Contextual Pipeline Feedback in CloudBees CI

Slack/Microsoft Teams/GitHub/Bitbucket

Jeremy Hartley

What we'll talk about today

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Agenda

- Where we started off
- There must be a better way
- Slack: Our first baby
- Meet the rest of the family
- Demo time
- Moving forward

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Where we started off

An impersonal view of the world

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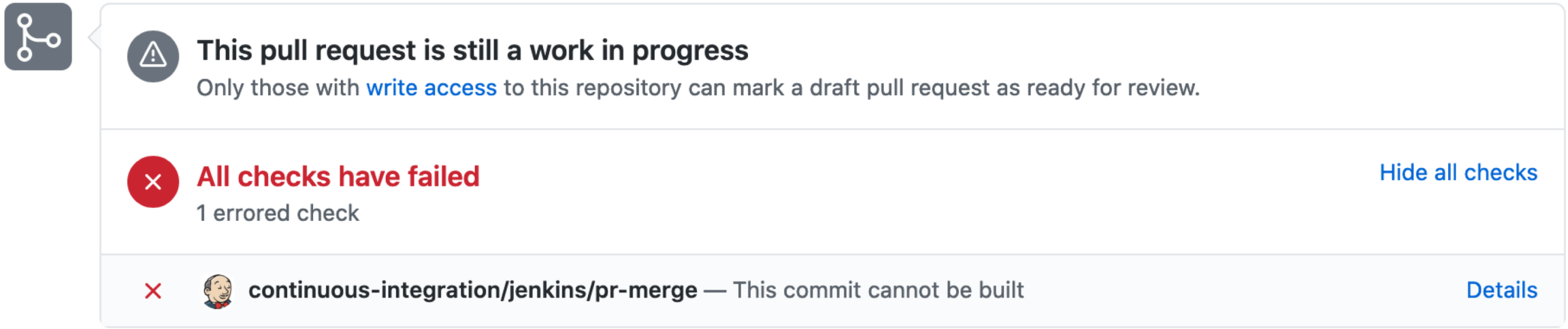
Where we started off

- Build Status Notifications
  - Very little detail
  - Shared notification channel
  - Go to Master to find real issue



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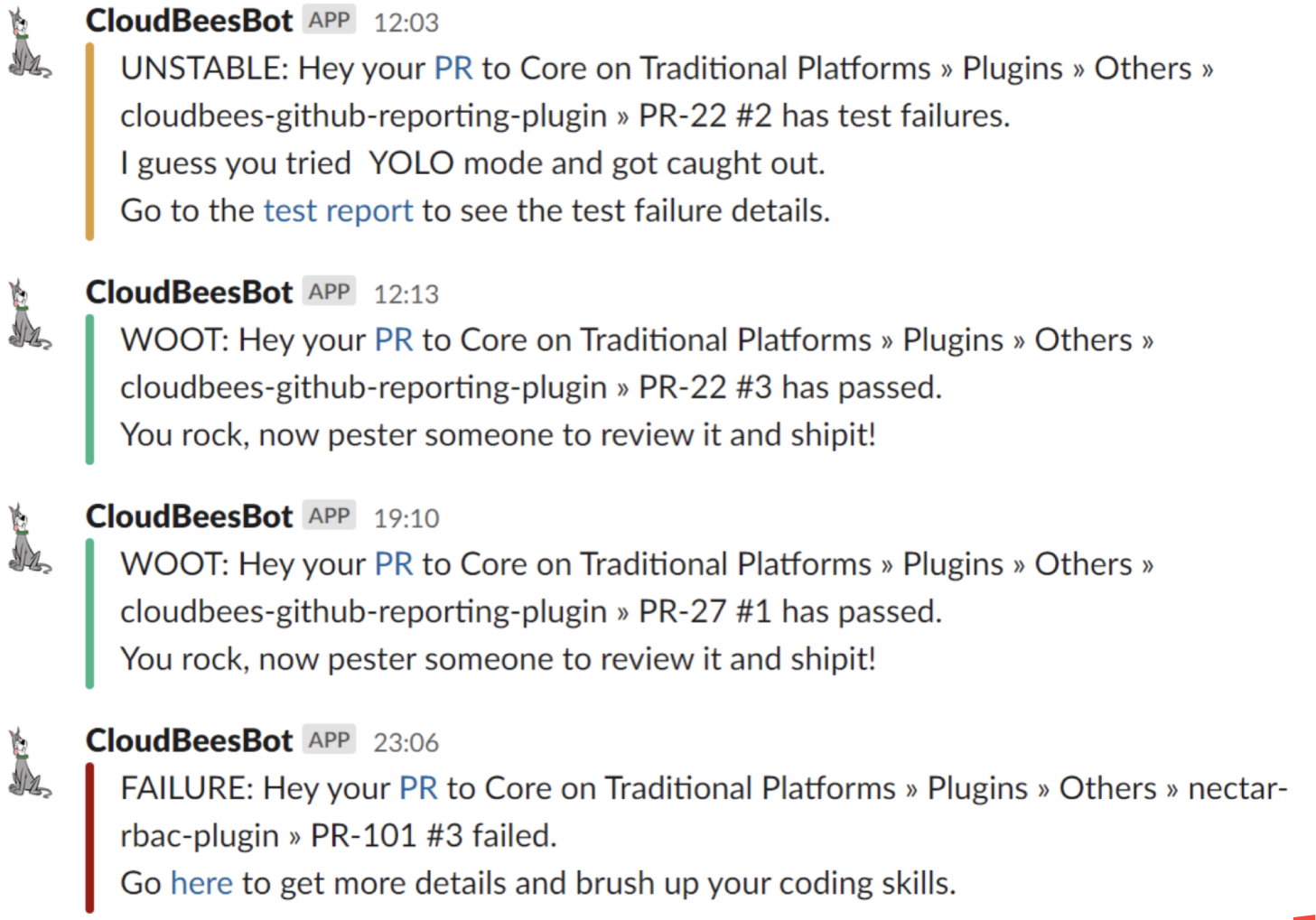
Why was this a problem?

- Shared Notification Channels
  - High Signal to Noise ratio
  - I don't care about my teammates' builds…
  - Ignore or Mark All Read!



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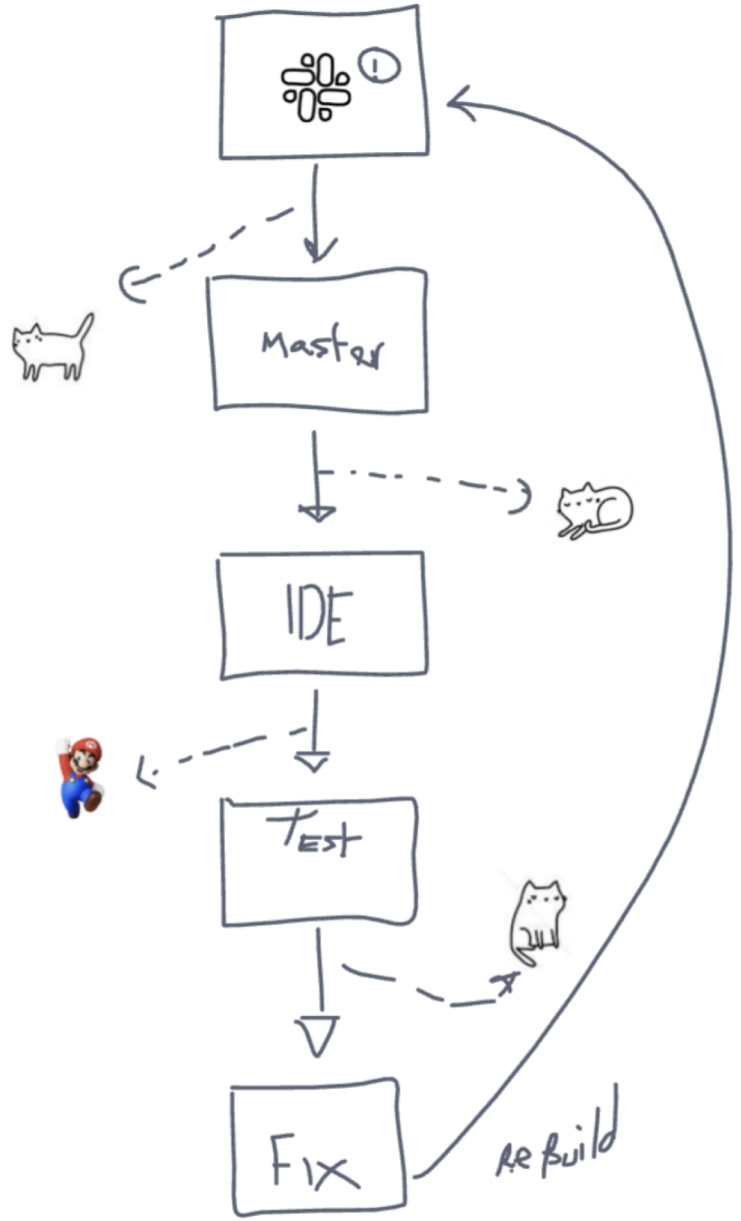
Why was this a problem?

- Lack of Detail / Master as source of truth
  - My build failed again???
  - Why?
  - Open Master
  - I ended up doing something else…
  - Let's start again
- This can be a slow and tedious loop



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Of course you could build your own solution...

- Create a shared library or code snippet
- Test / Debug / Maintain
- Modify all of your pipelines to use it

```
    post {
        failure {
            // https://issues.jenkins-ci.org/browse/JENKINS-42688
            script {
                if (env.CHANGE_ID == null) {
                    slackSend color: 'danger', channel: SLACK_CHANNEL, tokenCredentialId: 'cloudbees-slack-bot',
                              message: "FAILURE: ${currentBuild.fullDisplayName}\nClick <${RUN_DISPLAY_URL}|here> to get more details."
                } else {
                    String slackId = getSlackIdFromPRAuthorName()
                    if (slackId != null) {
                        slackSend color: 'danger', channel: "@${slackId}", tokenCredentialId: 'cloudbees-slack-bot',
                                  message: """FAILURE: Hey your <${CHANGE_URL}|PR> to ${currentBuild.fullDisplayName} failed.
Go <${RUN_DISPLAY_URL}|here> to get more details and brush up your coding skills."""
                    }
                }
            }
        }
```


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There must be a better way...

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Requirements for Success

- Make it personal
  - Direct Messages over Shared Notification Channels
  - Easy to configure and customize notifications

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Requirements for Success

- Make it relevant
  - Accurate status information
  - Detailed information about what went wrong

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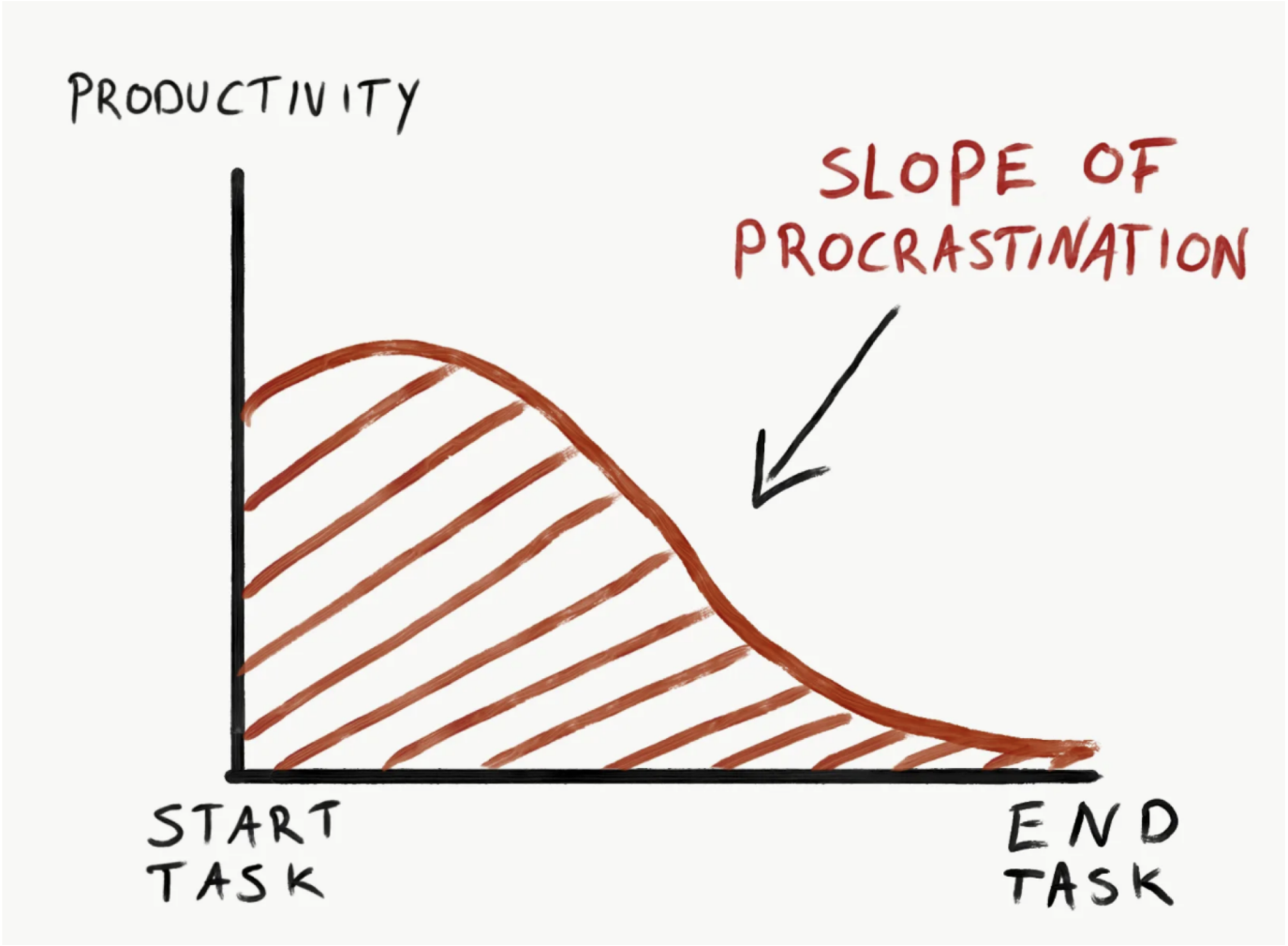
Requirements for Success

- Reduce Context Switching
  - Remove need to go to Master to find out what went wrong
  - Name the line of code that broke the build



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Requirements for Success

- No Pipeline Changes
  - No pipeline changes required to make it work
  - Easy and opinionated setup

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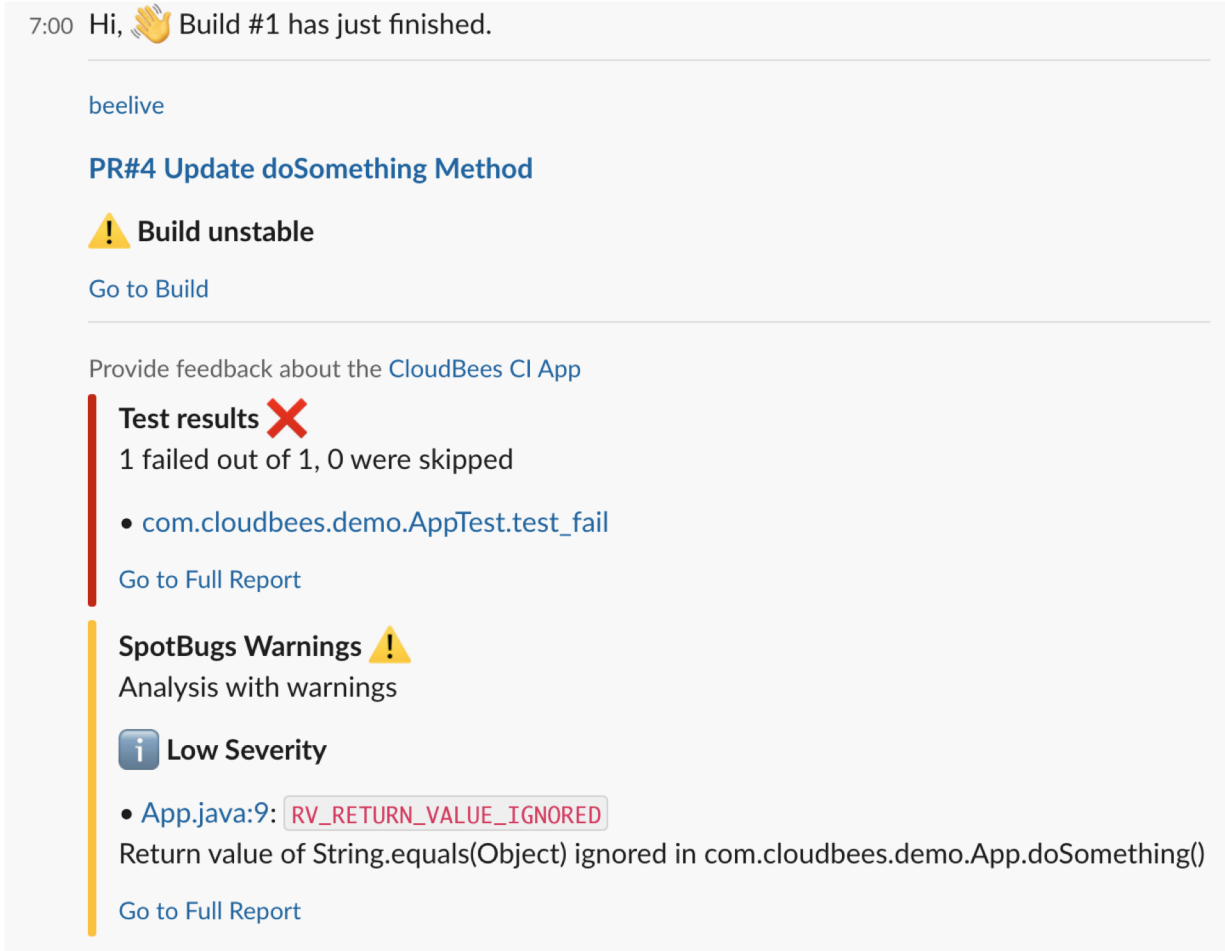
slack
Our first baby...

Personalized Slack Messaging

Actionable build status sent directly to the PR Author

- Direct Slack message
- Status followed by full details
- Next action is clear



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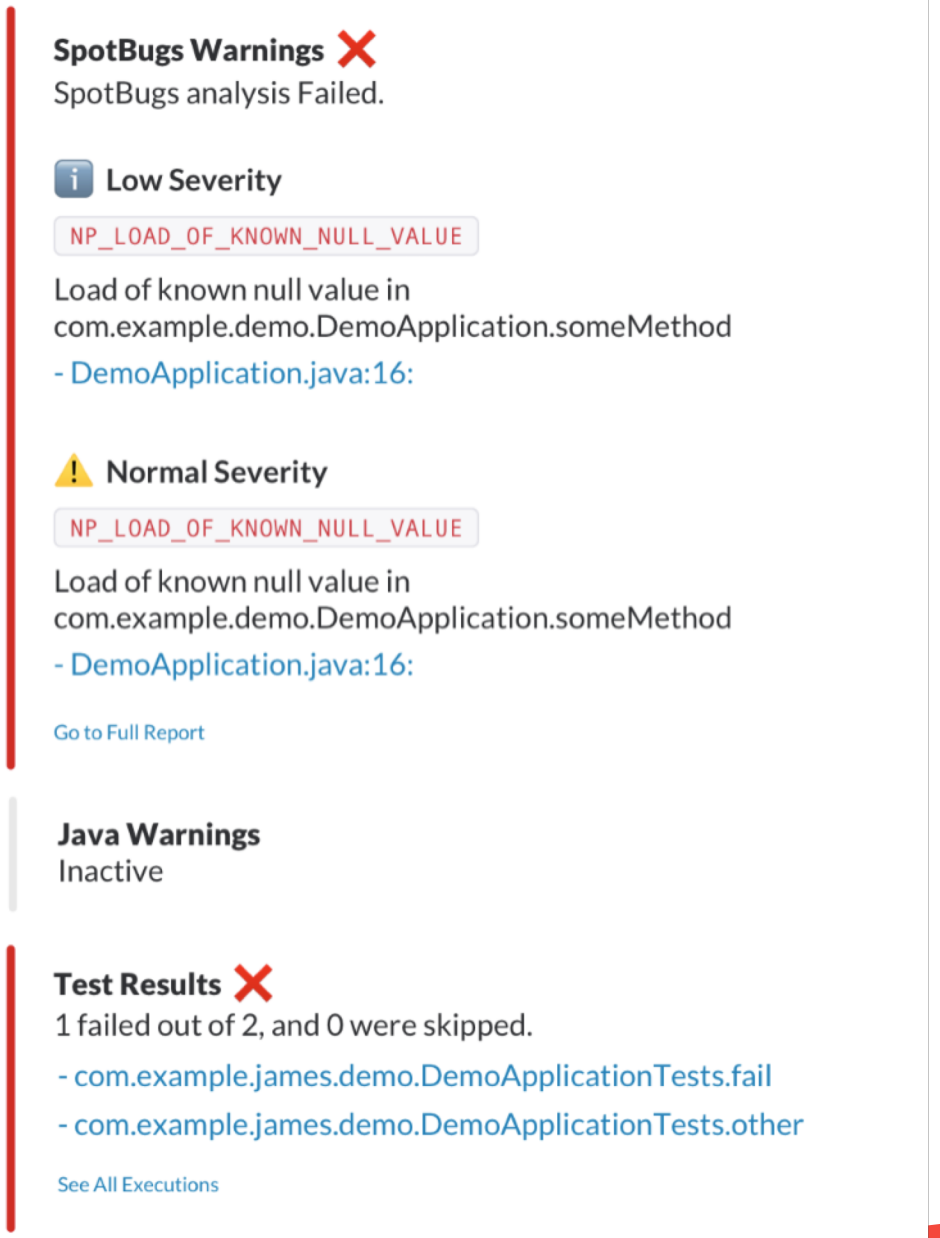
Detailed Information

Notifications about the status of your build containing:

- Build Status

- Reason for failures with links to more detailed information from:
  - Warnings NG
  - JUnit
  - Pipeline Policies



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CloudBees Internal Process

- One of the most heavily dog fooded features at CloudBees.
- Used Continuous Delivery to continually upload new versions of the plugin to our own internal masters after each PR.
- Huge amount of internal feedback.

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GitHub, Microsoft Teams & Bitbucket

Meet the rest of the family

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Next Steps

- GitHub
- Microsoft Teams
- Bitbucket

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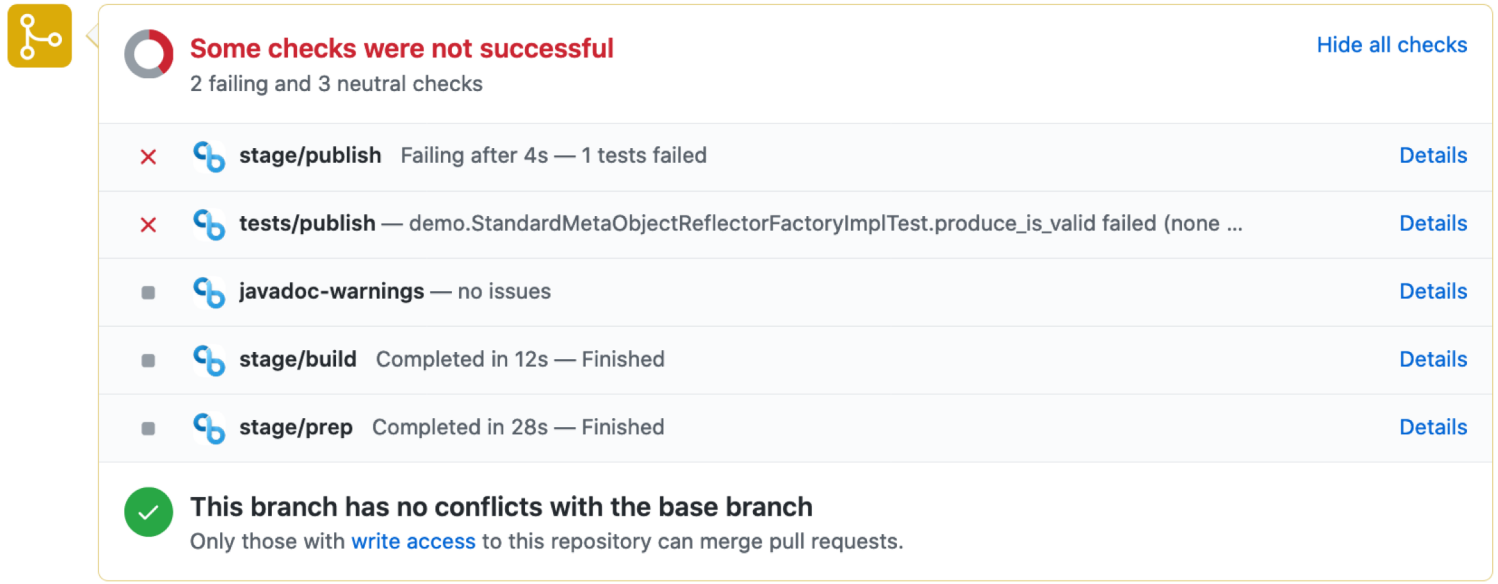
GitHub

- GitHub integration based on GitHub Checks API
- Real-time stage updates
- GitHub is a permanent record with permalinks to the results
- GitHub.com & GitHub Enterprise



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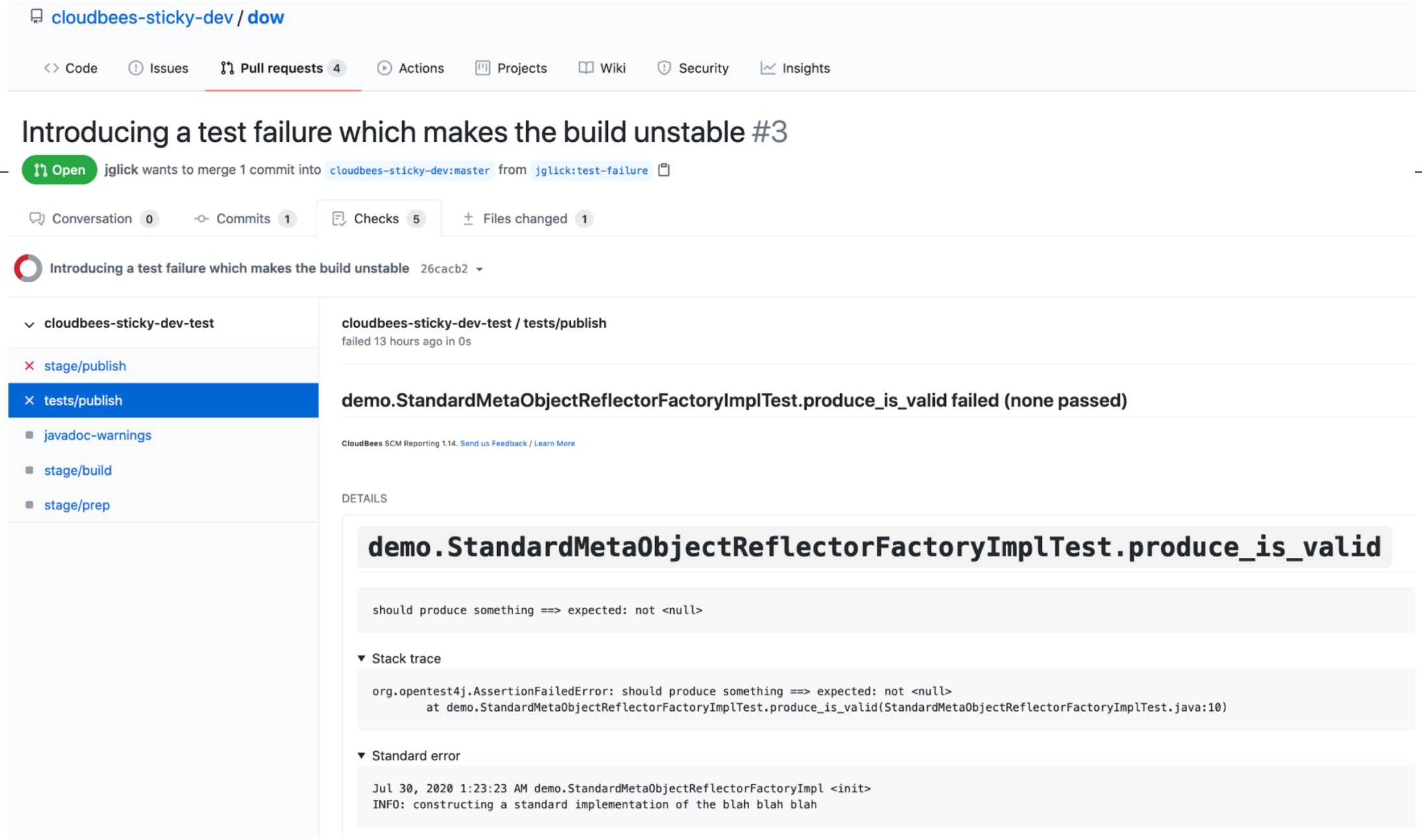

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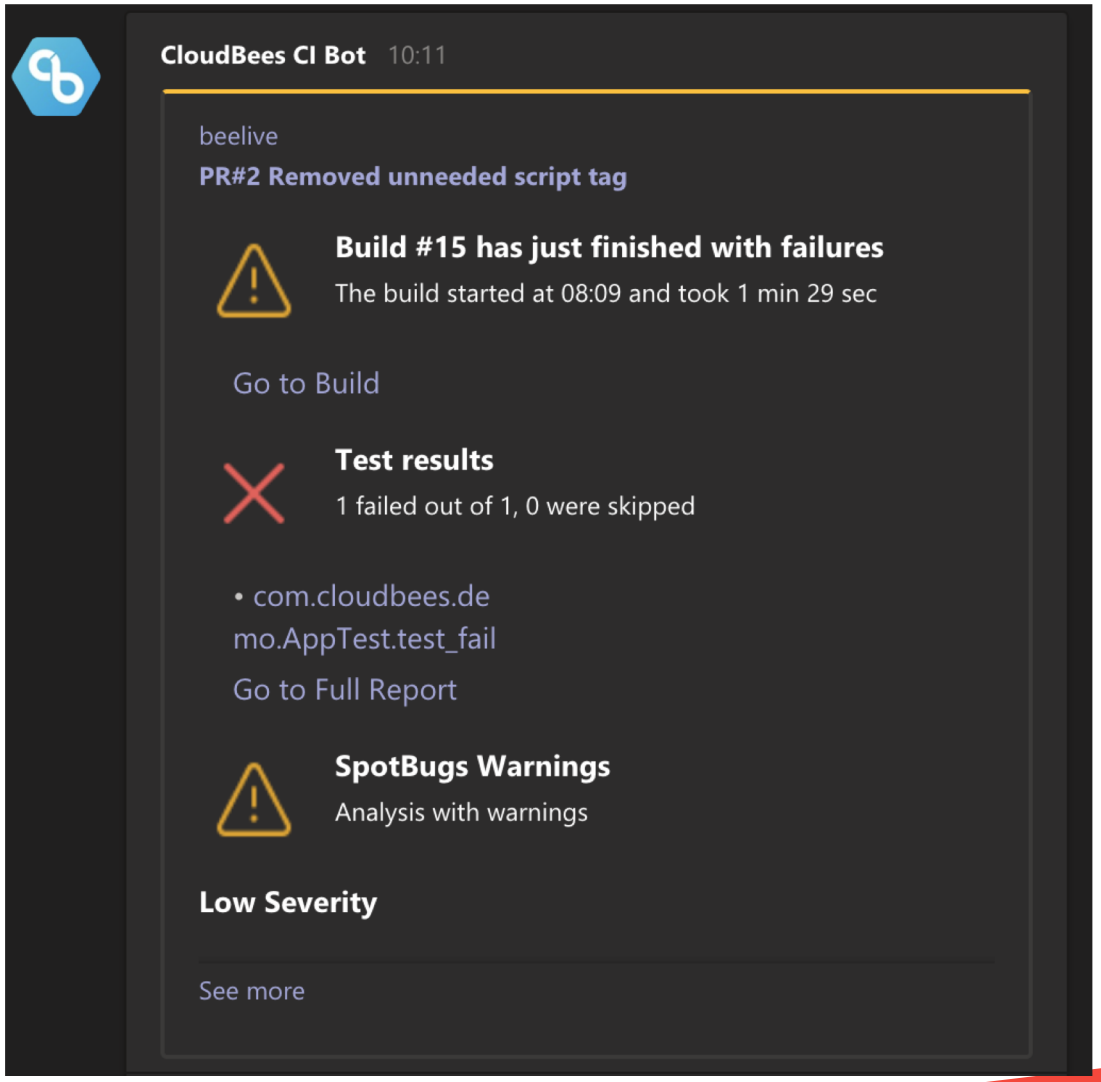
Microsoft Teams

- Microsoft Teams doesn't offer a Direct Messages API
- A virtual private Team is a viable solution



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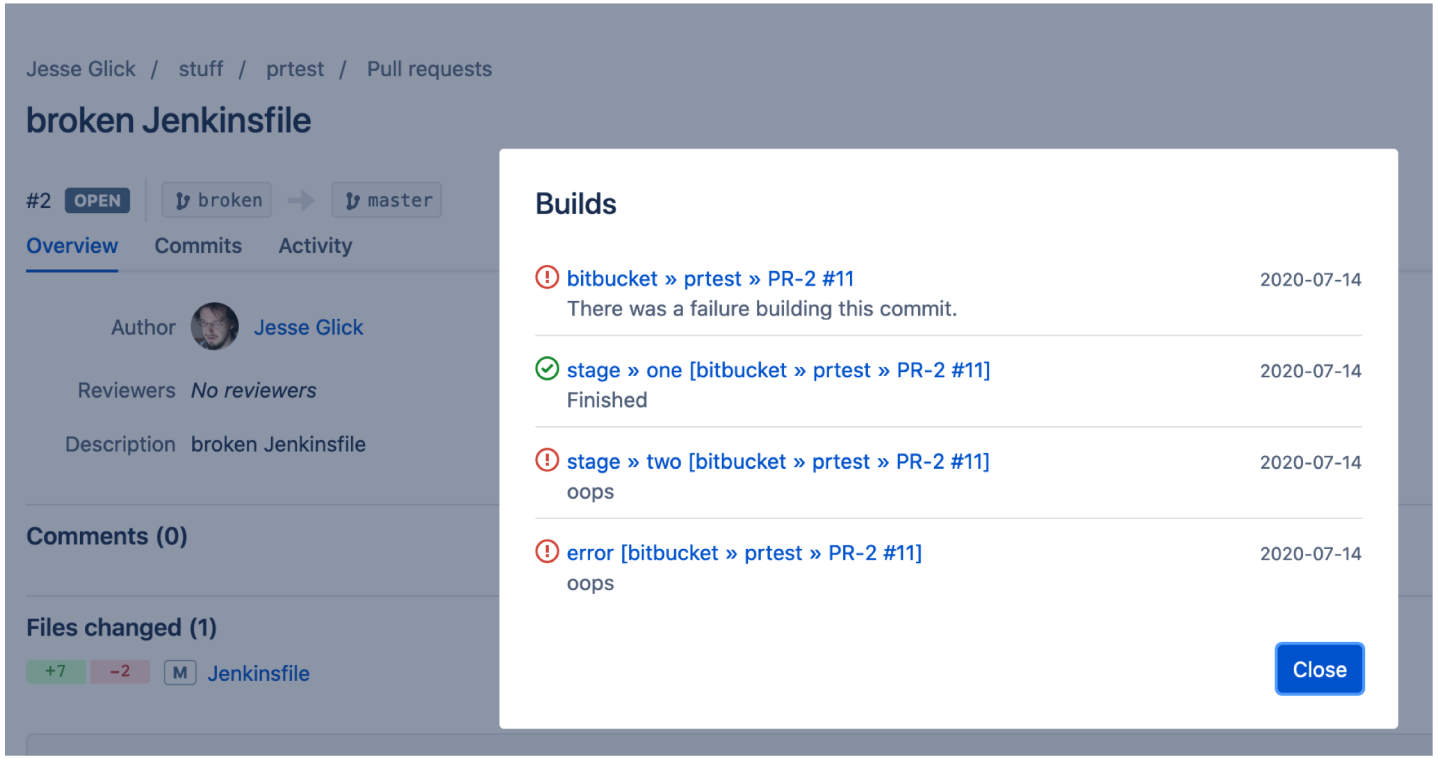
Bitbucket

- Bitbucket doesn't offer an equivalent to the GitHub Checks API.
- Bitbucket Cloud & Bitbucket Server



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Demo Time

GitHub, Slack & Microsoft Teams

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Moving Forward

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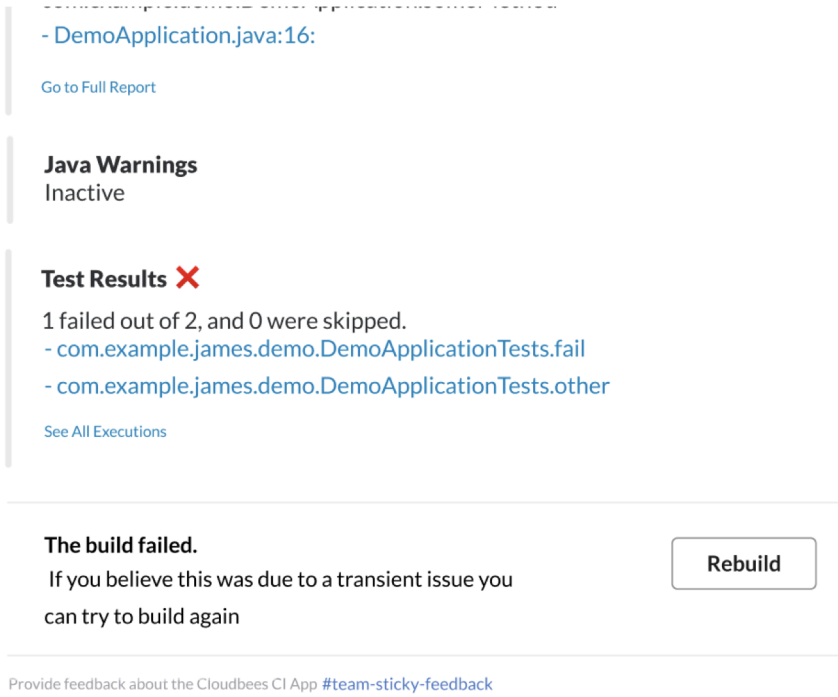
Two Way Communication

- ChatOps-like behavior
- Rebuild button
- We are open to other suggested actions



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ChatOps

- Full two way communication
- Use Slack/Teams/GitHub/Bitbucket as a command line for CloudBees CI
- What commands do you want most?

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Other Potential End Points

- IDEs
- Mattermost
- GitLab
- ServiceNow

- Where do you want to get this information?

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Q & A

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Thank You

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