

Managing Java Versions with Browsium Ion

Contents

Summary	1
Overview.....	2
See which version of Java is running in your browser	3
Java Version Manager	4
Manual Java Override Information	5
Java Override Table	5
Java CPL - Overriding Java 1.4, 1.5 (Java 5), 1.6 (Java 6) or 1.7 (Java 7).....	6
Running Java 1.3.....	7
Java 1.3 File Override #1:	7
Java 1.3 File Override #2:	7
Examples.....	8
Example 1: Overriding the most current version of Java with Java 1.4	8
Example 2: Overriding versions of Java 1.6 (Java 6).....	16
For more information.....	22

Summary

By default, Internet Explorer will only invoke the newest version of Java installed on your system, regardless of which version is needed for a particular web page or web application. Browsium Ion allows you to run specific version of Java for a specific web page or web application in much the same way you can run multiple IE engines side-by-side with Ion. This allows you to deploy and use a variety of different Java engines in your environment and run the ones you want where you want them all without incurring any usability costs for your users.

Overview

This document details the steps you need to take to configure Ion Profiles to run different versions of Java. In order for this to work, make sure all required versions of Java are installed on the local machine in unique directories. This is a requirement of Java. For versions of Java 1.4 and newer, there is a requirement to have a specific Java CPL setting enabled; this setting is detailed in the section “Java CPL - Overriding Java 1.4, 1.5 (Java 5), 1.6 (Java 6) or 1.7 (Java 7).”

In the example detailed later in this document, we have used a variety of Java versions that can be located in the following paths:

Java Version	Location of Java binaries
1.4.x	C:\Program Files (x86)\Java\j2re1.4.x_x\
1.5.x	C:\Program Files (x86)\Java\jre1.5.0_x\
1.6.x	C:\Program Files (x86)\Java\jre6\bin
1.7.x	C:\Program Files (x86)\Java\jre7\bin

Table 1 (Locations of Java binaries used as either source or target files)

Note: The most current installation of Java will be placed in the above locations and overwrite the previous version installed in that location. Installing any earlier version of Java will place that version in a release-specific folder (C:\Program Files (x86)\Java\jre1.6.0_30 for 1.6.0 Update 30 if you have Update 31 or newer installed.). If your system is 32-bit, omit (x86) from the above paths.

See which version of Java is running in your browser

Check which version of Java is running on this machine by default. Open Internet Explorer (Ion supports IE8, IE9 and IE10) then navigate to <http://javatester.org/version.html>. Here is a screenshot showing Internet Explorer without any Ion rules or profiles, running the latest version of Java & IE by default (Java 1.7.0 Update 45 in IE10):



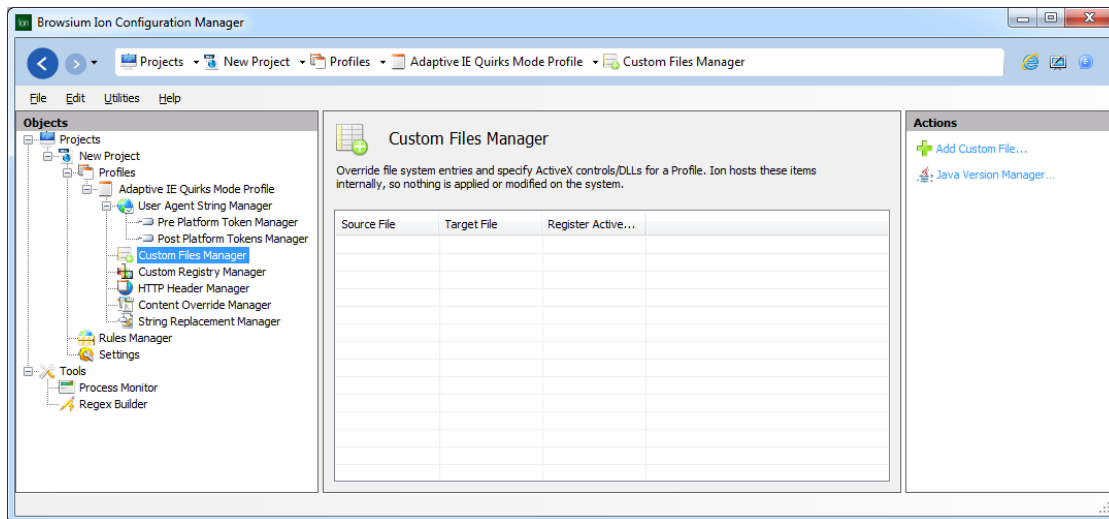
Figure 1 - Java inside of IE10

This web site contains a Java applet (the pink rectangle) whose only purpose is to report the version of the Java engine that it's running. You can see here it reports 1.7.0 Update 45 from Oracle as the currently running version.

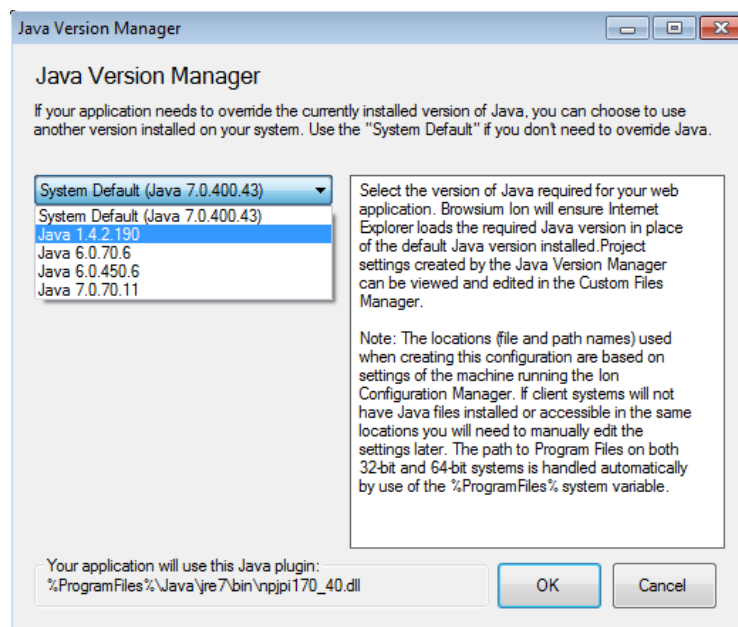
Java Version Manager

Browsium Ion 3.0 introduced the new Java Version Manager wizard to make configuration easy. Customers are encouraged to use the Java Version Manager when possible as it removes potential configuration issues.

The Java Version Manager is launched by clicking 'Java Version Manager' link in the Actions Pane.



Once launched, select the version of Java you need for your web application and the wizard will create all of the necessary configuration entries.



Note – The Java Version Manager will only display the versions of Java installed on the local machine. To include other versions of Java, simply install those versions and re-launch the wizard.

More information on using the Java Version Manager is available in section 3.3 of the [Browsium Ion Administration Guide](#). The remainder of this document provides details on how to manually configure Ion for Java replacements.

Manual Java Override Information

For customers wanting to run a custom version of Java 1.3, 1.4, 1.5 (Java 5), 1.6 (Java 6) or 1.7 (Java 7) should refer to the steps below. Customers wanting to run Java 1.3 should also refer to the section “Running Java 1.3” below.

Customers wanting to run the Microsoft JVM should refer to this document:

<http://www.browsium.com/faqs/managing-microsoft-java-vm-msjvm-ion/>

Java Override Table

Refer to this table to determine which binaries you need to use to override a newer version of Java with an older one. Note that customers wanting to run Java 1.3 require extra steps – those are detailed later this document.

For example, if you want to run an old version of Java 1.4 with a version of Java 1.5 (Java 5), refer to the 2nd line of this table. If you want to run Java 1.6.0 Update 4 instead of Java 1.6.0 Update 6, refer to the 10th line of this table.

The left column is the version of Java you want to run, and the 3rd column is the version of Java you want to override.

Java version to run	Source file to run	Java version to override	Target file to override
1.3.x	NPJava13x_x.dll	All versions	See below
1.4.x	NPJPI14x_x.dll	1.5.x	NPJPI15x_x.dll
1.4.x	NPJPI14x_x.dll	1.6.0 Update 7 or older	NPJPI16x_x.dll
1.4.x	NPJPI14x_x.dll	1.6.0 Update 8 or newer	JP2IEXP.DLL
1.4.x	NPJPI14x_x.dll	1.7.x	JP2IEXP.DLL
1.5.x	NPJPI15x_x.dll	1.5.x	NPJPI15x_x.dll
1.5.x	NPJPI15x_x.dll	1.6.0 Update 7 or older	NPJPI16x_x.dll
1.5.x	NPJPI15x_x.dll	1.6.0 Update 8 or newer	JP2IEXP.DLL
1.5.x	NPJPI15x_x.dll	1.7.x	JP2IEXP.DLL
1.6.0 Update 7 or older	NPJPI16x_x.dll	1.6.0 Update 7 or older	NPJPI16x_x.dll
1.6.0 Update 7 or older	NPJPI16x_x.dll	1.6.0 Update 8 or newer	JP2IEXP.DLL
1.6.0 Update 8 or newer	NPJPI16x_x.dll	1.6.0 Update 8 or newer	JP2IEXP.DLL
1.6.0 Update 8 or newer	NPJPI16x_x.dll	1.7.x	JP2IEXP.DLL
1.7.x	NPJPI17x_x.dll	1.7.x	JP2IEXP.DLL

Table 2: Java override files

NOTE: “x_x” in a file name will be replaced by the Java subversion of the file (see below for examples). For example, Java 1.4.2.19 has a file name of NPJPI142_19.DLL. Java 1.5.0 Update 12 has a file name of NPJPI150_12.DLL.

Recent versions of Java 1.6.0 (Update 8 or newer) have a fixed filename (JP2IEXP.DLL) and the file does not change its name regardless of version number.

Java CPL - Overriding Java 1.4, 1.5 (Java 5), 1.6 (Java 6) or 1.7 (Java 7)

Java 1.4 and later have a setting in the Java control panel which must be enabled for the override steps to work.

This setting is highlighted in Figure 2, below. This setting is enabled by default but in some organizations, this checkbox has been cleared. Please make sure that this setting is checked in order to allow Ion to load your custom version of Java.

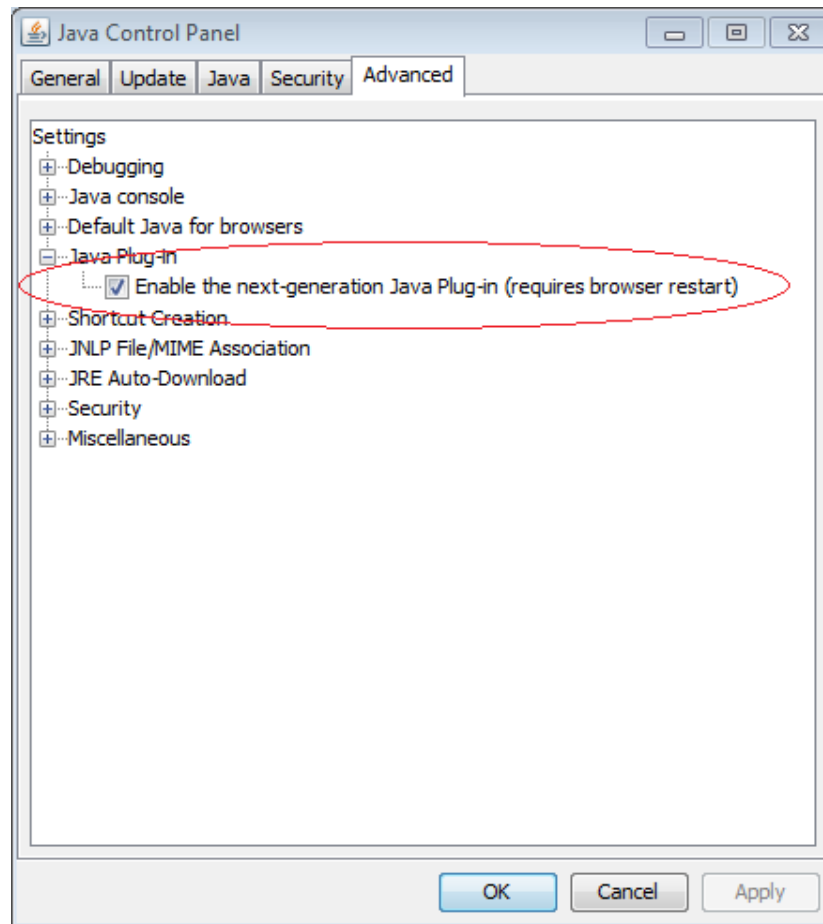


Figure 2 - Java CPL advanced setting

Enabling this setting allows the ActiveX interface to load in Internet Explorer, which is what Ion hooks in order to load your custom version of Java. After changing this setting, please close and restart IE and verify that the Java add-ons are enabled in your browser's Manage Add-ons UI, as illustrated in Figure 3 below.

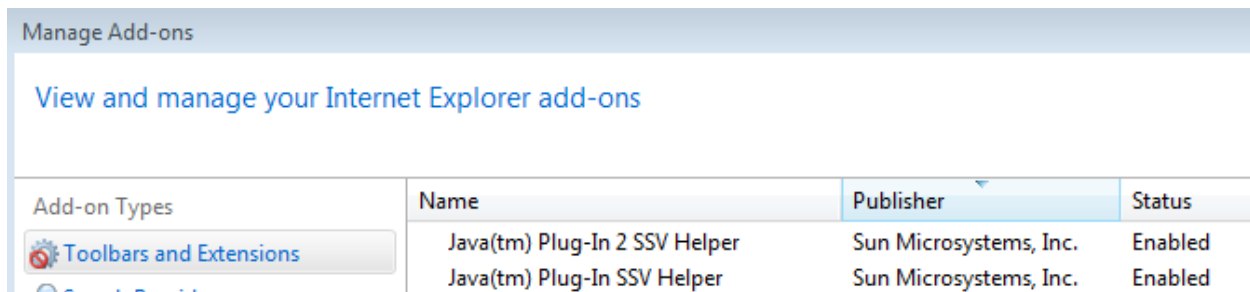


Figure 3 - IE's Manage Add-ons UI showing the Java add-ons enabled

Running Java 1.3

Java 1.3 was released in 2000 and, given its age, requires an additional step not required for newer versions of Java. In order to override a current version of Java with an older version of Java 1.3, you will have to acquire JVM.DLL from Java 1.4 and provide an additional file override for that. Alternatively, install version Java 1.4 on the same machine. Configuration uses two custom file maps:

Java 1.3 File Override #1:

For the first file override, point the *SOURCE* to the NPJAVA131_xx.dll file from the version of Java 1.3 you want to run. Set the *TARGET* to the appropriate file for the version of Java you want to override (in this example, that's Java 1.6 installed in the java\jre6 directory). See table 2, above for more details about what file to use as the override for the newer version of Java

Source: C:\Program Files (x86)\JavaSoft\JRE\1.3.1_20\bin\NPJava131_20.dll

Target: C:\Program Files (x86)\Java\jre6\bin\jp2iexp.dll

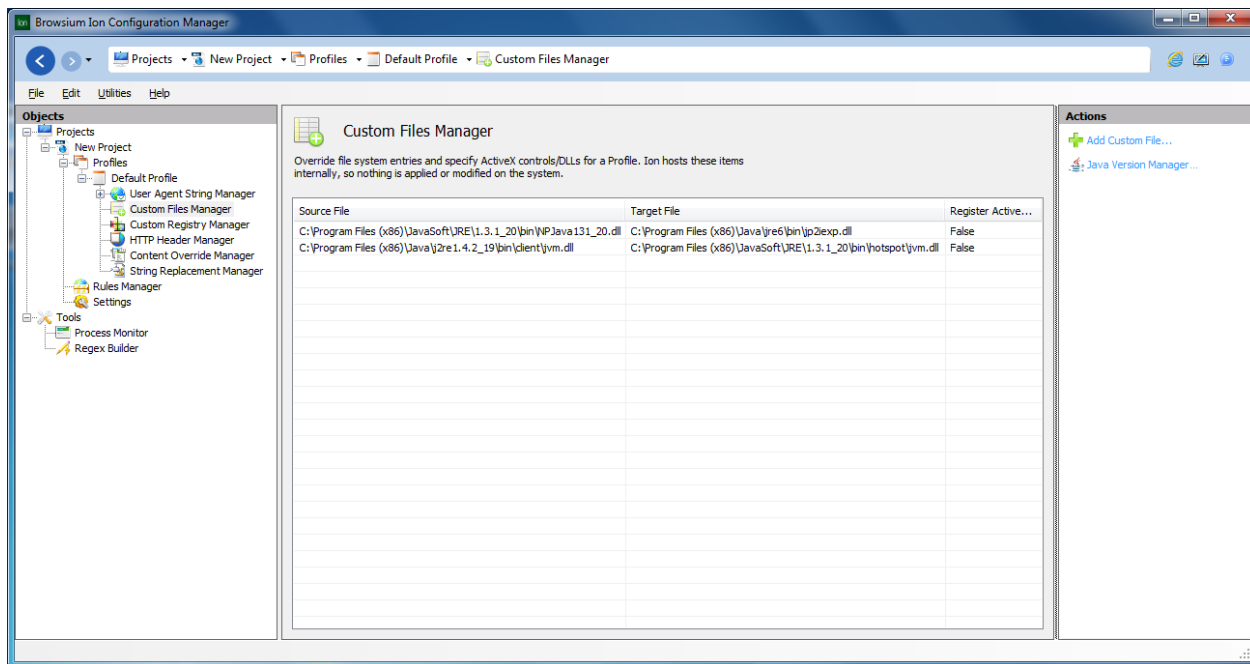
Java 1.3 File Override #2:

For the second file override, set the *SOURCE* to the Java 1.4 JVM.DLL. Set the *TARGET* to the Java 1.3 JVM.DLL.

Source: C:\Program Files (x86)\Java\j2re1.4.2_19\bin\client\jvm.dll

Target: C:\Program Files (x86)\JavaSoft\JRE\1.3.1_20\bin\hotspot\jvm.dll

The following screenshot shows how this might look in your Ion Configuration Manager:



These two file overrides are required for Java 1.3 to run on a modern OS. This is the only version of Java that requires two file overrides.

Examples

The examples provide step by step guidance on how to manually configure Ion to override a specific version of Java that is required for a given web application. These examples assume the organization is trying to get their 'Aggrid' site to work properly in a modern version of IE. To work properly, the Aggrid site requires the 'Adaptive IE Quirks' rendering mode and a legacy version of Java. Setting the rendering mode with Ion is simple – the rendering mode is chosen when a profile is created. Specifying the version of Java requires an extra step, which is shown below.

Note – Customers are advised to use the Java Version Manager wizard over the manual configuration process.

Example 1: Overriding the most current version of Java with Java 1.4

In this example, we are going to run the oldest version of Java (1.4) instead of Java 1.7.0 Update 45.

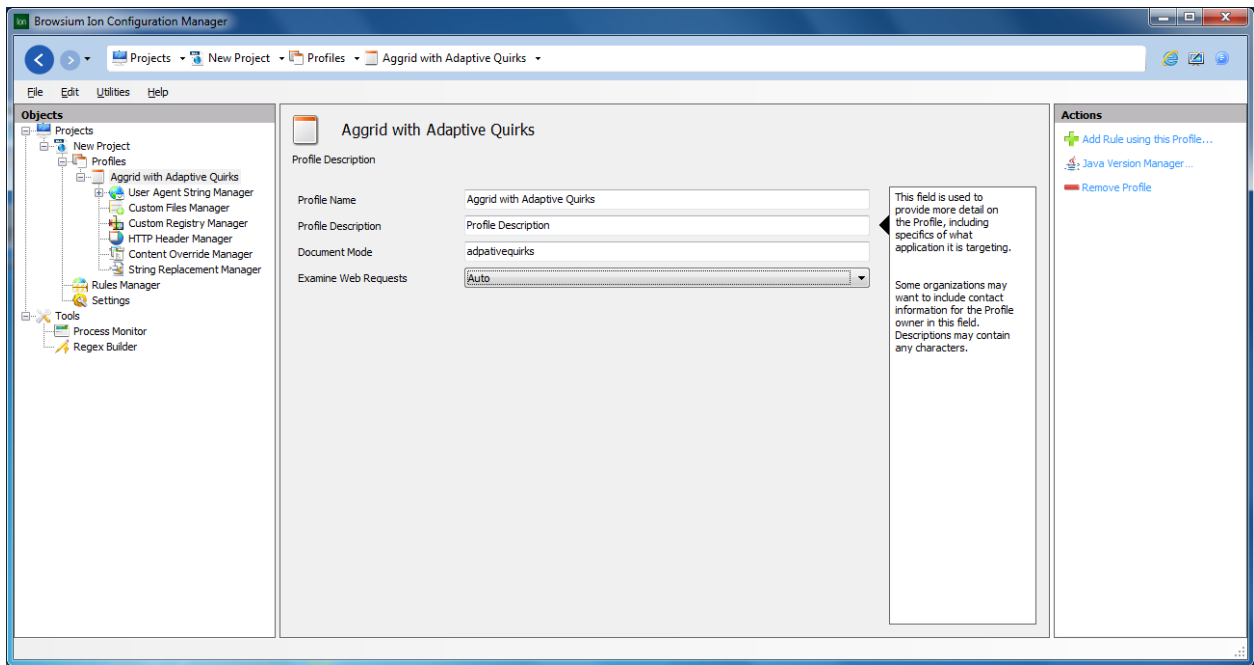
Here are the basic steps:

- 1) Update the profile with the right Java settings
- 2) Add a rule to use the new profile on a site of our choice
- 3) Open IE and see that the right version of Java is running

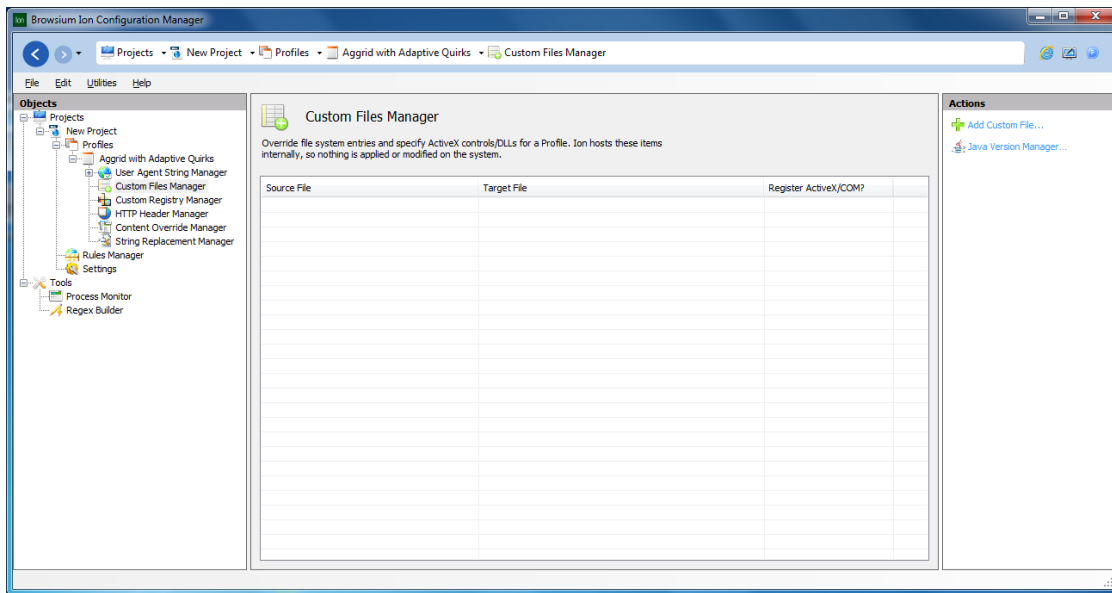
Now update the profile to load the older version of Java. To do so, refer to Table 1, above. Select the Java version you'd like to run (in our case, 1.4) and the target version to override (in our case, 1.7.0 Update 45 (or newer)).

In our example, that means NPJPI14x_x.dll (the binary for Java 1.4) must override JP2IEXP.DLL (the binary for Java 1.7.0 Update 45). Since we're running Java 1.4.2 Update 19, we're going to run NPJPI142_19.dll and JPIEXP.DLL. This example assumes a profile has been created and verified that the Advanced Java setting in the Java CPL has been checked (see above).

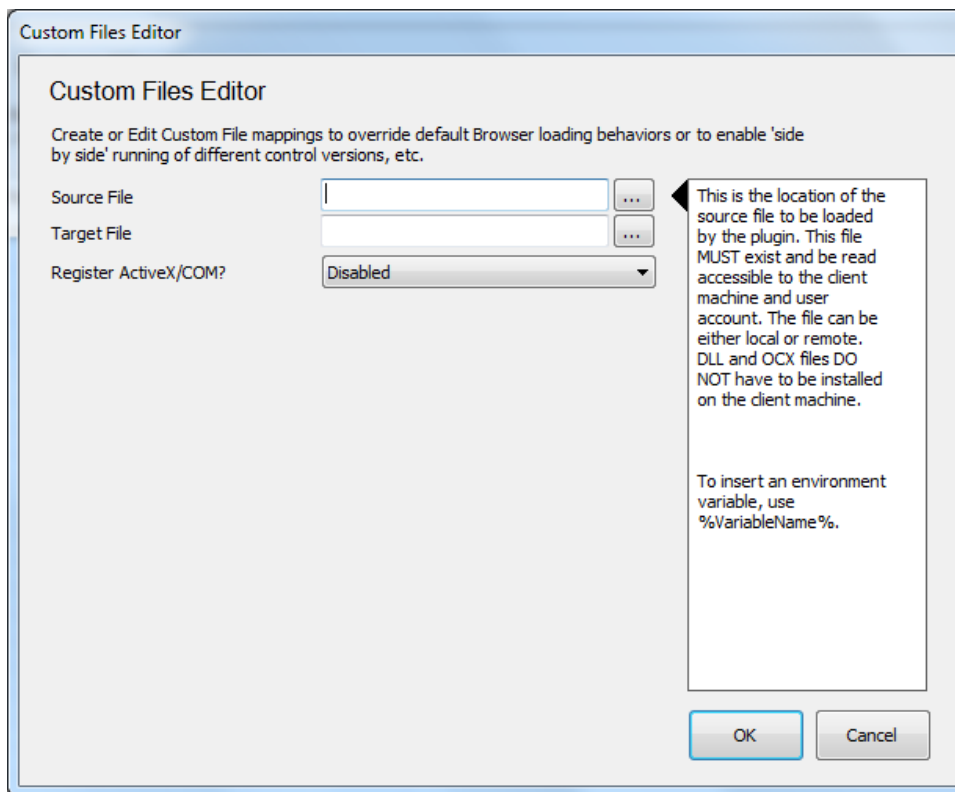
1. Open the Configuration Manager and load the appropriate profile. For this example we'll create a Profile based on the "Adaptive IE Quirks" mode. Java replacements can be done on any profile type:



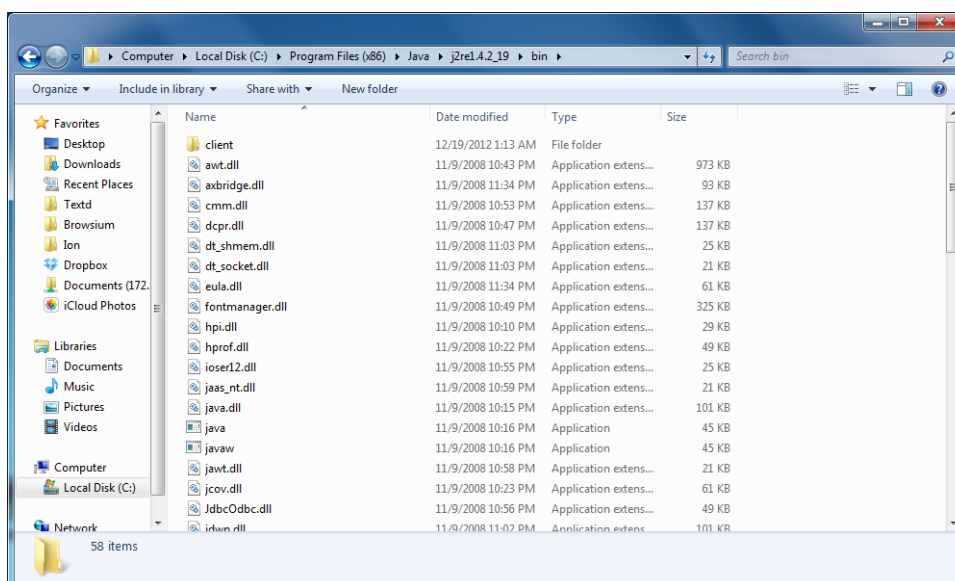
2. Select the profile, Aggrid with Apaptive Quirks in this example, to use to set Java up with and click on "Custom File Manager"



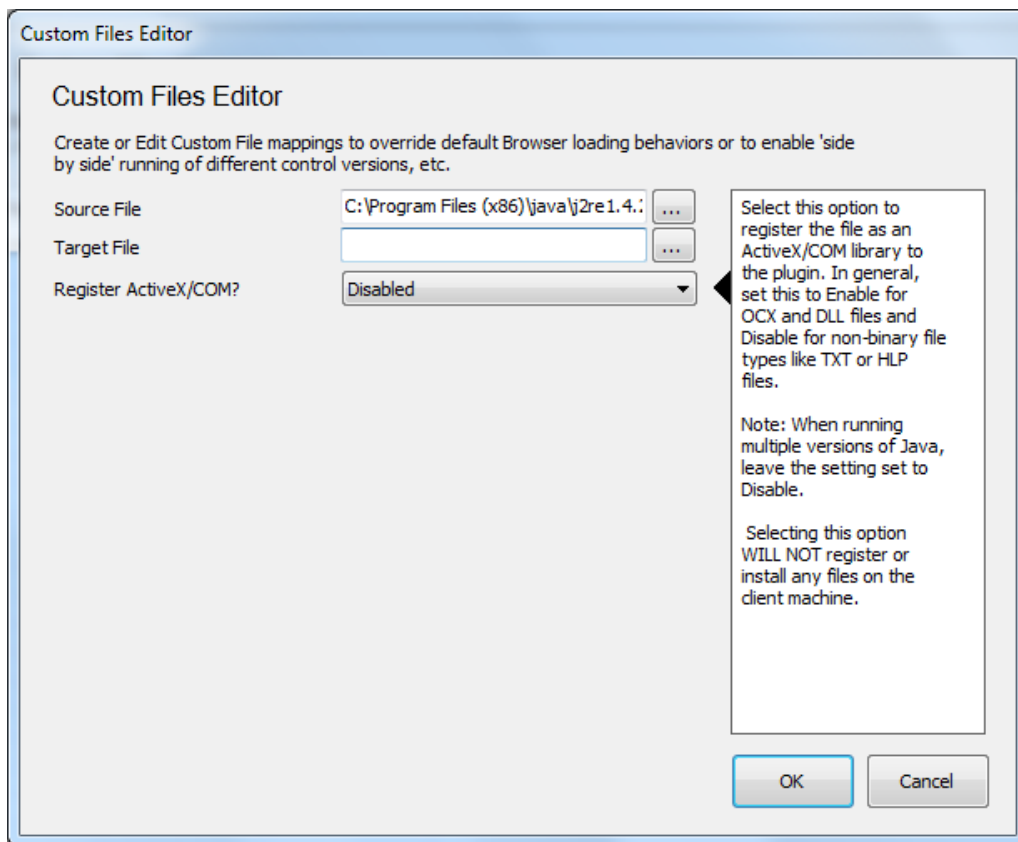
3. Click 'Add Custom File' to load the first override:



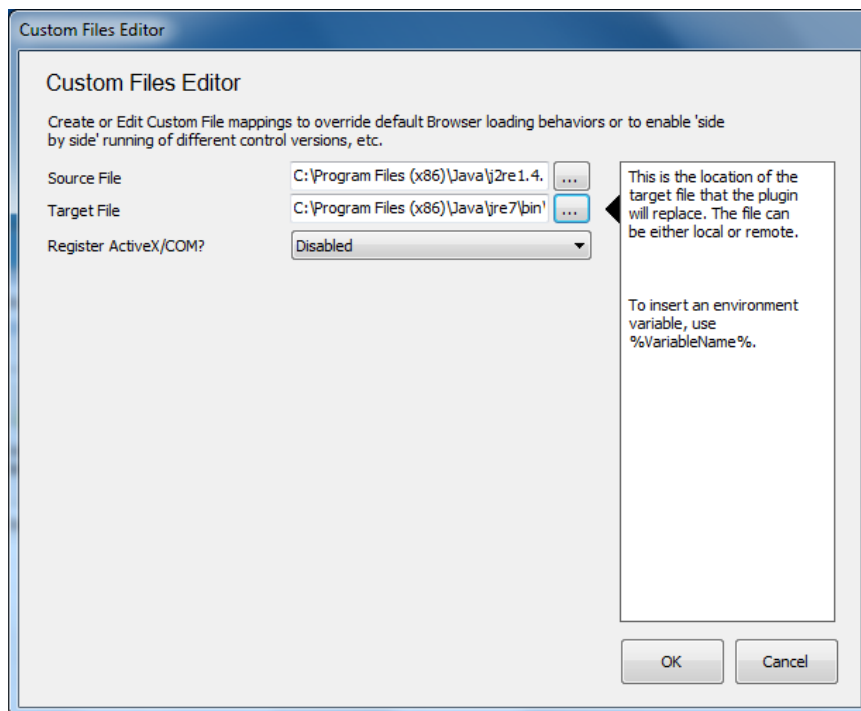
4. Click the '...' button to the right of the source file and locate the Java 1.4 file (NPJPI142_19.dll) using the file explorer. Note this file lives under the 'BIN' directory under the directory where Java was installed (in our case, C:\Program Files (x86)\java\j2re1.4.2_19\bin\):



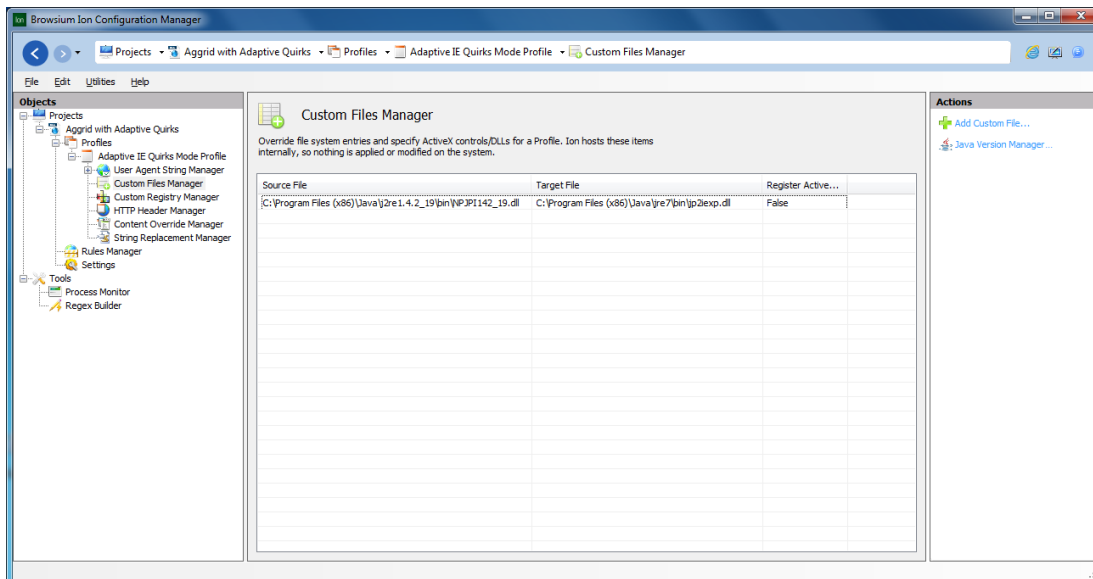
5. Select 'open' in this dialog and the path to this file now appears in the 'source' line:



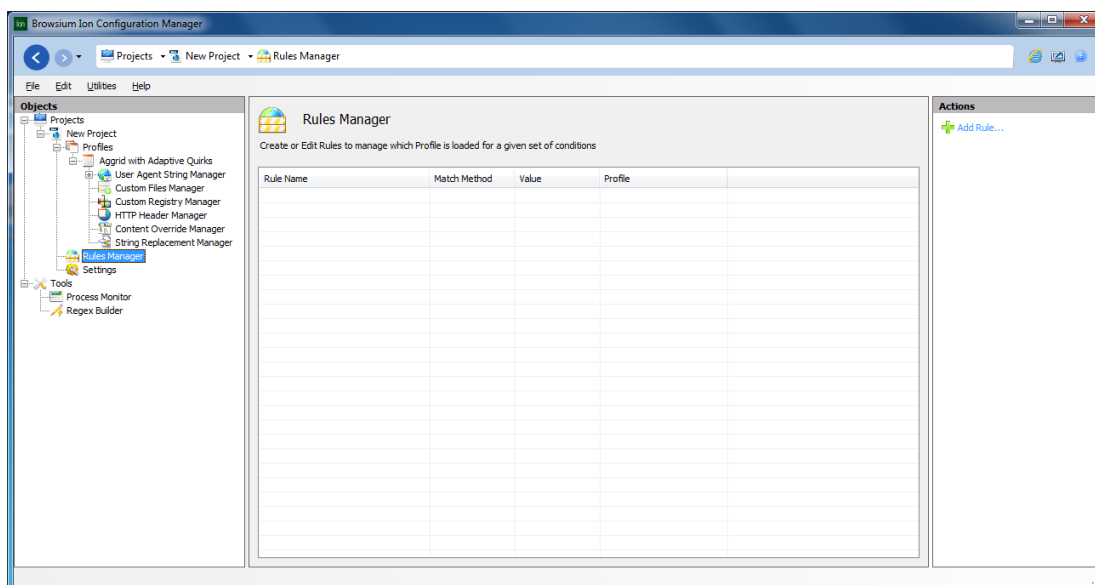
6. Click the '...' button next to the Target File and locate the appropriate file for Java 1.7.0 Update 45 (JP2IEXP.dll). This file also lives under the 'BIN' directory where this version of Java was installed (in our case, C:\Program Files (x86)\Java\jre7\bin). It should be noted that this location differs from previous versions of Java 1.7 (Java 7) and 1.6 (Java 6). Please refer to the table on page 2 for more information on default Java installation locations.



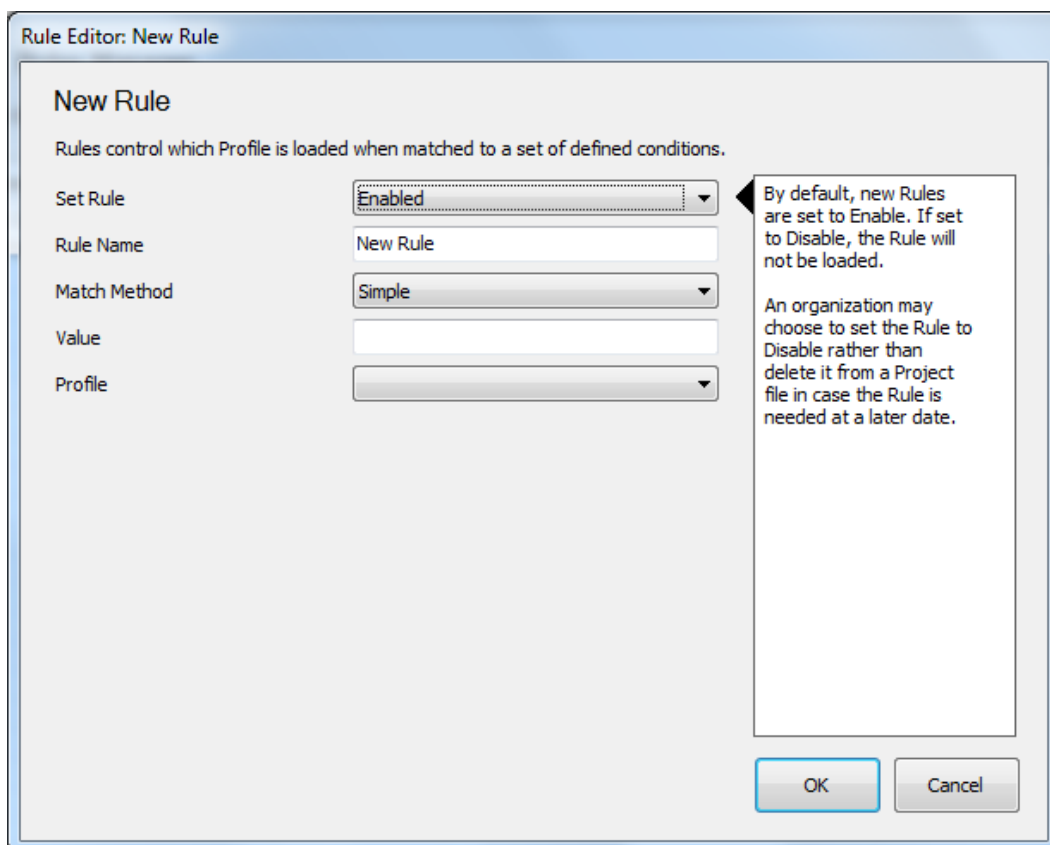
7. Leave the 'Register ActiveX Control/COM Library?' option set to 'Disabled' and select OK. You now have the Java override in your profile:



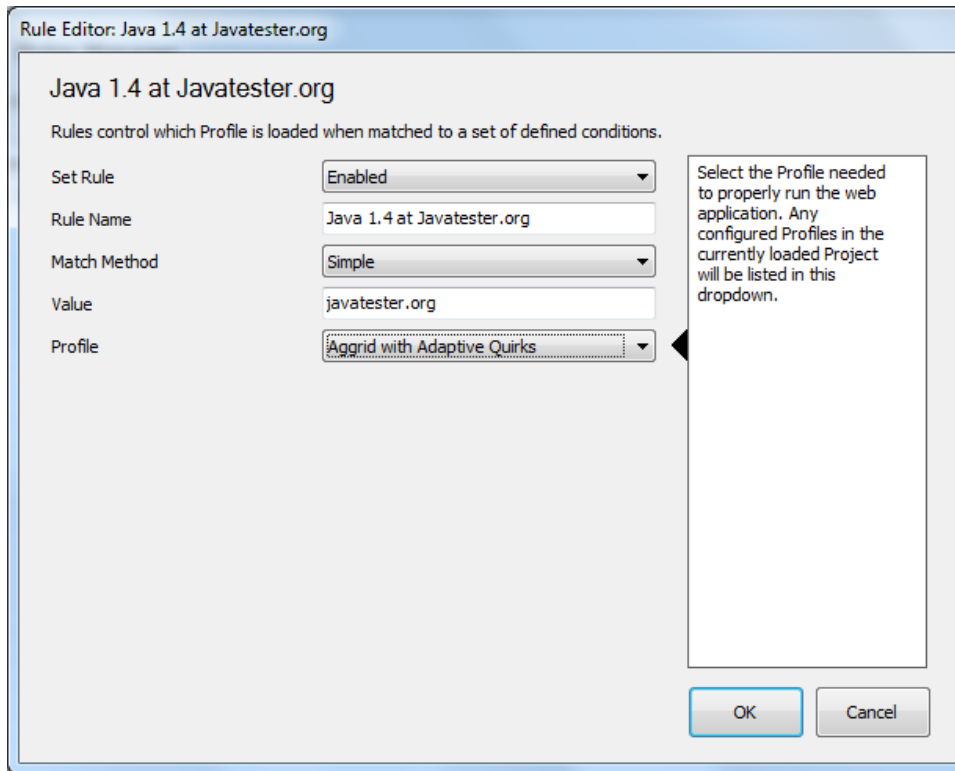
8. The profile is done, so we must add a rule to use it. Click the 'Rules Manager' on the objects pane to bring up the list of rules.



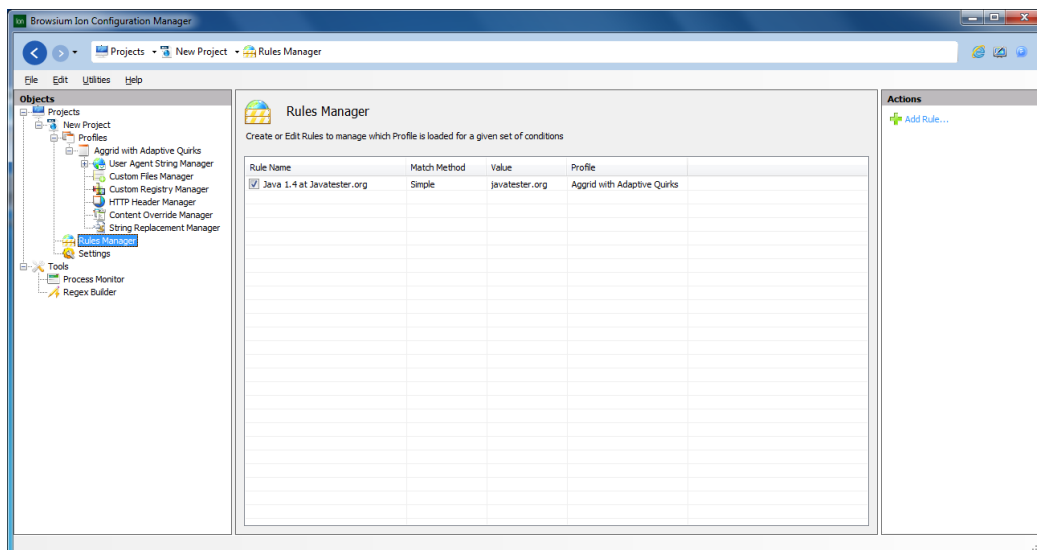
9. Select 'Add Rule...' from the Actions pane on the right to add a new rule:



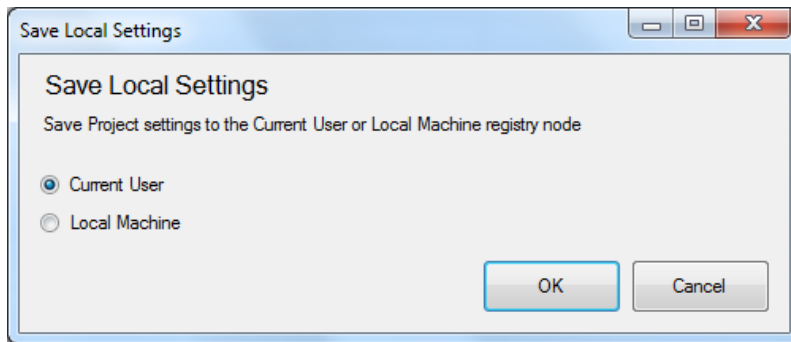
10. Give the rule a friendly name (“Java 1.4 at Javatester.org”) and enter ‘javatester.org’ in the ‘value’ field. Finally, select the correct profile from the profile dropdown (in our case, we called our profile “Aggrid with Adaptive Quirks”):



11. Click ‘OK’ to add this rule to the list:



12. Your rule and profile are now ready to use! Open the ‘File’ menu and then ‘Save Local Settings’ and keep the default (Current User):



13. Once the settings have been committed, open your IE browser and navigate to <http://javatester.org/version.html>. You should see the correct version of Java in the pink rectangle:



14. That's it! Your rule & profile are ready to be used

Example 2: Overriding versions of Java 1.6 (Java 6)

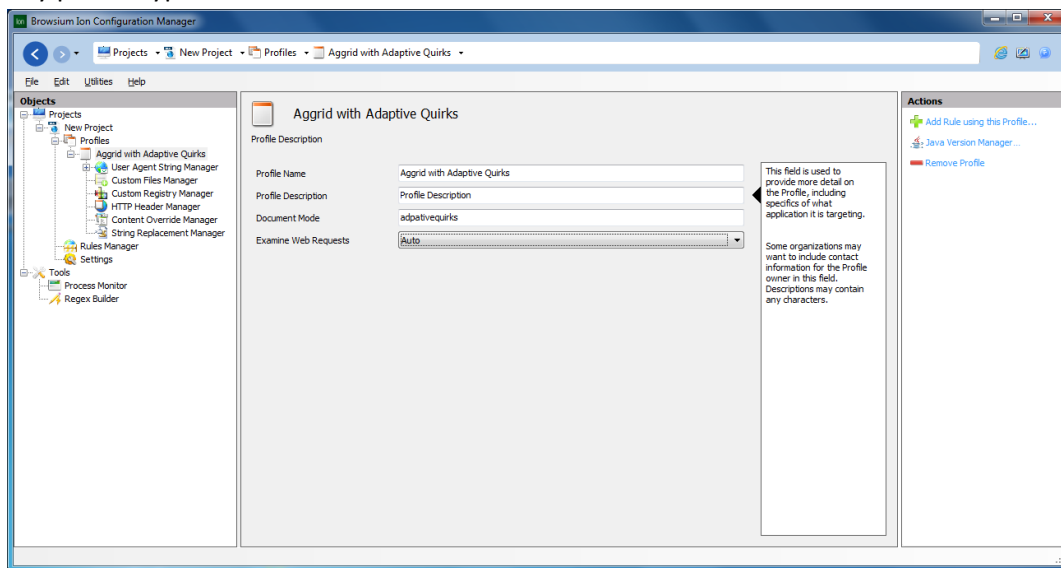
In this example, we are going to run Java 1.6.0 Update 7 instead of Java 1.6.0 Update 29. Because Java 1.6.0 Update 7 is newer than Java 1.4, we do not have to over-ride Java 1.4. This example assumes you have not just performed the steps in example 1 (if you have, please remove all existing Java overrides from the profile before continuing). For this example, we've already verified that the Advanced Java setting in the Java CPL has been checked (see above). In this example it is assumed the most current version of Java installed on the system is 1.6.0 Update 29.

Here are the basic steps:

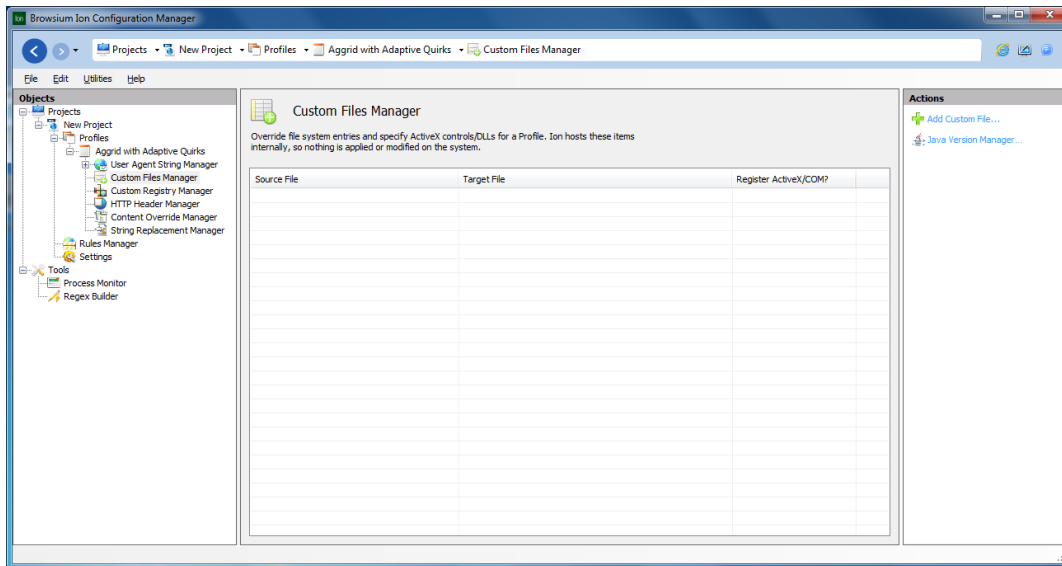
- 1) Update the profile with the right Java settings
- 2) Add a rule to use the new profile on a site of our choice
- 3) Open IE and see that the right version of Java is running

First, we must update the Profile to override the wrong version of Java with the right one:

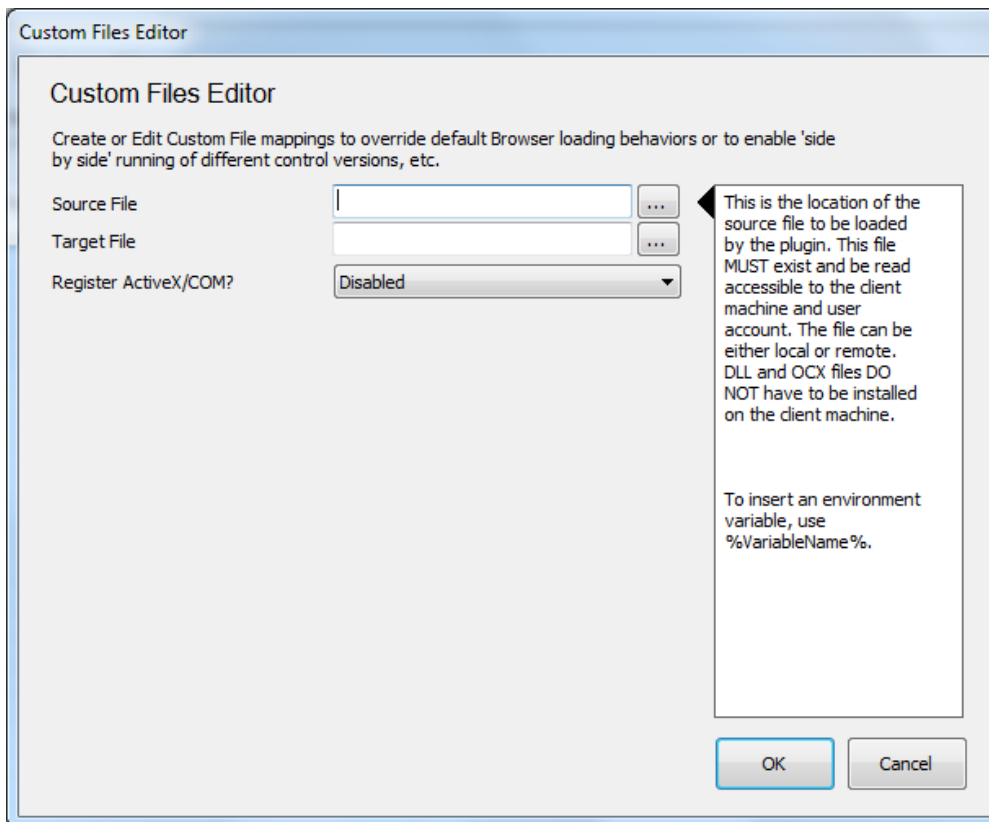
1. Open the Configuration Manager and load the appropriate profile. For this example we'll create a Profile based on the same "Adaptive IE Quirks" mode used in the prior example. Java replacements can be done on any profile type.



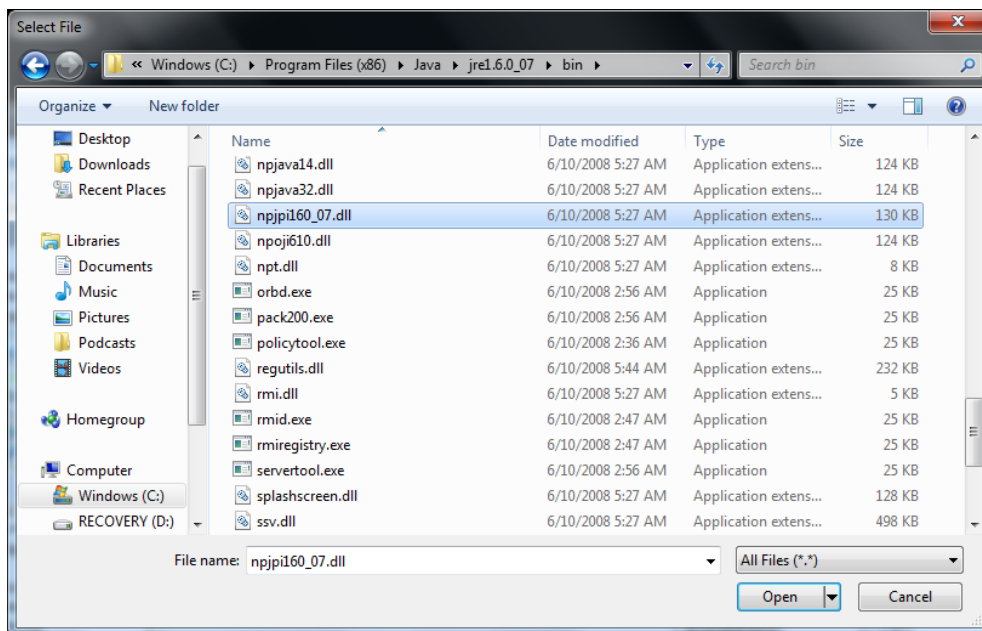
2. Select the profile you want to use to set Java up with and click on “Custom File Manager”



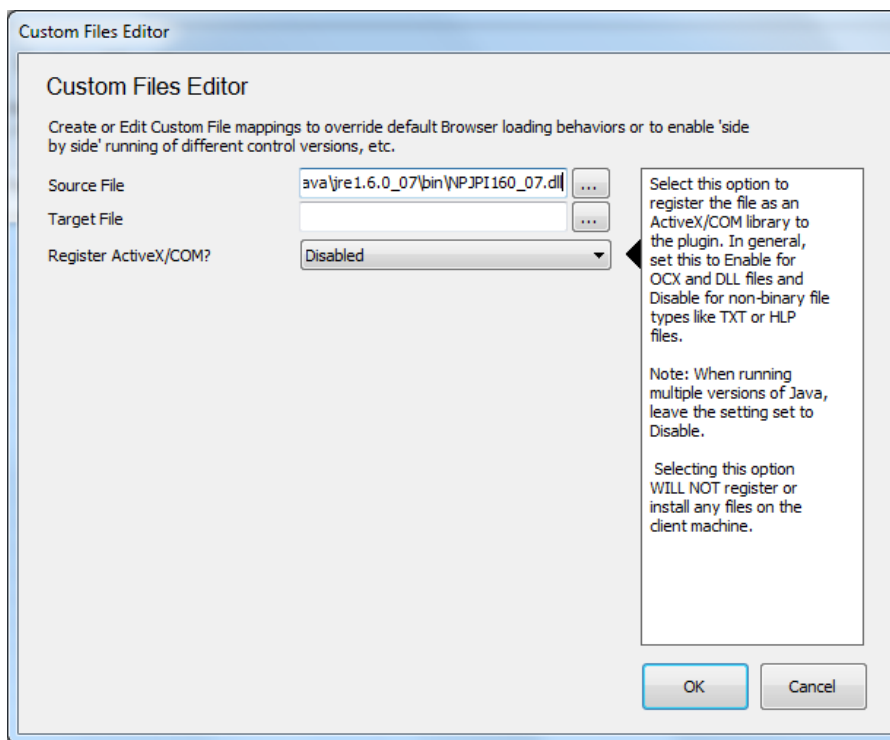
3. Click ‘Add Custom File’ to load the first override:



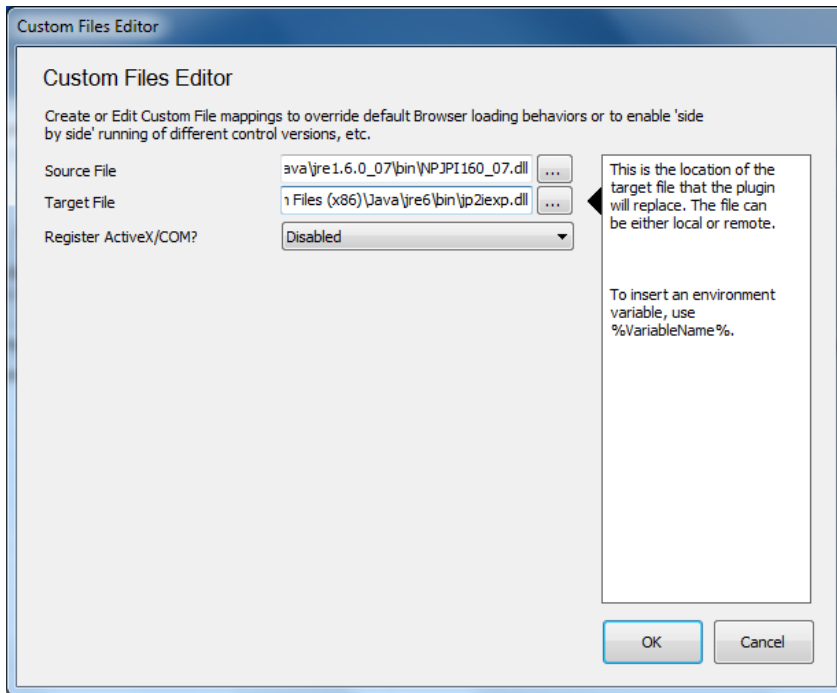
- Click the '...' button to the right of the source file and locate the Java 1.6.0 Update 7 file (NPJPI160_07.dll) using the file explorer. Note this file lives under the 'BIN' directory under the directory where Java was installed (in our case, C:\Program Files (x86)\Java\jre1.6.0_07\bin\):



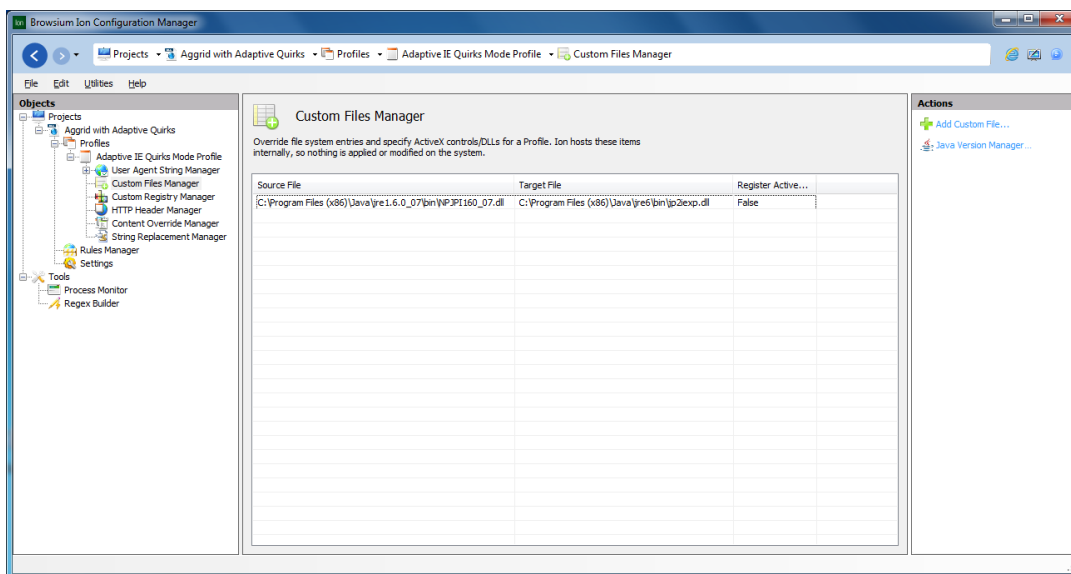
- Select 'open' in this dialog and the path to this file now appears in the 'source' line:



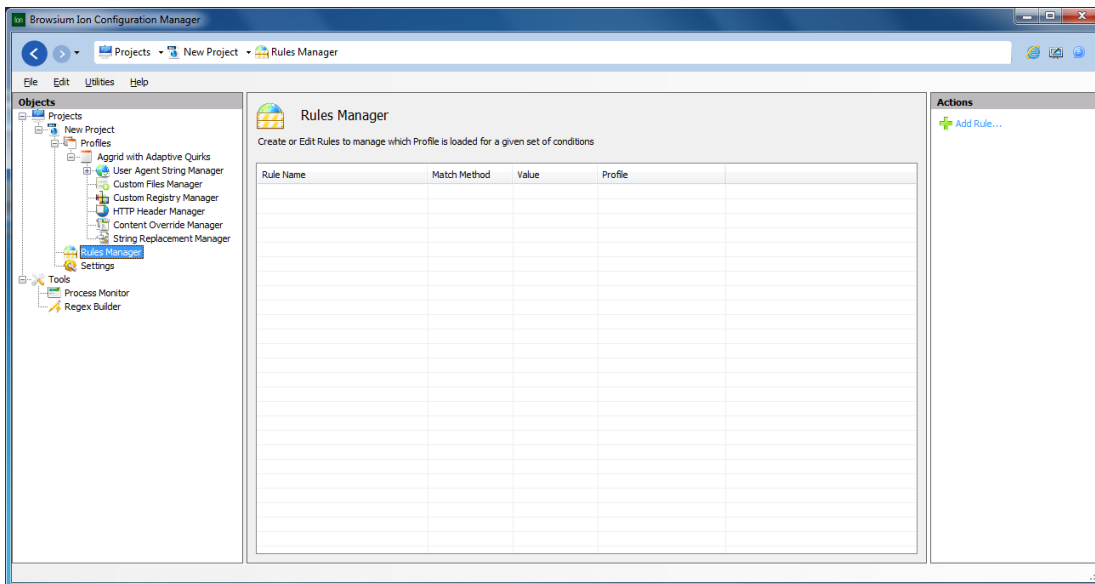
- Click the '...' button next to the Target File and locate the appropriate file for Java 1.6.0 Update 29 (JP2IEXP.dll). This file also lives under the 'BIN' directory where this version of Java was installed (in our case, C:\Program Files (x86)\Java\jre6\bin\).



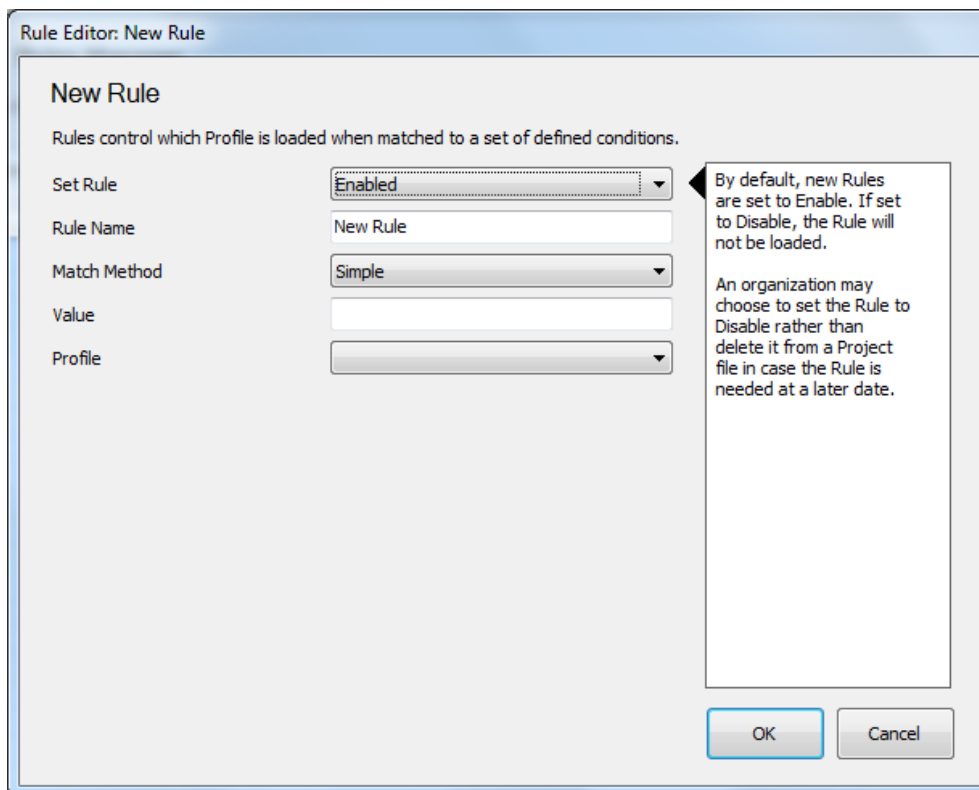
- Leave the 'Register ActiveX Control/COM Library?' option set to 'Disabled' and select OK. You now have the Java override in your profile:



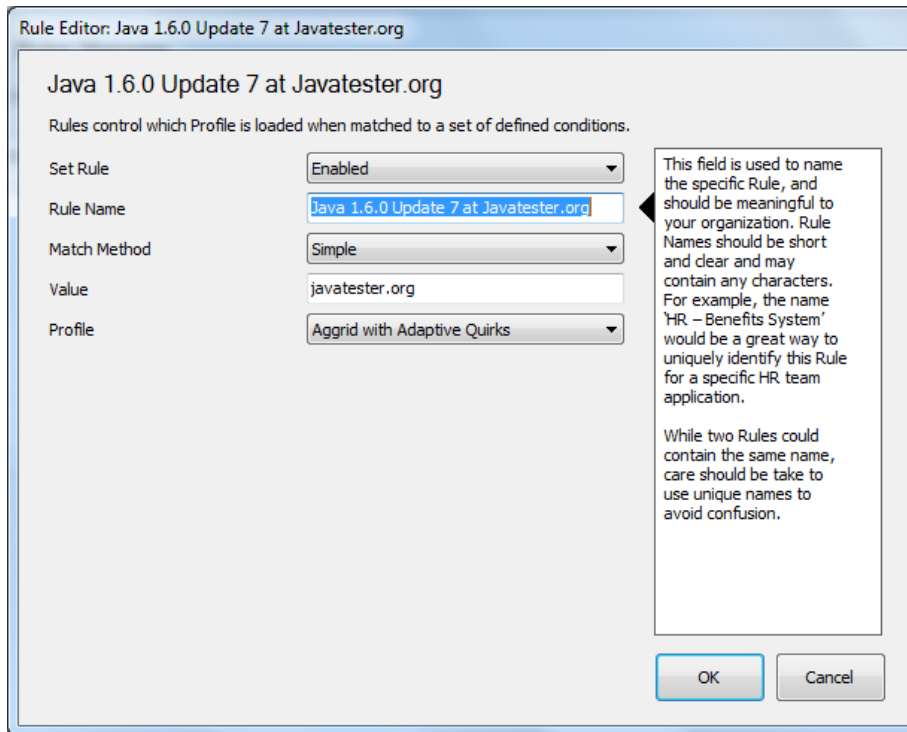
- The profile is done, so we must add a rule to use it. Click the 'Rules Manager' on the objects pane to bring up the list of rules.



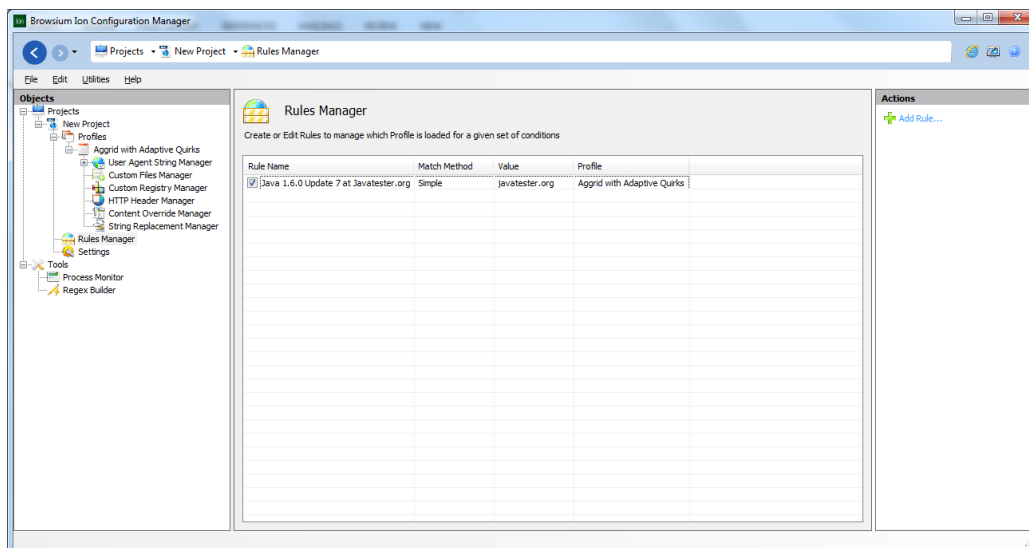
- Select 'Add Rule...' from the Actions pane on the right to add a new rule:



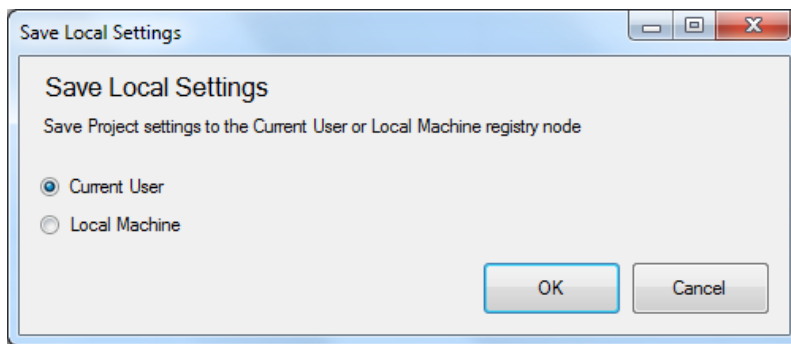
10. Give the rule a friendly name (“Java 1.6.0 Update 7 at Javatester.org”) and enter ‘javatester.org’ in the ‘value’ field. Finally, select the correct profile from the profile dropdown (in our case, we called our profile “Aggrid with Adaptive Quirks”):



11. Click ‘OK’ to add this rule to the list:



12. Your rule and profile are now ready to use! Open the ‘File’ menu and then ‘Save Local Settings’ and keep the default (Current User):



13. Once the settings have been committed, open your IE browser and navigate to <http://javatester.org/version.html>. You should see the correct version of Java in the pink rectangle:



14. That's it! Your rule & profile are ready to be used

For more information

Please visit Browsium's support web site at <http://support.browsium.com>