Coldfusion Administrator and the jvm.config file (a love-hate relationship)

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If you are using CMFX and trying to "tune" the JVM - or maybe even just adding a class path, I have some advice for you. Don't use the CF Administrator to do it! Instead, get used to editing the jvm.config file located in cfusionmx7/runtime/bin. Not only will you benefit from gaining a better knowledge of the inner workings of your JVM, but you will also miss out on a ticklish bug that will have you scratching your head in frustration. Here's the scoop.

To start, here is the "default" java.args string from the jvm.config file.

```
java.args=-server -Xmx512m -Dsun.io.useCanonCaches=false -XX:MaxPermSize=128m -XX:+UseParallelGC -DJINTEGRA_NATIVE_MODE -DJINTEGRA_PREFETCH_ENUMS -Dcoldfusion.rootDir={application.home}/
```

This is the default "setting" that is used when you install Coldfusion MX. I may have adjusted the -Xmx512m variable, but everything else is the same I believe. Now, the default settings are designed to handle the maximum number of server configurations. In other words they are designed like a pickup truck, not a sports car. Macromedia wants to make sure that the maximum number of folks possible end up with a server that works reasonably well after a default install of the server - makes sense right?

Please note - just because it *does* work doesn't mean you should not be making adjustments to it that make sense for your server. There are a great many things to adjust that can make your server run better (or worse). One of those things is called "Garbage Collection" (GC). GC is how the JVM handles recovering memory that is no longer referenced by any object. It's how the JVM "self-tunes" the amount of memory it needs and uses. Here's the deal, there are actually *several kinds of GC you can use*. MM has set the JVM to use a type of GC called *Parallel* GC. It's the argument switch that says *-XX:+UseParallelGC*. According to Java Guru Robi Sen, this switch is not as effective as -XX:+UseConcMarkSweepGC.

So naturally, you might add this line to your JVM args. Here's the args from my blog server:

```
java.args=-server -DJINTEGRA_NATIVE_MODE -DJINTEGRA_PREFETCH_ENUMS -Xms512m -Xmx640m -Dsun.io.useCanonCaches=false -XX:MaxPermSize=128m -XX:PermSize=64m -XX:+UseConcMarkSweepGC -XX:NewSize=48m
-Dcoldfusion.rootDir={application.home}/../ -Dcoldfusion.libPath={application.home}/../lib
-Dcoldfusion.classPath={application.home}/../../classes,{application.home}/../lib/updates,{application.home}/../lib/,{application.home}/../gateway/lib/,{application.home}/../wwwroot/WEB-INF/cfform/jars ... class stuff
```

If you do this you should no longer edit the JVM settings from the Coldfusion Administrator. Why? Because you have removed the default garbage collector and installed one that the CF Admin is not smart enough to recognize. When it goes to write your new config file it's going to say to itself "self... you don't have a Garbage collector in your arguments! You better add one right away!". It will then proceed to add the -XX:+UseParallelGC line to the arguments.

When you restart the server it will fail because the JVM will not be able to determine which GC to use (since both will be specified). You will have to go looking in the *server*-err.log files in the /runtime/logs/ directory to figure it out. I've been able to duplicate this about 3 times (2 times quite by accident or neglect). It may have something to do with the order of my arguments. Someone may be able to shed some light on it for me. But until I see otherwise, I'm editing the jvm.config file manually.