

# BoxBrowse

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# Introduction

BoxBrowse is an easy to implement and easier to use custom tag for use with the ColdFusion Mark-up Language. Enabling you to offer multiple files from multiple sources located anywhere on your web server, to anyone using a web browser.

It's inspired by both the functionality of FTP (file transfer protocol) and the user interface of Windows File Explorer. When using BoxBrowse your visitors will instantly get to grips with the application allowing them to intuitively navigate through your sets of files and folders. You can remain secure in the knowledge that these visitors are only able to access the areas permitted by you using BoxBrowse's flexible setting attributes.

This manual will not only guide you in the use of BoxBrowse but it also covers the technical details and functionality of the application.

civBox Software the developers of BoxBrowse can be reached at their webpage [www.civbox.com](http://www.civbox.com).

# Benefits and Features

BoxBrowse from the ground up has been designed with security in mind.

From the outset we did away with verbose path information being passed through various URL variables, an insecure mode required by many similar products. Instead BoxBrowse uses variables containing cryptic numeric sequences to track the user's location. This automatically nullifies all forms of URL tampering.

Instead of directly querying the **CFDIRECTORY** query, BoxBrowse generates its own custom query. All the restrictions and limitations are applied, and then the result is saved to the server's memory. All directory and file requires are then passed to the pre-filtered directory query in the server's memory, rather than to the actual file system on the hard drive.

So with BoxBrowse you can enjoy the flexibility of an anonymous ftp server without the security risks. Best of all your users can simply use a common web browser to access the files. You can even embed a file navigation window within your existing web site layouts for seamless integration.

- Linux and Windows are fully supported
- Multiple directories can be combined together to create a virtual root directory
- Both absolute paths and UNC paths<sup>i</sup> are supported for use with the root directory
- Foreign language (non-Latin character support) for all files and folders items including downloads and navigation
- Ignores web server restrictions by allowing folder access to and file downloads from any location
- Supports various URI schemes including HTTPS and non-standard ports
- HTML and XHTML standards compliant, clean generated code
- Can be run as a fully independent application or it can be easily embedded into an existing CFML or HTML page
- Easy to use and intuitive bread crumb navigation
- File and folder lists can be rearranged by name, size, item type, table columns
- Each file and folder item can have detailed information displayed including its name, item type, modified date and attributes

# Requirements and Supported Platforms

BoxBrowse has been written for servers compatible with the ColdFusion Mark-up Language (CFML) 7.  
Tested and supported servers currently include...

- Adobe ColdFusion MX 7.02 (Windows)

- Adobe ColdFusion MX 7.02 (Linux)

BoxBrowse should be compatible with other operating systems that support the File-system Hierarchy Standard such as Sun Solaris or IBM AIX.

# Quick Start Tutorial

As BoxBrowse is a custom tag we have made it quick and easy for you to get it up and running. This simple guide will get you started with a basic working implementation.

1. Create a directory in your web root. Our example we will use `filebrowse\` as shown in Figure i.
  - For Microsoft IIS your web root would usually be located at `c:\inetpub\wwwroot\`
  - For Apache the default web root would depend on the web server's version and operating system

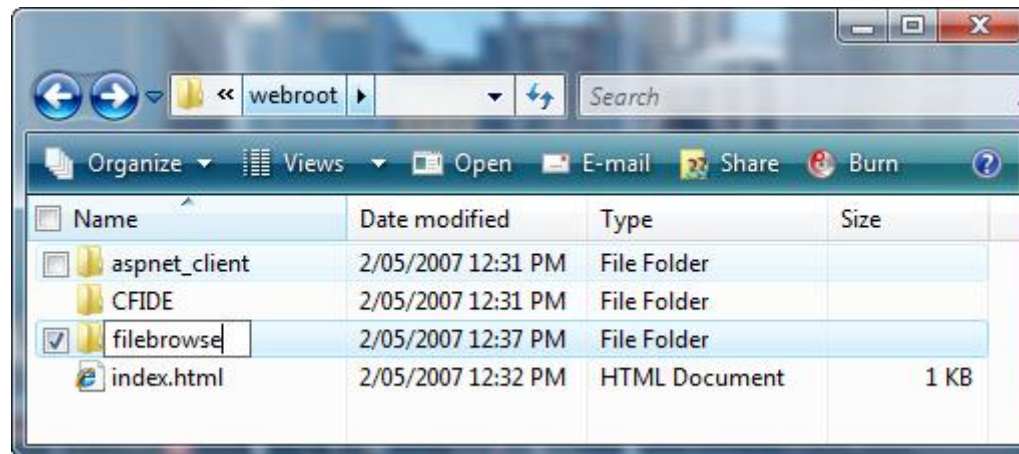


Figure i

2. Firstly extract your BoxBrowse package and then copy the items listed below into your newly created directory from step 1. Figure ii shows the items copied to `c:\inetpub\wwwroot\filebrowse\`
  - `box-Browse.cfm`
  - `box-Browse.cfc`
  - `box-Browse.css`
  - `icons\`

- Now create a blank CFM page (with no HTML) in the new directory then copy and paste in the Example A code.

Example A

```
<cfmodule template="box-Browse.cfm" folderRoot="c:\My Files\" cryptionKey="ChangeThisKey">
```

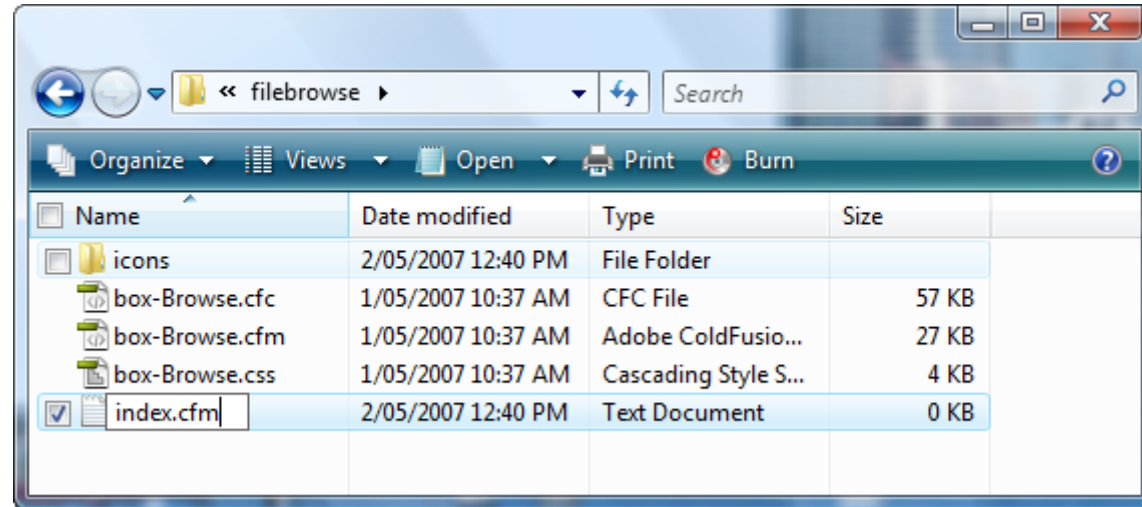


Figure ii

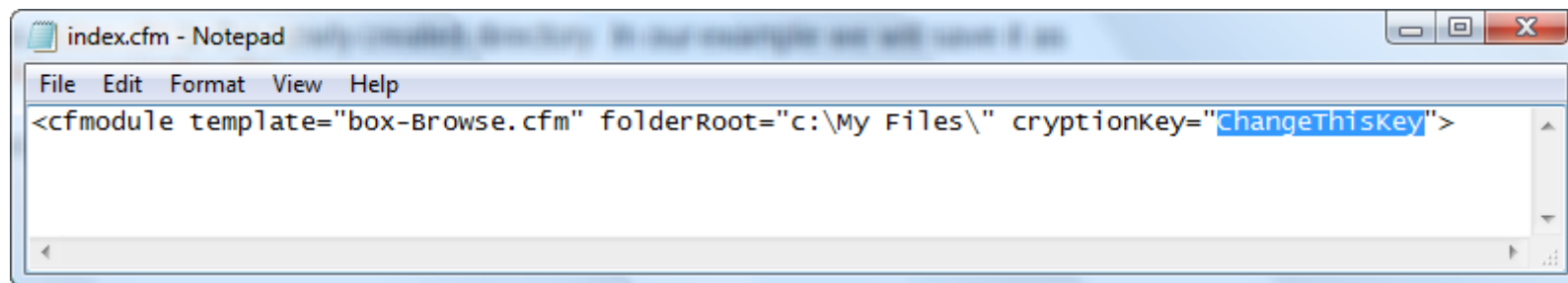


Figure iii

You new CFM page should look similar to Figure iii. Change the **folderRoot** and **cryptionKey** attributes. **FolderRoot** is the absolute

path of the directory which contains the files you wish to share. **CryptionKey** is a random string value of your choice that is used for the encryption of the client cookies.

4. Save the CFM page as **index.cfm** and make sure it is saved in the same directory as your BoxBrowse files. In our example we will save it as **c:\inetpub\wwwroot\filebrowse\index.cfm**.
5. Now point your web browser to the CFM page and you should see a result not unlike Figure iv.

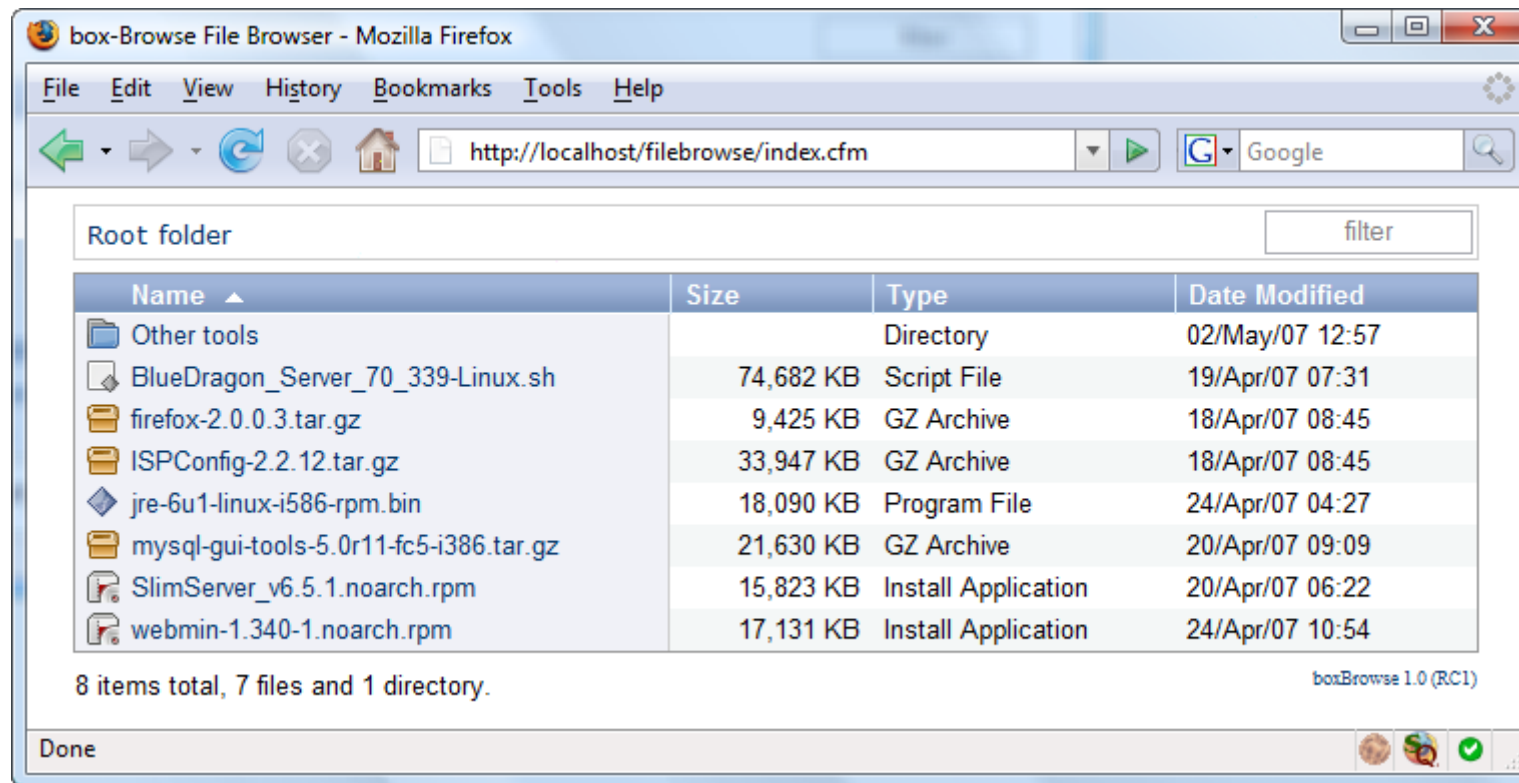


Figure iv



# User Interface

The screenshot displays the BoxBrowse 1.0 (RC1) user interface. At the top, a breadcrumb navigation path reads "Collection of Utilities > Server > Web Serving". To the right of this path is a "filter" input field. Below the breadcrumb is a "Sorting tabs" section. The main content area is a table listing 12 items. The table has four columns: "Name", "Size", "Type", and "Date Modified". The items listed are: CFXtreme (Directory), FuseBox (Directory), YaBB 2 (Directory), ApConf (Apache Config GUI) 4.1.exe (Program File, 1,711 KB), blog6.zip (ZIP Archive, 448 KB), CFCPhotoBlog.zip (ZIP Archive, 362 KB), cfmbb-1.11.zip (ZIP Archive, 539 KB), cfxxtreme\_full\_1.4.zip (ZIP Archive, 3,140 KB), galleon7.zip (ZIP Archive, 235 KB), modelglue\_1\_1.zip (ZIP Archive, 140 KB), Stand Alone BBoard v2.0.rar (RAR Archive, 702 KB), and YaBB\_2.1.zip (ZIP Archive, 926 KB). Annotations with arrows point to specific elements: "Root directory" points to the breadcrumb path; "Breadcrumb navigation" points to the breadcrumb path; "Filter results" points to the filter input field; "Directory" points to the "FuseBox" directory icon; "File download" points to the "cfxxtreme\_full\_1.4.zip" file icon; and "Statistics" points to the summary text "12 items total, 9 files and 3 directories." at the bottom left.

Root directory

Breadcrumb navigation

Filter results

Sorting tabs

Name ▲	Size	Type	Date Modified
CFXtreme		Directory	16/Aug/06 11:46
FuseBox		Directory	26/Feb/07 07:23
YaBB 2		Directory	16/Aug/06 11:46
ApConf (Apache Config GUI) 4.1.exe	1,711 KB	Program File	20/Sep/04 05:32
blog6.zip	448 KB	ZIP Archive	23/Jan/07 09:34
CFCPhotoBlog.zip	362 KB	ZIP Archive	01/Dec/06 08:56
cfmbb-1.11.zip	539 KB	ZIP Archive	06/Dec/06 04:44
cfxxtreme_full_1.4.zip	3,140 KB	ZIP Archive	16/Dec/05 04:19
galleon7.zip	235 KB	ZIP Archive	05/Dec/06 02:42
modelglue_1_1.zip	140 KB	ZIP Archive	01/Dec/06 08:57
Stand Alone BBoard v2.0.rar	702 KB	RAR Archive	08/Nov/05 03:46
YaBB_2.1.zip	926 KB	ZIP Archive	16/Mar/06 11:40

12 items total, 9 files and 3 directories.

Statistics

boxBrowse 1.0 (RC1)

Figure v

# How-To

## 1. How should I manage whitespace with BoxBrowse?

BoxBrowse has been designed to run in conjunction with the CFML `<cfsetting enableCFoutputOnly="true">` tag. This method is generally considered the most efficient means of managing ColdFusion's whitespace, as only characters placed within `<cfoutput></cfoutput>` tags are included in the output HTML code. If you do not already use the `cfsetting` tag in either the site's `Application.cfc` or `Application.cfm` pages then it is advised that you wrap the BoxBrowse `cfmodule` declaration with the `cfsetting` tags as shown in Example B.

### Example B

```
<cfsetting enableCFoutputOnly="true">
<cfmodule template="box-Browse.cfm" cryptionKey="myKey" folderRoot="c:\public files">
<cfsetting enableCFoutputOnly="false">
```

## 2. On a website how do I stop two or more separate instances of BoxBrowse from clashing with the web browser's cookies?

The `ID` attribute allows you to give each BoxBrowse instance a unique identifier removing any possibility of the cookies clashing.

### Example C

```
<cfmodule template="box-Browse.cfm" cryptionKey="myKey" folderRoot="c:\public share\files\utilities" id="share1">
<cfmodule template="box-Browse.cfm" cryptionKey="myKey" folderRoot="c:\public share\documents" id="share2">
```

## 3. I wish to move the included CSS file or the icon images into a different directory, how do I go about that?

The `css` attribute allows you to declare the location and the name of the cascading style sheet you wish to use with BoxBrowse. The only condition is that the location given must be a relative path. The `iconFolder` attribute is used to declare the location of the icon graphics folder.

### Example D

```
<cfmodule template="box-Browse.cfm" css="../css/box-Browse.css" iconFolder="images/boxBrowse/icons" cryptionKey="myKey"
folderRoot="c:\public share">
```

4. In my browser BoxBrowse does not seem to be displaying or formatting correctly.

If BoxBrowse looks similar to Figure vi then there is something wrong with the cascading style sheet. If you have used the `doctype="none"` attribute then you probably forgot to include a `<link>` tag in your HTML page linking to `box-Browse.css`. See Question 9 on page 13 for more information.

[Root folder](#)

	<a href="#">Name</a> ▲	<a href="#">Size</a>	<a href="#">Type</a>	<a href="#">Date Modified</a>
📁	<a href="#">Other tools</a>		Directory	02/May/07 12:57
📄	<a href="#">BlueDragon Server 70 339-Linux.sh</a>	74,682 kB	Script File	19/Apr/07 07:31
📦	<a href="#">firefox-2.0.0.3.tar.gz</a>	9,425 kB	GZ Archive	18/Apr/07 08:45
📦	<a href="#">ISPConfig-2.2.12.tar.gz</a>	33,947 kB	GZ Archive	18/Apr/07 08:45
📄	<a href="#">jre-6u1-linux-i586-rpm.bin</a>	18,090 kB	Program File	24/Apr/07 04:27
📦	<a href="#">mysql-gui-tools-5.0r11-fc5-i386.tar.gz</a>	21,630 kB	GZ Archive	20/Apr/07 09:09
📄	<a href="#">SlimServer v6.5.1.noarch.rpm</a>	15,823 kB	Install Application	20/Apr/07 06:22
📄	<a href="#">webmin-1.340-1.noarch.rpm</a>	17,131 kB	Install Application	24/Apr/07 10:54
<a href="#">boxBrowse 1.0 (RC1)</a>				
8 items total, 7 files and 1 directory.				

Figure vi

5. How do I display system, zero byte sized and hidden files?

By enabling these attributes respectively, `displaySystem`, `displayZeroByte`, `displayHidden`.

Example E

```
<cfmodule template="box-Browse.cfm" cryptonKey="myKey" folderRoot="c:\" displayZeroByte="yes" displayHidden="yes"
displaySystem="yes">
```

6. How do I display all my files, it seems BoxBrowse is intentionally hiding a few?

For security reasons by default BoxBrowse hides a number of system files and folders from view. Changing the following attributes will enable you to view all the files and folders under BoxBrowse, `hideFolders`, `hideFiles`, `hideExtensions`.

Example F

```
<cfmodule template="box-Browse.cfm" cryptonKey="myKey" folderRoot="c:\" hideFolders="" hideFiles="" hideExtensions="">
```

7. How do I change the time/date format of the dates listed in the 'Date modified' column?

You need to manually edit the box-Browse.cfm file. Conduct an exact search for the code snippet Example G and when found rearrange the string values of the `LSDateFormat` and `TimeFormat` functions to whatever order you wish.

Example G

```
<div class="bbTDDate">#LSDateFormat(TDDate,'dd/mmm/yy')# #TimeFormat(TDDate,'hh:mm')#</div>
```

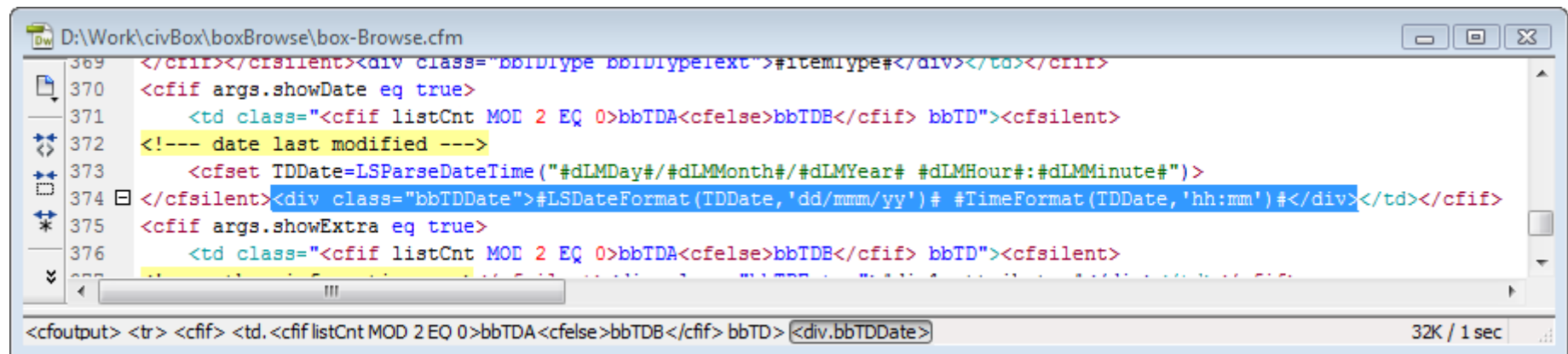


Figure vii

8. How do I change the format of the size data listed in the 'Size' column?

You need to manually edit the `box-Browse.cfm` file. Conduct an exact search for the code snippet Example H and when found you can change either of these attributes, `lowestValue`, `highestValue`, or `showDecimal`. `showDecimal` is a Boolean value while the other two values can be set

to 'bytes', 'kB', 'MB', 'GB' or 'TB' quantities.

*Example H*

```
<cfinvoke component="#cfcName#" method="boxByteCFC" returnvariable="displaySize" value="#dir1.size#" lowestValue="kB"
highestValue="kB" showDecimal="no">
```

#### 9. How do I embed BoxBrowse into my existing pages or templates?

The `doctype=none` attribute and value will stop BoxBrowse from including the `doctype`, `head`, `html` and `body` HTML tags in the output code.

*Example I*

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">
<html>
<head>
<link href="box-Browse.css" rel="stylesheet" type="text/css" />
<title>My Webpage</title>
</head>
<body>
<div style="padding-bottom:10px;">Below is an example of BoxBrowse embedded into an existing HTML page.</div>
<cfsetting enableCFoutputOnly="true">
<cfmodule template="box-Browse.cfm" cryptonKey="myKey" folderRoot="c:\public files" doctype="none">
<cfsetting enableCFoutputOnly="false">
</body>
</html>
```

In Example I we have also highlighted some extra CFML and HTML tags that are needed when using the `doctype="none"` attribute value. The HTML `<link>` tag needs to be manually inserted into the page as BoxBrowse cannot generate this tag in this mode, otherwise it would break HTML validation. BoxBrowse also relies on the `cfsetting` CFML tag to manage whitespace. If you do not incorporate this tag within your site's `Application.cfm` or `Application.cfc` file then it is advised that you wrap it around your BoxBrowse `cfmodule` declaration as shown in Example I.

Please note that if you wish to embed more than one instance of BoxBrowse on a page then each instance must have unique URL variables and a unique ID as shown in Example J. These can be changed using the `id`, `urlvar_id`, `urlvar_refreshid`, `urlvar_sort` and `urlvar_download` attributes.

*Example J*

```

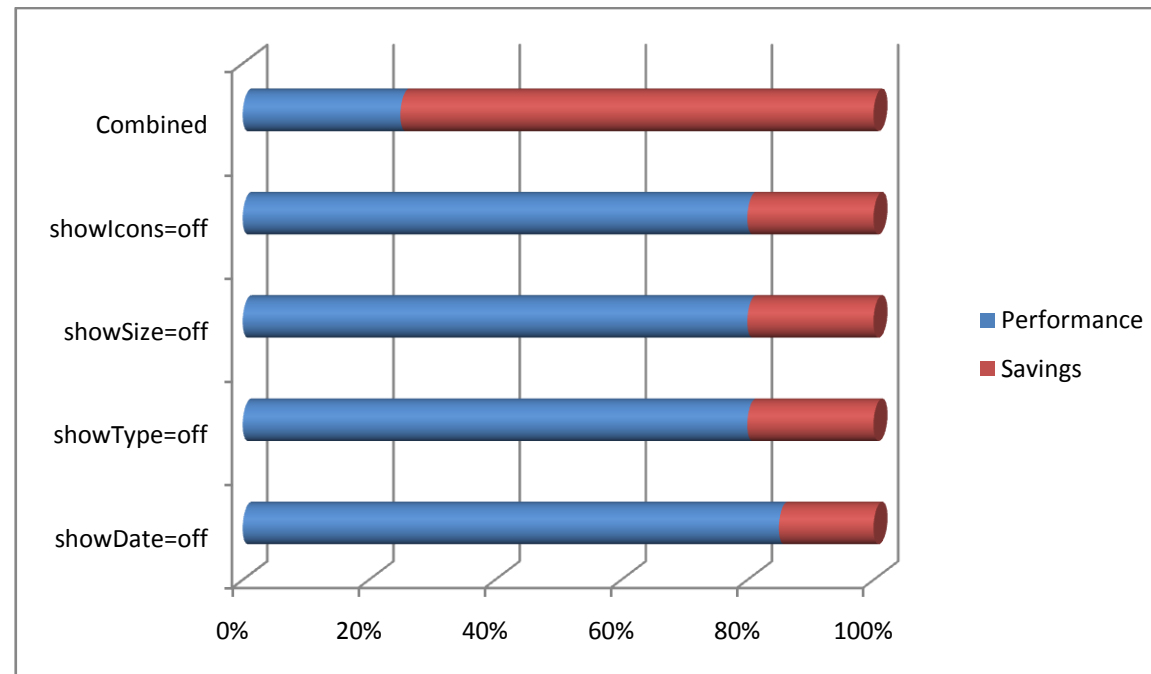
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">
<html>
<head>
<link href="box-Browse.css" rel="stylesheet" type="text/css" />
<title>My Webpage</title>
</head>
<body>
<div style="padding-bottom=10px;">Below is an example of BoxBrowse embedded into an existing HTML page.</div>
<cfsetting enableCFoutputOnly="true">
<cfmodule template="box-Browse.cfm" cryptionKey="myKey" folderRoot="c:\public files" doctype="none" id="example1" urlvar_id="varA1"
urlvar_refreshid=" varA2" urlvar_sort=" varA3" urlvar_download=" varA4">
<cfoutput><p></p></cfoutput>
<cfmodule template="box-Browse.cfm" cryptionKey="myKey" folderRoot="c:\public files" doctype="none" id="example2" urlvar_id="varB1"
urlvar_refreshid="varB2" urlvar_sort="varB3" urlvar_download="varB4">
<cfsetting enableCFoutputOnly="false">
</body>
</html>

```

# Performance Tuning

One of the great features of BoxBrowse is that it allows you to offer files on your website that are stored outside of the restricted web root directory. This flexibility is not without its risks though, and we have focused our attention on security over performance in designing BoxBrowse. These extra security precautions do lead to overheads with the application's performance when browsing large directories. So in this segment we will show you how to optimize and tweak for quicker processing results, without compromising security.

With our in-house tests<sup>ii</sup> we found that with large file lists you could greatly reduce the BoxBrowse processing time by simply turning off some or all of the table columns.



Turning off all table columns can lead to a 75% performance improvement.

# Troubleshooting

1. Why is ColdFusion MX 7 or greater needed for use with BoxBrowse?  
*BoxBrowse requires the use of these two CFML 7 only features. A correct reply for a `CGI.PATH_INFO` or `CGI.SCRIPT_NAME` request and the use of customized query of queries attributes.*
2. There are no files or folders being displayed in the current directory, even though I know there are items contained in it.  
*You need to make sure the web server (or the server users-access) has permission to view the content of the directory.*
3. I receive the following ColdFusion error message when using a Linux server.  
*The specified Directory {/your/directory} cannot be read. The exception occurred during a cfdirectory action="list". ColdFusion does not have permission to access the directory you have requested under BoxBrowse.*
4. I have changed the `cryptonAlgorithm` attribute and now I receive the following error message.  
*"There has been an error while trying to encrypt or decrypt your input string: Cannot decode string ..."*  
*The `cryptonAlgorithm` should not be changed. It was only implemented for experimentation on unsupported non-Adobe CFML servers. The default `CFMX_COMPAT` algorithm is propriety and is exclusive to Adobe products.*
5. My Windows based ColdFusion server cannot display the content of mapped drives.  
*The ColdFusion service on Windows operates by default as 'System' and so it cannot access directories on a remote system or mapped drive. To resolve this issue you need to change the Local System account that ColdFusion runs on.*
6. In Internet Explorer 6 the BoxBrowse icons do not display correctly.  
*IE6 does not fully support the PNG image standard, including its transparency effects which are used by BoxBrowse.*
7. Internet Explorer (any version) has problems when downloading large files.  
*This problem is caused by the default web server included with the ColdFusion server application which is not intended for production use. The error problem does not occur on 3<sup>rd</sup> party production servers such as IIS and Apache.*



# Reference Tables

On the following pages you will find categorised, all the attributes you can use with BoxBrowse. This includes their default values, options, descriptions and any notes that maybe appropriate.

# Application Settings

Attributes	Default Setting	Information										
folderRoot		<p>The path or paths to be used as the directory root. <u>Absolute and Windows UNC paths</u> are allowed. Linux server paths are case-sensitive, while Windows server paths are not. Multiple paths can be combined together using a comma-delimiter list to create a virtual directory.</p> <p>Example: <code>folderRoot="c:\fileshare\documents,c:\fileshare\media,downloads\d\"</code></p>										
cryptonKey		<p>A key used to encrypt web browser cookies that contain the user's current path information.</p>										
folderRootMask	Root folder	Assign a customized name for the root folder (see Figure v 'root directory').										
title	box-Browse File Browser	<p>Title to be displayed in the web browser.</p> <p>This attribute is ignored when <code>doctype="none"</code> is used.</p>										
id	BoxBrowse	<p>A unique ID used in the naming of web browser cookies.</p> <p>If you are using more than one instance of BoxBrowse on a server then each instance will require unique ID to avoid browser cookie conflicts.</p>										
anchor	Yes	All links will be directed to a HTML anchor that automatically scrolls the user's browser down to the BoxBrowse breadcrumb navigation.										
doctype	xhtml11	<p>HTML mark-up language and DTD the application should use.</p> <p>Options:</p> <table><tr><td>html4strict</td><td>HTML 4.01</td></tr><tr><td>html4loose</td><td>HTML 4.01 Transitional</td></tr><tr><td>xhtml1strict</td><td>XHTML 1.0 Strict</td></tr><tr><td>xhtml1loose</td><td>XHTML 1.0 Transitional</td></tr><tr><td>xhtml11</td><td>XHTML 1.1</td></tr></table>	html4strict	HTML 4.01	html4loose	HTML 4.01 Transitional	xhtml1strict	XHTML 1.0 Strict	xhtml1loose	XHTML 1.0 Transitional	xhtml11	XHTML 1.1
html4strict	HTML 4.01											
html4loose	HTML 4.01 Transitional											
xhtml1strict	XHTML 1.0 Strict											
xhtml1loose	XHTML 1.0 Transitional											
xhtml11	XHTML 1.1											

		<div> <div>none</div> <div>*</div> </div> <p>* Use 'none' when you wish to embed the application within an existing web page, rather than using it as a standalone web application. No document type is declared, nor is there any <code>&lt;body&gt;</code> or <code>&lt;head&gt;</code> tags used. But all mark-up tags will be both HTML and XHTML friendly as to not to break any existing web site validation. You will need to manually insert the BoxBrowse CSS location using a <code>&lt;link&gt;</code> tag as well as any encoding or title attributes.</p>
fileDownloads	Yes	Allow file downloading.
fileRemoteLinkage	No	Allow links to files from sources outside the BoxBrowse application.
cryptonAlgorithm	CFMX_COMPAT	Default ColdFusion encryption algorithm used when encrypting cookies in the web browser. This has only been tested with <code>CFMX_COMPAT</code> and is not guaranteed to work with strong encryption types such as <code>AES</code> , <code>BLOWFISH</code> , <code>DES</code> .
encode	utf-8	The HTTP character set to be used by the HTML or XHTML output. This attribute is ignored when <code>doctype="none"</code> is in use.
debug	Off	<p><b>All ways keep this option off when your application is accessible by the public</b></p> <p>Toggles the application technical information display including directory paths and variable values. Debug will break X/HTML validation and can generate CSS layout problems in some web browsers such as Internet Explorer 6.</p> <p>Options: Full, Limited, Off</p>

## File and Folder Exclusions

Attributes	Default Setting	Information
displayHidden	No	Display and allow access to the files and folders that are flagged as hidden. In Windows these are the items flagged with the +H attribute. In Linux these are items that start with a period.
displayZeroByte	No	Display and allow access to empty files that are 0 bytes in size.
hideExtensions	See endnote <sup>iii</sup>	Forbid the display and access to files with these extensions. Example: <code>hideExtensions="cfm,cfc,html,log,css"</code>
hideFiles	See endnote <sup>iv</sup>	Forbid the display and access to files using these names. Example: <code>hideFiles="ntldr,ntdetect.com,Thumbs.db"</code>
hideFolders	See endnote <sup>v</sup>	Forbid the display and access to these directories. <u>Absolute paths</u> must be used. Example: <code>hideFolders="c:\Windows,c:\Program Files"</code>
showOnlyExtensions		Only display and allow access to files with these extensions. Example: <code>showOnlyExtensions="zip,rar"</code>
showOnlyFiles		Only display and allow access to files using these names. Example: <code>showOnlyFiles="file_id.diz,readme.txt,download.zip"</code>

## Table Columns

Attributes	Default Setting	Information
showIcons	Yes	Display the icon column used to graphically identify the files and folders.
showSize	Yes	Display the file size column.
showType	Yes	Display the type column used for item descriptions.
showDate	Yes	Display the date column showing the date when the item was last modified.
showExtra	No	Display the extras column which only shows limited Windows attributes.
showStatistics	Yes	Displays a summary of the total number of files and folders in the current directory.

## Table Format

Attributes	Default Setting	Information
css	<i>box-Browse.css</i>	<p>This is the <u>relative path</u> and file name of the cascading style sheet to be used with the application. This attribute only needs to be used if you move or rename the default <b>box-Browse.css</b> file.</p> <p>This attribute is ignored when <b>doctype="none"</b> is in use.</p> <p>Example: <b>css=" ../css/box-Browse.css"</b></p>
iconFolder	<i>icons/</i>	<p>The <u>relative path</u> to the application's icons and images. If you wish to change individual icon file names, you can find their variables at the top of the <b>box-Browse.cfc</b> package under '<i>image file names used by the application</i>'</p>
tableWidth	<i>700</i>	Total width (in pixels) of the application. This attribute also affects the width of the Name column which is dynamically calculated.
colIconWidth	<i>20</i>	Total width (in pixels) of the Icon column.
colSizeWidth	<i>100</i>	Total width (in pixels) of the Size column.
colDateWidth	<i>150</i>	Total width (in pixels) of the Date column.
colExtrasWidth	<i>70</i>	Total width (in pixels) of the Extras column.
colTypeWidth	<i>150</i>	Total width (in pixels) of the Type column.

## URL Variable Names

Attributes	Default Setting	Information
urlvar_id	<i>bb1</i>	This URL variable is used to identify the directories.
urlvar_refreshid	<i>bb2</i>	This URL variable is used to identify the application state and instance.
urlvar_sort	<i>bb3</i>	This URL variable is used to sort all the items within the directory.
urlvar_download	<i>bb4</i>	This URL variable is used to identify downloads.

## Footnotes

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<sup>i</sup> UNC path support is dependent on the host server setup. Windows servers need to be properly configured to allow ColdFusion to access the shares. Linux servers need to have the shares mounted to a local file system directory.

<sup>ii</sup> Tests were conducted on an Intel Pentium 4 2.8 MHz development server with 1GB of RAM. Both Fedora Core 6 and Windows Microsoft XP Professional were used on the same hardware while running Adobe ColdFusion 7.02. The benchmarks were conducted on a single folder that contained 900 miscellaneous music files equalling 8.35 GB on disk.

<sup>iii</sup> cfm,cfc,ini,sys,dll,log,bat

<sup>iv</sup> box-Browse.cfm,box-Browse.cfc,ntldr,ntdetect.com,Thumbs.db

<sup>v</sup> c:\Windows,c:\Documents and Settings,c:\Program Files,c:\cfusionmx,c:\cfusionmx7