

Make your owners rules faster

in just one step*



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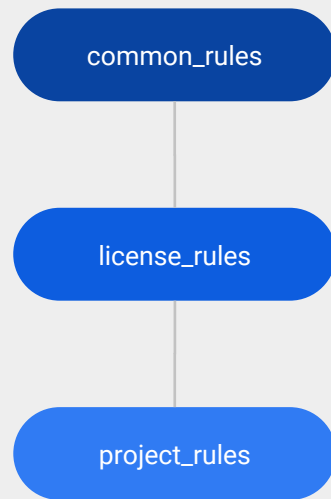


GERRIT
USER SUMMIT 2023

Capturing the baseline: stable-3.4

Baseline: stable-3.4

Projects structure - [owners
based on matchers](#)



Baseline: stable-3.4

The owners plugin configuration



The **OWNERS** files:

- common rules
.md and .txt files are owned by editor@example.com
- license rules
.lic files are owned by lawyer@example.com
- project rules
.sql files are owned by dbadmin@example.com and .java files are owned by *JavaReviewers* group

The **rules.pl** file at project level:

```
submit_rule(S) :-  
    gerrit:default_submit(L),  
    L =.. [submit | Sr ],  
    gerrit_owners:add_match_owner_approval(Sr,A),  
    S =.. [submit | A ].
```

Baseline: stable-3.4

The owners plugin configuration
in practice



Gerrit CHANGES YOUR DOCUMENTATION BROWSE

Active ☆ 2001 Add feature X

Change Info [SHOW ALL](#) [REPLY](#)

Owner test_0001

Reviewers Java Reviewer X editor lawyer dbaadmin

Repo | Branch load-test | master

Topic

Submit requirements

✓ Code-Review +2 Java Reviewer +2 dbaadmin +2 lawyer +2 editor

Comments No comments

Add feature X

Lorem ipsum dolor sit ar

Change-Id: Ida55e9e1428

Files	Comments	Findings
Base → Patchset 3 1c5d6bd		
File		
Commit message		
LICENSE.lic	Added	
README.md	Added	
src/main/java/com/example/demo/DemoApplication.java	Added	
src/main/resources/db.migration/V0.0.1_initial.sql	Added	

Baseline: stable-3.4

Test scenario

- create & configure projects
- create 2048 users
- create 2000 changes (with files and paths)
- add 5 - 10 reviewers to all changes
- 4000 times vote by random user on random change and get change details each time

Baseline: stable-3.4

Results



Version	Submit rule evaluation (ms)		Test time
	Median	95p	
3.4	34.7	42.6	44:55.16

*in just one step**

Upgrade to stable-3.6



Version	Submit rule evaluation (ms)		Test time
	Median	95p	
3.4	32.9	38.9	44:55.16
3.6	13.2	17.6	20:21.94

But how?

- Gerrit improvements
- The owners plugin
- [caching improvements](#)

Can we beat it?

- install cached-refdb module
- switch to submit rules/requirements

Can we beat it?

Install [cached-refdb](#) module



- drop library jar file to `${site}/lib` dir
- add module to

```
${site}/etc/gerrit.config with
[gerrit]
    installDbModule =
com.google.source.gerrit.plugins.cachedrefdb.LibDbModule
    installModule =
com.google.source.gerrit.plugins.cachedrefdb.LibSysModule
```

- ensure that refdb can keep up by extending its memory limit e.g:

```
[cache "ref_by_name"]
    memoryLimit = 16592
```

Version	Submit rule evaluation (ms)		Test time
	Median	95p	
3.4	32.9	38.9	44:55.16
3.6	13.2	17.6	20:21.94
3.6 cached	1.52	2.17	15:20.63

Can we beat it?

Switch to submit
rule/requirements



Why would you want to do that?

- starting with 3.6 prolog gets [deprecated](#)
- owners plugin [improvements](#) to the rescue

How to do it?

- enable it in
`${site}/etc/owners.config` with
`[owners]`
`enableSubmitRequirement = true`
- remove `rules.pl` file from project's
`refs/meta/config`

Version	Submit rule evaluation (ms)		Test time
	Median	95p	
3.4	32.9	38.9	44:55.16
3.6	13.2	17.6	20:21.94
3.6 cached	1.52	2.17	15:20.63
3.6 sr	0.84	1.14	15:04.22

Can we still do better?

Combine cached refdb with
submit rule/requirements



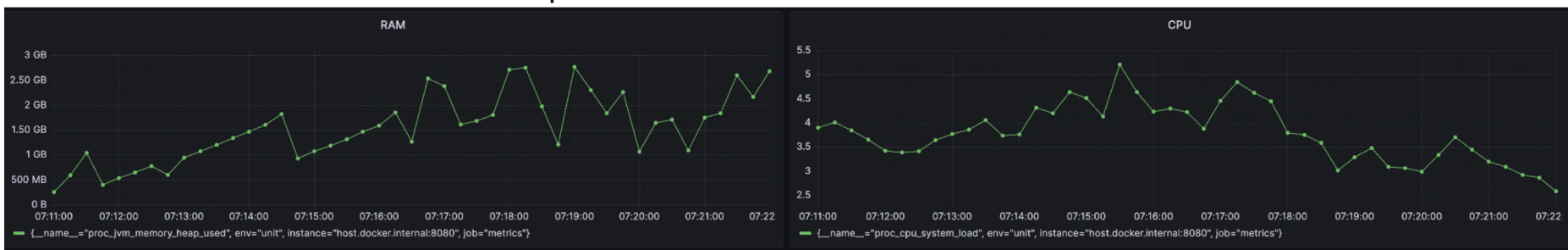
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3.6	13.2	17.6	20:21.94
3.6 cached	1.52	2.17	15:20.63
3.6 sr	0.84	1.14	15:04.22
3.6 sr cached	0.83	1.87	14:54.93

Resources perspective

stable-3.6 with submit rule/requirements



stable-3.6 with cached submit rule/requirements



Summary

From the lowest to the highest effort:

- upgrade and get >100% performance improvement
- add cached-refdb and speed it up ~10 times (overall site performance improved)
- switch to submit rule/requirements and cut it again by half
- use submit rule/requirements with cached-refdb to do it with ease

Thank you!

Links and references

- [Owners based on matchers configuration example](#)
- [Owners stable-3.4 tests script with results captured in Grafana](#)
- [Stable 3.6 Prolog deprecation notice](#)
- [Owners plugin improvements towards submit requirements](#)
- [Owners stable-3.6 tests script with results captured in Grafana](#)
- [The latest stable-3.6 owners plugin](#)
- [The latest cached-refdb module library](#)
- [The owners plugin caching improvements](#)
- [The cached-refdb module](#)