Working with Gerrit

Lesson 02

Lesson Objectives

- Understanding Code review
- Performing Code review using Gerrit

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Understanding Code Review

- **Code Review**
  - Part of the development process
  - Prerequisite for merging the code into target branch
  - It is seen as *team programming, where code is shared all members of the development team*
- **Roles in Code Review**
  - **Contributor** : User with the ability to access at least one branch of the repository in read mode and with the ability to upload a new change
  - **Reviewer** : Team member who can express a score on a given change, expressed as a label + numeric value (positive, negative, or neutral)
  - **Committer** : Team member who can thorough feedback on the code and provide the final word (either positive or negative) on a proposed change
  - **Maintainer** : *This role involves* administering and monitoring the project, but who then has no active role in the Code Review process.

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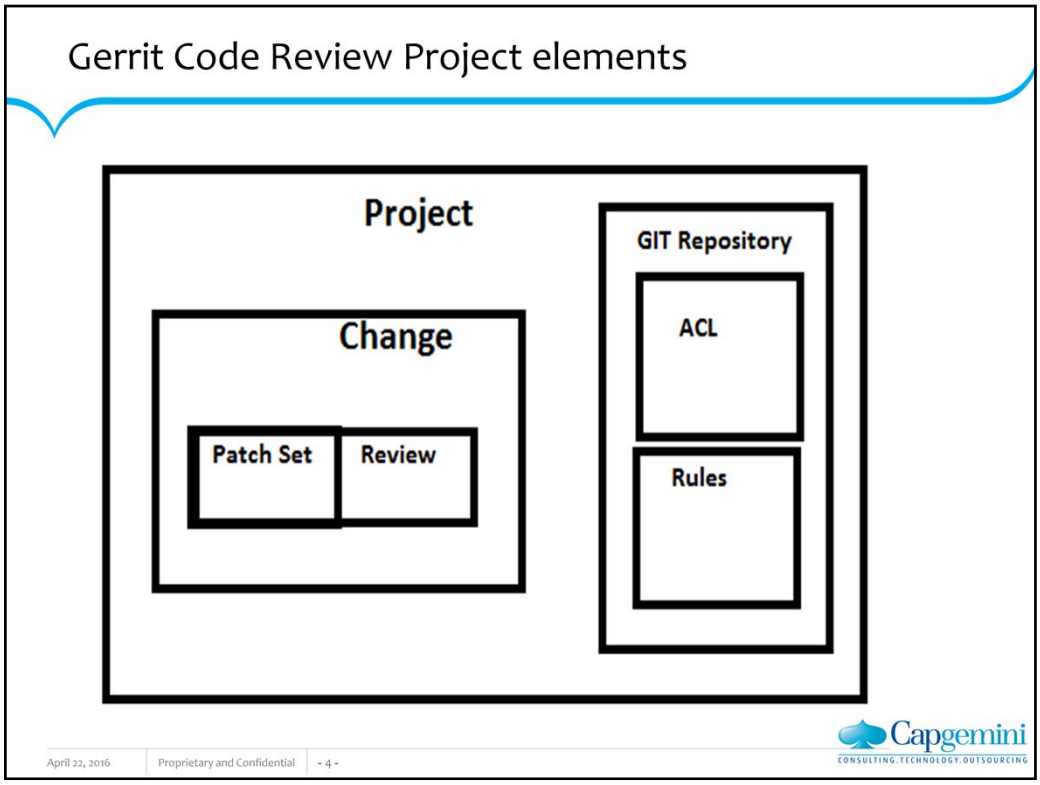
Reviewer Team members and contributors are typically granted the ability to express a positive (+1) or negative (-1) review score in addition to simple comments on the code or on the entire change.


Gerrit Code Review Project elements
Project
Change
Patch Set
Review
GIT Repository
ACL
Rules
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Performing Code Review : steps …..

- Initialize the commit-msg hooks
- The contributor creates a commit & pushes to the Gerrit review branch
- The contributor invites one or more reviewers to look at the code and provide their feedback
- Reviewers provide feedback, with comments, code change and positive or negative score, ranging from -2 to +2
- A change with score less than minimum score to be approved, it will need to be reworked by its contributor
- Types of reworking can be **rebase, amend**
- Committer submits a change once it satisfies the minimum conditions for approval, it automatically triggers the merge & Gerrit merges

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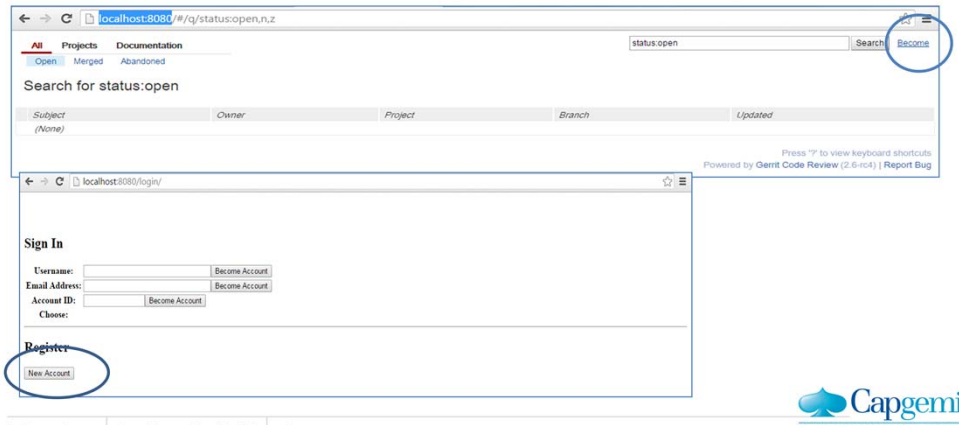
The contributor creates a commit and assigns a new unique global **Change-Id** through the commit-msg hooks previously downloaded from Gerrit. The contributor pushes to the Gerrit review branch, creating a new change for review. Gerrit assigns a unique URL in order to access and review the change using its web-UI. This step is optional. Continuous Integration builds and verifies the change: the builder fetches and triggers a build to check if the change actually works. Feedback is reported back as a positive (code builds and works) or negative (code doesn't work or build is broken) score. For existing changes with additional patch-sets, Gerrit automatically notifies all of the existing reviewers and watchers that a new review is required.

Gerrit has a set of rules for getting a change approved based on the overall feedback and scoring received. Default Gerrit rules require at least one Code Review/ + 2. Rules can be tailored to each project's needs and can even have a different set of approval conditions or be based on additional custom labels. When a change does not reach the minimum score to be approved, it will need to be reworked by its contributor.

Gerrit merges the change onto its target branch, as a consequence of the previous submit operation. Should the merge fail because of a conflict, the change has to be reworked again and validation has to resume.

Creating a User profile for Gerrit UI

- **Selecting single tag takes the following syntax**
  - ***http://localhost:8080***
- Select **'Become'** and then **'New Account'**



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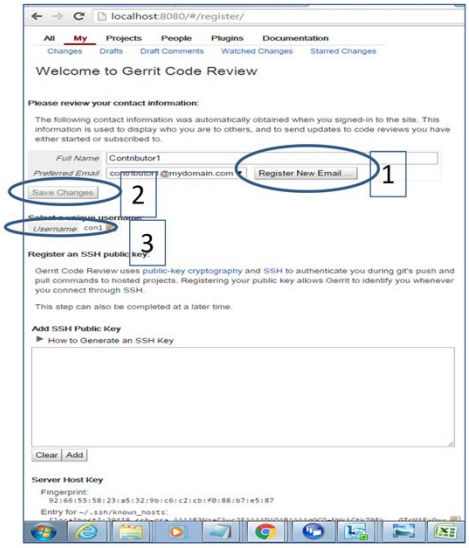
Add the notes here.

Creating a User profile for Gerrit (continued)

- Gerrit **'New Account'** registration
  - Fill in the form as shown below



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Add the notes here.

Walkthrough

- **Performing Gerrit Code Review**

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References

Code review

- **https://gerrit-review.googlesource.com/Documentation/dev-readme.html**

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Add the notes here.

Summary

- Understanding Code review
- Performing Code review using Gerrit

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