



Dimensions CM Pulse Running Checkstyle Expert

Version 1.0

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Contents

Introduction	3
What is Checkstyle?	3
Why use Checkstyle?	3
Investigate Checkstyle	3
Step 1: Configuring Dimensions CM	4
Step 2: Create the Suite and Product.....	5
Step 3: Create an expert chain.....	9
Step 4: Make a deliver a modification	11
Step 5: View the newly created changeset results in Pulse	12
Further task.....	13
Further Information	13

Introduction

What is Checkstyle?

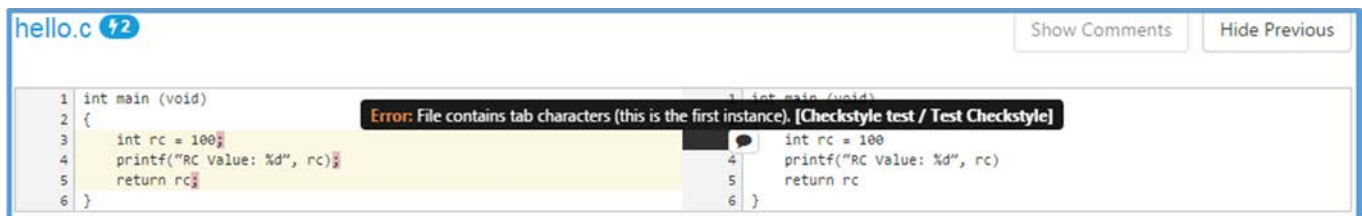
The Checkstyle expert is included out of the box with Pulse and is used to report as to whether source code complies to certain coding standards.

Why use Checkstyle?

Style compliant code can be an important metric in determining the health and quality of code being delivered. Checkstyle automates this process and generates a detailed report, which can be inspected directly from within the Pulse Review.

Investigate Checkstyle

The procedure below describes the steps required to configure the Checkstyle Expert to monitor a delivered C file, and show the results within a Pulse review



Step 1: Configuring Dimensions CM

NOTE CM Setup

In this step, we will create a stream with a simple text file that contains some C code.

- Login to Dimensions with the Web or Desktop Client
- Create an empty stream in the **QLARIUS** product called **CSTYLE1**
- Assign an empty work area to the stream, e.g. **c:\work\streams\cstyle1**
- Create a file **hello.c** in the workarea with the following contents

```
int main (void)
{
    int rc = 100;
    printf("RC Value: %d", rc);
    return rc;
}
```

- Perform a deliver of the **hello.c** file into the **CSTYLE1** stream

Step 2: Create the Suite and Product

NOTE: Suites and Products

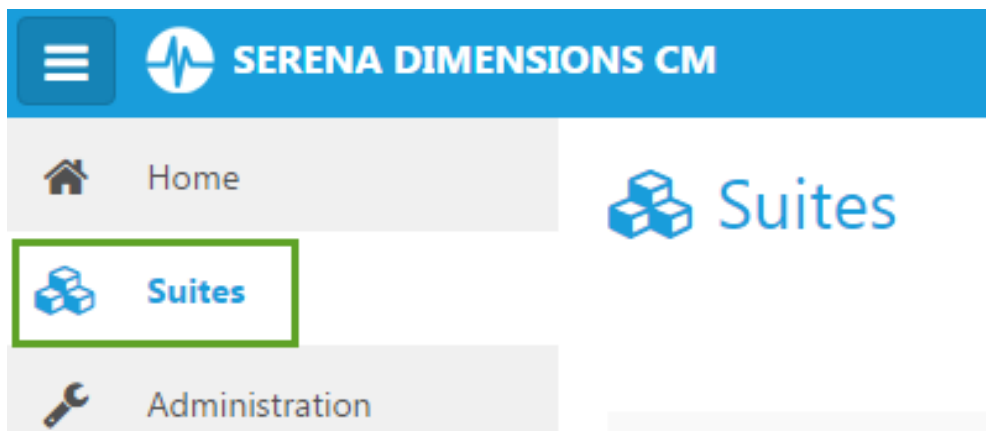
Pulse now organises streams by a hierarchy.

Suites can contain one or more Products, for example, Qlarius Online Insurance and Qlarius Online Banking.

A **Product** is a collection of CM streams, for example, the product Qlarius Online Insurance contains the streams QLARIUS:HOME, QLARIUS:AUTO, and QLARIUS:VACATION


Tip If a suite containing the product has already been registered then go to Step 3: Create an Expert Chain.

- Access Pulse by going to <http://<server>:8080/pulse>
- Login as the Pulse administrator
- On the left toolbar click on **Suites**



- Click on the button **New Suite** and define the following information

 **New**

 Changes not saved

Title

Chain Test

Required

Note

B *I*       **A**   

Testing a CI Expert chain in Pulse

 Edit

 Preview

Save

Cancel

- Click on the newly defined Suite and click on the **Register product** button and select **Single Product** from the drop down, then supply a Title, select the existing repository and the existing **QLARIUS** product and click on **Register**.

Register Single Product

Title

Qlarius sample product

Required

Note

B **I**       **A** **-**  

Using sample data

 Edit

 Preview

Repository Details

Repository Name

Example Database on PC-VB-W28K

Required

Product in Repository

QLARIUS

Required



Register

Cancel

- Click on the newly created **Qlarius Sample product** link and then click on **Register Stream**.

Note Once a product has been registered, Streams are automatically registered when a delivery occurs to the stream

- Type the string **QLARIUS:CSTYLE1** stream and an autocomplete drop down will allow the user to select the full name, then click on **Save**.

 New

Stream Name

QLARIUS:CSTYLE1

Required

Save

Cancel

- Click on the link **QLARIUS: CSTYLE1** under the Streams entry, we are now ready to define an expert chain.

Step 3: Create an expert chain

In this step we will define an expert chain that will contain the Checkstyle expert.

Note

Experts are plugins to Pulse that are triggered when a delivery is made and generate a report.

An **Expert Chain** is a sequence of experts. For example, examine the delivery and run a build.

- Access Pulse by going to <http://<server>:8080/pulse> and login
- Access the stream **QLARIUS:CSTYLE1**. Do this by clicking on Suites in the left hand panel, and clicking in the Suite defined, then click on the Product, then click on the stream QLARIUS:CSTYLE1 from the list of streams

At the Edit dialog perform the following steps:

1. Click on the **Expert Chains** option on the left hand side of the screen
2. Click on the **New Expert Chain** button
3. Supply a name and description, then click on **Add Expert**

The screenshot shows the 'New' dialog box in the Pulse application. At the top left is a gear icon and the word 'New'. In the top right corner is a red circle with the number '3' next to a button labeled 'Add Expert'. Below this is a 'Title' field containing the text 'Checkstyle test', with a red circle '1' next to it. To the right of the title field is a 'Required' button. Below the title field is a 'Note' field containing the text 'Test the checkstyle expert', with a red circle '2' next to it. Above the note field is a rich text editor toolbar with icons for bold, italic, link, unlink, code, image, list, indent, font color, background color, undo, and redo.

4. Select **Checkstyle** from the Add Expert drop down and specify the expert options as below:

- Title: **Test Checkstyle**
- Click on the **Save** button

Experts in Chain

1. Checkstyle : Test Checkstyle

Title

Test Checkstyle

1

Required

Configuration File Name

Enter optional configuration file name that will be used by this expert chain entry

2

Save

Cancel

Step 4: Make a deliver a modification

- Modify the content of the file **hello.c** and make the following changes
- Indent lines 3-6 using the **tab** key
- Ensure that the file does not end with a carriage return, (e.g. the closing brace } is the final character in the file)

```
int main (void)
{
    int rc = 100;
    printf("RC Value: %d", rc);
    return rc;
}
```

- Save the file
- Deliver the change to the stream with the comment: **added indents**

NOTE: Syntax errors

A **syntax error** is an **error** in the **syntax** of a sequence of characters or tokens that is intended to be written in a particular programming language.

For example in Java and C/C++:

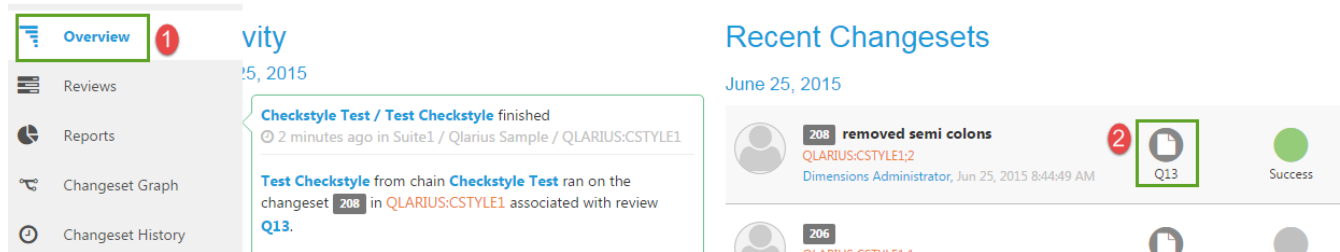
Forgetting the right-hand side of an assignment statement:

```
max = ;      // Error, missing right-hand side
```

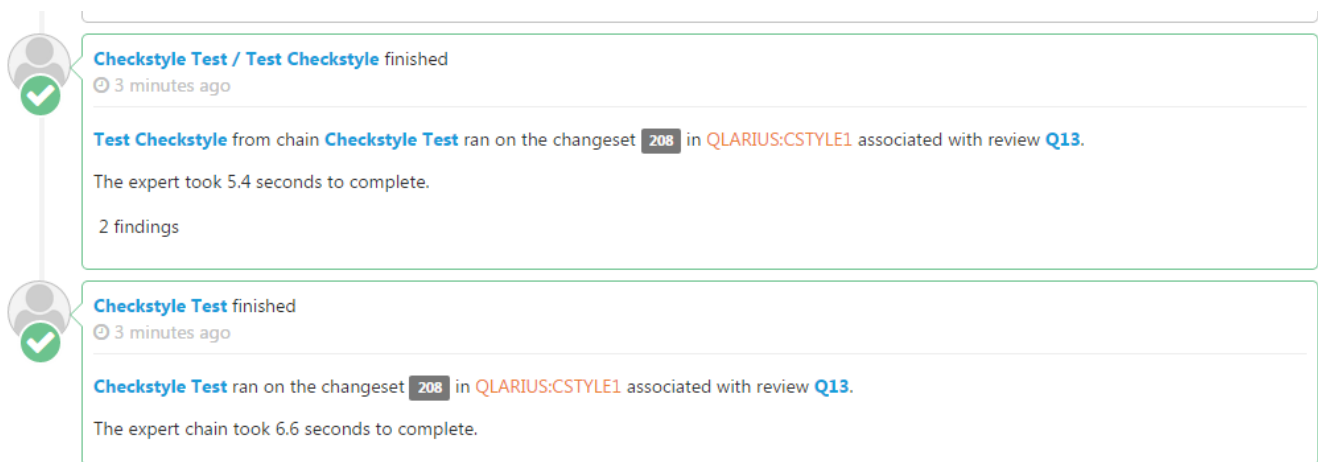
Eclipse: Syntax error on token "=", Expression expected after this token

Step 5: View the newly created changeset results in Pulse

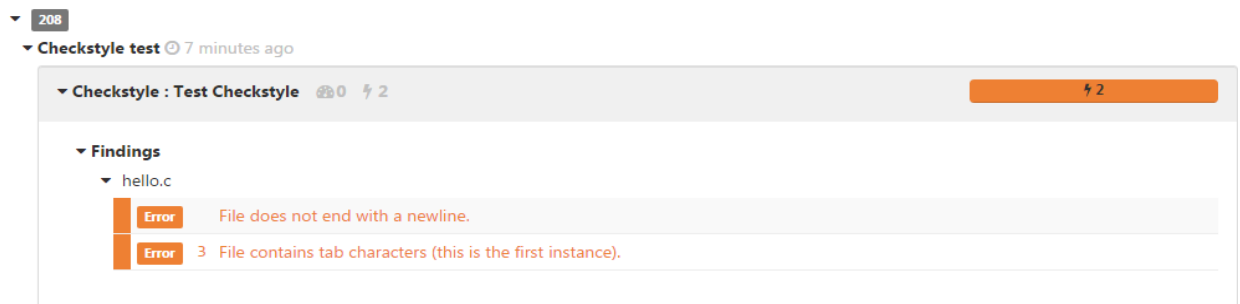
1. Return to Pulse and click on **Overview** from the left hand panel
2. Click on the **Review icon** for the latest changeset, e.g.



- The review panel should show the Checkstyle Expert call



- Scroll to the Section entitled **Experts** and click on the arrow next to **Checkstyle / Test Checkstyle**
- Click on the arrow next to **Findings**
- Finally click on the arrow next to the **hello.c** entry, to reveal the Checkstyle report



- Scroll down further to the section entitled **hello.c** and the Checkstyle comments are embedded within the file view.
- For example near or at line 3 the line number is highlighted with an orange background.

hello.c 42

Show Comments

Hide Previous

<pre>1 int main (void) 2 { 3 int rc = 100; 4 printf("RC Value: %d", rc); 5 return rc; 6 }</pre>	<pre>1 int main (void) 2 { 3 int rc = 100; 4 printf("RC Value: %d", rc); 5 return rc; 6 }</pre>
---	---

- Simply hover mouse pointer over the highlighted section to see the results generated by the Checkstyle report

hello.c 42

Show Comments

Hide Previous

<pre>1 int main (void) 2 { 3 int rc = 100; 4 printf("RC Value: %d", rc); 5 return rc; 6 }</pre>	<pre>1 int main (void) 2 { 3 int rc = 100; 4 printf("RC Value: %d", rc); 5 return rc; 6 }</pre>
---	---

Error: File contains tab characters (this is the first instance). [Checkstyle test / Test Checkstyle]

Further task

Edit the file hello.c to and replace the tab characters with two whitespaces, also add a terminating newline character. Deliver the changes and review the Checkstyle report.

Further Information

More information on Checkstyle can be found on the Checkstyle website:

<http://checkstyle.sourceforge.net/>

More information on Pulse can be found in the online Documentation, go to:

<http://localhost:8080/pulse-help>