



# Checks UI: A new versatile interface for all your CI results



Ben Rohlfs, Delphine Carlson / Gerrit Code Review @Google

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Google



**Ben Rohlf**

Software Engineer for Gerrit Code  
Review @Google



**Delphine Carlson**

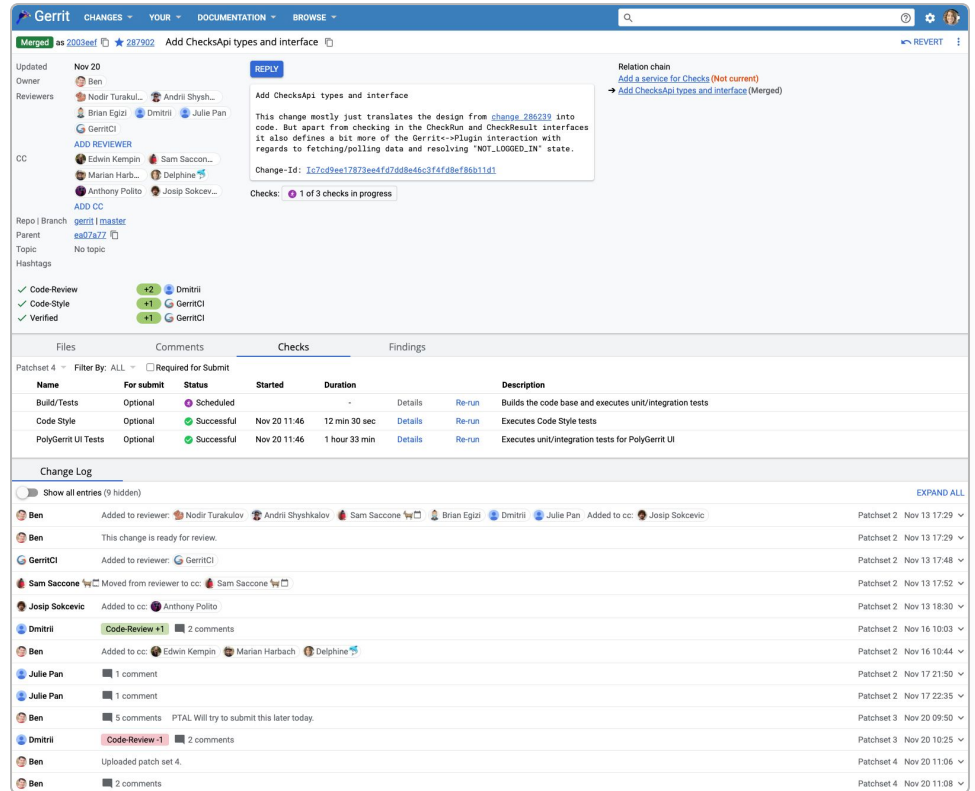
UX Designer for Gerrit Code  
Review @Google

Context

# Problem space

## Integration painpoints with CI results

- Important for a review tool to have some integration with CI results
- CI systems had to adapt how they communicate with the former Gerrit Checks thus preventing adoption by other hosts.
- Android and Chrome Gerrit hosts had their own **custom plugin** connected to their CI system and was **not maintained by the Gerrit Code Review team** at Google



The screenshot shows the Gerrit web interface for a patchset titled "Add ChecksApi types and interface". The interface includes a header with navigation links, a left sidebar with metadata (Updated: Nov 20, Owner: Ben, Reviewers: Nodir Turakulov, Andrii Shyshkalov, Brian Egizi, Dmitrii, Julie Pan, etc.), and a main content area. A "Checks" section displays a table of CI checks:

Name	For submit	Status	Started	Duration	Description
Build/Tests	Optional	Scheduled	-	-	Builds the code base and executes unit/integration tests
Code Style	Optional	Successful	Nov 20 11:46	12 min 30 sec	Executes Code Style tests
PolyGerrit UI Tests	Optional	Successful	Nov 20 11:46	1 hour 33 min	Executes unit/integration tests for PolyGerrit UI

Below the checks table is a "Change Log" section showing a list of events such as "Added to reviewer", "Added to cc", and "Code-Review" comments with timestamps and user avatars.

Former Gerrit Checks

# Poll

**How much of a pain point is Gerrit Checks/CI integration for you and your organization?**

- Biggest pain point.
- One of the big pain points.
- Small pain point.
- Not much of an issue.

ADD REVIEWER

Edwin Kempin Sam Saccon...

# Former Checks plugin

ADD CC

Repo | Branch [gerrit](#) | [master](#)

Parent [ea07a77](#)

Topic No topic

Hashtags

- ✓ Code-Review +2 Dmitrii
- ✓ Code-Style +1 GerritCI
- ✓ Verified +1 GerritCI

... but apart from checking in the checkout and checkresult ... it also defines a bit more of the Gerrit->Plugin interaction with regards to fetching/polling data and resolving "NOT\_LOGGED\_IN" state.

Change-Id: [Ic7cd9ee17873ee4fd7dd8e46c3f4fd8ef86b11d1](#)

Checks: + 1 of 3 checks in progress

Files

Comments

Checks

Findings

Patchset 4  Filter By: ALL  Required for Submit

Name	For submit	Status	Started	Duration			Description
Build/Tests	Optional	<span>+ Scheduled</span>		-	<a href="#">Details</a>	<a href="#">Re-run</a>	Builds the code base and executes unit/integration tests
Code Style	Optional	<span>✓ Successful</span>	Nov 20 11:46	12 min 30 sec	<a href="#">Details</a>	<a href="#">Re-run</a>	Executes Code Style tests
PolyGerrit UI Tests	Optional	<span>✓ Successful</span>	Nov 20 11:46	1 hour 33 min	<a href="#">Details</a>	<a href="#">Re-run</a>	Executes unit/integration tests for PolyGerrit UI

## Change Log

Show all entries (9 hidden)

[EXPAND ALL](#)

- Ben Added to reviewer: Nodir Turakulov Andrii Shyshkalov Sam Saccone Brian Egizi Dmitrii Julie Pan Added to cc: Josip Sokcevic Patchset 2 Nov 13 17:29
- Ben This change is ready for review. Patchset 2 Nov 13 17:29
- GerritCI Added to reviewer: GerritCI Patchset 2 Nov 13 17:48
- Sam Saccone Moved from reviewer to cc: Sam Saccone Patchset 2 Nov 13 17:52
- Josip Sokcevic Added to cc: Anthony Polito Patchset 2 Nov 13 18:30
- Dmitrii Code-Review +1 2 comments Patchset 2 Nov 16 10:03
- Ben Added to cc: Edwin Kempin Marian Harbach Delphine Patchset 2 Nov 16 10:44

## User painpoints with CI results in Android and Chrome Gerrit hosts

### Discoverability pain point

“

*When trybots or CQ fails, it is hard to figure out what went wrong, **it takes several clicks and a lot of scrolling to find the right information.***

[Developer in Chrome Browser](#)

“

### Readability painpoint

***It's too hard to interpret what's gone wrong** with presubmit checks and build errors in various Gerrit/CQ systems for Google's git.*

[Developer at Google](#)

### Inconsistent UX across host

*Chrome, Android and Gerrit Code Review host **had different UI to display check results.***

Our proposal

# Checks UI solution



## Why a new interface for CI results?

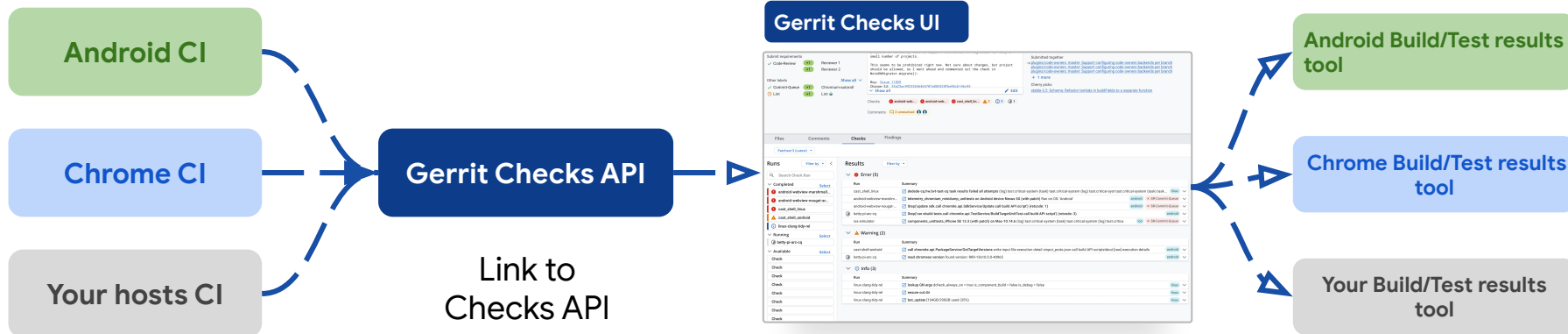
Our aim is to **improve user and admin experience** for integrating Gerrit with **continuous integration (CI) and analyzer systems**, with **minimal disruption** to customer teams.

## Why a new interface for CI results?

Provide to all Gerrit hosts adopting this feature:

- A **first-class integration with a Checks API to have consistent** CI results
- A **unified user experience** of consulting Checks results and fixing them

# Provide a pluggable Checks API to output data to a consistent interface owned by Gerrit



CI results from the CI system are input to the Checks API

The Check results output are displayed in a data table in Gerrit.

The table shows all relevant Check runs and their Check results.

Gerrit's Checks view provides a link to external tooling with details of the results.

## Data Model <https://cs.opensource.google/gerrit/gerrit/gerrit/+master:polygerrit-ui/app/api/checks.ts>

### Run

- Is tied to **change** and **patchset**.
- Can have multiple **attempts**.
- Status is **RUNNABLE**, **RUNNING** or **COMPLETED**.
- Can have a **description**, a **link** and **timestamps**.
- May be tied to a **label**.
- May include **actions** like **CANCEL** or **RE-RUN**.
- Has 0-n **results**.

### Result

- Is tied to one **run**.
- Has a **summary**, **message** and maybe **links** and **tags**.
- Category is **SUCCESS**, **INFO**, **WARNING** or **ERROR**.
- May include **actions** like **DISMISS** or **REPORT PROBLEM**.
- Can also have **code pointers**.

User Experience

# Demo

Change Info SHOW ALL

START REVIEW

Owner Ben
Reviewers
Repo | Branch gerrit | master
Topic

Increase the click target for chip links
And change hover color from gray-700 to gray-900.
https://imgur.com/a/aiCvHE7
Change-Id: I9945145c7afd30535d0e809a2f26a5b22df287b4

Submit Requirements

- Code-Review No votes
Verified No votes
Code-Style No votes

Checks: FAKE Error Finder Fin..., FAKE Super Check (2), FAKE Super Check
Comments: 2 unresolved, 1 resolved

Files Comments Checks Findings

Runs

- Filter runs by regular expression
Running: FAKE Super Check
Completed: FAKE Error Finder..., FAKE Mega Analysis, FAKE Elimination Long..., Code Style, PolyGerrit UI Tests

Results Patchset 3 (latest)

Filter results by regular expression
Error (2): FAKE Error Finder... I would like to point out this error: 1 is not equal to 2! (OBSOLETE, E2); FAKE Error Finder... Running the mighty test has failed by crashing. (INTERRUPTED, WINDOWS)
Warning (1): FAKE Super Check We think that you could improve this. (INTERRUPTED, WINDOWS)
Info (2)

Merge Conflict ☆ 3313065 Remove final few side-effects in platform/utilities.ts

EDIT

Change Info SHOW ALL REPLY

Owner: Tim Van der Lippe
Reviewers: Jack Franklin
CC: devtools-revie...
Repo | Branch: devtools/devtools-frontend | main
Topic:

Submit requirements
Code Owners: Approved ADD OWNERS
Code-Review: No votes

Other labels SHOW LESS
Auto-Submit: No votes
Bot-Commit: No votes
Commit-Queue: No votes
Owners-Override: No votes

Remove final few side-effects in platform/utilities.ts
The final few can be added to TestRunner.js which can expose them to the global scope for the legacy layout tests. The other usages of the final global have been removed from the legacy defs and ported in the code.
As such, we can now consider crbug.com/1050549 finalized and all globals properly exported.
R=jackfranklin@chromium.org
Fixed: 1050549
Change-Id: I9945ecb15e6324ee1982a81fbab669c63fb62512

Relation chain
Remove final few side-effects in platform/utilities.ts
Change shell to TypeScript-authored
Remove legacy\_css\_definitions (Not current)
Cleanup cached resources (Merged)
Cleanup entrypoint initialization (Merged)
Remove modules support from Runtime (Merged)
Submitted together
devtools/devtools-frontend: main: Remove legacy\_css\_definitions ✓
devtools/devtools-frontend: main: Remove final few side-effects in platform/utilities.ts
devtools/devtools-frontend: main: Change shell to TypeScript-authored ✓

Checks: devtools\_frontend\_l... 5
Comments: No comments

open: Roll finished.

Files Comments Checks Findings

- Runs
Completed
devtools\_frontend\_linux\_bli... RERUN
devtools\_frontend\_linux\_dbg
devtools\_frontend\_linux\_rel
devtools\_frontend\_win64\_rel
dtf\_presubmit\_linux
dtf\_presubmit\_win64

Results Patchset 1 (latest)
Filter results by regular expression
CHOOSE TRYJOBS RETRY FAILED BUILDS

Table with 2 columns: Run, Summary. Contains 10 rows of failed test results, including 'Build devtools\_frontend\_linux\_blink\_light\_rel failed' and various 'Test http/tests/devtools/a11y-axe-core/...' failures.

# Poll

**Will the demoed features address your and your organization's needs for Checks/CI integration?**

- Fully addressing all our needs.
- Mostly addressing our needs.
- Somewhat addressing our needs.
- Not addressing our needs at all.



# Links

## API

<https://cs.opensource.google/gerrit/gerrit/gerrit/+/master:polygerrit-ui/app/api/checks.ts>

## Design

<https://www.gerritcodereview.com/design-docs/ci-reboot-solution-ci-results-tab.html>

## Examples

<https://gerrit.googlesource.com/plugins/checks/+/refs/heads/master/web/plugin.ts>

<https://gerrit.googlesource.com/plugins/checks/+/refs/heads/master/web/fetcher.ts>

<https://chromium.googlesource.com/infra/gerrit-plugins/buildbucket/+/refs/heads/main/src/main/resources/static/checks-opt-view.js>

<https://chromium.googlesource.com/infra/gerrit-plugins/buildbucket/+/refs/heads/main/src/main/resources/static/checks-fetcher.js>

Q&A opener

**What needs is the Checks UI not addressing at the moment?**