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

Ben Rohlfs, Delphine Carlson / Gerrit Code Review @Google
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Ben Rohlfs
Software Engineer for Gerrit Code Review @Google

Delphine Carlson
UX Designer for Gerrit Code Review @Google
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
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.
### Checks

<table>
<thead>
<tr>
<th>Name</th>
<th>For submit</th>
<th>Status</th>
<th>Started</th>
<th>Duration</th>
<th>Details</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build/Tests</td>
<td>Optional</td>
<td>Scheduled</td>
<td>Nov 20 11:46</td>
<td>12 min 30 sec</td>
<td>Details</td>
<td>Re-run Builds the code base and executes unit/integration tests</td>
</tr>
<tr>
<td>Code Style</td>
<td>Optional</td>
<td>Successful</td>
<td>Nov 20 11:46</td>
<td>1 hour 33 min</td>
<td>Details</td>
<td>Re-run Executes Code Style tests</td>
</tr>
<tr>
<td>PolyGerrit UI Tests</td>
<td>Optional</td>
<td>Successful</td>
<td>Nov 20 11:46</td>
<td></td>
<td>Details</td>
<td>Re-run Executes unit/integration tests for PolyGerrit UI</td>
</tr>
</tbody>
</table>

**Change Log**

- Added to reviewer: Nodir Turakulov, Andrii Shyshkalov, Sam Saccone, Brian Egizi, Dmitrii, Julie Pan, Added to cc: Josip Sokcovic
- Ben: This change is ready for review.
- GerritCI: Added to reviewer: GerritCI
- Sam Saccone: Moved from reviewer to cc: Sam Saccone
- Josip Sokcovic: Added to cc: Anthony Polito
- Dmitrii: Code Review +1, 2 comments
- Ben: Added to cc: Edwin Kempin, Marian Harbach, Delphine
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.
<table>
<thead>
<tr>
<th>Run</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Is tied to <strong>change</strong> and <strong>patchset</strong>.</td>
<td>● Is tied to one <strong>run</strong>.</td>
</tr>
<tr>
<td>● Can have multiple <strong>attempts</strong>.</td>
<td>● Has a <strong>summary</strong>, <strong>message</strong> and maybe <strong>links</strong> and <strong>tags</strong>.</td>
</tr>
<tr>
<td>● Status is <strong>RUNNABLE</strong>, <strong>RUNNING</strong> or <strong>COMPLETED</strong>.</td>
<td>● Category is <strong>SUCCESS</strong>, <strong>INFO</strong>, <strong>WARNING</strong> or <strong>ERROR</strong>.</td>
</tr>
<tr>
<td>● Can have a <strong>description</strong>, a <strong>link</strong> and <strong>timestamps</strong>.</td>
<td>● May include <strong>actions</strong> like <strong>DISMISS</strong> or <strong>REPORT PROBLEM</strong>.</td>
</tr>
<tr>
<td>● May be tied to a <strong>label</strong>.</td>
<td>● Can also have <strong>code pointers</strong>.</td>
</tr>
<tr>
<td>● May include <strong>actions</strong> like <strong>CANCEL</strong> or <strong>RE-RUN</strong>.</td>
<td></td>
</tr>
<tr>
<td>● Has 0-n <strong>results</strong>.</td>
<td></td>
</tr>
</tbody>
</table>
User Experience

Demo
Increase the click target for chip links

And change hover color from gray-700 to gray-900.

https://imgur.com/a/g1CyHE7

Change-Id: 19945145c7af3d38535d8e889a2f26a6b22df287b4
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 def and ported in the code.

As such, we can now consider crbug.com/1856549 finalized and all globals properly exported.

r=jackfranklin@chromium.org

Fixed: 1856549
Change-Id: I9945ecbi56324ee19828a81fbab665c03f62512

Submitted together
devtools/devtools-frontend: main: Remove legacy_css_definitions
devtools/devtools-frontend: main: Remove final few side-effects in platform/utilities.ts

Relation chain
- Remove final few side-effects in platform/utilities.ts
  - Change shell to TypeScript-authored
  - Remove legacy_css_definitions (Not current)
  - Cleanup cached resource (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
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

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