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GSoC 2020 - Checks API Plugin for Jenkins

Kezhi Xiong

Project Mentors:
Ullrich Hafner
Tim Jacomb

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About me...



 @XiongKezh

 kezhi-xiong-44234a188

 @AugustX_

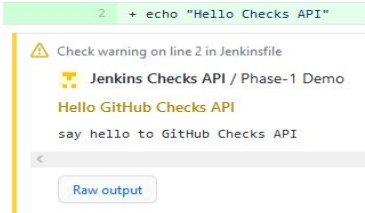
I'm a incoming graduate student at Northeastern University (Boston) and currently in gap year...

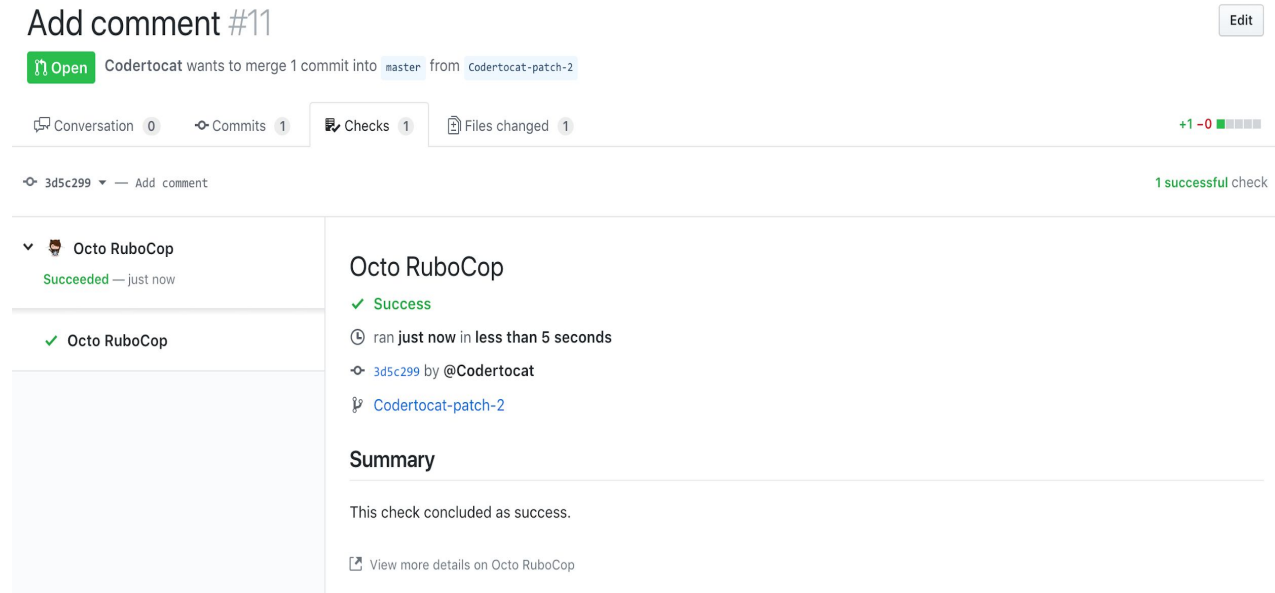
I joined Jenkins as a Google Summer of Code 2020 Student. I'm an open source enthusiast who enjoys sharing ideas and projects with other developers. Currently, I'm working on Jenkins Checks API Plugin.

In my spare time, I watch soccer (Chelsea fan) and Motorsports (F1, WRC)...

01 Introduction of GitHub Checks API

A highly customized way to integrate CI tools or make reports for PR:

- Status
 - Queued
 - In Progress
 - Completed
 - Conclusion
 - Success
 - Failed
 - Neutral
 - Canceled
 - Timed Out
 - Annotations
 - Make warnings / notices on specific lines of code
- 
- The screenshot shows a code change in a file named 'Jenkinsfile'. The change is on line 2, where the text 'echo "Hello Checks API"' has been added. A yellow warning icon is present next to the code, indicating a check warning. The warning message reads: 'Check warning on line 2 in Jenkinsfile'. Below the warning, there is a section titled 'Jenkins Checks API / Phase-1 Demo' which contains the text 'Hello GitHub Checks API' and 'say hello to GitHub Checks API'. A 'Raw output' button is visible at the bottom of the annotation.
- Actions
 - Re-run
 - Automatic Formatting / Fixation





From <https://developer.github.com/apps/quickstart-guides/creating-ci-tests-with-the-checks-api>

02 Motivation

How Jenkins is integrated now -- GitHub Status API



- Only a status and a short message




**All checks have failed**

1 failing check

[Hide all checks](#)

continuous-integration/jenkins/pr-merge — This commit has test failures

[Details](#)

**This branch has no conflicts with the base branch**

Only those with [write access](#) to this repository can merge pull requests.

Core / Jenkins 1

Pull Request: PR-4827

Commit: 1081c15

2h, 4m 37s

4.4k logs

No changes

Pull request PR-4827 opened

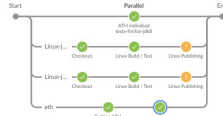
Pipeline

Changes

Issues

Artifacts

Open



Running ATH - 2h 3m 4s

athSources

Reactor files previously installed

1s

No building ATH docker container image. Using jenkins/athhq256.284c2b0f1515f178323537c0d8b074e839f234063d12ba3001959428d8 as specified

Print Message

1s

Checks if running on a Unix-like node

1s

docker pull jenkins/athhq256.284c2b0f1515f178323537c0d8b074e839f234063d12ba3001959428d8

Shell Script

23s

athSources

Reactor files previously installed

1s

jenkinsWar

Reactor files previously installed

3s

Checks if running on a Unix-like node

1s

docker inspect -f jenkins/athhq256.284c2b0f1515f178323537c0d8b074e839f234063d12ba3001959428d8

Shell Script

1s

Shell Script

2h 3m 27s

Stopping deployment to incremental

Print Message

1s

What Jenkins is capable of now -- Warnings Plugin, Code Coverage API Plugin ...

[Test Result](#) (no failures)



Maven: [18 warnings](#)

• [One fixed warning](#)



Error Prone: [138 warnings](#)



Java: [7 warnings](#)



JavaDoc: [5 warnings](#)



SpotBugs: [32 warnings](#)



CheckStyle: [76 warnings](#)



PMD: [100 warnings](#)




CPD: [335 warnings](#)



Open Tasks Scanner: [53 warnings](#)

Java Warnings

Severities Distribution




High

Normal

Low

Reference Comparison




New

Outstanding

Fixed

History



Normal

#939

0%

Details

Files

Issues

Show

10

entries

Search:


File	Total	Distribution
DashboardTableAssert.java	2	<div></div>
IssuesColumnConfiguration.java	1	<div></div>
IssuesRecorder.java	4	<div></div>
Total	7	


Showing 1 to 3 of 3 entries


02 Motivation



How Jenkins is integrated now -- GitHub Status API


- Only a status and a short message




**All checks have failed**
1 failing check

Hide all checks

continuous-integration/jenkins/pr-merge — This commit has test failures

Details

**This branch has no conflicts with the base branch**
Only those with [write access](#) to this repository can merge pull requests.

Core / Jenkins 1

2h, 4m 37s

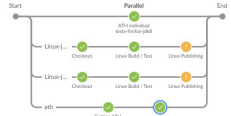
No changes

Full request PR-4027

Commit: 1081515

4 files

Full request PR-4027 opened



Running ATH - 2h 3m 5s

- athSources -> Restore files previously stored
- No building ATH docker container image. Using jenkins/athhq256.284c2b0f1515157831235170d8b074839f234063d12ba300195942b68 as specified -> First Message
- Checks if running on a Unix-like node
- docker pull jenkins/athhq256.284c2b0f1515157831235170d8b074839f234063d12ba300195942b68 -> Shell Script
- athSources -> Restore files previously stored
- jenkinsWar -> Restore files previously stored
- Checks if running on a Unix-like node
- docker inspect -f {{.Image}} jenkins/athhq256.284c2b0f1515157831235170d8b074839f234063d12ba300195942b68 -> Shell Script
- Shell Script
- Stopping deployment to Incrementals -> First Message

What Jenkins is capable of now -- Warnings Plugin, Code Coverage API Plugin ...



02 Motivation

How about integrating GitHub with them?

Content of file NullBlamer.java

```
1 package io.jenkins.plugins.analysis.core.scm;
2
3 import edu.hm.hafner.analysis.Report;
4
5 /**
6  * A blamer that does nothing.
7  *
8  * @author Ullrich Hafner
9  */
10 public class NullBlamer implements Blamer {
11     @Override
12     public Blames blame(final Report report) {
13         report.logInfo("Skipping blaming as requested in the job configuration");
14         return new Blames();
15     }
16 }
```

 io.jenkins.plugins.analysis.core.scm.NullBlamer is Serializable; consider declaring a serialVersionUID

This class implements the Serializable interface, but does not define a serialVersionUID field. A change as simple as adding a reference to a .class object will add synthetic fields to the class, which will unfortunately change the implicit serialVersionUID (e.g., adding a reference to String.class will generate a static field class\$java\$lang\$String). Also, different source code to bytecode compilers may use different naming conventions for synthetic variables generated for references to class objects or inner classes. To ensure interoperability of Serializable across versions, consider adding an explicit serialVersionUID.

Source Code View from Warnings Plugin



Add comment #12

Open Codertocat wants to merge 1 commit into master from Codertocat-patch-2

Conversation 0 Commits 1 Checks 1 Files changed 1

Changes from all commits Jump to... +1 -0

Diff settings Review changes

1 octocat.rb

@@ -13,5 +13,6 @@ def display

13 13 end

14 14 end

15 15

16 + # Instantiate a new Octocat

16 17 m = Octocat.new("Mona", "cat", "octopus")

Check notice on line 17 in octocat.rb

Octo RuboCop / Octo RuboCop

octocat.rb#L17

Style/StringLiterals: Prefer single-quoted strings when you don't need string interpolation or special symbols.

Check notice on line 17 in octocat.rb

Octo RuboCop / Octo RuboCop

octocat.rb#L17

Style/StringLiterals: Prefer single-quoted strings when you don't need string interpolation or special symbols.

Check notice on line 17 in octocat.rb

Octo RuboCop / Octo RuboCop

octocat.rb#L17

Style/StringLiterals: Prefer single-quoted strings when you don't need string interpolation or special symbols.

17 18 m.display

GitHub Check Run Annotations

03 Plugins

A General API

jenkinsci / checks-api-plugin

- api
 - ChecksAction
 - ChecksAnnotation
 - ChecksConclusion
 - ChecksDetails
 - ChecksImage
 - ChecksOutput
 - ChecksPublisher
 - ChecksPublisherFactory
 - ChecksStatus
 - package-info.java

Prepared for the similar concept in different platforms like GitLab, BitBucket, etc.

An Implementation for GitHub Checks API

jenkinsci / github-checks-plugin

✓ Hello Checks API 18c9e2f

✓ Jenkins Checks API

✓ Default Jenkins Run

✓ Jenkins

✓ Jenkins Build

✓ Jenkins is the way Check

✓ Phase-1 Demo


Jenkins Checks API / Phase-1 Demo

succeeded on Jan 12, 1970 in 0s

re-run

Jenkins Check

A Successful Build



DETAILS

0 Failures

ANNOTATIONS

Check notice on line 1 in Jenkinsfile

jenkins-checks-api / Phase-1 Demo

Hello Jenkins

say hello to Jenkins

Raw output


Check warning on line 2 in Jenkinsfile

jenkins-checks-api / Phase-1 Demo

Hello GitHub Checks API

say hello to GitHub Checks API

03 Plugins

 Released Beta


Checks API

Installs: 0
Jenkins 2.204.4 +

This plugin has no labels

This plugin defines an API for Jenkins to publish checks to SCM platforms.

Ullrich Hafner




GitHub Checks

Installs: 0
Jenkins 2.204.4 +


This plugin has no labels


This plugin provide GitHub Checks API for other plugins.


Ullrich Hafner







Some checks haven't completed yet
1 in progress, 1 pending, and 9 successful checks



	Jenkins In progress — This check has start...	Details
---	--	-------------------------



**All checks have failed**
1 errored and 1 failing checks

 continuous-integration/jenkins/pr-merge — This commit cannot be built

 Jenkins

 Jenkins

[Details](#)

[link](#)

- Install both plugins on your Jenkins
- Use GitHub App credentials for your multi-branch / github org project

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04 Warning Checks

Powered by
Warnings Next Generation Plugin

- Quality Gate
- Issue Statistics
- Severity Statistics
- Annotations for new issues
- ...

No new issues, 11 total.

11 issues in total:

- 0 new issues
- 11 outstanding issues
- 0 delta issues
- 0 fixed issues

DETAILS

Total Issue Statistics:

- Error: 2
- High: 0
- Normal: 9
- Low: 0

New Issue Statistics:






- Error: 0
- High: 0
- Normal: 0
- Low: 0

Delta Issue Statistics:

- Error: 0
- High: 0
- Normal: 0
- Low: 0

 Some checks were not successful
2 failing and 6 successful checks

[Hide all checks](#)

✗	 PMD — 16 new issues.	Details
✓	 CPD — No issues.	Details
✓	 Error Prone — 6 new issues.	Details
✓	 Java — No issues.	Details
✓	 Jenkins	Details
✓	 Maven — No new issues, 1 total.	Details

 Check warning on line 58 in src/main/java/edu/hm/hafner/util/StringContainsUtils.java

 jenkins-checks-api / CheckStyle

ParameterNumberCheck

NORMAL:

More than 7 parameters (found 12).

▼ Raw output


<p>Since Checkstyle 3.0</p><p> Checks the number of parameters of a method or constructor. </p>

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05 Coverage Checks

Powered by
Code Coverage API Plugin

- Coverage Trend
- Coverage Healthy Score
- Different Coverages
- ...







All checks have passed

5 successful checks

[Hide all checks](#)



 Code Coverage — Line: 84.78%.

[Details](#)



 Code Coverage — Line: 84.78% (+0.00% against last successful build).

[Details](#)











Jenkins Checks API / Code Coverage
succeeded 1 minute ago in 0s

Line: 84.78% (+0.00% against last successful build).

- [Last successful build](#)

Coverage Healthy score is 100%.

DETAILS

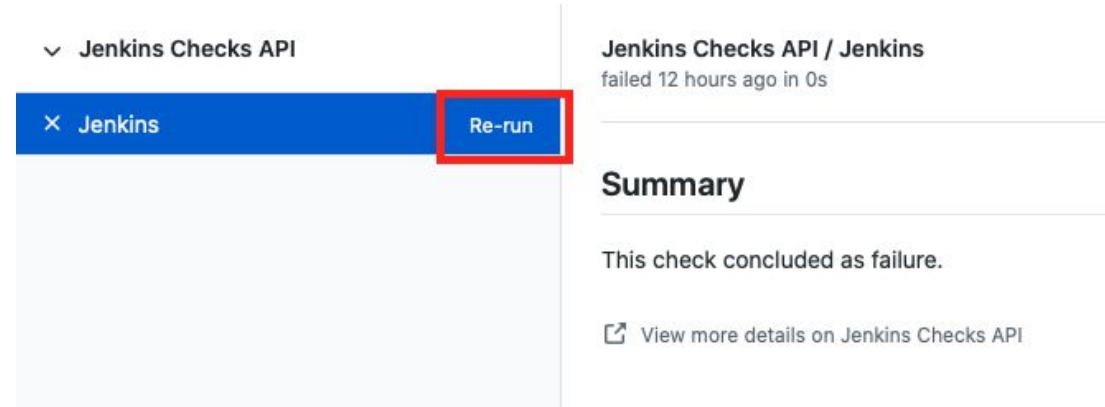
	Report	Group	Package	File	Class	Method	Line	Instruction
 Coverage	100.00%	100.00%	50.00%	80.00%	86.67%	90.12%	84.78%	90.79%
 Trend	+0.00% 	+0.00% 	+0.00% 	+0.00% 	+0.00% 	+0.00% 	+0.00% 	+0.00% 

 [View more details on Jenkins Checks API](#)

[Link](#)

06 Features on the way

- Pipeline support
- Request rerun Jenkins build on GitHub
- ...



We hope the next great feature is ...

Powered by
YOUR Plugin!

Thanks!

Gitter channel: <https://gitter.im/jenkinsci/github-checks-api>

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