Summary Document

Gerrit is a code review system developed for the Git version control system. It is a web based code review system, facilitating online code reviews for projects. Gerrit is a Git server which adds a fine grained access control system and a code review system and workflow.

The Approach and Motivation of the Tool

Gerrit can prevent users from pushing directly to the Git repository. If you push to Gerrit, you use a certain path ( ref specification) which tells Gerrit that you want to create a change. This push ref specification is refs/for/master if the target of the change under review is the master branch. You can also push to refs/for/xyz to put a commit into the review queue for the xyz branch.

If you push to this ref specification, Gerrit creates a new change or makes an update of an existing one. Gerrit uses the Change-Id information in the commit message to identify if the push is a new commit or an update of an existing change.

A change consists of one or more patch sets which are used to improve the first proposal based on review comments. One patch set corresponds to one Git commit.

It is still possible to bypass code review by pushing directly to refs/heads/master if sufficient rights have been granted.

Gerrit was built after an internal Google tool used for code review. Gerrit Rietveld, the inventor of Gerrit, improved the Google tool and made it available for the large public and also incorporating Git into it.

The Aim and Novelty of the Tool

The overall aim was to construct a more efficient way to perform code review for developers as seamlessly as possible given the Git integration.

In terms of the novelty, there were not many open source code review applications and the ones that existed had limited features. Gerrit provided a new interface, where changes were visually easy to see and comment and a space for professional interaction between colleagues.

A major feature of the project is its voting system, upon which a change (=commit) is accepted or not. Basically, based on votes from the reviewers and contributors, a commit becomes submittable or blocked.

The Validation of the Tool

The main form of validation and constant improvement of the tool comes from the users themselves since Gerrit is an open-source tool, where everyone can contribute.