

How to find, install and implement **3rd Party Libraries** in ColdFusion/CFML

Online ColdFusion Meetup
June 23, 2022

https://github.com/gpickin/20220623_OnlineCFMLMeetup_3rdPartyLibraries

Gavin Pickin

Who am I?

- Software Consultant for Ortus Solutions
- Work with ColdBox, CommandBox, ...Box every single day
- Working with Coldfusion for 22 years
- Working with Javascript just as long
- Love learning and sharing the lessons learned
- From New Zealand, live in Bakersfield, Ca
- Loving wife, lots of kids, and countless critters

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Overview

It's finally happening! For the first time in three years, Adobe ColdFusion Summit will be in-person. Join us on the 3rd and 4th of October for the 10th edition of the marquee event. Meet coders from across the globe, learn from industry professionals, and dive into our latest release, as you explore coding like never before.

Previous Online CF Meetups in this Series

May 12

Code Reuse in CF: Is Spaghetti Code still Spaghetti if it's DRY? with Gavin Pickin--CF Meetup #295

<https://www.youtube.com/watch?v=Mn0W6G5MVqE&t=1s>

June 9

When Should I Use 3rd Party Libraries vs Roll My Own? with Gavin Pickin--CF Meetup #296

https://www.youtube.com/watch?v=JP-_U41zW9Q&t=3s

Where do you find 3rd party Libraries?



Where do you find out about 3rd party libraries?

- In CFML most of the code from 3rd party libraries you will find through google.
- You'll find a blog post, presentation, stack overflow, community forums
- Or maybe slack, twitter, or on a napkin

You'll see someone with a problem, and hopefully a solution you can use

Where do I get 3rd party libraries?

ForgeBox

Not just for BOX products

ForgeBox is the only full package management solution for your ColdFusion Applications, accessible from the CLI with CommandBox, and accessible by the browser at ForgeBox.io.

I work for Ortus, we built it, I am biased, but I believe it is for a good reason.

Where do I get 3rd party libraries?

CFLib

<https://cflib.org>

Oldie but a goodie - not updated often - A lot of these functions have been migrated to ForgeBox

Welcome to the Common Function Library Project. The purpose of the Common Function Library Project (CFLib.org) is to create a set of user-defined function (UDF) libraries for ColdFusion 5.0 and higher. These libraries are open source and may be used and modified to your liking. Functions range from email format checking to encryption routines. These UDFs can greatly speed up development time as well as add new and powerful features to your web site.

Where do I get 3rd party libraries?

GitHub

A lot of people post their gists or repositories on Github, and then share those links via blogs, tweets, forum posts, slack etc.

Where do I get 3rd party libraries? - Java

Apache Maven

<https://maven.apache.org/>

A strength of CFML is we can utilize Java Libraries too

Apache Maven is a software project management and comprehension tool. Based on the concept of a project object model (POM), Maven can manage a project's build, reporting and documentation from a central piece of information.

Where do I get 3rd party libraries? - Java

Apache Maven

<https://maven.apache.org/>

Maven's primary goal is to allow a developer to comprehend the complete state of a development effort in the shortest period of time. In order to attain this goal, Maven deals with several areas of concern:

- Making the build process easy
- Providing a uniform build system
- Providing quality project information
- Encouraging better development practices

How do I install 3rd party libraries?

- Once you find a 3rd party library, then you need to install it... and update it.
- Options
 - Manually install the library
 - Automate installing the library
 - Use a Package Manager

Manually install 3rd party libraries?

- Find the library you want to install
- Download the files
- Where do you put them?
- How do you know when to update them?
- How do you update them?
- How do you deploy with them?

Manually install 3rd party libraries?

- Where do you put them?
 - In your source control repository?
 - When you update a library, there is a lot of noise because you could be changing 10,50,100s of files all at once
 - That can bloat your repo current size
 - That can really bloat your repo historic size, and that does matter when you clone your repos.

Manually install 3rd party libraries?

- How do you know when to update them?
 - Do you know what version you have?
 - Do you know what version is the latest?
 - Do you remember to go look at the website etc to get an update?
 - What if there is a security patch? Will you find out about it?

Manually install 3rd party libraries?

- How do you update them?
 - Once you know you have to update your library, you have to find where the code lives now
 - You have to remember the steps you used to install it
 - You might have to determine how to uninstall the last version
 - Where do you put the new version?
 - How do other devs get the right version? Or stg or prod environments?
 - Do you put it in source control, do you handle the bloat etc?

Manually install 3rd party libraries?

- How do you deploy with them?
 - So if you have your code in Source control, this is easy, bloated possibly, but easier to get to devs, stg, prod
 - If it's not in source control, then how do you update all of your devs version of that library.
 - How do you update stg
 - How do you update prod when the code that needs it goes but not before it goes to prod?
 - Will you remember to deploy in sync?

Manually install 3rd party libraries?

- We've done it for years, right. Is it that bad?
 - Yes when:
 - you have multiple developers
 - Or multiple deployment tiers
 - Or too many libraries to keep track of
 - Or you have no hair left after managing your nightmare lib folder manually

Ok, other options?

Automatically install 3rd party libraries?

- Use a tool/script to handle installing from:
 - Url link
 - Git
 - S3
 - CFLib
 - Gist
 - Java

Automatically install 3rd party libraries?

- Does the tool know
 - What version do you have of the library?
 - What version do you need of the library?
 - Do you already have that version installed?
 - How to uninstall the old library?

Automatically install 3rd party libraries?

- When you update versions of the library, how does the tool know
 - Do you have to update the tool in one place
 - Do you have to update it for devs, stg, and prod
 - How do you keep track of which version is needed for what code? Will the right version be there when prod is pushed?

Automatically install 3rd party libraries?

- What if your libraries are installed from multiple sources?
 - Can your tool handle
 - Url link
 - Git
 - S3
 - CFLib
 - Gist
 - Java
- Does it know where to install them?

Automatically install 3rd party libraries?

- Do you write a:
 - Cfml script
 - bash script?
 - Gitlab / Github Action
 - Jenkins
 - Travis
 - Powershell
 - Make files (talking to you Adam Tuttle)
- You know CommandBox can install from endpoints other than ForgeBox?



COMMANDBOX

<https://www.ortussolutions.com/products/commandbox>

CommandBox - What can it do?

- CLI Tool - With cross platform helpers
- Package Management
- Application Scaffolding
- Embedded Servers (Adobe, Lucee + More)
- Task Runners
- Modular and Extensible with CFML



COMMANDBOX

Automatically install 3rd party libraries?

CommandBox - Endpoint Installation

- For CommandBox to install packages for you, it needs to connect to where packages are stored so it can download them for installation.
- CommandBox integrates seamlessly with ForgeBox, our community repository of ColdFusion (CFML) projects, which is the recommended Endpoint.
- CommandBox also integrates with many other endpoints to use with CFML and Java.

Automatically install 3rd party libraries?

CommandBox - Endpoint Installation

- HTTP(S) - Point to a hosted zip file containing a package
- File - A local file containing a package
- Folder - A local folder containing a package
- Git - Any Git repo containing a package
- Lex - A Lucee Extension hosted via HTTP that's *not* contained in a zip file
- S3 - A package zip stored in a private S3 bucket

Automatically install 3rd party libraries?

CommandBox - Endpoint Installation

- CFLib - UDFs posted on [CFLib.org](<http://cflib.org/>)
- Gist - A package hosted as a Gist from [gist.github.com](<http://gist.github.com/>)
- Java - Install OpenJDK for your servers
- Jar - A jar file hosted via HTTP that's *not* contained in a zip file

Let's play with it

Open VS Code

Let's play with it

HTTP(S) - Point to a hosted zip file containing a package

Install <https://github.com/coldbox-modules/bcrypt/archive/refs/heads/development.zip>

File - A local file containing a package

Install myStuff.zip

Folder - A local folder containing a package

install __myrepos/utils

Let's play with it

Git - Any Git repo containing a package

install `git://github.com/gpickin/versionHeader.git`

CFLib - UDFs posted on CFLib.org

install `cflib:GetHostName`

Gist - A package hosted as a Gist from `gist.github.com`

install `gist:d10024aea74857d3dc15486e695f764b`

Why won't this work?

install `gist:ba07c8ebc85418b1d7dce39bc53565ec`

Let's play with it

S3 - A package zip stored in a private S3 bucket

install s3://my-private-bucket/myPackage.zip

Jar - A jar file hosted via HTTP that's not contained in a zip file

install

"jar:<https://github.com/coldbox-modules/cbox-bcrypt/blob/master/models/lib/jbcrypt.jar?raw=true>"

Let's play with it

Lex- A Lucee Extension hosted via HTTP that's not contained in a zip file

install lex:<https://server.com/path/to/ortus-redis-cache-1.4.0.lex>

Java - Install OpenJDK for your servers

java install OpenJDK8_jdk8u181b13

Full ColdFusion Package Management for your App

ForgeBox is the only full package management solution for your ColdFusion Applications, accessible from the CLI with CommandBox, and accessible by the browser at ForgeBox.io.

Why should we NOT use Package Management?

- Another tool to manage and deal with
- Old school is simpler
- What about building without Internet
- Builds are faster without packaging

Why should we NOT use Package Management?

- Another tool to manage and deal with
Modern developers have lots of tools, this one extra
one will save you time and headaches
- Old school is simpler
Not when you have to manage your nightmare lib
folder manually.

Why should we NOT use Package Management?

- What about building without Internet
Most package managers have offline modes
- Builds are faster without packaging
Offline and artifact based builds are very fast

Why should we use Package Management?

Knowing which libraries you use, and which version, is very important if you:

- need to update a library due to a critical bug / security hole;
- or just need to check whether an announced security hole affects you

Why should we use Package Management?

- You can tell if the version you have is the most recent by reading package information
- You don't have to download the repo/zip every time because you don't know what version the contents of the repo/zip is
- Only downloads new versions if you haven't got that download in artifacts

Why should we use Package Management?

- PM like ForgeBox supports semver ranges
- Only installs the updates you specify with the version in the package, and the semver range in your box.json (equivalent to a package.json for npm)

Let's play with it

Open VS Code

<http://127.0.0.1:6060/>

Let's play with it

Install ColdBox 5.1.0 via Git Zip

install <https://github.com/ColdBox/coldbox-platform/archive/refs/tags/v5.6.2.zip>

Install ColdBox 5.1.0

install coldbox@5.1.0+698

Install ColdBox 5.x

Install coldbox@5

Update box dependency

"coldbox": "^5.1.0+698"

Recap - Why use CommandBox + ForgeBox?

MAKE YOUR
DEVELOPER
LIFE EASIER

ForgeBox packages saves you because:

Using a package management endpoint like ForgeBox will give you speed improvements, since you know the version you have, and what's available.

ForgeBox packages saves you because:

It will save you download time, because you have carefully built packages, not a source control repo with all of the history of every file you ever added to the repo

ForgeBox packages saves you because:

You only download when you have a new version available, and only *IF* it's a version you want to upgrade to (controlled by SemVer Ranges)

Questions



Thanks

Join me on July 7th for my next Online CF Meetup
Planning and Building my Developer Feud Quiz API

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