<eventinfo type="onRDSDataViewSelectionChange">`
		
		`<event>onRDSDataViewSelectionChange</event>`
		`<name>AUTHORS</name>`
		`<parent>Tables</parent>`
		`<node_type>table</node_type>`
		`</eventinfo>`
		`</ide>`
		`<user></user>`
		`</event>`

Column	• `type`: The event type `onRDSDataViewSelectionChange`
	• `name` : Column name
	• `parent_node`: Name of parent node. That is, the name of the table to which the column belongs.
	• `node_type`: Type of the node-column.
		`<?xml version="1.0" encoding="UTF-8"?>`
		
		`<event>`
		`<ide version="2.0">`
		`<callbackurl>http://[ip_address:port]/index.cfm?extension=<Extension_Name></callbackurl>`
		`<eventinfo type="onRDSDataViewSelectionChange">`
		
		`<event>onRDSDataViewSelectionChange</event>`
		`<name>AUTHORID</name>`
		`<parent>APP.AUTHORS</parent>`
		`<node_type>field</node_type>`
		`</eventinfo>`
		`</ide>`
		`<user></user>`
		`</event>`

OnFileSaved: Add event notification when file is saved

When a file is saved in ColdFusion Builder, an event notification is sent to the Handler CFM file. For this, a new event `onFileSaved` has been introduce. The event can be registered as follows:

```
<event type="onFileSaved" handlerid="OnFileSaved"/
```

The information sent to the Handler includes:

- `type`: Event type is `onFileSaved`
- `project_path`: Absolute path of the project in which the file that is saved belongs.
- `file_path`: Absolute path of the file saved.
- `editor_name`: Name of the editor that opened the file. For CFML files the name is `Adobe CFML Editor`.

The following is a sample output:

```
<?xml version="1.0" encoding="UTF-8"?>
<event>
 <ide version="2.0">
  <callbackurl>
   http://[ip_address:port]/index.cfm? extension=<Extension_Name>
  </callbackurl>
  <eventinfo type="onfilechangeineditor">
   <project>
    Extensions
   </project>
   <project_path>
    [project_path]
   </project_path>
   <file_path>
    [file_path]
   </file_path>
   <event>
    onfilesaved
   </event>
   <editor_name>
    Adobe CFML Editor
   </editor_name>
  </eventinfo>
 </ide>
 <user>
 </user>
</event>
```

Specifying context-menus

Use the `menucontributions` tag to specify a context-menu. A context-menu is a pop-up menu that appears on a right-click event.

To specify menu contributions for different views, use the `contribution` tag. Use the `target` attribute within the `contribution` tag to specify the target view where the menu must appear. Use the `menu` tag within the contribution tag to specify the menu to add. Use the `action` tag within the `menu` tag to specify menu items.

Syntax

```
<menucontributions>
 <contribution target="rdsview|projectview|outlineview">
 <menu name="name of the menu item">
 <action name="action name">
 </action>
 </menu>
 </contribution>
</menucontributions>
```

contribution

Attribute	Description

`target`	The target view can be any of the following: • rdsview • projectview • outlineview • editor

> **Note**
>
> You can specify only alphanumeric characters for the attribute values. Special characters are not allowed.

menu

Attribute	Description
`name`	Specifies the name of the menu.

> **Note**
>
> You can specify only alphanumeric characters for the attribute values. Special characters are not allowed.

action

Attribute	Description
`name`	Specifies the name of the action.
`handlerid`	Specifies the ID of the associated handler.
`showresponse`	A Boolean that value that specifies if the HTML response that the handler receives must be shown to the user: • `yes` • `no` The default value is `false`.

> **Note**
>
> You can specify only alphanumeric characters for the attribute values. Special characters are not allowed.

Specifying menu filters

Menu filters help control where a menu or menu item must appear. You specify menu filters using the `filters` tag. You can specify different filter types within the `filters` tag; use the `type` and `pattern` attributes to specify where the menu or menu item must appear. If any of the specified filters match, the specified menu or menu item appears.

You can specify filters for both menus and actions. If you specify the `filter` tag within the `menu` tag, the filter controls the display of the menu. For example, in the following code, the ORM Code Generator menu appears only if the user right-clicks the modelglue.xml file.

```
<menu name="ORM Code Generator">
<filters>
<filter type="file" pattern="modelGlue.xml" />
<filters>
</menu>
```

Specifying filters for the Navigator View

You can specify filters on the project, folder, or file of the Navigator view.

Syntax

```
<filter type="folder|project|file"
pattern="regular expression to match folder, project, or filename" />
```

*Example*If you want the ORM Code Generator menu to appear only in the context of a folder, you can use code like the following:

```
<menu name="ORM Code Generator">
<filters>
<filter type="folder" />
<filters>
</menu>
```

Specifying filters for the Outline View

You can specify filters on different node types of the Outline view. The node name that you specify acts as the filter. In the Outline view, you can also specify filters for files. When you open the file that matches the filter in the CFML editor, the contributed menu appears in the Outline view.

Syntax

```
<menu name="menu name">
<filters>
<filter type="node name" />
```

*Example*If you want the ORM Code Generator menu to appear only on the CFfunction node in the Outline view, you can use code like the following:

```
<menu name="ORM Code Generator">
<filters>
<filter type="cffunction" />
```

Specifying input types

Before a handler is called, you can get user inputs using the `input` tag. The associated handler processes the user inputs. You specify an `input` tag for every action and the `input` tag must be within the `action` tag.

To control the height and width of the input dialogs, you specify the `input` tag within the `dialog` tag. For example, you can specify code like the following:

```
<dialog height="400" width="600" title="title" image="path to the image file">
<input name="Mapping" ... />
<input name="Datasource" ... />
</dialog>
```

Attribute	Description
`height`	Specifies the height of the dialog.
`width`	Specifies the width of the dialog.
`title`	Specifies the title for the dialog.
`image`	Specifies the path to the image that appears in the title bar. The path that you specify must be relative to the Extension folder.

Syntax

```
<action name="action name">
 <input name="input variable name"
 label="label for the input dialog box"
 tooltip="tool tip"
 type="dir|string|boolean|file|password|list"/>
</action>
```

Attribute	Description
`name`	Input variable name
`label`	The label of the input dialog box

`tooltip`	The tool tip that appears when the user moves the mouse over the input dialog box.
`type`	The input variable can be any of the following data types: • dir • string • Boolean • file • password • list • projectdir • projectfile
`required`	Specifies the input field as required. When you specify an input field as required, the OK button is not enabled until the user enters a value in the required field.
`pattern`	Specifies the regular expression against which user input is validated. For a validation error, you can specify the error message that must appear. You use the `errormessage` attribute to specify the error message.
`errormessage`	The error message that appears when validation fails for a given pattern.
`helpmessage`	The Help tip that appears in the title area of the dialog for a given input field.
`default`	Specifies a default value for a given input type. You cannot specify a default value for Boolean input types. For lists, the default value is pre-selected.
`checked`	A Boolean value that specifies if the check box field is selected or deselected, by default: • true - check box is selected (default value). • false - check box is deselected

> ⚠ **Note**
>
> You can specify only alphanumeric characters for the attribute values. Special characters are not allowed.

Each data type corresponds to an input type as specified in the table below. The syntax for each input type is also specified.

Datatype	**Input type**	**Syntax**

dir	Directory selection field	<input name="input variable name" label="*label*" tooltip=" *tooltip*" type="dir"/>
string	Text field	<input name="input variable name" label="*label*" tooltip=" *tooltip*" type="string"/>
boolean	Check box	<input name="input variable name" label="*label*" tooltip=" *tooltip*" type="boolean"/>
file	File selection field	<input name="input variable name" label="*label*" tooltip=" *tooltip*" type="file"/>
password	Password field	<input name="input variable name" label="*label*" tooltip=" *tooltip*" type="password"/>
list	List field	<input name="input variable name" label="*label*" tooltip=" *tooltip*" type="list"> <option value=”Option1”> <option value=”Option2”> </input>
projectdir	Project directory selection field	<input name="input variable name" label="*label*" tooltip=" *tooltip*" type="projectdir"/>
projectfile	Project file selection field	<input name="input variable name" label="*label*" tooltip=" *tooltip*" type="projectfile"/>

Example

```
<menucontributions >
 <contribution target="rdsview" >
  <menu name="ORM Code Generator">
    <action name="Generate ORM CFC" handlerid="cfm1" >
    <input name="Location" label="Enter location"
 tooltip="Location where generated CFCs will be stored" type="dir"/>
    <input name="generateAppCFC" label="Generate
 Application CFC" tooltip="Generate Application CFC along with ORM CFC"
 type="boolean"/>
    <input name="generateView" label="Generate View"
    tooltip="Generate View template along with ORM CFC" type="boolean"/>
   </action>
   <action name="Generate Ajax Grid" handlerid="cfm2" >
    <input name="Location" label="Enter location"
    tooltip="Location where generated View will be stored" type="dir"/>
   </action>
  </menu>
 </contribution>
 <contribution target="projectview" >
  <menu name="ORM Code Generator">
   <action name="Generate ORM CFC" handlerid="cfm1" />
   <action name="Generate Ajax Grid" handlerid="cfm2" />
  </menu>
 </contribution>
 <contribution target="outlineview" >
  <menu name="ORM Code Generator">
   <action name="Generate ORM CFC" handlerid="cfm1" />
   <action name="Generate Ajax Grid" handlerid="cfm2" />
  </menu>
 </contribution>
</menucontributions>
```

Keyword support

ColdFusion Builder supports keywords that are used to add default values in input dialogs. During runtime, actual values replace the keywords.

The following table lists the supported keywords and the corresponding actual values.

Keyword	Actual value
projectlocation	Absolute path to the project location
projectname	Name of the project
serverhome	Absolute path to the serve installation location
wwwroot	Server web root

For example, you can specify the `projectname` keyword as follows:

```
<input name="projectname" label="projectname" default="{$projectname}" type="dir"/>
```

For information about importing, reloading, packaging, and debugging extensions, see Using the Extensions view.

Support for menu contribution on multiple nodes

> **Note**
>
> Introduced in ColdFusion Builder 2.0.1

In RDS Data View, menu contributions can be added to server, database, and file nodes in addition to table nodes.

If you select server node, then server names are sent to the Handler. The attribute `selected,` if `true`, indicates if the server, database, table or field is part of the selection as shown in the following sample response sent to the Handler:

```
<?xml version="1.0" encoding="UTF-8"?>
<event>
 <ide version="2.0">
  <callbackurl>
   url
  </callbackurl>
  <rdsview>
   <servers>
    <server name="server1">
    <server name="server2">
   </servers>
   <database name="db1" server="server1" selected="true">
    <table name="table1" selected="false">
     <fields>
      <field
      name="field1" .... selected="true">
     </fields>
    </table>
   </database>
  </rdsview>
 </ide>
</event>
```

Filters

As menu contributions can be added to multiple nodes in the RDS data view, you can specify filters to specify the node that you choose to be active as shown in the following example.The valid filter types are `server`, `database`, `table,` and `field`.

```
<contribution target="rdsview">
<menu name="menu1">
<action name="action1">
</action>
<filters>
<filter type="database" />
<filter type="table" />
</filters>
</menu>
</contribution>-
```

Understanding ColdFusion Builder and handler communication

Communication between the handler and ColdFusion Builder IDE is through XML. When an event occurs, ColdFusion Builder sends the event details to the associated handler in XML format. The XML is sent to the handler as a FORM-scope variable named `ideEventInfo`. To retrieve the XML from the FORM-scope variable, use the `cf param` tag in the handler.

Syntax

```
<cfparam name="ideeventinfo">
```

or

```
<cfset ideData= form.ideEventInfo >
```

Understanding XML structure

To understand the XML structure, let us review the XML code. Consider the following points before reviewing the code:

- All information sent to the handler is within the `event` tag.
- All event and action information is within the {{ide }}tag.
- Any user inputs are within the `user` tag.

The following table describes the XML code. The contents of the XML code vary depending on the event.

Code	Context	Description

<rdsview > <database name=""> <table name=""> <fields> <field name="" type="" length="" nullallowed="" primarykey=""/> </fields> </table> </database> </rdsview>	rdsview	When you click a menu item of the RDS view, the event details are sent to the associated handler.

<projectview
projectname="" projectlocation="">
<resource name=""
path=""
type="file/folder/project" />
</projectview>
	projectview	When you click a menu item of the Project view, the event details are sent to the associated handler.

<outlineview projectname="" projectlocation="" > <source filename="" path="" > <node type="function/other"> <function name="" returntype=""> <argument name="" type="" /> </function> </node> </source> </outlineview>	outlineview	When you click a menu item of the Outline view, the event details are sent to the associated handler.

<eventinfo
projectname=""
projectlocation=""
eventtype="" >
<resource name=""
path=""
type="file/folder/project" />
</eventinfo>
	on project create	When the specified event occurs, the event details are sent to the associated handler.

<user> <input name="" value=""/> <input name="" value=""/> <input name="" value=""/> </user>	input dialog	All user inputs are specified within the user tag. Each input tag within the user tag, contains specific user input. The input name is the same as the input name specified in the IDE_Config.xml file.

<user> <page index="" > <input name="" value="" /> </page> </user>	Install wizard	All user inputs are specified within the user tag and sent to the handler associated with the Install wizard. Each input tag within the user tag contains specific user input. The input name is the same as the input name specified in the IDE_Config.xml file.

ideeventinfo.xml sent to Handler CFM files from ColdFusion Builder has:

- ColdFusion Builder version information provided as follows:

```
<event>
   <ide version="2.0" >
      ....
   </ide>
</event>
```

- Server details that include hostname and port number, provided as follows:

```
<eventinfo projectname="mg1"
projectlocation="C:/Documents and
Settings/sandeepp/runtime-EclipseApplication/mg1"
eventtype="onprojectcreate">
<server name="local1" hostname="localhost" port="8501"
wwwroot="C:\ColdFusion9\wwwroot"/>
</eventinfo>
```

Sending messages between extensions

Note

Introduced in ColdFusion Builder 2.0.1

An extension can now send messages to another extension to perform an action or to notify of some event. The extension that receives the message can either take action or ignore the message.

The following scenario explains how this feature is useful:

You can now create extension that can listen to events, for example switching to a different file in the editor or selection change in the RDS data view. Using this feature, if you want, you can update the view content with this information (say about the new selection).

The handler CFM file that receives the event change notification executes a callback command `sendMessageToExtension` to ColdFusion Builder with the following:

- Message information
- Name of the extension to which the message has to be sent

- The handler CFM file in the extension that has to be executed

The following example asks ColdFusion Builder to send message to `New Extension Enhacements in CFB Twister` extension and call its handler `NewFeaturesTestViewHandler` and passes information such as event type and other event related information:

```
<cfsavecontent variable="command" > <cfoutput> <response>
<ide> <commands> <command type="sendMessageToExtension">
<params> <param
key="extension_name" value="New Extension Enhacements in CFB Twister" />
<param key="handlerid" value="NewFeaturesTestViewHandler" />
<param key="event_type" value="#type#" /> <cfloop
list="#structKeyList(eventinfo[1])#" index="key"> <param
key="#key#" value="#eventinfo[1][key].xmlText#" />
</cfloop> </params> </command>
</commands> </ide> </response> </cfoutput> </cfsavecontent>
<cftry>
 <cfhttp url="#callbackURL#" method="post" result="httpResult">
  <cfhttpparam type="body" value="#command#">
 </cfhttp>
<cfcatch>
 <cfset httpError = cfcatch.Message>
</cfcatch>
</cftry>
```

Handler communication

ColdFusion Builder sends the event details to the handler `NewFeaturesTestViewHandler` as XML (as FORM-scope variable ideEventInfo) as follows:

```
<event>
 <ide version="2.0">
  <callbackurl>
   http://[ip_address:port]/index.cfm?extension=New Extension Enhacements in CFB
2.0.1
  </callbackurl>
  <extension_message>
   <from_extension_name>
    New Extension Enhacements in CFB 2.0.1
   </from_extension_name>
   <params>
    <param key="project" value="Extensions"/>
    <param key="project_path" value="[project_path]"/>
    <param key="file_path" value="[file_path]"/>
    <param key="event" value="onfilechangeineditor"/>
    <param key="event_type" value="onfilechangeineditor"/>
    <param key="editor_name" value="Adobe CFML Editor"/>
   </params>
   <from_extension_server>
    LocalCF9
   </from_extension_server>
  </extension_message>
 </ide>
 <user>
 </user>
</event>
```

The information passed inside the `extension_message` node include the following:

Information	Description
`from_extension_name`	The extension that has sent the message.
`params`	Parameters of the message.

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Creating user interfaces for extensions

Create input dialogs

You can create an input dialog either by using a configuration file (IDE_Config.xml) or using CFM pages.

Note

If you are creating a user interface using XML response, turn off the debug output by specifying `cfsetting showdebugoutput="no"` in the relevant code.

Using the configuration file

You create an input dialog by creating a configuration file (IDE_config.xml) and specifying the necessary details. For more information, see Configuration file.For, example, you can specify code like the following:

```
<action name="action name">
<dialog>
<input name="input variable name" label="label for the input dialog"
tooltip="tool tip" type="dir"/>
</dialog>
</action>
```

Using CFM pages

- In the IDE_config.xml file, specify the `showResponse` attribute of the `Action` tag as `yes`, as follows:

```
<action name="generate CFC" handlerid="cfcgenerator" showResponse="yes" />
```

- In the CFM handler, do the following:

1. Specify the content-type value of the `cfheader` tag as `text/xml`, as follows:

```
<cfheader name="Content-Type" value="text/xml">
```

2. Create the input dialog by constructing the XML as follows:

```
<cfoutput>
<response>
<ide>
<dialog >
<input name="location" Label="Enter Location"  type="dir" />
</dialog>
</ide>
</response>
</cfoutput>
```

Create HTML user interfaces

You can create an HTML user interface either by using HTML response or XML response.

Using HTML response

In the IDE_config.xml file, specify the `showResponse` attribute of the `Action` tag as `yes`, as follows:

```
<action name="generate CFC" handlerid="cfcgenerator" showResponse="yes" />
```

The HTML content of the CFM page appears in a dialog box. Ajax and Javascript are not supported in the HTML content. If you use links in the HTML content, the URL for the link must be an absolute URL and not a relative URL.

Using XML response

In the CFM handler, do the following:

1. Specify the content-type value of the `cfheader` tag as `text/xml`, as follows:

```
<cfheader name="Content-Type" value="text/xml">
```

2. Create the HTML user interface by constructing the XML as follows:

```
<cfoutput>
<response showresponse="true">
<ide url="http://localhost:8500/local/Dynamic%20UI%20Test/handlers/main.swf" >

<dialog width="455" height="470" />
</ide>
</response>
</cfoutput>
```

The HTML content of the specified URL appears in a dialog box.You can also display HTML user interface through an XML response as follows:

```
<cfoutput>
<response showresponse="true">
<ide >
<dialog width="100" height="400" />
<body>
<![CDATA[
Any HTML content
]]>
</body>
</ide>
</response>
</cfoutput>
```

> **Note**
>
> Extensions do not support relative paths for CSS and JavaScript. Ajax and JavaScript code that is specified in the CDATA section does not work. Any URL that you specify in the CDATA section must be an absolute URL.

Understanding the structure of XML response

Response

The XML response is defined within the `response` tag that has the following attributes:

Attribute	Description
showresponse	A Boolean value that specifies if the response must be shown to the user: • true • false
status	Displays a success or error dialog box. Depending on the status - success or error, the dialog appears with a relevant icon. Applicable only when message attribute is specified in IDE tag.This attribute is applicable only when you specify the message attribute within the IDE tag.

IDE

The `IDE` tag has the following attributes:

Attribute	Description
message	Displays the message that you specify in a success or error dialog box. Use status="success/error" attribute of the response tag to specify if the message must appear as an error message.
url	The URL of a page that you want to display to the user.
handlerfile	Path to the handler file that must be called when a user clicks OK in the message dialog box.This attribute is applicable only when input dialogs are created from an XML response.

Body

Use the `body` tag to specify any HTML content. The HTML content within the body tag must be specified in the CDATA section.

Dialog

The `dialog` tag is used to create input dialogs and has the following attributes:

Attribute	Description
`height`	Specifies the height of the dialog.
`width`	Specifies the width of the dialog.

`title`	Specifies the title for the dialog.
`image`	Specifies the path to the image that appears in the title bar.
`dialogclosehandler`	Path to the handler file that must be called when a user clicks Close or Cancel in the message dialog box.This attribute is applicable only when input dialogs are created from an XML response.

To control the height and width of the input dialogs, you use the `input` tag within the `dialog` tag.

Attribute	**Description**
`height`	Specifies the height of the dialog.
`width`	Specifies the width of the dialog.
`title`	Specifies the title for the dialog.
`image`	Specifies the path to the image that appears in the title bar. The path that you specify must be relative to the Extension folder.

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Create views

ColdFusion Builder lets you create views using extensions. You can also specify a view icon and toolbar items for the view you create.

The feature helps you use IDE features concurrently while seeing the data.

Create view in either of the following ways:

- Add contribution to ide_config.xml
- Dynamically from handler response

Add contribution to IDE_config.xml

Specify the details in the configuration file IDE_config.xml as shown in the following code. Adding view contribution to ide_config.xml adds the view to the list of views under ColdFusion category in Show View dialog box (Window > Show View > Other).

```
<viewcontributions>
    <view id="ID" title="title" icon="relative_path_to_icon" handlerid="handler_id"
>
        <toolbarcontributions>
            <toolbaritem icon="relative_path_to_icon" handlerid="handler_id" />
            <toolbaritem icon="relative_path_to_icon" handlerid="handler_id" />
        </toolbarcontributions>
    </view>
</viewcontributions>
```

Attribute	Description
`id`	Identifies the view. Views contributed by an extension must have unique IDs. `id` can be used to update the content of a view from handler response.
`title`	A title for the view.
`toolbaritem`	Adds an item to the view toolbar.
`icon`	Relative path to image file that resides in the installation location of extensions. For example, specifying `images/icon.png` (in the images folder of extension installation location) displays icon.png as the view icon.The standard sizes are 16x16 pixels or 20x20 pixels. All popular image formats are supported.
`handlerid`	ID of the associated handler.
`keepFocus`(Added in ColdFusion Builder 2.0.1)	If `true`, avoids focus from shifting when an extension view is generated dynamically. Assume that you are editing a file and an action results in refresh/creation of extension view. You may not want the focus to move from the editor to the view. Set the attribute keepFocus to true to avoid focus from shifting when an extension view is generated dynamically using the `<view>` tag in IDE_config.xml. By default, dynamically created extension views do not get focus. The extension views displayed from the Window menu > Show View option always gets focus.

Displaying the view

1. Install or import the extension which contributes the view.
2. Open Show View dialog box (Window > Show View > Other).
3. Double-click ColdFusion in the folder list.
4. Select the view (that is contributed) and then click OK.

The view appears and calls the corresponding Handler CFM file.

Use Handlers (for dynamic views)

In the CFM handler,

1. Specify the content-type value of the `cfheader` tag (as `text/xml)`as follows:

```
<cfheader name="Content-Type" value="text/xml">
```

2. Create the view that displays HTML content by constructing the XML as follows:

```
<cfoutput>
<response showresponse="true">
      <ide url="URL">
   <view id="ID" title="title" icon="icon_path" />
      </ide>
</response>
</cfoutput>
```

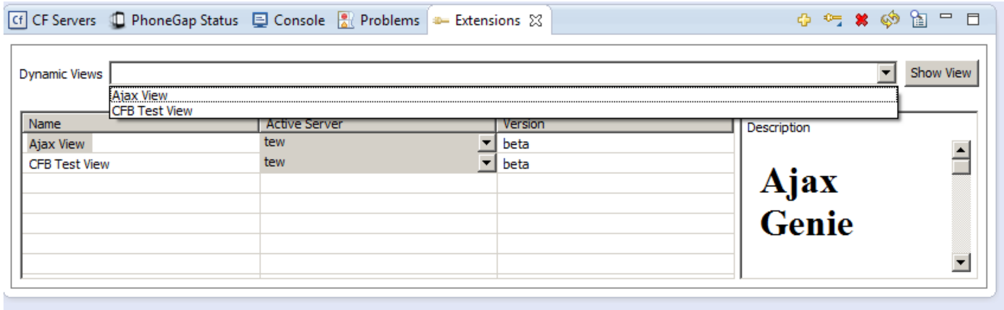
You can also display HTML content through an XML response as follows:

```
<cfoutput>
<response showresponse="true">
   <ide>
      <view id="ID" title="title" icon="icon_path" handlerid="ID" />
<body>
[![CDATA[any html content]]>
</body>
</ide>
</response>
</cfoutput>
```

Note

Currently, views do not persist across ColdFusion Builder sessions.

In ColdFusion Builder 2 and earlier versions, the dynamic views gets added to the sub menu of “Window > Show view” dialog. However, in ColdFusion Builder 3, the dynamic views are shown in the extension view as a drop down item:



Name	Active Server	Version
Ajax View	tew	beta
CFB Test View	tew	beta

Specifying callback commands from handlers

In ColdFusion Builder (the previous release), from the handler CFM files, you can request to run the following commands: `refreshproject`, `refereshfolder`, `refreshfile`, `inserttext`, and `openfile`.

Now you can complete all these operations and few others in the execution phase itself (rather than at the end of execution). From the Handler CFM files you can send a call to ColdFusion Builder using the callback URL. ColdFusion Builder provides the callback URL in ideeventinfo XMLas shown here:

```
<event>
    <ide version="2.0">
        <callbackurl>
            callbackURL
        </callbackurl>
</ide>
</event>
```

In addition to the commands that get context information related to the editor, you can get server-specific information such as data source and table details.

The following table provides the list of commands that help you perform various operations in the execution phase. All commands which request data have command result in XML format. The table has the results returned by each command:

Name	Action	Input	Result

`refreshFile`	Refreshes the specified file by sending the absolute or relative path. If you specify the relative path, specify the project name.`projectName` is optional. It can be specified if the file is in the project.	`<command type="refreshFile">`
		` <params>`
		`  <param key="filename" value="filePath" />`
		`  <param key="projectname" value="#arguments.projectName#" />`
		` </params>`
		`</command>`
			Not applicable

`refreshFolder`	Refreshes the specified folder.`projectName` is optional. It can be specified if the folder is in the project.	`<command type="refreshFolder">`
		` <params>`
		`  <param key="foldername" value="folderPath" />`
		`  <param key="projectname" value="projectName" />`
		` </params>`
		`</command>`
			Not applicable

`refreshProject`	Refreshes the specified project.	`<command type="refreshProject">`
		`<params>`
		`<param key="projectname" value="projectName" />`
		`</params>`
		`</command>`
			Not applicable

`openFile`	Opens the specified file for editing, by sending the absolute or relative path. If you specify the relative path, specify the project name.`projectName` is optional. It can be specified if folder is in the project. `lineNumber` is an optional parameter (_added in ColdFusion Builder 2.0 _)	`<command type="openFile">`
		`<params>`
		`<param key="filename" value="filePath" />`
		`<param key="projectname" value="projectName" />`
		`<param key="linenumber" value="10" />`
		`</params>`
		`</command>`
			Not applicable

`insertText`	Inserts the specified text in the active editor. Selected text in the editor is replaced after this command runs.	`<command type="inserttext">`
		`<params>`
		`<param key="text">`
		`<![CDATA[ text_to_insert ]]>`
		`</param>`
		`<param key="insertmode" value="replace/insert" />`
		`</params>`
		`</command>`
			Not applicable

getServers	Lists the servers added to the Server Manager.	<command type="getservers" > </command>	<?xml version="1.0" encoding="UTF-8"?> <event> <ide version="2.0"> <callbackurl> [callback URL] </callbackurl> <command_results> <command_result type="getservers"> <servers> <server name=""/> ... </servers> </command_result> </command_results> </ide> </event>

`getDatasources`	Lists the data sources for a given server.Output variable is comma-separated list of data source names.If server name is not specified, by default, the server on which the extension runs is considered.	`<command type="getdatasources" >`
		`  <params>`
		`   <param key="server" value="comma_seperated_server_names" />`
		`</params>`
		` </command>`
			`<?xml version="1.0" encoding="UTF-8"?>`
			`<event>`
			` <ide version="2.0">`
			`<callbackurl>`
			`[callback url]`
			`</callbackurl>`
			`<command_results>`
			`<command_result type="getdatasources">`
			`<datasources>`
			`<datasource name="" server=""/>`
			`     ...`
			`</datasources>`
			`</command_result>`
			`</command_results>`
			` </ide>`
			`</event>`

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

	Gets the details of tables for a given data source.If server name is not specified, by default, the server on which the extension runs is considered.	`<command type="gettables"> <params> <param key="server" value="servers" /> <param key="datasource" value="datasources" /> </params> </command>`	`<event>`
			`<ide version="2.0">`
			`<callbackurl>`
			`[callback url]`
			`</callbackurl>`
			`<command_results>`
			`<command_result type="gettables">`
			`<tables>`
			`<table datasource="" name="table_Name" server="">`
			`<field cfsqltype="" cftype="" javatype="" name=""`
			`nullallowed="" primarykey="true|false" type=""/>`
			`[list of other columns]`
			`</table>`
			`...[list of other tables]`
			`</tables>`

			`</command_result>`
			`</command_results>`

			`</ide>`
			`</event>`

`getTable`	Gets the details of a particular table for a given data source.If server name is not specified, by default, the server on which the extension runs is considered.	`<command type="gettable">`
		`<params>`
		`<param key="server" value="servername" />`
		`<param key="datasource" value="dsn" />`
		`<param key="table" value="tablename" />`
		`</params>`
		`</command>`	

```
<?xml version="1.0" encoding="UTF-8"?>
<event>
 <ide version="2.0">
  <callbackurl>
   [callback url]
  </callbackurl>
  <command_results>
   <command_result type="gettable">
    <table datasource="" name="" server="">
     <field cfsqltype="" cftype="" javatype="" name="" nullallowed="" primarykey="true|false" type=""/>
     ...
    </table>
   </command_result>
  </command_results>
 </ide>
</event>
```

`searchFile`	Searches for a text content file and returns the content.Use `getcontent` only for text files.`searchDirection` indicates if you want to search through the parent folders (up) or sub-folders (down)	`<command type="searchfile" >`
		`<params>`
		`<param key="fileName" value="ide_config.xml"/>`
		`<param key="from" value="search_from_this_file_or_folder"/>`
		`<param key="getcontent" value="true/false"/>`
		`<param key="searchDirection" value="up/down"/>`
		`<param key="matchfolder" value="true/false"/>`
		`</params>`
		`</command>`
			`<?xml version="1.0" encoding="UTF-8"?>`
			`<event>`
			`<ide version="2.0">`
			`<callbackurl>`
			`[callback url]`
			`</callbackurl>`
			`<command_results>`
			`<command_result type="searchfile">`
			`<files>`
			`<file path="" type="file"/>`
			`</files>`
			`</command_result>`
			`</command_results>`
			`</ide>`
			`</event>`

`getfunctionsandvariables` (For details on enhancements, see the section Enhancements to existing callback commands in ColdFusion Builder 2.0.1)	Lists the functions and variables in a file you specify.		`<?xml version="1.0" encoding="UTF-8"?>`
			`<event>`
			`<ide version="2.0">`

```
<command type="getfunctionsandvariables" >
 <params>
  <param key="filePath" value="path"/>
 </params>

</command>
```

```
<callbackurl>

[callbackurl]

</callbackurl>

<command_results>

<command_result type="getfunctionsandvariables">

<cfmlfile type="component|interface|cfml">

<variables>

<variable function="name of function if variables is inside function" name="" type=""/>
      ...

</variables>

<functions>

<function file="" name=""/>
      ...

</functions>

</cfmlfile>

</command_result>
```

			`</command_results>`

			`</ide>`
			`</event>`

`getProjects` (Added in ColdFusion Builder 2.0.1)	Gets the list of ColdFusion Builder projects. The details include:
	• `name`: Name of the project
	• `path`: Absolute path of the project.
	• `isopen` : If project is open or closed. If open, the value is `true`.
	• `iscfproject`: `false` if not a ColdFusion project. If it is a ColdFusion project, then additional information such as server name is returned.
		`<commands>`
		`<command type="getprojects" > </command>`
		`</commands>`
			`<?xml version="1.0" encoding="UTF-8"?><event> <ide version="2.0"> <callbackurl> http://<ip_address:port>/index.cfm?extension=untitled </callbackurl> <command_results> <command_result type="getprojects"> <projects> <project name="TestProject" path="<Project_Path>"> <cfproject> <server name="local_server" /> </cfproject> </project> </projects> </command_result> </command_results> </ide></event>`

`reloadExtensions`(Added in ColdFusion Builder 2.0.1)	Reloads an extension using an extension.	`<commands>`
		`<command type="reloadExtensions" > </command>`
		`</commands>`
			Not applicable

`sendMessageToExtension`(Added in ColdFusion Builder 2.0.1)	For details, see Sending messages between extensions.		

Enhancements to existing callback commands in ColdFusion Builder 2.0.1

The response returned by the callback command `getfunctionsandvariables` now includes variable scope-related information. You can write extension to determine the scope, for example if the variable is var scoped in the function.The following three variables are identified:

- Argument scope
- Var scope
- Tag created variables, for example, the variables created in `cfquery`.

You can determine the remaining scopes in the Handler CFM file from the variable name prefix, for example `this` or `application`. The following is a sample `getfunctionsandvariables` output that includes scope-related information:

```
<event>
    <ide version="2.0">
        <callbackurl>
            http://ip_address:port/index.cfm?extension=untitled
        </callbackurl>
        <command_results>
            <command_result type="getfunctionsandvariables">
                <cfmlfile type="cfml">
                    <variables>
                        <variable name="i" type="numeric"/>
                    </variables>
                    <functions>
                        <function name="testFunc"
file="C:\ColdFusion9\wwwroot\MyExtension\handlers\test.cfm">
                            <variables>
                                <variable name="j" type="numeric"
function="testFunc" scope="varscope"/>
                                                <variable name="arg1"
function="testFunc" scope="argument"/>
                                                <variable name="variables.l"
type="numeric" function="testFunc"/>
                            </variables>
                        </function>
                    </functions>
                </cfmlfile>
            </command_result>
        </command_results>
    </ide>
</event>
```

Example: Execute commands using callback URL

Step 1: Get ideeventinfo XML

```
<cfparam name="ideeventinfo" >
<cfset xmldoc=xmlParse (ideeventinfo)>
```

Step 2: Get callback URL from ideeventinfo XML

```
<cfset callbackurl= xmldoc.event.ide.callbackurl.xmlText>
```

Step 3: Create XML to send command to ColdFusion Builder

```
<cfsavecontent variable="commandxml" >
<cfoutput>
    <response>
        <ide>
            <commands>
                [Any command xml to be executed]
            </commands>
        </ide>
    </response>
</cfoutput>
</cfsavecontent>
```

Step 4: Execute callback command and get response

```
<cfhttp method="post" url="#callbackurl#" result="commandresponse" >
    <cfhttpparam type="body" value="#commandxml#" >
</cfhttp>
```

Handling errors while using callback commands

If there is an error while executing commands which return data, command response XML provides the error node with information about the possible cause of error.

```
<?xml version="1.0" encoding="UTF-8"?>
<event>
 <ide version="2.0">
  <callbackurl>
   [callback url]
  </callbackurl>
  <command_results>
   <error>
    [error message]
   </error>
  </command_results>
 </ide>
</event>
```

Additional resources

- *[ColdFusion Builder 2 Extensions - Understanding Callback Commands|http://sandeepp.org/blog/?p=224]* ColdFusion Builder engineering team member Sandeep Paliwal explains the possibilities of callback commands in ColdFusion Builder 2 extensions.

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Using the Extensions view

Use the Extensions view to install, uninstall, import, and reload extensions.

If the Extensions view is not already displayed in the workbench, add the Extensions view by selecting Window > Show View > Other. Then, in the Show View dialog box, select ColdFusion > Extensions view.

Install and uninstall extensions

1. In the Extensions view, click ✚ and select the Archive file to install.

> ⚠ **Note**
>
> If the extension that you are installing is shipped with ColdFusion Builder, the Archive file is available in the Extensions directory within the ColdFusion Builder installation.

2. The Extension Install wizard guides you through the installation.
3. Select the Server. If no server is configured, click Add Server to add a new server. For information about adding a server, see Adding ColdFusion servers.You can install the same extension on different servers. For example, CF9 local server and CF8 local server. However, at any given point, only the server that the extension uses is active.
4. Enter the path to the ColdFusion web root (if the path is not automatically populated when selecting the server). For example, _C:\ColdFusion9_wwwroot\
5. Select a folder within the web root to install the extension. The archive file is extracted to the install location.
6. Click Install.

To view a brief description about the installed extension, click the extension name. If you have installed the same extension on more than one server, you can make one of the servers active. To do so, select the server that you want to make active from the Active Server drop-down list.

To uninstall an extension, select the extension in the Extensions view and click ✖. You can uninstall an extension from the IDE only, or remove the extension from your IDE and computer’s file system at the same time. When an extension is permanently removed from the file system, you cannot undo the command.

> ⚠ **Note**
>
> If you are uninstalling an extension that is installed on multiple servers, repeat the uninstall process for every server.

Import and reload extensions

Use the Extensions view to import and reload extensions.

- You can import extensions from an existing directory into ColdFusion Builder. Click in the Extensions view, and select the directory that contains the extension files.

> ⚠ **Note**
>
> It is useful to import extensions when you use existing extensions to develop new extensions.

- You reload an extension if you change the configuration file of an installed extension. Configuration file changes are reflected only after you reload the extension. Click ⟳ in the Extensions view to reload all the installed extensions.

Debug and package extensions

While loading extensions from the configuration file, any errors are logged to the Eclipse log. To debug the errors, you can view the ColdFusion Builder error log by selecting Window > Show View > Other > General > Error Log. The ColdFusion Builder error log appears in the Error Log view.

To package an extension, add the following contents to a ZIP file:

- Configuration file (IDE_config.xml)
- Handler directory that contains all the Handler CFM files

> ⚠ **Note**
>
> Ensure that you add the configuration file and handler directory directly under the root of the ZIP file.

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Use ColdFusion Builder Extension Creator to create and package extensions

The ColdFusion Builder Extension Creator wizard guides you through the process of creating and packaging extensions. The wizard guides you through creating the Configuration file (IDE_Config.xml) and Handler files (CFM), specifying metadata elements, adding context menus, and creating user interfaces.

> ⚠ **Note**
>
> The ColdFusion Builder Extension Creator wizard is installed only if you selected Install Extensions while configuring a ColdFusion server. See the Extensions view for the list of installed extensions.

1. In the Navigator view, right-click the project in which you want to create the extension, and select Adobe Extension Builder > New.
2. Enter or browse to a location to store the extension. Select Create Folder With Extension Name to store the extension files in a folder with the same name as the extension.
3. Select the Extension Details tab to enter the extension name and details. You can also specify any license agreement text that must appear on installing the extension.

Specify menu contributions

Select the Menu contributions tab and click Add Menu to specify a context-menu. A context-menu is a pop-up menu that appears on a right-click action.

- Enter the name of the menu and the target view from where the menu must appear. You can specify the target view as the Navigator or Project view, RDS view, Outline view, or the CFML editor. Then, click Save Menu.
- To specify menu items, click Add Action.
    1. You can associate handlers with an action. Handlers display the code generation operations that are fetched from the server. Specify the Handler ID and Handler name, and select Show Response to display the server response. Then, click Save.

    2. Before a handler is called, you can get user inputs. To do so, click Add Input.
    3. Specify the input variable name, label for the input dialog box, tooltip, and the input variable type.
    4. You can also specify the pattern against which the user input is validated, and the error message that appears when the validation fails.
    5. Select Required to specify the input field as required, and select Checked to have the check box selected, by default. Then, click Save.
- To specify filters that control the display of the menu, click Add Filter. You can specify filters at the project, folder, and file levels.

Specify handlers

Select the Handlers tab to view details about the installed handlers.

1. To specify a new handler, click Add Handler, and enter the necessary details.
2. Select Generates Response to get user inputs before calling the handler.
3. Specify the title of the input dialog box, and the height and width in pixels. Then, click Save Handler.

Create an extension installation wizard

Select the Install Wizards tab to create an installation wizard that guides you through the extension installation.

1. Specify the height and width of the wizard in pixels. You can also associate a handler with the wizard. Then, click Save.
2. Specify a title for the wizard, and click Save.
3. Specify the input variable name, label for the input dialog box, tooltip, and the input variable type. You can also specify the pattern against which the user input is validated, and the error message that appears when the validation fails.

Package the extension

1. In the Navigator view, right-click the ide_config.xml file and the Handler folder that contains all the Handler CFM files, and select Adobe Extension Builder > Package. The files are added to a ZIP file.
2. Browse to a location to store the ZIP file.

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Contribute to Code Assist from extensions

You can add proposals to Code Assist from extensions.

1. In the IDE_config.xml, do the following:

- To add proposals to Code Assist for function parameters, add the following code:

```
<codeassistcontribution>
 <functions>
  <function name="linkTo" variableName="event" componentName="component_name"
handlerId="CodeAssistHandler">
   <parameter index="1" />
  </function>
 </functions>
</codeassistcontribution>
```

- To add proposals to Code Assist on variables, add the following code:

```
<codeassistcontribution>
 <variables>
  <variable name="event" componentName="component_name"
handlerId="CodeAssistHandler">
   <parameter index="1" />
  </variable>
 </variables>
</codeassistcontribution>
```

Attribute	Description
`name`	Name of the function that has to be listed.
`variableName`	Name of the variable. If specified, then the handler is called only if the name of the variable on which the function is called matches the variable name.For variables, when you specify `variablename.` ,in the editor, Code Assist presents the contribution for that variable.
`componentName`	If specified, the type of the variable on which the function is called matches the component name you specify.
`handlerID`	ID of the associated handler.
`index`	Specifies parameter indexes for which the handler can provide Code Assist. If not present, then the handler is called for all parameters in the function.

1. In the Handler CFM file, specify the response to add code assist proposal in the following format:

```
<codeassist_response>
<proposal display="display_value" insert="insert_this_value"
inquotes="true/false"/>
</codeassist_response>
```

Attribute	Description
`display`	The value you specify appears in the proposal window.
`insert`	If that proposal is selected, then the value you specify is inserted in the editor.

`inquotes`	If set to `true`, then the text inserted in the editor is enclosed in double quotes.

2. Install/import the extension. When you start ColdFusion Builder Code Assist, the functions are displayed in the proposal window.

Additional resources

- **How to contribute to code assist from extensions** ColdFusion Builder engineering team member Sandeep Paliwal provides answers to the frequently asked questions about contributing to Code Assist using extensions.

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Extension support for setting Launch Page

You can dynamically generate Start Page URL for framework applications using extensions.

ColdFusion Builder features such as ColdFusion Debugger, Use External Browser, Run as ColdFusion Application use this URL as the Start Page URL.

The generated URL can also have query param added to it.

Note

ColdFusion Builder lets you Set Launch Page at the project level, which is helpful for simple applications. This feature provides option to set Launch Page for projects that are based on frameworks.

Add Start Page contribution to IDE_config.xml

Specify the details in the configuration file IDE_config.xml as shown in the following code:

```
<startpagecontribution>
<urlgenerator handlerid="ID" />
</startpagecontribution>
```

Handler communication

ColdFusion Builder sends the event details to the handler as XML (as FORM-scope variable `ideEventInfo`) as follows:

```
<event>
    <ide version="2.0">
        <callbackurl>
            ...
        </callbackurl>
        <startpage_request>
            <project name="" projectlocation="">
                <resource name="" path="" type="file|Folder|Project"/>
                <server name="" hostname="" port="" wwwroot=""/>
            </project>
        </startpage_request>
    </ide>
</event>
```

This information can be used to generate the URL.

Using extensions to generate Start Page URL

1. In the Project View, right-click the project and then select Properties > ColdFusion Project.
2. In the Start Page Setting, select the option available in the Use Extension list.
3. Click OK.

Next time, when you run the application, the handler identified with the ID you specified in IDE_config.xml is called. The information related to the project or the CFM is displayed.

Example

```
<cfheader name="Content-Type" value="text/xml">
<cfoutput>
<startpage_response>
 <url>Any URL</url>
</startpage_response>
</cfoutput>
```

Using Extensions

- Adobe CFC Generator
  - Install Adobe CFC Generator
  - Use Adobe CFC Generator (in ColdFusion Builder 2.0)
    - Create CFC
    - Create ORM CFC
  - Use Adobe CFC Generator (in ColdFusion Builder 2.0.1)
    - Adobe CFC Generator dialog box
      - Move table
      - Edit table
      - Create, edit, and delete relationship
- AS Class Generator
  - Install AS Class Generator
  - Use AS Class Generator
    - AS Class Generation from a database table
      - Reviewing the generated ActionScript Class file
    - AS Class Generation from CFC
      - From an ORM CFC
      - From a traditional CFC
    - Points to remember
- Model-Glue Assistant
  - Prerequisites to use Model-glue Assistant extension
  - Install Model-Glue Assistant extension
  - Create a ColdFusion project
  - Use Model-Glue Assistant
    - Add Event
      - Generated code
    - Debug Trace Toggle
      - Generated code
    - Enable Reactor
      - Generated code
    - Creating Scaffolds
      - Generated code
  - Update Model-Glue Assistant

The following extensions are automatically installed with ColdFusion Builder if you selected the Install Extensions option when creating a server. For more information, see Adding ColdFusion servers.

- Adobe CFC Generator
- ActionScript Class Generator

The information covered here discusses how to use these extensions. It does not cover information about developing the extensions.

Note

The extension user interface is rendered in the default browser of your computer. If you want to specify the browser as Mozilla, go to the Preferences dialog box and select ColdFusion > Extensions. Then, select Use Mozilla Browser For Extensions.

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Adobe CFC Generator

The Adobe CFC Generator generator generates ORM CFCs (ColdFusion Components) from database tables. The Adobe CFC Generator extension lets you create a traditional CFC or an ORM CFC from a set of tables.

Object Relational Mapping (ORM) is a programming technique that lets you define a mapping strategy to store and retrieve data from a relational database using object models. The Adobe CFC Generator lets you define the mapping for relations, specify join conditions, and generate services for the CFCs. For more information about ORM, see ColdFusion ORM.

Install Adobe CFC Generator

The Adobe CFC Generator extension is installed with ColdFusion Builder, if you selected the Install Extension option when creating a server.

If you did not install the extension when creating a server and want to install it now, see Install and uninstall extensions. The Adobe CFC Generator extension archive file (AdobeCfcGenerator.zip) comes packaged with ColdFusion Builder. The archive file is in the Extensions directory within the ColdFusion Builder installation.

Use Adobe CFC Generator (in ColdFusion Builder 2.0)

1. In the ColdFusion Builder perspective, select RDS Dataview.
2. If you have configured an RDS user name and password, specify the RDS user name and password.

   Note

   You set the RDS password in the ColdFusion Administrator. Do not confuse the RDS password with the ColdFusion Administrator password, which is also managed through the ColdFusion Administrator.

3. The list of data sources available in the configured server are listed.
4. Select a data source and the table for which you want to generate CFCs. You can select multiple tables at once by pressing Shift and selecting the table names.
5. Right-click the selected tables, select Adobe CFC Generator, and select one of the following options:

   Note

   The Adobe CFC Generator option appears only if you right-click a table name. Clicking the data source or records within the data source does not show these options.

- **Create CFC** Generates a ColdFusion component.
- *Create ORM CFC * Generates an ORM CFC and maps it to the database.

Create CFC

1. Right-click a table in the selected data source, for example, APP.EMPLOYEES table, and select Adobe CFC Generator > Create CFC.
2. In the Adobe CFC Generator dialog box, do the following:

- Specify the location to store the generated CFC.
- Select Generate Service to automatically generate methods.

You can modify the CFC source code to provide additional functionality.

Create ORM CFC

1. Right-click a table in the selected data source, for example, APP.EMPLOYEES table, and select Adobe CFC Generator > Create ORM CFC.
2. Specify the location to store the generated CFCs.
3. The Adobe CFC Generator dialog box displays the selected database tables and fields in a dynamic, editable, sortable, data grid.

   > ⚠ **Note**
   >
   > Because the data grid is an Ajax-rich user interface, it can sometimes take a few moments to load.

   You can customize the ORM CFC as follows:

   - Change the CFC Name: You can edit the auto-generated CFC name in the CFC Name field.
   - Change the property name: You can edit the property name in the Property Name field.
   - Change the property type: To edit a property type, click the property type that appears in the Property Type column and select a property type from the drop-down list.
   - Specify the primary key: You can edit the primary key settings by selecting "True" or "False" for the required column.
   - You can include or exclude columns that you want to generate in the CFC by selecting or deselecting the check box next to each column name.
   - Sorting data: You can sort tables and columns that appear in the data grid. The direction of the sort can be either ascending or descending. To sort table names, click the Tables column and select the sort order. To sort column data, click the column heading and select the sort order.
4. To generate a basic ORM CFC, click the Generate Code link. To define relations and join conditions for the ORM CFC, do the following:
   a. In the Relationships data grid, click Insert. A new row is inserted.
   b. Click the Relation Name field and enter a name for the relationship. For example, you can define a relationship between the Art table and Artists table.
   c. Select the target table from the Target Table drop-down list.
   d. Specify the relationship type by selecting the Multiplicity drop-down list.
   e. Specify a Link table, if necessary.
   f. Click Save.
   g. When you define a relationship, define a join condition. To define a join condition for the specified relationship, click the target table that you selected in step 3.
   h. Click Insert in the Join Conditions data grid.
   i. Select the source field from the Source drop-down list.
   j. Select the target field from the Target drop-down list.
   k. Click Save.
   l. Click the Generate Code link.
5. In the Navigator view, right-click the folder that contains the CFC and select Refresh. You can modify the CFC source code to provide additional functionality.

Use Adobe CFC Generator (in ColdFusion Builder 2.0.1)

The Adobe CFC Generator has been enhanced in ColdFusion Builder 2.0.1 to provide a better user experience.

1. In ColdFusion Builder, select RDS Data View. It is assumed that you have added a ColdFusion server in the servers view.
2. Select tables within a data source for which you wish to generate CFCs.
3. Right-click on selected tables within the data source and then select **Adobe CFC Generator** > **Create ORM CFC**.
4. You can choose to generate services and scripts CFCs by selecting appropriate options. When Generate Services option is selected, CRUD (create, read, update, and delete) operations are created for each selected table. Scripts CFC allows you to generate code in Scripts style instead of tags.
5. Specify the location to store the generated CFCs.
6. The Adobe CFC Generator displays the selected tables along with their fields.

Adobe CFC Generator dialog box

Move table

On the Adobe CFC Generator, click the table header and drag to move a table.

Edit table

1. Double-click the table header to display the Table Editor.
2. You can now do any of the following:

- If necessary, you can change the name of the CFC.
- Click property name to edit it.
- Click the property-type you wish to change and select from the drop-down list.
- Individually select/unselect table fields using the check box (first grid column). If not selected, the property is not created for that field. If no field is selected in the table, then the CFC for that table is not generated.

Create, edit, and delete relationship

- To create a relationship between two fields of different tables, drag one field on to other. This displays a connector between the two connected fields..
- Double-click the connector to edit the relationship on the Edit Relationship screen dialog box.
- Select to create property for both primary and foreign key.
- Set cardinality of relationship at each end and specify relationship name.
- (For many-to-many relationship) Select a link table from the drop-down list.
- To edit conditions of relationship, click the field that you want to edit.
- To add new condition, click the last empty row of the table.
- To delete relationship, click the X mark in the last column of the table.
- Click the circle in the middle of the linking line to delete the relationship.

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AS Class Generator

The AS Class Generator generates ActionScript classes with or without offline metadata. Offline metadata is a part of the ColdFusion-AIR offline integration feature of ColdFusion. You can generate ActionScript classes either from a CFC or directly from a database table.

Install AS Class Generator

The AS Class Generator extension is installed with ColdFusion Builder, if you selected the Install Extension option when creating a server.

If you did not install the AS Class Generator extension when creating a server and want to install it now, use the AS Class Generator extension archive file (ASClassGenerator.zip). The AS Class Generator extension archive file comes packaged with ColdFusion Builder and is in the Extensions directory within the ColdFusion Builder installation. For more information on installing an extension, see Install and uninstall extensions.

Use AS Class Generator

The AS Class Generator application is available at the following levels:

- RDS Dataview view
- Project Navigator view

AS class generation is supported in the following scenarios:

- From a database table
- From a CFC You can generate the AS class from either an ORM CFC or a traditional CFC.

AS Class Generation from a database table

1. In the ColdFusion Builder perspective, select RDS Dataview.
2. If you have configured an RDS user name and password, specify the RDS user name and password.

> ⚠ **Note**
>
> You set the RDS password in the ColdFusion Administrator. Do not confuse the RDS password with the ColdFusion Administrator password, which is also managed through the ColdFusion Administrator.

3. The list of data sources available in the configured server are listed.
4. Select a data source.
5. Right-click a table in the data source and select Generate AS Class from DB Table > Generate AS Class.

> ⚠ **Note**
>
> The Generate AS Class from DB Table option appears only if you right-click the table name. Clicking the data source or records within the data source does not show these options.

6. Enter the following details in the Generate AS Class dialog box.

- Specify or select a location to store the ActionScript class files.
- Select the Include AS Metadata Tags check box to include the following metadata tags:
- **[RemoteClass]** Maps the ColdFusion CFC or Java objects on the ColdFusion server with the generated ActionScript class
- **[Entity]** Indicates that the generated ActionScript class has to be persisted to the AIR SQLite database as a table. This tag is a ColdFusion-AIR offline integration tag.
- **[Id]** Specifies the AS Class property as a primary key after the ActionScript class is persisted to the AIR SQLite database table.
- Enter the path to the remote CFC class using dot notation relative to the web root. For example, if the path to the CFC is C:\ColdFusion9\wwwroot\CFProj\xyz.cfc, the dot notation path is CFProj.xyz

> **Note**
>
> This entry is ignored if you have not selected the AS Metadata Tags check box.

- Enter the name of the package. The naming convention is the same as the ActionScript naming convention.

1. The ActionScript Class file is created with the naming convention *databasetablename*.as

Reviewing the generated ActionScript Class file

The following code is an example of an ActionScript class file - `Employees.as` that is generated from the `Employees` table in the `cfdocexamples` data source.

Code	Description
`package package1`	The package is created with the name "package1"
`[RemoteClass(alias="cfproj.xyz")]`	The ActionScript Class maps with cfproj/xyz.cfc on the server.

`[Entity]`
public class EMPLOYEES
{
`[Id]`
public var EMP_ID:int;
public var FIRSTNAME:String;
public var LASTNAME:String;
public var EMAIL:String;
public var PHONE:String;
public var DEPARTMENT:String;
public var LOCATION:String;
public var IM_ID:String;
public function EMPLOYEES()
{
}
}
	The class name is the same as the database table name. Each property in this class corresponds to a column in the Employees database table. The data type of each property is mapped automatically after introspecting the column data type.

AS Class Generation from CFC

From an ORM CFC

1. Create an ORM CFC.

> **Note**
>
> CFCs for which ActionScript classes are generated must be within the ColdFusion web root.

2. In the Project Navigator, right-click the ORM CFC and select Generate AS Class from CFC > Generate AS Class.
3. Enter the following details in the Generate AS Class dialog box.

- Specify or select a location to store the ActionScript class files.
- Enter the name of the package. The naming convention is the same as the ActionScript naming convention.
- Select the Include AS Metadata tags check box to include the `[RemoteClass]` tag.
- Select the Include CF-AIR Offline Metadata check box to include the following tags:
- `[Entity]`
- `[Id]`
- If the ORM CFC already has the necessary information like, primary key and data type for each property, you need not enter the ColdFusion data source.

From a traditional CFC

1. In the Navigator view, right-click the CFC and select Generate AS Class from CFC > Generate AS Class.

> ⚠ **Note**
>
> CFCs for which ActionScript classes are generated must be within the ColdFusion web root.

2. Enter the following details in the Generate AS Class dialog box.

- Specify or select a location to store the ActionScript class files.
- Enter the name of the package. The naming convention is the same as the ActionScript naming convention.
- Select the Include AS Metadata tags check box to include the `[RemoteClass]` tag.
- Select the Include CF-AIR Offline Metadata check box to include the following tags:
- `[Entity]`
- `[Id]`
- If the primary key and data type for each property is not specified in the CFC, enter the ColdFusion data source name.

Points to remember

- For CF-AIR offline integration, column-specific metadata tag `[Column]` additions are not currently supported. However, you can manually add the column-specific metadata tags after the ActionScript class file is generated.
- RDS does not provide information about the primary key of a table in the data source. Use the `cfdbinfo }}tag to identify the primary key. The {{cfdbinfo }}tag does not support ODBC drivers including Microsoft Access. Hence, for unsupported data sources, you manually define the {{Id` column in the generated ActionScript Class file.
- CFCs for which ActionScript class files are generated must be within the ColdFusion web root.
- In an ORM CFC, `datatype/type` is an optional attribute of the {{cfproperty }}tag. If this attribute is not present in the CFC, ActionScript class files are not generated. To ensure that the ActionScript class files are generated, specify the ColdFusion data source. Data type information is retrieved from the database table and the ActionScript class file is created.

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Model-Glue Assistant

Model-Glue Assistant is a ColdFusion Builder application that is designed to help you get started with Model-Glue.

Model-Glue is a web application framework to develop ColdFusion web applications (For more information on Model-Glue, see http://docs.model-glue.com).

Prerequisites to use Model-glue Assistant extension

Before you use the Model-Glue Assistant extension, install the following supporting frameworks:

- Model-Glue Framework (You can download from www.model-glue.com)
- ColdSpring Framework (You can download from www.coldspringframework.org)
- Reactor Framework (You can download from www.reactorframework.org)

If you already have the supporting frameworks installed on your computer, you do not have to reinstall the frameworks again.

The Model-Glue Assistant is designed to work with Model-Glue version v2.0.304. If the version of Model-Glue on your computer is other than the specified version, update Model-Glue Assistant.

Install Model-Glue Assistant extension

The Model-Glue Assistant extension is installed with ColdFusion Builder, if you selected the Install Extension option when creating a server.

If you did not install the Model-Glue Assistant extension when creating a server and want to install it now, see Install and uninstall extensions. The Model-Glue Assistant extension archive file (ModelGlue Assistant.zip) comes packaged with ColdFusion Builder. The archive file is in the Extensions directory within the ColdFusion Builder installation.

Create a ColdFusion project

1. Create a ColdFusion project under the web root. See Creating a ColdFusion project for details.
2. In the Add Existing Sources and Referenced Project dialog box, ensure that you select the ModelGlue Assistant Application check box in the list of Applications.
3. Once you create the ColdFusion project, right-click the project in the Project Navigator and select Refresh to see the files and folders that are created. The ModelGlue.xml and ColdSpring.xml files in the Config folder are automatically configured for your project.
4. To check if the Model-Glue Assistant is configured correctly, enter the following URL in your web browser: http://_localhost_/_project name_/index.cfmThe ModelGlue 2.0 web page appears with the message that it is up and running. You see many debug messages that you can comment out; see Debug Trace Toggle for details.

Use Model-Glue Assistant

In the Project Navigator, right-click the configured project and select ModelGlue Assistant. You see the following options. Relevant code is generated for each of following actions.

Add Event

In Model-Glue, when you add an event, you associate a CFM page with the event. When you add an event, the code that is added to the CFM file is typically as follows:

```
<event-handler name="Event1">
 <broadcasts>
  <message name="Hello" />
 </broadcasts>
 <views>
  <include name="body" template="dspPhrase.cfm">
  <value name="xe.translationForm" value="translationForm" />
  </include>
 </views>
</event-handler>
```

The code includes a handler name, a message to broadcast when the event runs, and a view that is associated with a CFM file. For more information, see http://docs.model-glue.com/.

The Model-Glue Assistant lets you add this code easily as follows:

1. Right-click the project in the Navigator and select ModelGlue Assistant > Add Event.Enter the following details in the Add Event dialog box.
2. Enter a name for the event.
3. Enter a broadcast message, if necessary. The message that you enter is broadcast when the event runs.
4. Enter a view name.
5. Enter the location to store the CFM file associated with the view. The location must be a folder or subfolder within the Views folder of the project.
6. Enter a value name and value, if necessary.
7. To check if the event is added, enter the following URL in your web browser: http://_localhost_/_project name_/index.cfm?event=*event name*

Model-Glue Assistant displays a default message in the web page. To change this message, edit the CFM file that you associated with the view.

Generated code

Model-Glue Assistant adds an event handler entry to the ModelGlue.xml file.

Debug Trace Toggle

The Debug Trace Toggle functionality lets you toggle the display of the Model-Glue web page between showing the debugging messages and clearing them.

1. Right-click the project in the Navigator and select ModelGlue Assistant > Debug Trace Toggle.
2. Enter the following URL in your web browser: http://_localhost_/_project name_/index.cfmThe debugging messages are removed.
3. To display the debugging messages, right-click the project in the Navigator and again select ModelGlue Assistant > Debug Trace Toggle.

Generated code

Model-Glue Assistant toggles the value of the debug node in the ColdSpring.xml file.

Enable Reactor

For database-related events, Model-Glue works with the Reactor framework. To get Model-Glue working with

Reactor, enable Reactor. To enable Reactor, clear comments on the Reactor entries in the ColdSpring.xml file (located in the Config folder of your project).

- Right-click the project in the Navigator and select ModelGlue Assistant > Enable Reactor.

Generated code

Model-Glue Assistant clears the comments on the Reactor entries in the ColdSpring.xml file.

Creating Scaffolds

Using the Model-Glue Assistant you can create Scaffolds that let you quickly create basic user interfaces to the database table. For more information on Scaffolds, see http://docs.model-glue.com and http://livedocs.reactorframework.com

1. In the ColdFusion Builder perspective, select RDS Dataview.
2. If you have configured an RDS user name and password, specify the RDS user name and password.

   > ⚠ **Note**
   >
   > You set the RDS password in the ColdFusion Administrator. Do not confuse the RDS password with the ColdFusion Administrator password, which is also managed through the ColdFusion Administrator.

3. The list of data sources available in the configured server are listed.
4. Select a data source.

   > ⚠ **Note**
   >
   > Scaffolds do not support all type of data sources. For information about the supported data sources, see http://livedocs.reactorframework.com/

5. Right-click a table in the data source, and select ModelGlue Assistant > Create Scaffold Entry.

   > ⚠ **Note**
   >
   > The ModelGlue Assistant option appears only if you right-click the table name. Clicking the data source or records within the data source does not show the Create Scaffold Entry option.

   Enter the following details in the Create Scaffold Entry dialog box.

6. Select the project configured for Model-Glue Assistant.
7. Enter the data source user name and password.

   > ⚠ **Note**
   >
   > You set the data source user name and password in the ColdFusion Administrator. The data source password is different from the RDS password and the ColdFusion Administrator password.

8. Select the data source type from the DB Type drop-down list.
9. To check if the Scaffold entry is added, enter the following URL in your web browser: http://_localhost_/_project name_/index.cfm?event=*table name*.list

10. After verifying that the Scaffold entry is created, you see that the following files are created under the Scaffolds folder in the project:
    - dsp_tablename_.cfm
    - dsp_tablename_List.cfm
    - frm_tablename_.cfm

Generated code

- A Scaffold entry is added to Reactor.xml for the selected table. Table relationships are not added.
- The Reactor configuration in ColdSpring.xml is updated to point to the correct data source.
- A Scaffold object entry is added to ModelGlue.xml

Update Model-Glue Assistant

You can update the Model-Glue Assistant extension to the version of Model-Glue and supporting frameworks on your computer.

1. Go to the location in the web root where you have installed Model-Glue Assistant.
2. In the Model-Glue Assistant folder, you see a Handlers folder and the ide_config.xml file.
3. To update the Model Glue Application template files to point to the version of Model-Glue on your computer, edit the modelapp.ini file in the Handlers folder. The code in the modelapp.ini file is as follows:

    ```
    <model>
     <sampleapp name="modelglueapplicationtemplate" location="" />
    </model>
    ```

    Specify the absolute path to Model-Glue Application Template folder in the `location` attribute. For example, location="C:\ColdFusion9\wwwroot\ModelGlueApplicationTemplate"

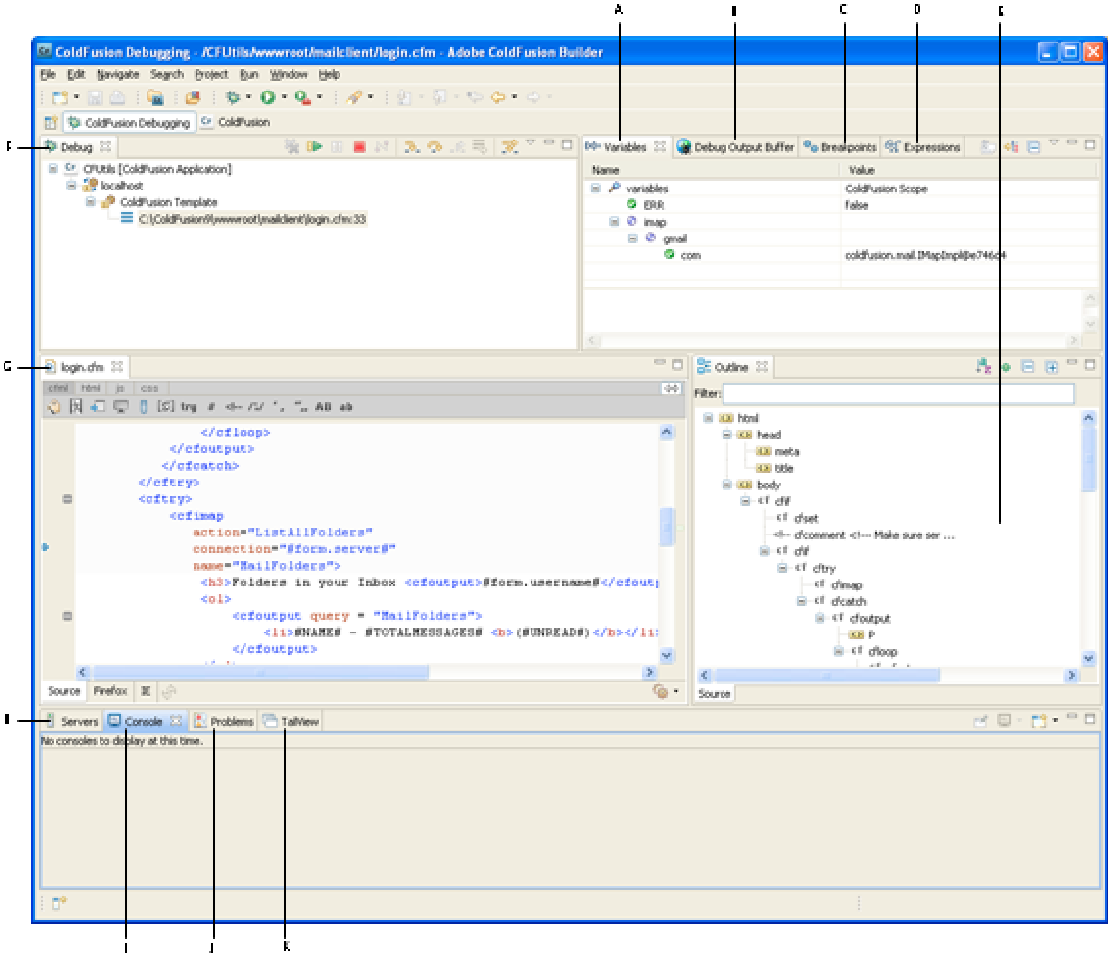
Model-Glue Assistant performs string-handling operations for code generation. To customize the code generated, you can update the CFM files in the Handler folder, as required.

Debugging Perspective

- ColdFusion Debugging perspective
  - Debug View
- Debugging applications
  - Using ColdFusion debugger for server-side debugging
    - Set up ColdFusion to use the Debugger
    - Set up debugging for J2EE configuration of ColdFusion
    - Specify debugger settings in ColdFusion Builder

ColdFusion Debugging perspective

The ColdFusion Debugging perspective (invoked through Run > Debug Configuration > Perspectives) contains tools to debug your ColdFusion applications as well as client-side applications. There are different views that let you add breakpoints to your code, step into functions, step over functions, or examine and evaluate expressions in your code. The editor works with the debugging tools to locate and highlight lines of code that need correction.



CFUtils [ColdFusion Application]
localhost
ColdFusion Template
C:\ColdFusion9\wwwroot\mailclient\login.cfm:33

Name	Value
variables	ColdFusion Scope
ERR	false
imap	
gmail	
con	coldfusion.mail.IMapImpl@e746c4

```
                </cfloop>
            </cfoutput>
          </cfcatch>
      </cftry>
      <cftry>
            <cfimap
              action="ListAllFolders"
              connection="#form.server#"
              name="MailFolders">
                <h3>Folders in your Inbox <cfoutput>#form.username#</cfout
                <ol>
                    <cfoutput query = "MailFolders">
                        <li>#NAME# - #TOTALMESSAGES# <b>(#UNREAD#)</b></li
                    </cfoutput>
```

html
head
meta
title
body
cfif
cfset
cfcomment <!--- Make sure ser ...
cfif
cftry
cfimap
cfcatch
cfoutput
P
cfloop

No consoles to display at this time.

A. *Variables view* ***B.*** *Debug output buffer view* ***C.*** *Breakpoints view* ***D.*** *Expressions view* ***E.*** *Outline view* ***F.*** *Debug view* ***G.*** *Edit view* ***H.*** *Servers view* ***I.*** *Console view* ***J.*** *Problems view* ***K.*** *TailView view*

The ColdFusion Debugging perspective contains the following views:

Debug View

The Debug view retains the results of each debug session. The Debug view shows the stack trace when the page execution is suspended at breakpoint or when stepping into or over code.

The Debug toolbar contains the following buttons (left to right):

Button/command	**Description**
Resume	Resumes a debugging session
Suspend	Pauses a debugging session
Terminate	Stops a debugging session
Disconnect	Disconnects the debugger from the selected debug target when debugging remotely
Remove All Terminated Launches	Clears all terminated debug targets from the display
Step Into	Executes code line by line, including included code, UDFs, and CFCs
Step Over	Executes code line by line, excluding included code, UDFs, and CFCs
Step Return	Returns to the original page from which you entered the included code, UDF, or CFC
Drop to Frame	This command is not supported in ColdFusion Builder.
Use Step Filters/Step Debug	Ensures that all step functions apply step filters

Debugging applications

Debugging lets you examine and troubleshoot your application. When you debug, you can control when the application must stop at specific points in the code. You can also monitor important variables and test your code. Debugging uses a configuration to control how applications are launched. When you debug your application, you run the debug version of the application file.

While ColdFusion Builder Version 2.0 supported ColdFusion server-side debugging (restricted to the ColdFusion Markup Language syntax), ColdFusion Builder 3, in tandem with the introduction of <cfclient> tag in ColdFusion 11, allows client side debugging to debug client-side JavaScript code.

Using ColdFusion debugger for server-side debugging

Before you use the ColdFusion Debugger, ensure that you do the following:

Set up ColdFusion to use the Debugger

Before you use the Debugger, ensure the following:

- A server is associated with the project or the project containing the files that you want to debug.

1. In the Navigator view, right-click the project and select Properties.
2. In the Properties dialog box, select ColdFusion Server Settings.
3. Under Select Servers, ensure that a server is selected. If no server is selected, select the Servers drop-down list and select an available server, or select Add Server to configure a new server.
4. In ColdFusion Administrator, select Debugging & Logging > Debugger Settings.
5. Select Allow Line Debugging.
6. Specify the port to use for debugging. The default value is 5005.
7. Specify the maximum number of simultaneous debug sessions. The default value is 5.
8. Click Submit Changes.
9. To increase the time after which requests time out, do the following:
    a. Select Server Settings > Settings.
    b. Select Timeout Requests After (Seconds) and enter the required timeout value. For example, 300.
    c. Click Submit Changes.
10. The debugger server listens for commands from ColdFusion Builder on a separate port than the one specified in step 3. By default, ColdFusion launches the debugger server with a random available port. This could be a problem if ColdFusion (and hence debugger server) is behind a firewall. Because, the firewall blocks the random port that the debugger is listening.

- RDS is enabled on the ColdFusion server, and you have specified the correct RDS configuration information in ColdFusion Builder.
- Debugging is enabled in ColdFusion Administrator.

To prevent this problem, specify a fixed debugger server port number and allow this port in the firewall. To set a fixed debugger server port number, specify the following JVM argument on the Java And JVM page of the ColdFusion Administrator (or the appropriate place for your J2EE Application Server). Replace portNumber with the port that you want to use:
-DDEBUGGER_SERVER_PORT=portNumber

1. Restart ColdFusion. If you are running the J2EE configuration of ColdFusion, restart the server in debug mode with the debug port as specified.

Set up debugging for J2EE configuration of ColdFusion

If you are not running the server configuration of ColdFusion, specify Java debugging parameters in the configuration file or startup script of the application server you are running. The parameters must look like the following:

-Xdebug -Xrunjdwp:transport=dt_socket,server=y,suspend=n,address=<port_number>

Ensure that the port number you specify is the same port number specified on the Debugger Settings page of ColdFusion Administrator.

If you are running the server configuration, ColdFusion writes these debugging parameters to the jvm.config file when you use the Debugger Settings page of the ColdFusion Administrator.

1. If you are not running the server configuration and your application server is not running on JRE 1.6, copy the tools.jar file of the JDK version that your application server is running to the \lib folder of ColdFusion. For example, if you are running JRun that runs on JRE 1.4, copy the tools.jar file of JDK 1.4 to the \lib folder of ColdFusion.
2. If you are running the server version of ColdFusion and you specify a JRE version other than JRE 1.6 in the jvm.config file, copy the tools.jar file of the JDK version specified in your jvm.config file to the \lib folder of ColdFusion.

Specify debugger settings in ColdFusion Builder

1. In ColdFusion Builder, select Window > Preferences.
2. In the tree view, select ColdFusion > Debug Settings.
3. Specify the home page URL that points to the page that appears in the Debug Output Buffer of the debugger when you click the Home button.
4. Specify the extensions of the types of files that you can debug and debugger scopes that you want the Debugger to recognize. To improve performance when debugging large files, deselect all scopes for which you do not require information
5. Select Break On CFML Runtime Exception to stop the debugger on the line that causes a ColdFusion error.
6. Select Log An Exception To The Eclipse Error Log to display the server logs in the TailView view instead of showing a warning dialog.

Debugging Mobile Applications in ColdFusion Builder

See Debugging Mobile Applications

Bundled ColdFusion Server

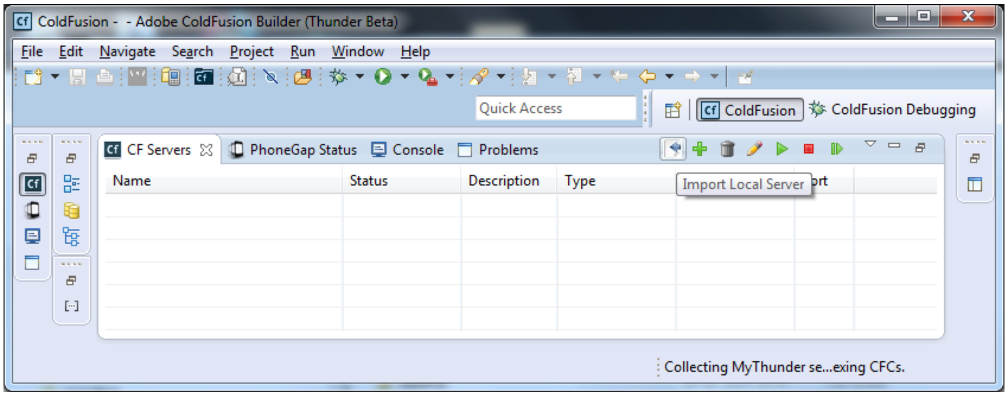
ColdFusion Builder 3 has a built-in ColdFusion Server, which is a lighter version of ColdFusion 11. This bundled version is the same ColdFusion Express. See Installing the ColdFusion Express.

> While installing ColdFusion Builder Standalone (Not eclipse plugin), you will be prompted to install the bundled ColdFusion Server. During the installation process, you must provide a password for the bundled server. The password that you provide will be used for Administrator and RDS.

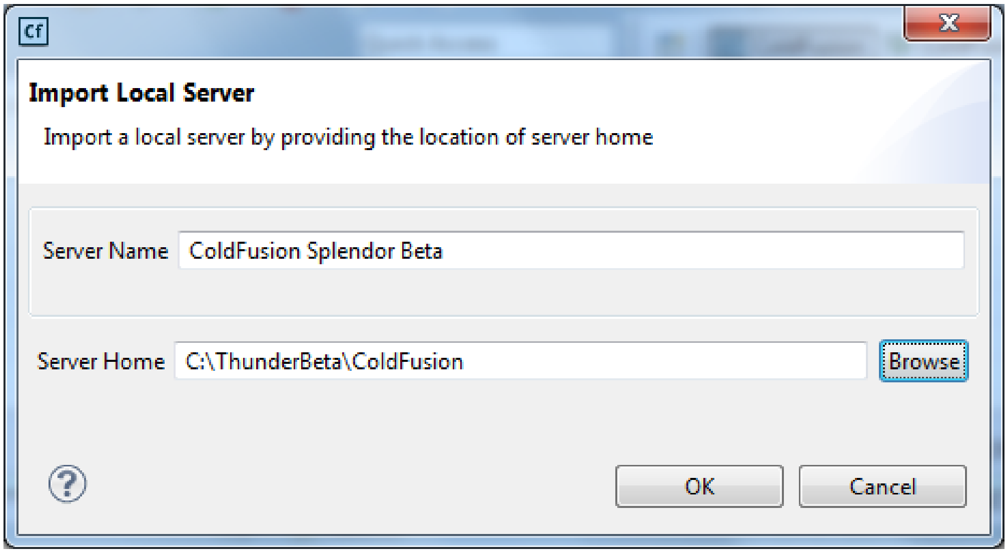
You can quickly build and debug applications using ColdFusion Builder and the bundled ColdFusion Express. When you are installing ColdFusion Builder, you will be prompted to install the bundled Server. When you choose to install the bundled Server, the Server gets installed under <*CFBUILDER_HOME*>/ColdFusion directory. For configuring the Server, see Installing the ColdFusion Express.

To configure a local Server or the bundled Server, perform the following steps:

1. Click Window > Show Views > CF Servers
2. Click the Import Local Server icon:



3. Provide a name for the Server and provide the path to the bundled Server:



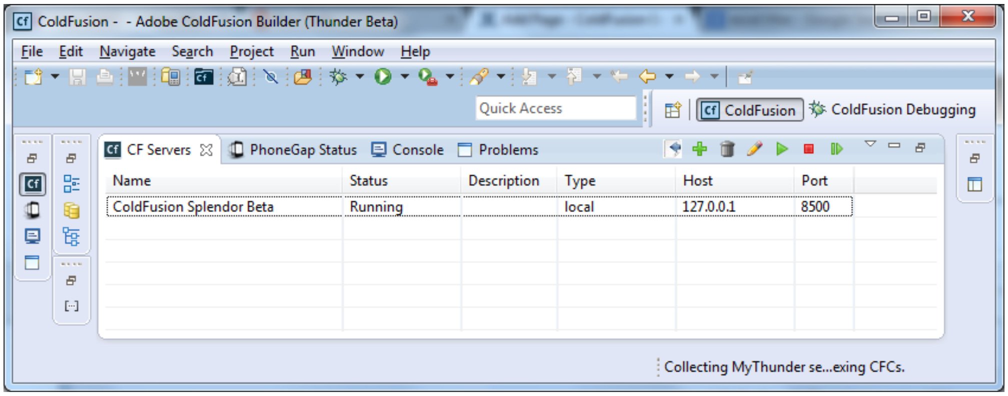
Import Local Server

Import a local server by providing the location of server home

Server Name: ColdFusion Splendor Beta

Server Home: C:\ThunderBeta\ColdFusion

4. You can now manage the life cycle of the Server from the ColdFusion Builder:


ColdFusion - - Adobe ColdFusion Builder (Thunder Beta)
File Edit Navigate Search Project Run Window Help
Quick Access
ColdFusion
ColdFusion Debugging
CF Servers
PhoneGap Status
Console
Problems

Name	Status	Description	Type	Host	Port
ColdFusion Splendor Beta	Running		local	127.0.0.1	8500

Collecting MyThunder se...exing CFCs.

So, if you are using ColdFusion Builder to quickly build and debug applications, you do not need to install ColdFusion Server separately.

Note: The bundled ColdFusion Server runs on port 8600. If this port is not available, a different port will be used.

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Building mobile applications using ColdFusion Builder

See Building Mobile Applications.