Debug custom rules

In this guide, you will learn how to debug the custom rules you have created with the Kiuwan Rule Developer.

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Why do I need to debug my rules?

Sometimes you need to perform complex checks and take into account multiple cases of **how code should be constructed** or which best practices it should follow.

Although Kiuwan offers a complete API reference (bundled with Kiuwan Rule Developer), it's not always possible to predict how rules will behave when executed in non-trivial scenarios.

Debugging a complex rule fine-tunes its behavior, making the rise of spurious defects less likely to happen.

Spurious defects

A **false positive** is introduced in an analysis result when a defect arises, although it shouldn't.

A **false negative** is introduced in an analysis result when a defect that should arise does not arise.

Set up the debugger tool

Kiuwan Rule Developer allows you to **remotely debug the rule** you are editing in your IDE while it is being executed.

To start, launch Kiuwan Rule Developer in debug mode.

Open a console and type:

OS	Command
Windows	> AGENT_HOME/bin/agent –development debugPort=xxxx *
Unix	> AGENT_HOME/bin/agent.sh –development debugPort=xxxx *

(*) xxxx is the port number where the Kiuwan Rule Developer will wait for a remote debug tool to become attached to. Note that the application will not be launched until the remote debug tool is detected by the process.

```
C:\KiuwanLocalAnalyzer\bin>agent --development debugPort=4444


   #       #
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   #
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Kiuwan agent is up to date.
Launching....

Task finished successfully.

----------------------------------------------
   Initializing Rule Developer in debug mode
----------------------------------------------

This console will be left available but Rule Developer
will be launched in background and will wait for
a remote debugger session to be attached.
Now you can start your debug session in your IDE.

Listening and waiting on port 4444...

Task finished successfully.

C:\KiuwanLocalAnalyzer\bin>
```
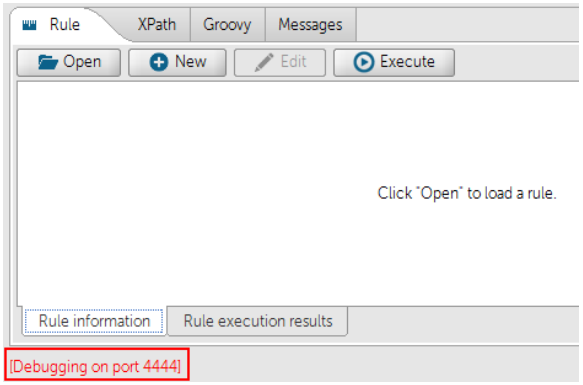
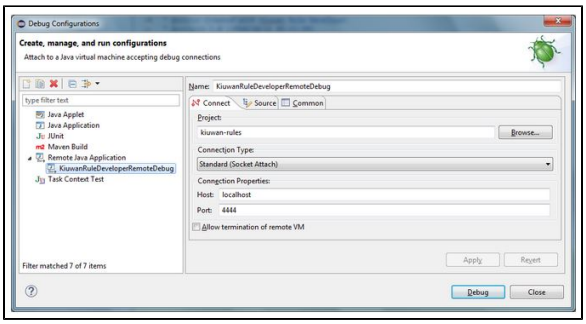

If the attachment is successful, you will see a red label indicating the current debugging port in the bottom left of the Rule Developer window:



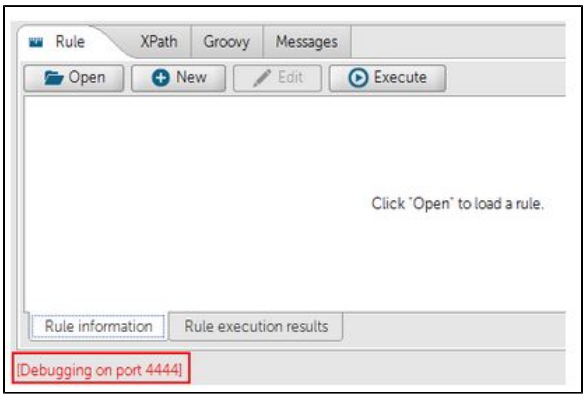
Once the Kiuwan Rule Developer is waiting for the debugger to be attached, **create a remote debug configuration in your IDE**.

To do this with Eclipse:

- Right-click your Kiuwan custom rules project in the **Explorer** view.
- Select **Debug As** and then select **Debug Configurations…**
- Double click **Remote Java Application** on the left side of the dialog shown.
- Fill the **Connection Properties** form with these values:
    - Host: localhost
    - Port: xxxx (the port number you specified when launching Kiuwan Rule Developer).
- Click **Debug**.



Make sure the specified debug port matches the one configured in your remote debug tool. If the attachment is successful, Kiuwan Rule Developer will start and you will see a red label indicating the current debugging port in the bottom left of the Rule Developer window:



Once Kiuwan Rule Developer is started **in debug mode**:

1. Set a breakpoint in your rule's source code.
2. Execute the rule in Kiuwan Rule Developer.
3. Eclipse should stop in the breakpoint.
4. You are ready to debug your custom rule!