



cqse-all / engine / com.teamscale.index / src / com / teamscale / index / TeamscaleStarter.java

More

```

68 import com.teamscale.index.configuration.AnalysisProfileUtils;
69 import com.teamscale.index.dashboard.templates.DashboardTemplateIndex;
70 import com.teamscale.index.dashboard.templates.DashboardTemplateUtils;
71
72 import eu.cqse.check.framework.core.registry.CheckRegistry;
73
74 /**
75  * A ConQAT runnable for starting the index server. This includes setting up the
76  * storage system, creating the scheduler and one or more workers, and starting
77  * the web server for the service interface.
78  */
79 public class TeamscaleStarter extends ConQATRunnableBase {
80
81     /**
82      * The default configuration file names. This contains a list to be backwards
83      * compatible.
84      */
85     private static final String[] DEFAULT_CONFIG_FILE_LOCATIONS = { "config/teamscale.properties",
86                             "teamscale-config.properties" };
87
88     /**
89      * System property that allows us to disable Java certificate validation
90      * completely. Useful when we have to connect to servers with self-signed
91      * certificates. The proper solution is to fix the certificates, but this
92      * takes time. This setting may be used as a temporary workaround to allow
93      * Teamscale to connect to the servers.
94      */
95     private static final String DISABLE_CERTIFICATE_VALIDATION = "teamscale.disableCertificateValidation";
96

```

Quality Goal Settings

Show new findings since...

Manage baselines

Metrics

Files	1
Lines of Code	351
Source Lines of Code	239
File Size Assessment	<div style="width: 100%; height: 10px; background-color: green;"></div>
Longest Method Length	26
Method Length Assessment	<div style="width: 100%; height: 10px; background-color: green;"></div>
Maximum Nesting Depth	

Software Intelligence bei der CQSE

Entwicklung von Teamscale mit Teamscale

Dr. Benjamin Hummel



git



GitLab

JIRA

Produktdaten

Prozessdaten



The screenshot shows a Jira dashboard for 'Teamscale Fachlicher PO'. It displays a grid of release cycles with associated issues and tasks. The releases shown are Release 3.7 Done, Release 3.8 Done, Release 3.5 Done, Release 3.4 Done, and Release 3.3 Done. Each release card lists tasks such as 'Allow to navigate from Done to Staging finding', 'Workshop Test-Coverage 2.0 und Integrierte Nutzungsdaten in TGA', and 'Enable Upload of Findings Reports without ConQAT'. The dashboard also includes a sidebar with navigation options like 'Issues', 'Filters', and 'Dashboards'.



git



GitLab



eclipse

JIRA

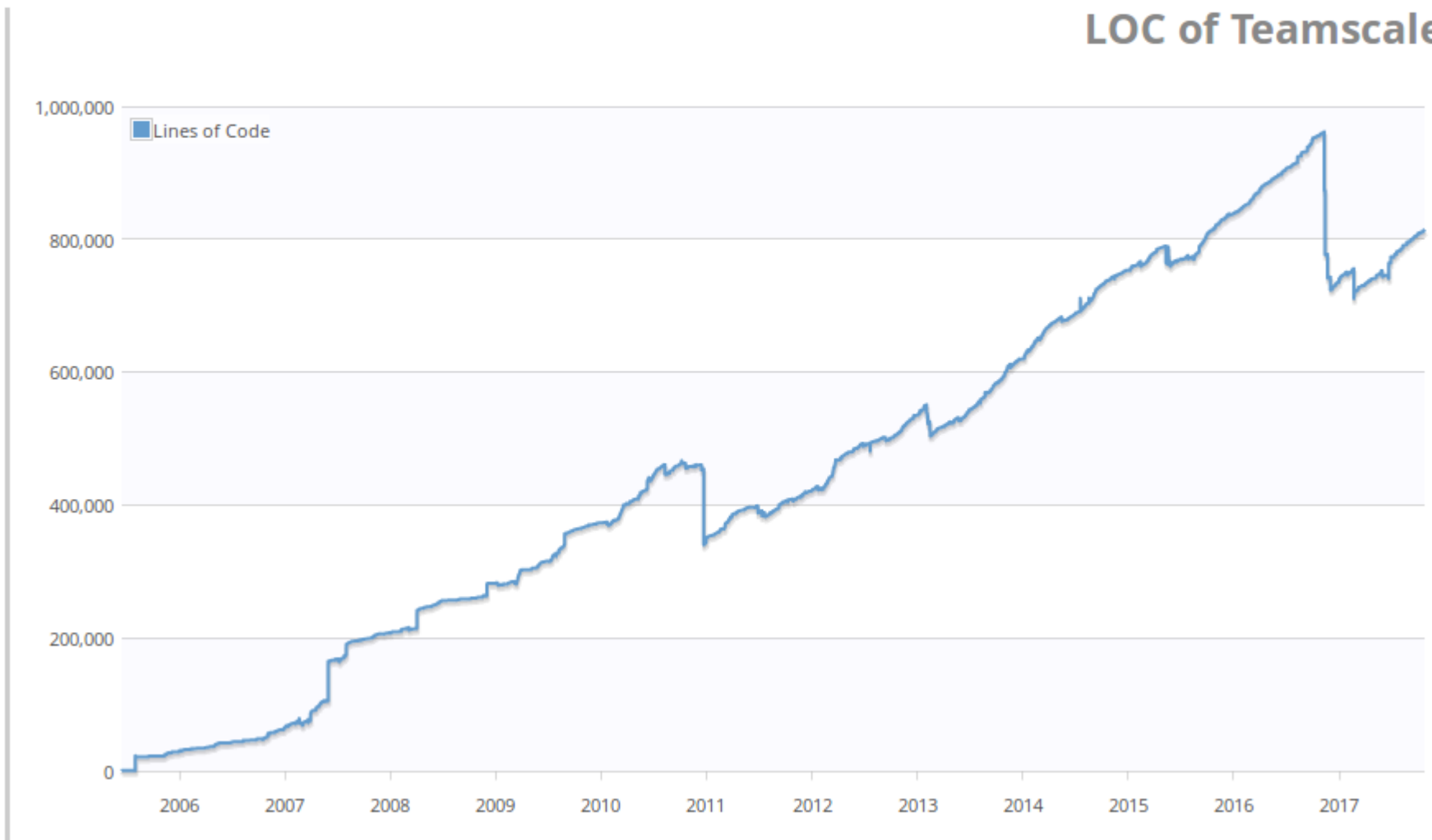


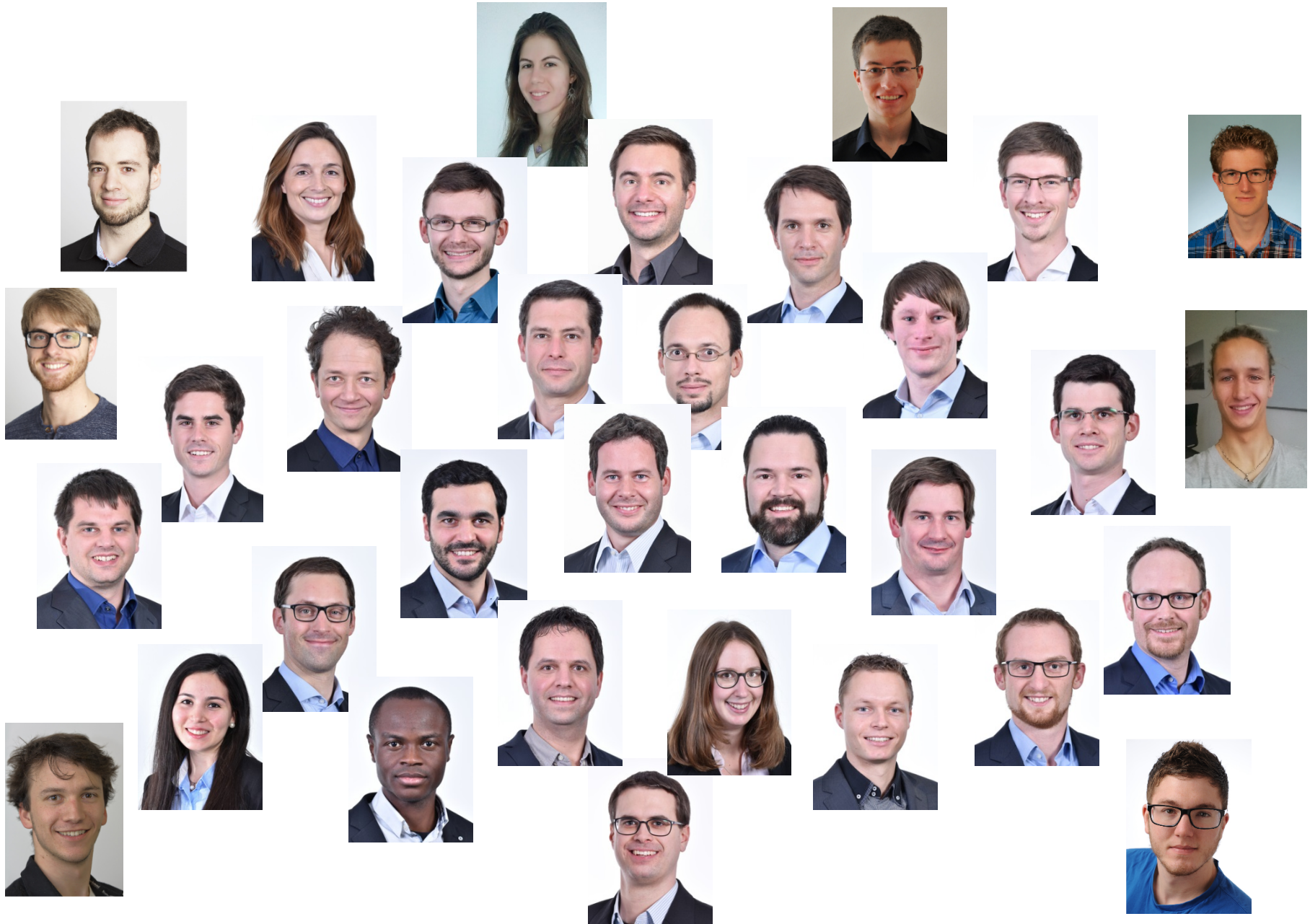
Branch: master

Timetravel:

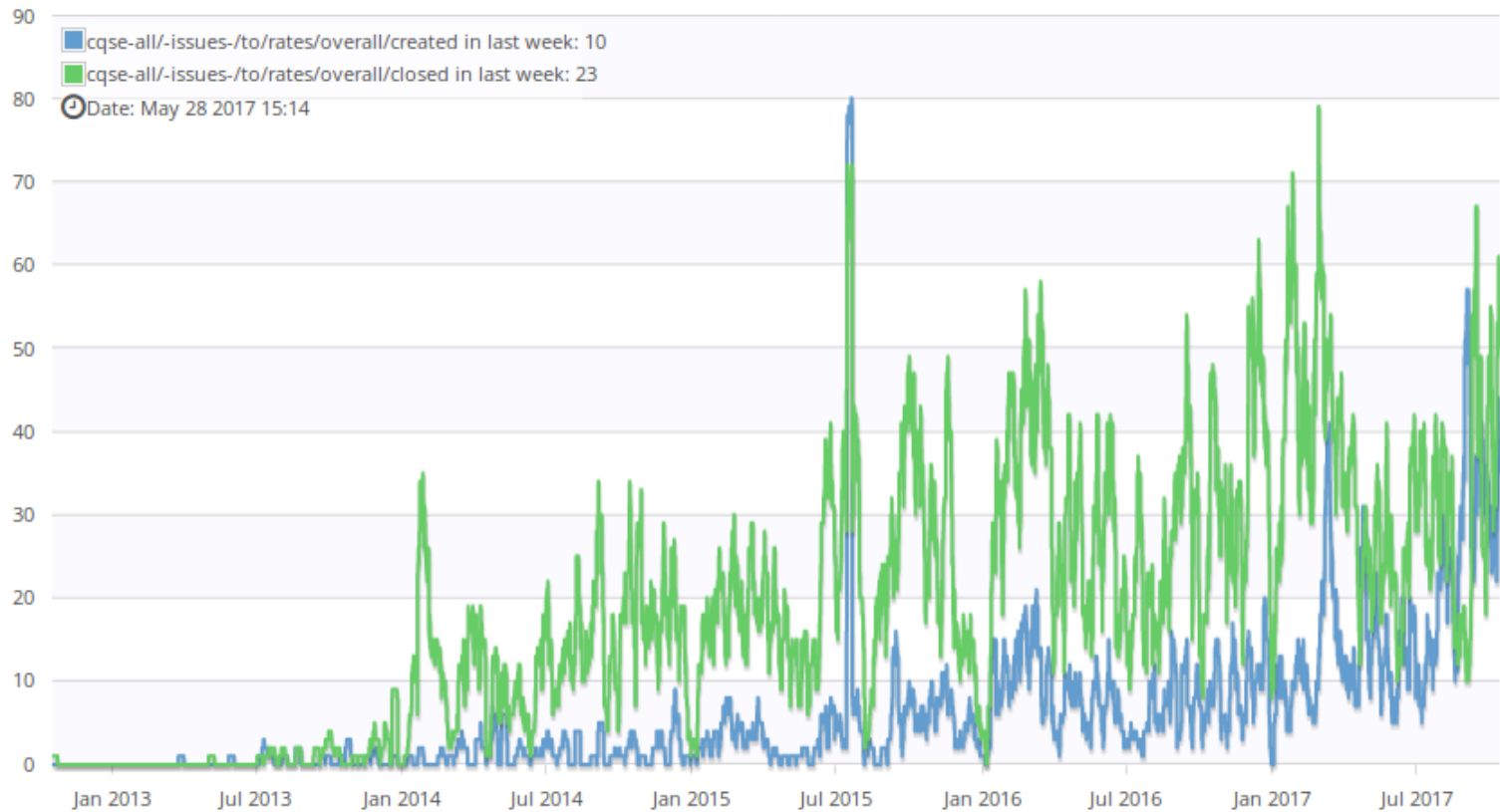
Current Dashboard

LOC of Teamscale





Ticket creation/closing rates



Queries: `inState(closed=false) <= 7d`
`closed=true && inState(closed=true) <= 7d`

Spezielle Herausforderungen

- Hoher Zeitdruck
- Hoher Kostendruck
- Anforderungen (und Prioritäten) ändern sich beständig

Allgegenwärtige Herausforderungen

- Hoher Zeitdruck
- Hoher Kostendruck
- Anforderungen (und Prioritäten) ändern sich beständig

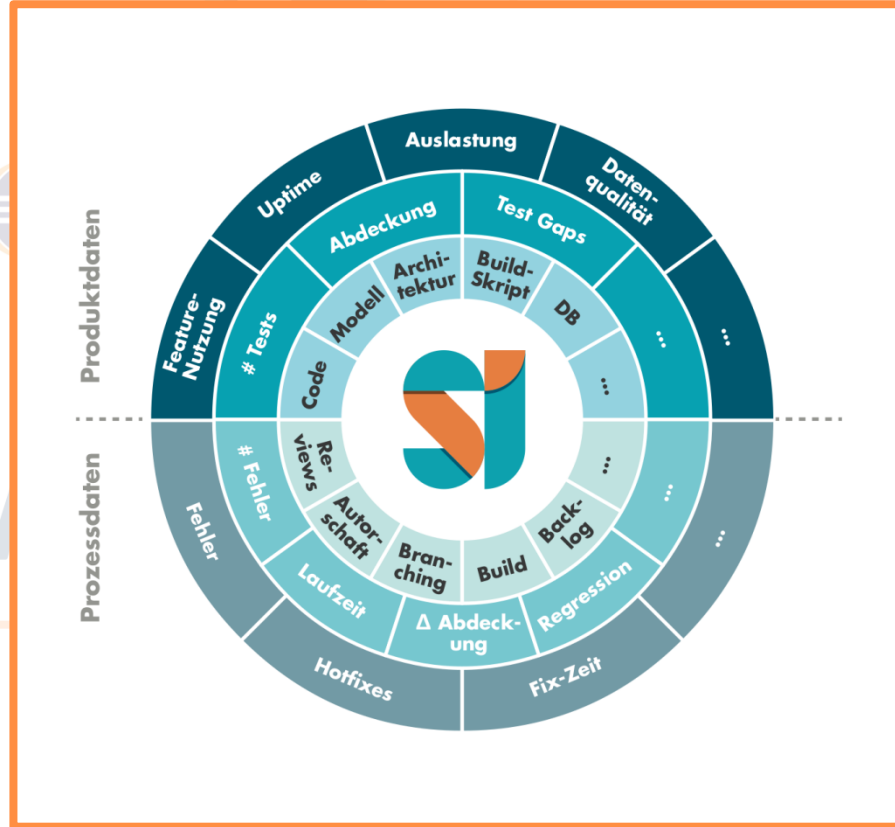


git



GitLab

JIRA

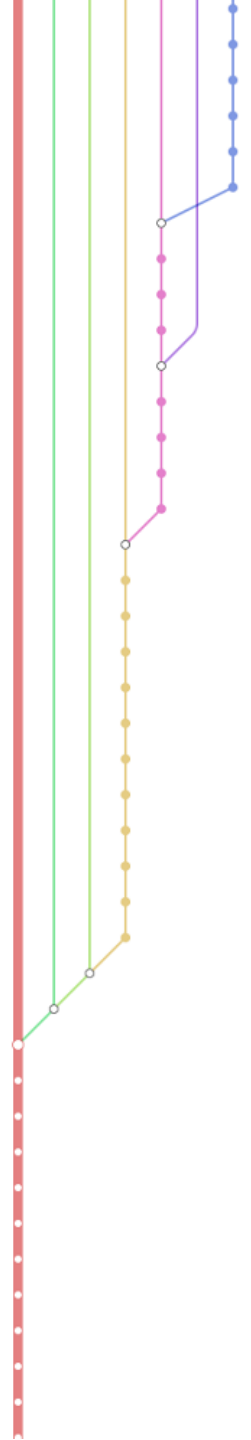


Herausforderung 1: Parallele Entwicklung

- Typischerweise 1-3 (Teil-)Features pro Entwickler
- Features im Review oder im Test
- Bug-Fixes
- Experimentelle Features
- Wartungsarbeiten
- ...

Feature Branches

- Voraussetzung: **Branching** und **Merging** müssen extrem »billig« sein



Software Quality Blog

Our Journey to Git

Posted on 11/09/2016 by [Martin Pöhlmann](#)

2016 marks the year we switched our development repositories from Subversion to Git. As I was responsible for large parts of this migration, I want to share some technical aspects of this journey with focus on the biggest obstacles we had to master: Combining multiple Subversion repositories into one Git repository, shrinking the repository size, dealing with Subversion externals and resulting changes in our development process.



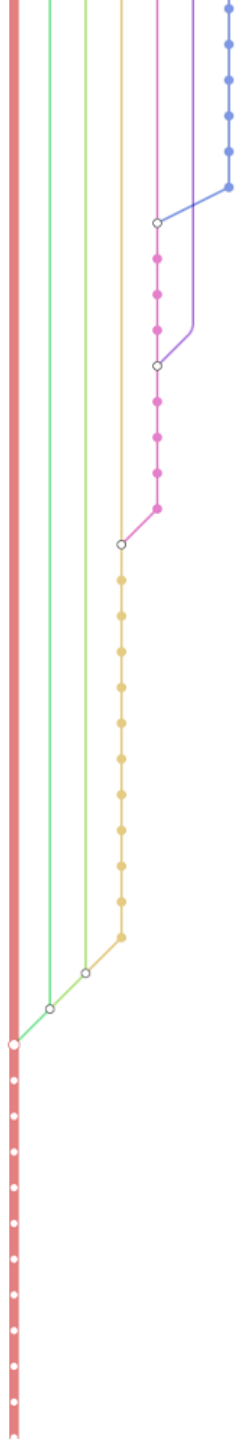
Combining multiple Subversion repositories

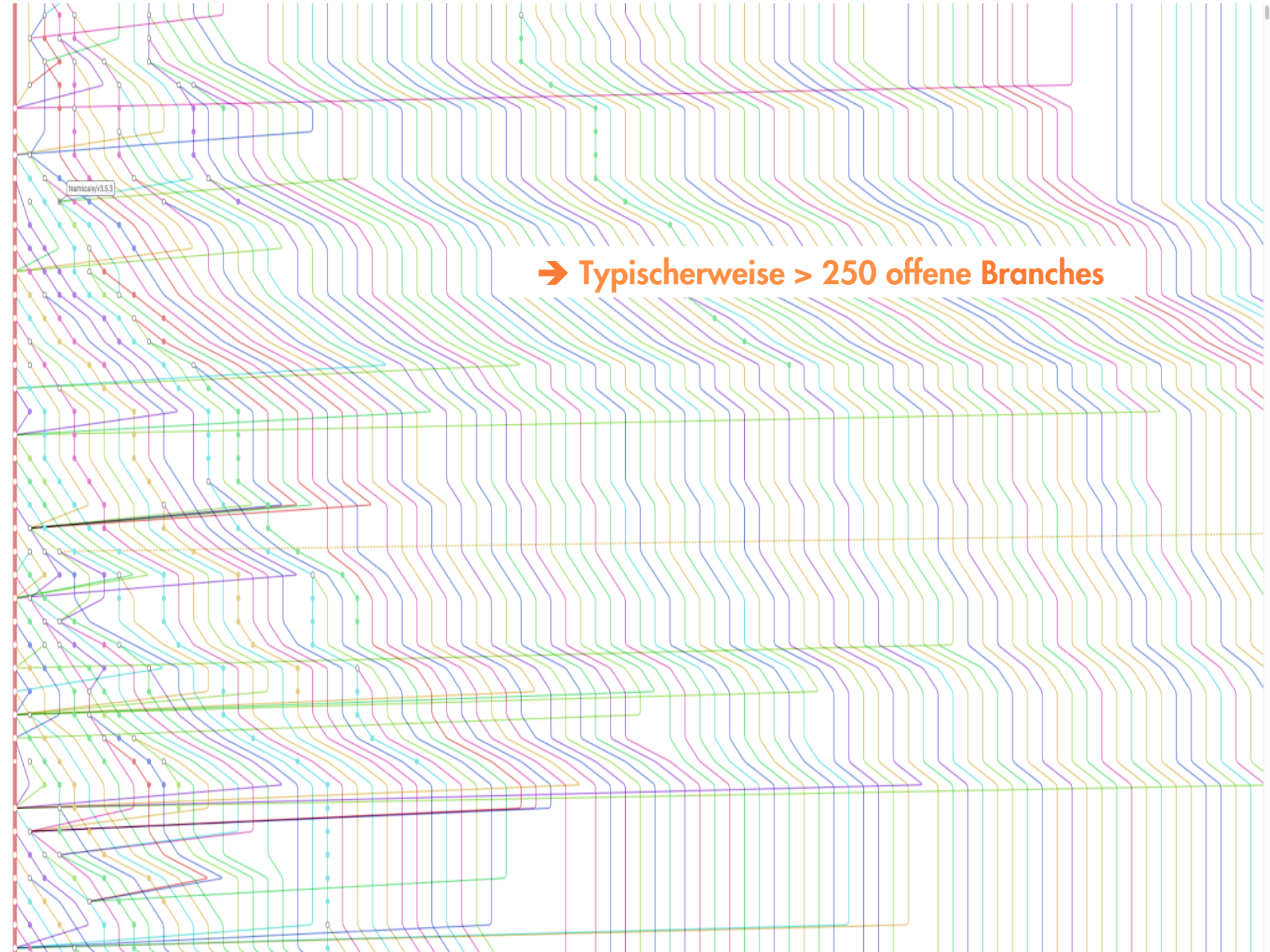
Our Subversion repositories

Our product [Teamscale](#) is based on the open source analysis toolkit [ConQAT](#) formerly developed at the [Competence Center Software Maintenance](#) at Technische Universität München and now maintained by us. The first commit in that Subversion repository dates

Feature Branches

- Voraussetzung: **Branching und Merging** müssen extrem »billig« sein
 - Für uns bedeutet das **git**
- **Alles ist ein Feature-Branch**
 - Features
 - Bug-Fixes
 - Experimente
 - Änderungen an der Dokumentation
 - ...
- Zusätzlich noch Release-, Kunden-, Test-Branches





→ Typischerweise > 250 offene Branches

Project:

CQSE All

Branch:

master

Timetravel:

All Commits.

**Merge branch 'cr/12975_contais_on_list' into 'master'**

Today 10:05

by [Daniel Veihelmann](#) in revision [d700b6a4](#) in branch master (Gitlab)Merged from [cr/12975_contais_on_list](#)

Files: 2 changed

Issue: [TS-12975](#)

Findings: 0

**CR#12975 Fix contains on list**

Yesterday 13:53

by [Thomas Kinnen](#) in revision [df0c1c47](#) in branch cr/12975_contais_on_list (Gitlab)

Forked from master

Files: 2 changed

Issue: [TS-12975](#)

Findings: 3

**Merge branch 'cr/10485_threshold_renames' into 'master'**Oct 02 2017
16:57by [Thomas Kinnen](#) in revision [45401977](#) in branch master (Gitlab)Merged from [cr/10485_threshold_renames](#)

Files: 9 added, 17 changed, 9 deleted

Issue: [TS-10485](#)

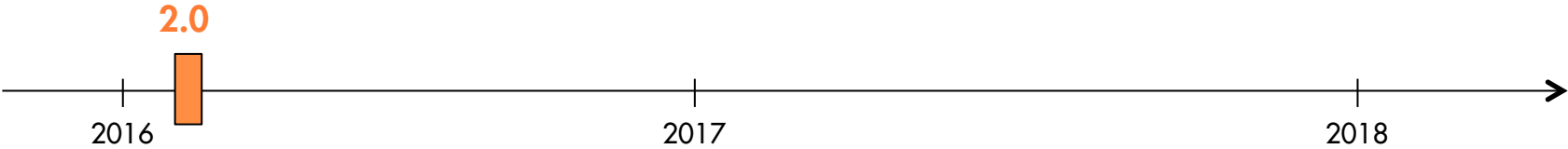
Findings: 0

**Merge branch 'teamscale/v3.6.x' into teamscale/v3.7.x**Oct 02 2017
16:25by [Thomas Kinnen](#) in revision [2b52eafe](#) in branch master (Gitlab)Merged from [teamscale/v3.7.x](#)

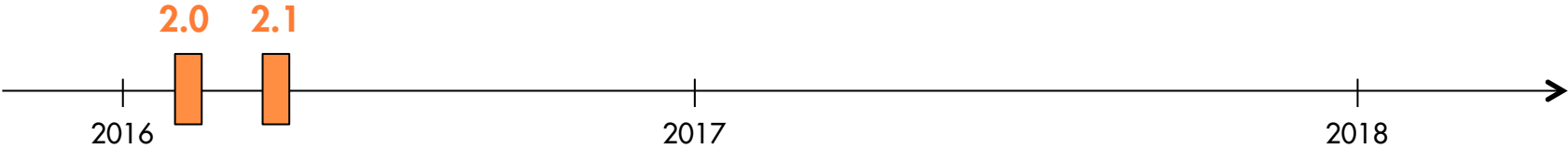
Files: 1 added, 25 changed

Findings: 0

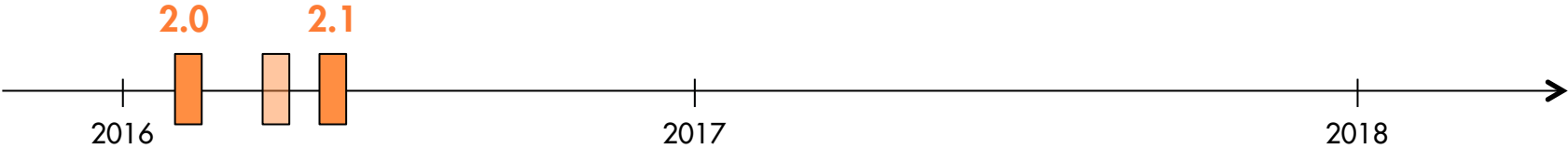
Release-Aufschieberitis



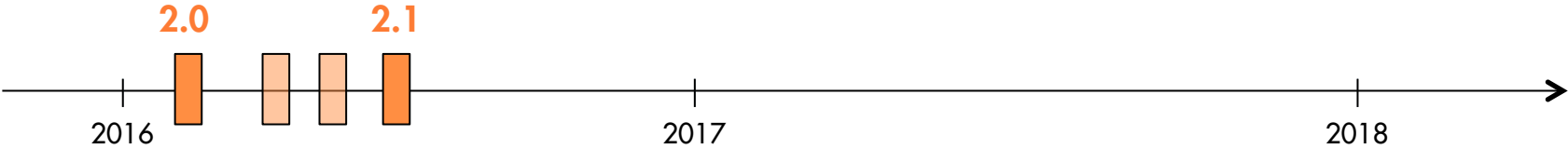
Release-Aufschieberitis



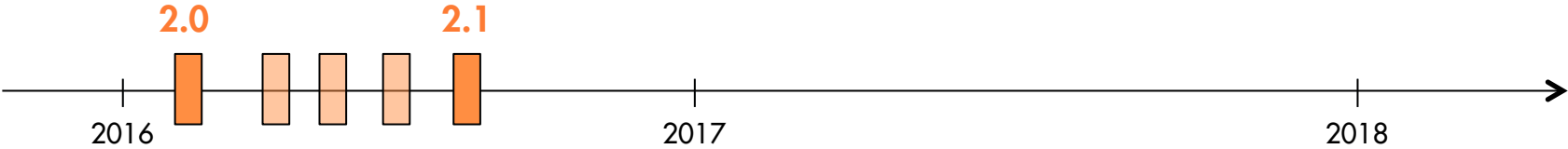
Release-Aufschieberitis



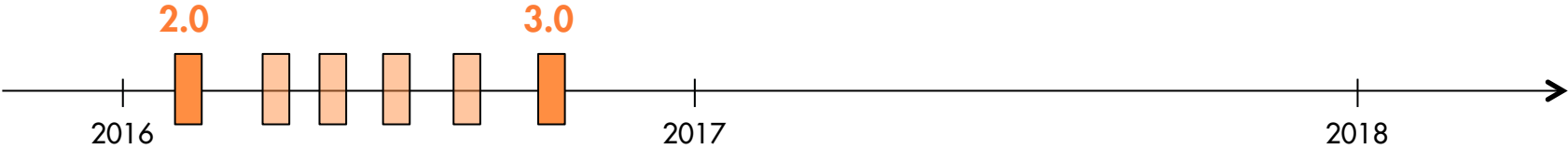
Release-Aufschieberitis



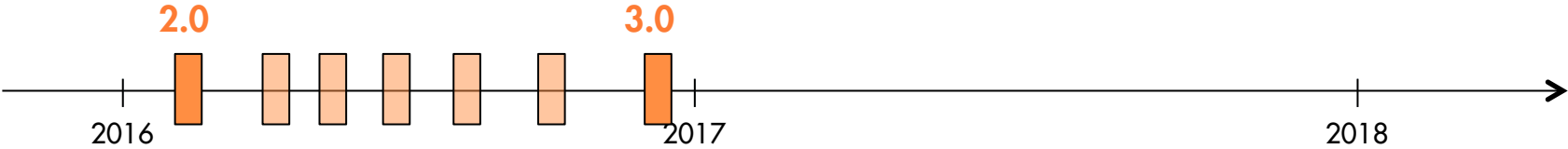
Release-Aufschieberitis



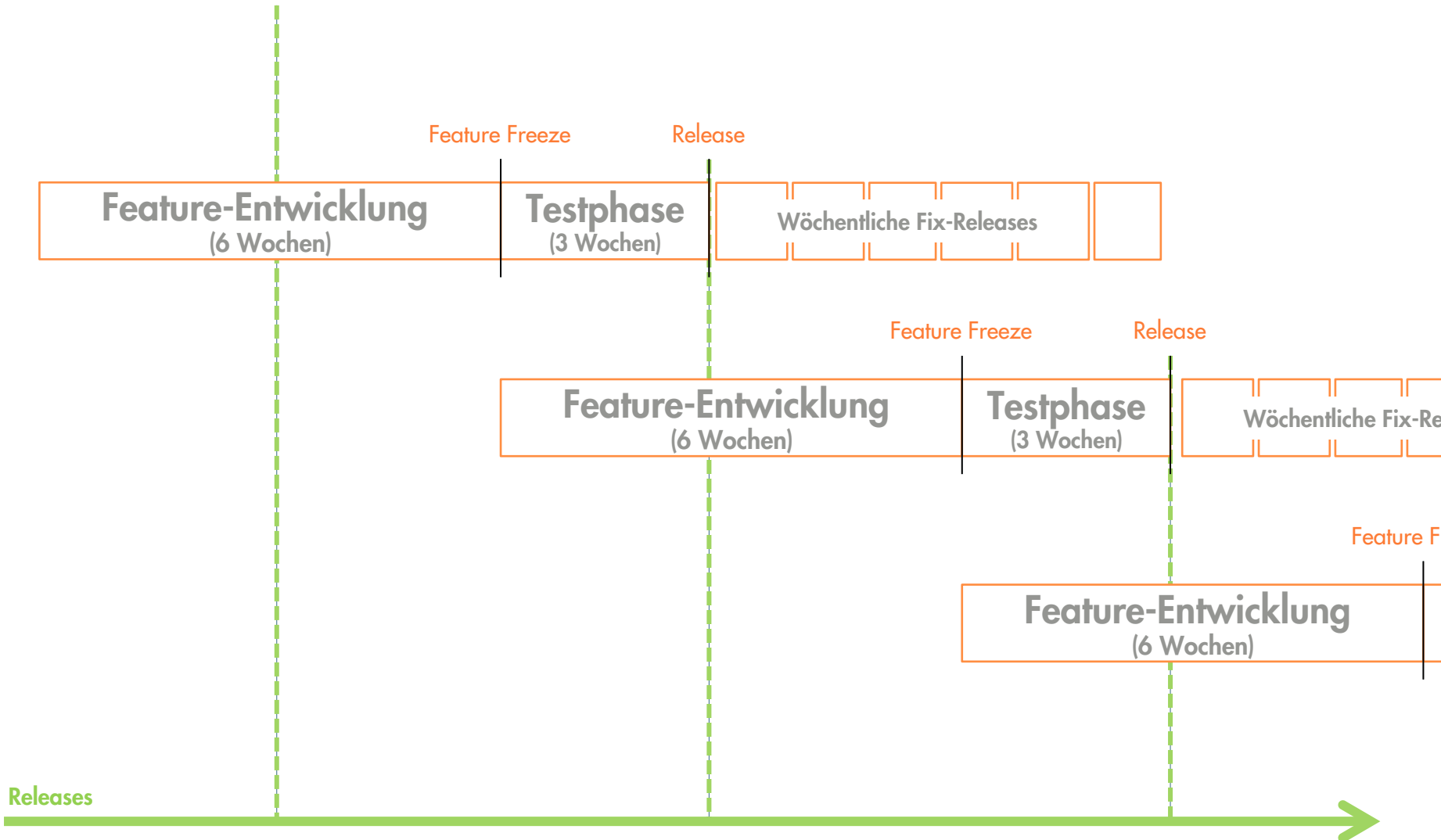
Release-Aufschieberitis



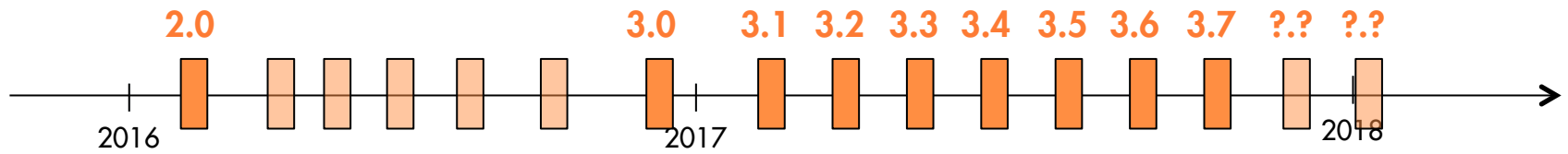
Release-Aufschieberitis



Regelmäßige Releases (»Release Trains«)



Release Trains



Herausforderung 2: Externe Systeme

Versionsmanagement								Issue Tracker			Authentifizierung					
Subversion				git				Jira			Redmine		LDAP		Crowd	SSO
HTTP(S)	NTLM	svn+ssh	...	lokal	HTTPS	ssh	...	Basic Auth	Digest	Special	OpenLDAP	MS/AD				
Layout				Submodules				Magic Cookie			Secondary Server		Layout		...	
Branching																
Renaming																
...																

Manuelle RC-Tests

UI: 237

System: 96

Integration: 1097

Komplexe Checks, Services: 979


JavaScript: 6

Basisbibliotheken, Parser, einfache Checks: 2647

Tests

Builds/Tests für jeden Commit (und Branch)

passed

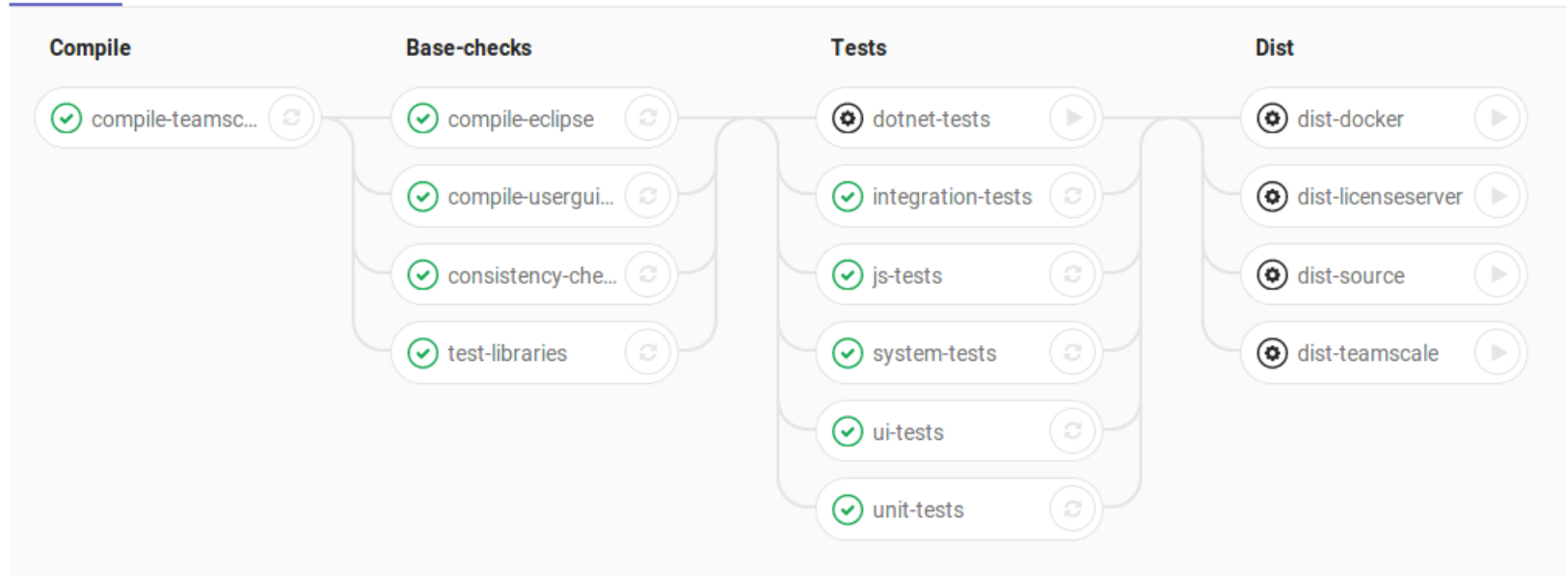
Pipeline #32191 triggered a day ago by  Alexander von Rhein

CR#12106 rework

15 jobs from [cr/12106_taint_graph_cycle_handling](#) in 24 minutes 18 seconds (queued for 3 seconds)

 [ecba7826](#)  

Pipeline Jobs 15



TGA-Information pro Ticket

TS-13069: Make branching history layer respect batch operations (**»Green«**)



Created by
[Benjamin Hummel](#)
on Oct 18 2017 08:25

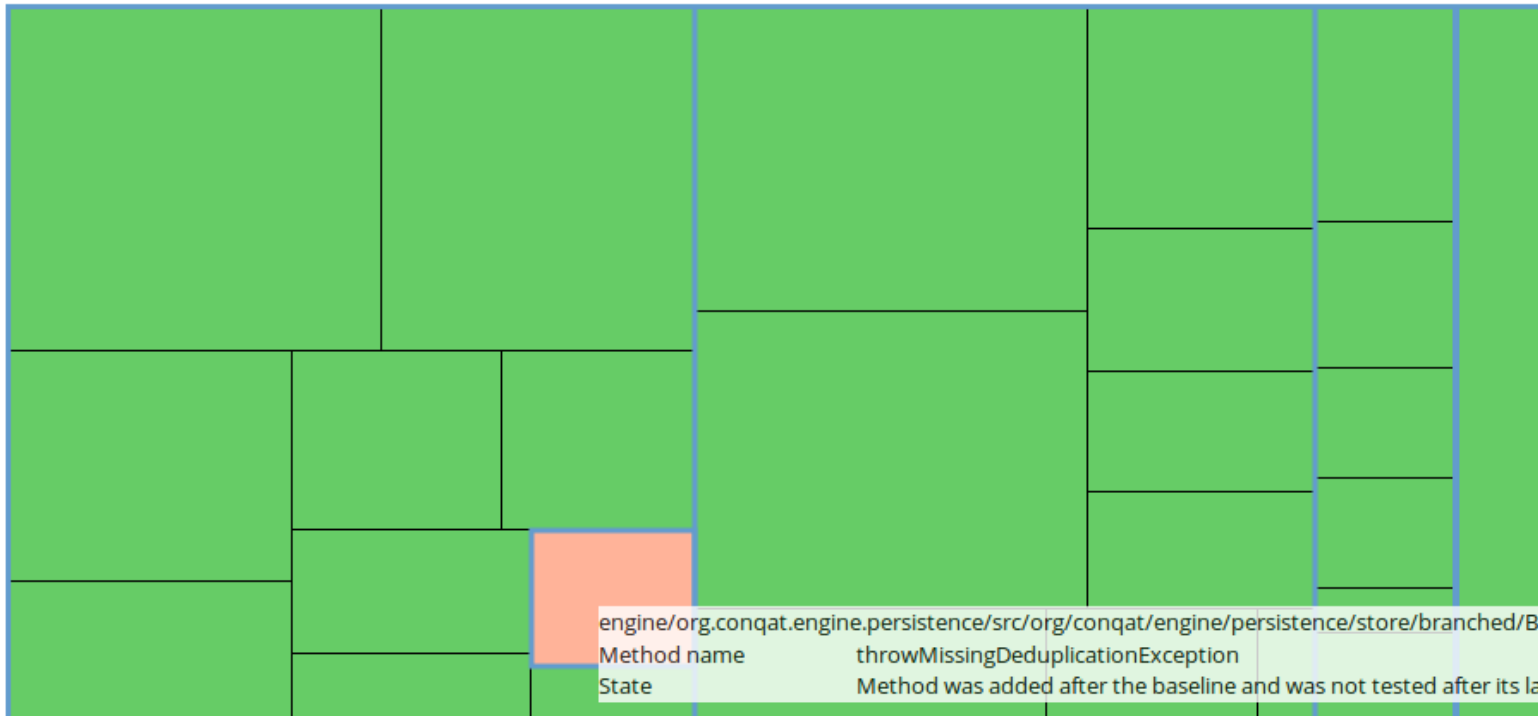


Assigned to
[Benjamin Hummel](#) [Open in bugtracker](#)

⌵ Affected files (99)

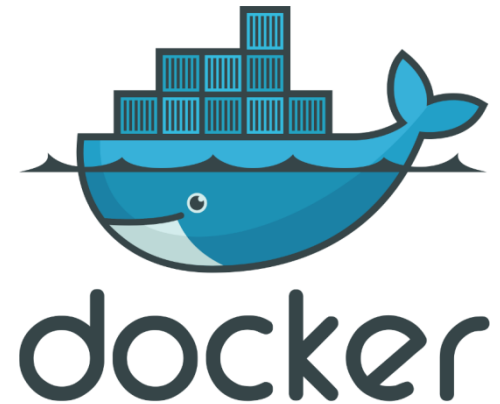
⌵ Test Gap Treemap

Oct 18 2017 09:03 – now | Test Gap: 3.85%



Container für Builds

- Build-Umgebung selbst ist ein Container
 - Neuer Container pro Build, d.h. saubere Umgebung
 - Schnelleres aufsetzen und skalieren von Build-Slaves
- Container für Tests gegen Drittsysteme
 - Tests für verschiedene Branches arbeiten auf eigenen Instanzen
 - Ausfall von Test-Servern führt nicht zu scheiternden Tests



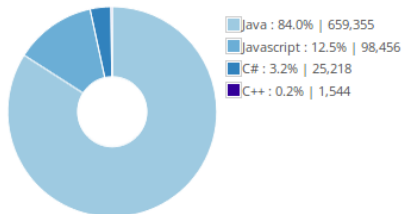
Allgegenwärtige Herausforderungen

- Hoher Zeitdruck
- Hoher Kostendruck
- Anforderungen (und Prioritäten) ändern sich beständig
- **Trotzdem hohe Qualität liefern**

Branch: master

Timetravel: Current Dashboard

LOC Distribution for cqse-all



Clone Coverage for cqse-all



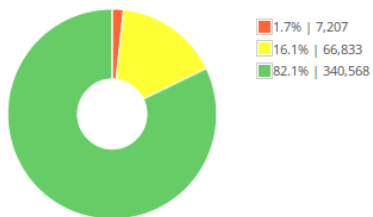
Findings Density for cqse-all



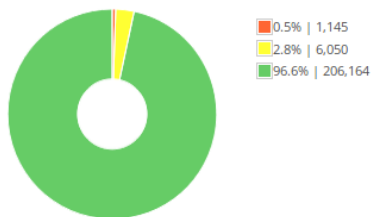
Line Coverage for cqse-all



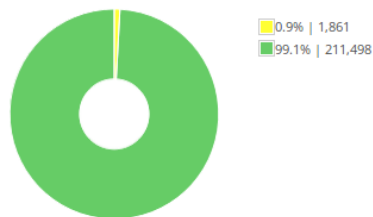
File Length for cqse-all



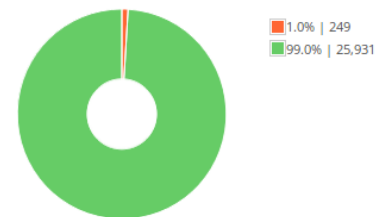
Method Length for cqse-all



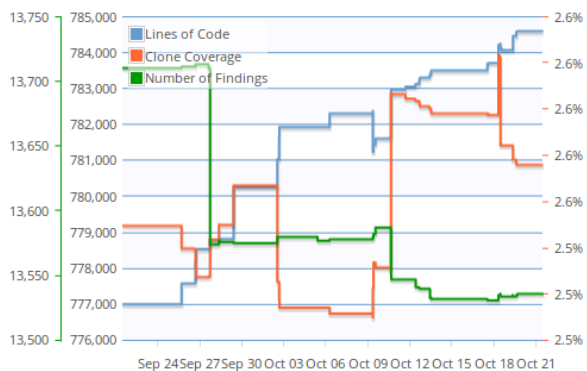
Nesting Depth for cqse-all



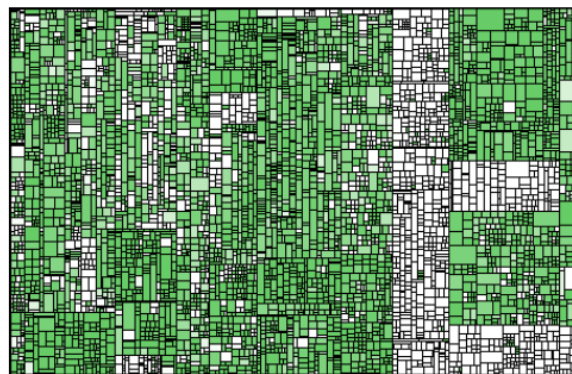
Comment Completeness for cqse-all



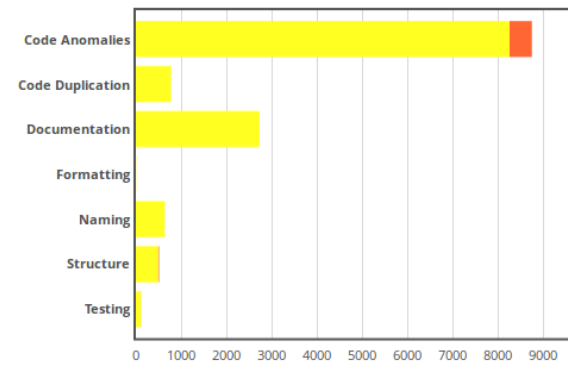
30 Day Trend for cqse-all



Java Test Coverage for cqse-all



Findings Summary Bar Chart for cqse-all



```

src > com.teamscale.index.repository.tfs > TFSRepositoryConnector > createConnection(ILogger) : IRepositoryConnection
44 @AConQATFieldParameter(parameter = TfsRepositoryInfoIndex.BASE_NAME, attribute = IndexAccess.READ_WRITE, description = "Index ho
45 public TfsRepositoryInfoIndex repositoryInfoIndex;
46
47 /** {@ConQAT.Doc} */
48 @AConQATFieldParameter(parameter = "main-branch", attribute = "name", description = "The name of the main branch.", optional = t
49 public String mainBranch;
50
51 /** {@ConQAT.Doc} */
52 @AConQATFieldParameter(parameter = "disable-work-item-association", attribute = "value", description = "Indicates whether to dis
53 + " commit messages. This can be used to increase analysis performance if no"
54 + " linking between commits and work items is needed.", optional = true)
55 public boolean disableWorkItemAssociation = false;
56
57 /** Sub paths in which to look for branches */
58 private final List<String> branchLookupPaths = new ArrayList<>();
59
60 /** {@ConQAT.Doc} */
61 @AConQATParameter(name = "branch-lookup-path", description = "", minOccurrences = 0, maxOccurrences = -1)
62 public void addBranchLookupPath(@AConQATAttribute(name = "value", description = "") String lookupPath) {
63     branchLookupPaths.add(lookupPath);
64 }
65
66 /** {@inheritDoc} */
67 @Override
68 protected IRepositoryConnection createConnection(ILogger logger) throws RepositoryException {
69     AccountCredentialsOption accountCredentials = getAccountCredentials();
70     URI serverAddress;
71     try {
72         serverAddress = new URI(accountCredentials.url);
73     } catch (URISyntaxException e) {
74         throw new RepositoryException("Invalid URI: " + accountCredentials.url);
75     }
76
77     return new TFSRepositoryConnection(connectionIdentifier, serverAddress, pathSuffix, branchPathSuffix,
78         branchLookupPaths, mainBranch,
79         new UsernamePasswordCredentials(accountCredentials.username, accountCredentials.password),
80         codePatternSupport, startDateOrRevision, endDateOrRevision, branchingEnabled, branchPatternSupport,
81         uniformPathCasingIndex, repositoryInfoIndex, disableWorkItemAssociation, logger);
82 }
83 }

```

1 items

Current Branch: master (default)

Description	Group	Category	Assessment	Resource	Location
Exception stacktrace is lost	Exception Han	Code Anomalie	YELLOW	TFSRepository	74

Peer-Reviews

- Jede Änderung unterliegt Review durch einen Kollegen


Wichtig

- Gemeinsames Verständnis von Qualität (z.B. Guidelines, DoD)
- Offener Umgang unter den Entwicklern
- Code geht nur ins Review, wenn er »clean« ist
- Tooling

Review ist Integrationskriterium für den Feature-Branch

- Inhalt des Reviews ist der Merge-Request
- Reviewer führt Merge durch
- Alle Tests und automatischen Analysen müssen dafür schon verfügbar sein

Open





Merge request !1499 opened a day ago by  **Alexander von Rhein**

CR#12934 fixed metric perspective

 **Teamscale** Findings: 🔴 3 🔵 2 🟢 1

Edited 3 minutes ago by Alexander von Rhein

Request to merge `cr/12934_metrics_table_bug`  **into** `teamscale/v3.6.x` (9 commits behind)

✔ Pipeline #24418 passed with stages     for `1aec8241`.

Merge

Remove source branch

Modify commit message

You can merge this merge request manually using the [command line](#).



0



0

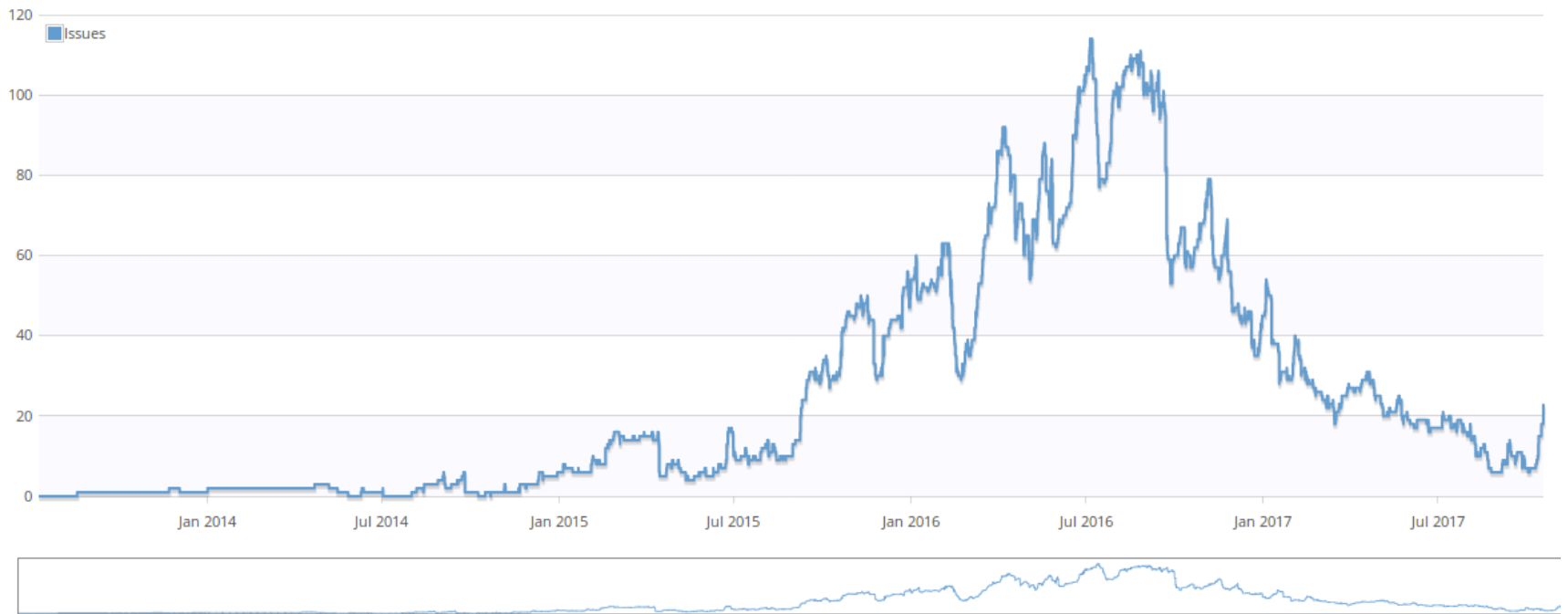


»Wachstumsschmerzen«: Reviews > 2 Wochen



Query: `closed = false && inState(status=Yellow) > 14d`

»Wachstumsschmerzen«: Reviews > 2 Wochen



Query: `closed = false && inState(status=Yellow) > 14d`



git

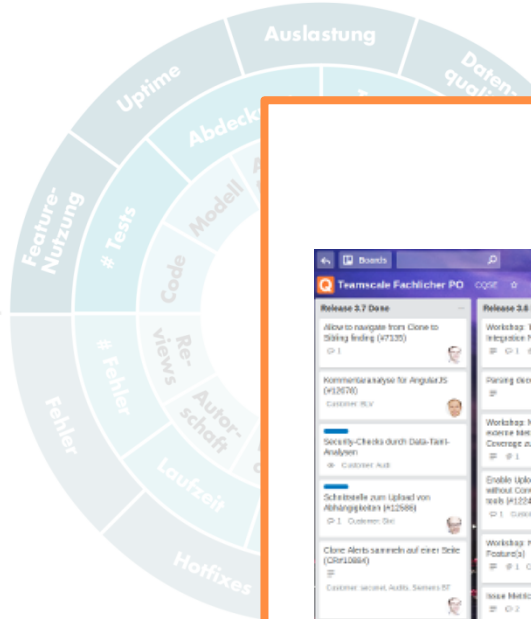


GitLab

JIRA

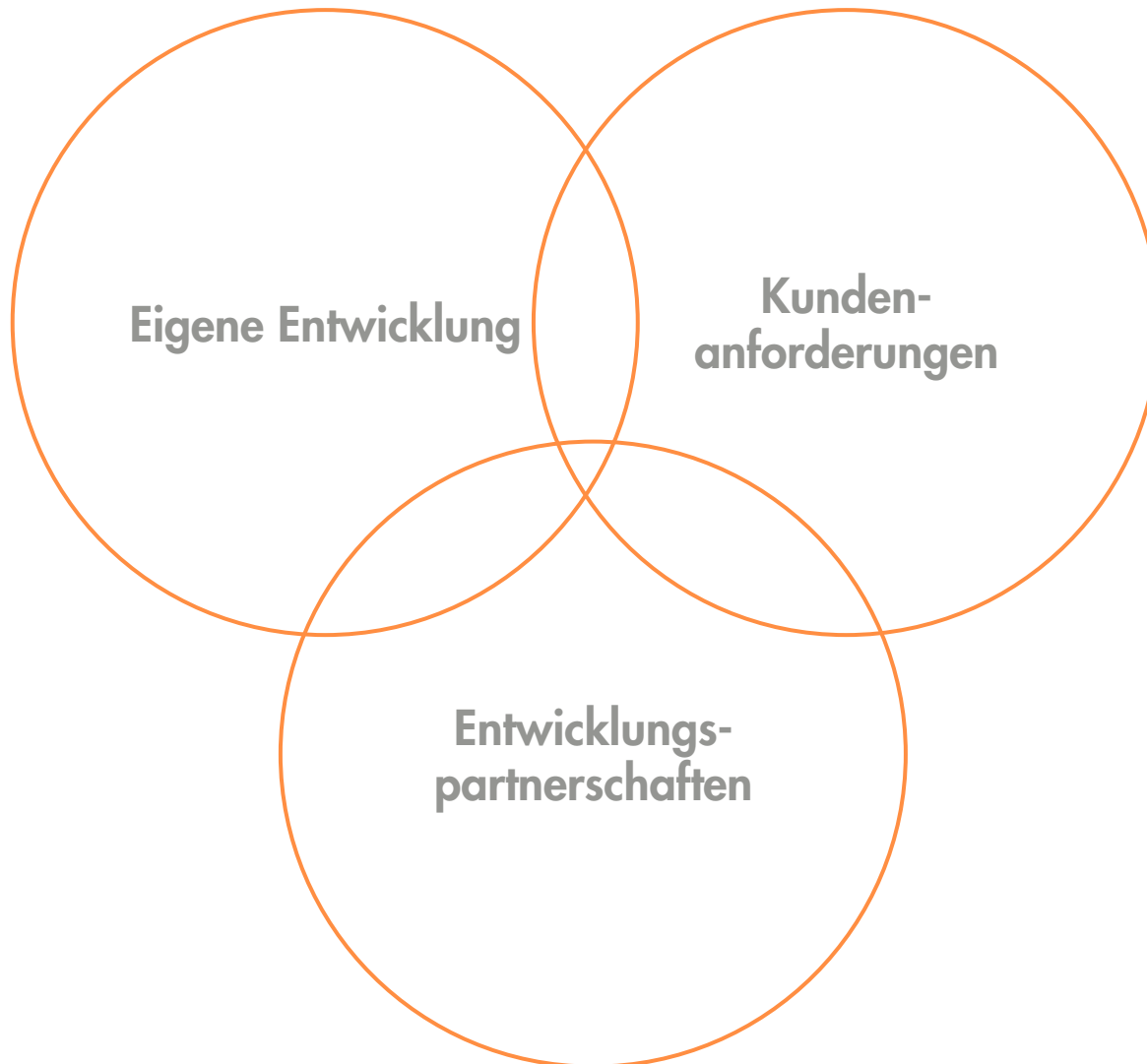
Produktdaten

Prozessdaten

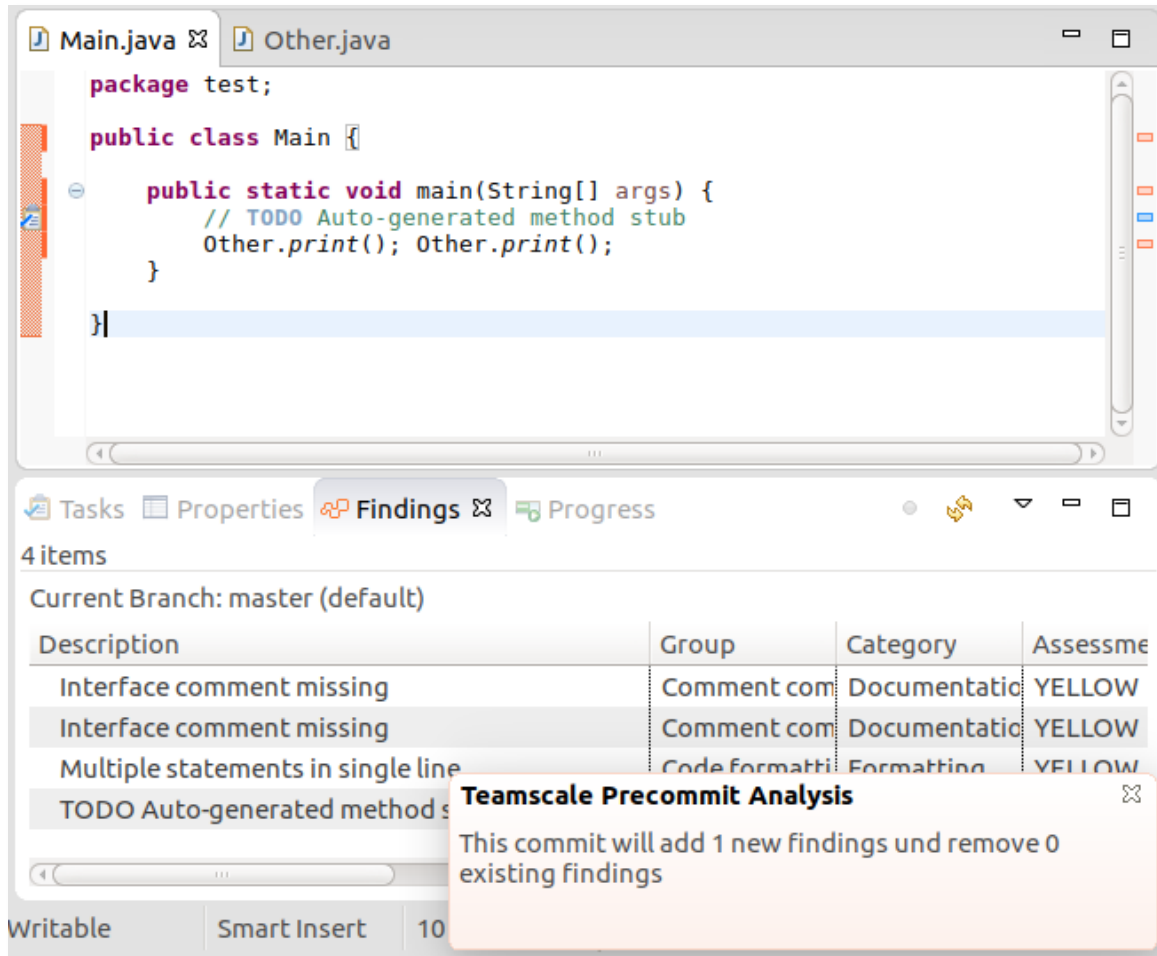


A screenshot of a Teamscale dashboard for 'TeamScale Fachlicher PO'. The dashboard displays a grid of release cycles and associated tasks. The release cycles shown are Release 3.7 Done, Release 3.6 Done, Release 3.5 Done, Release 3.4 Done, and Release 3.3 Done. Each release cycle has a list of tasks with descriptions, assignees, and status indicators. For example, under Release 3.7 Done, tasks include 'Allow to navigate from Done to Staging finding (#7133)', 'Kommentaranalyse für AngularJS (#12670)', 'Sonic Fly-Checks durch Data-Test-Analysen', 'Screenshot zum Upload von Abhängigkeiten (#12588)', 'Clone Alerts senken auf einer Seite (#12684)', and 'Issue Metrics für TFS (#12390)'. The dashboard also shows a 'Bounties' section at the top left and a 'Filter' section at the top right.

Wo geht die Reise hin?



Noch schnelleres Feedback



The screenshot shows an IDE window with two tabs: 'Main.java' and 'Other.java'. The 'Main.java' tab is active, displaying the following code:

```
package test;

public class Main {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        Other.print(); Other.print();
    }

}
```

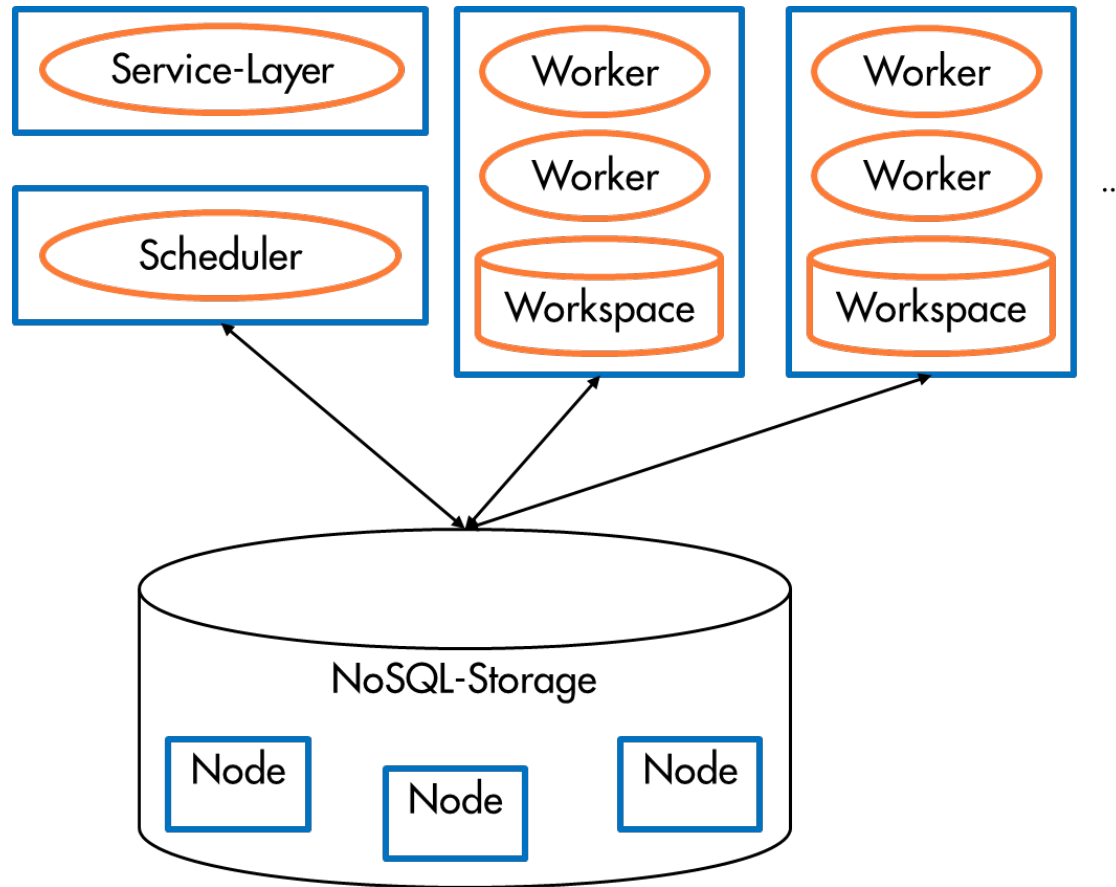
Below the code editor, there is a 'Findings' panel. It shows '4 items' and 'Current Branch: master (default)'. The findings are listed in a table:

Description	Group	Category	Assesme
Interface comment missing	Comment com	Documentatio	YELLOW
Interface comment missing	Comment com	Documentatio	YELLOW
Multiple statements in single line	Code formatti	Formatting	YELLOW
TODO Auto-generated method s			

A tooltip titled 'Teamscale Precommit Analysis' is overlaid on the table, containing the text: 'This commit will add 1 new findings und remove 0 existing findings'.

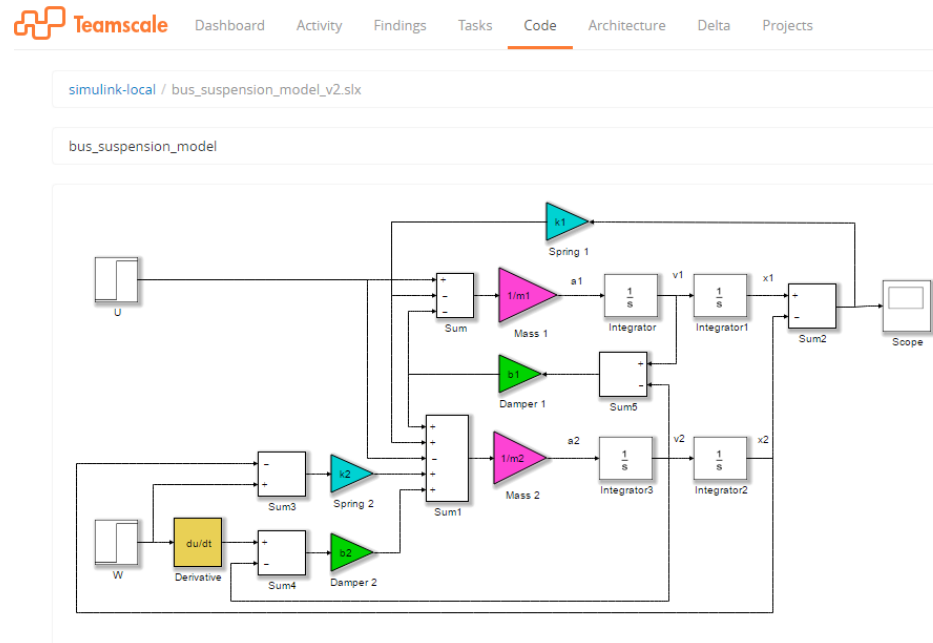
At the bottom of the IDE, there are status indicators: 'Writable', 'Smart Insert', and '10'.

Verfügbarkeit/Skalierbarkeit/Private & Public Cloud



Mehr Sprachen und Artefakte

- 26 Programmiersprachen
- Matlab Simulink und Stateflow



Noch bessere und tiefere Analysen

```
+ in PROG/Z_CALLER.abap
1 REPORT ztestsrc_df_class.
2
3 PARAMETERS: filename TYPE String DEFAULT 'default_filename'.
4 [0] This source taints the variable 'filename'.
5
6 *-----*
7 *          CLASS zcl_main DEFINITION
8 *
9 *
10 *-----*
11 *
12 *-----*
13 *
14 *-----*
15 *
16 *-----*
17 *
18 *-----*
19 *
20 *-----*
21 *
22 *-----*
23 CLASS zcl_main IMPLEMENTATION.
24
25 METHOD main.
26 [2] Field 'filename' may contain tainted data.
27 DATA: secret TYPE string.
28 secret = fon( +filename ).
29 [3] Possibly tainted parameter at index 0 can be modified in method call
30 [4] Possibly tainted return value in assignee 'MKR_foo>2_ASSIGNEE'
31 secret = secret + 'postfix'.
32 CALL 'SYSTEM' ID 'ls' FIELD secret.
33 [7] OS command injection with tainted variable 'secret'
34 ENDMETHOD.
35 METHOD foo.
36 returnValue = 'CLEAN'.
37 ENDMETHOD.
38 ENDCLASS.
39 "zcl_main IMPLEMENTATION
40
41 START-OF-SELECTION.
42 zcl_main=>main( ).
43 [1] Possibly tainted field 'PROG/Z_CALLER.sbap#filename' can be modified in method call
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Bessere Testunterstützung

The screenshot displays the Teamscale interface for a project named 'test'. The navigation bar includes 'Dashboard', 'Activity', 'Findings', 'Metrics', 'Test Gap' (highlighted), 'Issues', 'Tasks', and 'More'. The user profile is 'test @super lon...'. The current view is 'Code Structure' with 'Issues' as a sub-tab. The 'Test Gap' section shows a table with columns: Path, Test Gap, # Test Gaps, Execution, and Churn. The table lists 'Summary', 'additional_folder', 'index', and 'Starter.java'. Below this, the 'Architecture' section shows a table for the 'test' project with columns: Path, Test Gap, # Test Gaps, Execution, and Churn. The architecture table lists '-architectures-/backend.architecture' and '-architectures-/frontend.architecture'. The 'Test Gap' column uses red bars to indicate the size of the gap, and the 'Execution' column uses grey bars to indicate execution progress. The 'Churn' column uses colored bars (red, green, orange) to indicate churn levels.

Project: test Branch: super_long_branch_name... Timetravel: Current Test Gap

Code Structure Issues Baseline: 30 Days Coverage sources: All

Code

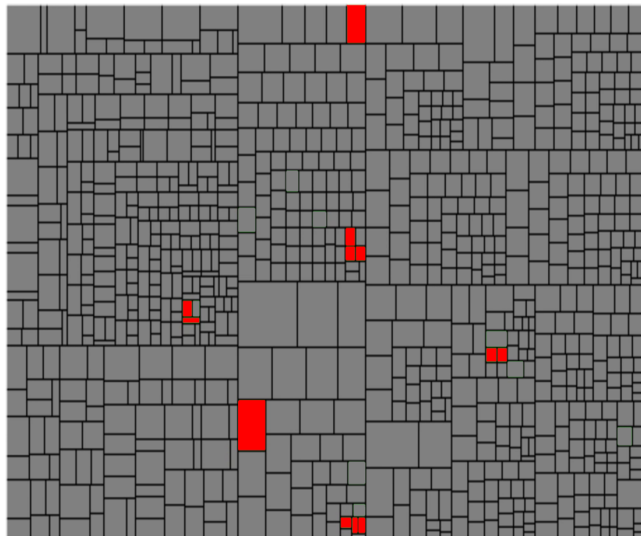
Path	Test Gap	# Test Gaps	Execution	Churn
Summary		4.3k		
additional_folder		2		
index		4.3k		
Starter.java		1		

Architecture

test

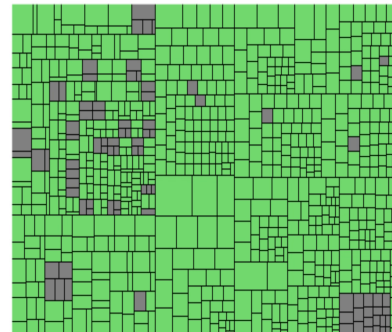
Path	Test Gap	# Test Gaps	Execution	Churn
-architectures-/backend.architecture		4.3k		
-architectures-/frontend.architecture		4.3k		

Test-Impact-Analyse



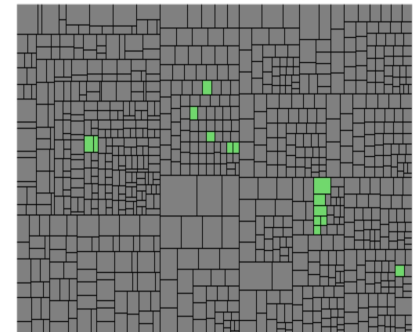
All tests

Jun 18 2017 16:22 - now | Execution Ratio: 35.31%



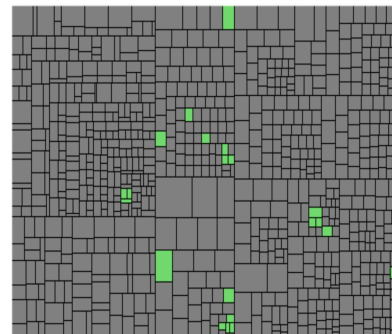
DistinctTest.testDistinctLazy

Jun 18 2017 16:22 - now | Execution Ratio: 0.6%



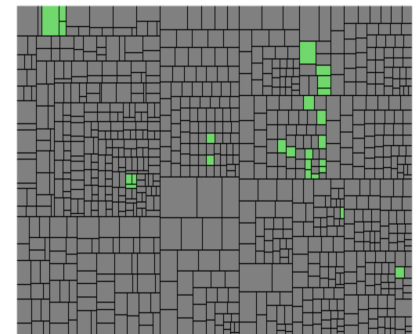
CollectorsTest.testAveragingDouble

Jun 18 2017 16:22 - now | Execution Ratio: 0.9%



FlatMapTest.testFlatMap

Jun 18 2017 16:22 - now | Execution Ratio: 1.07%



Test-Impact-Analyse

