

Idea: Git repo caching on agents

The Jenkins git plugin clones remote git repositories into Jenkins workspaces on agents. The Jenkins agents frequently have other copies of the remote git repository which could be used as a local cache to reduce network data transfer from the remote git server to the local workspace. Those local copies could be in workspaces for previous builds of this job or they could be in workspaces for other branches of the same repository. Those local copies might also be maintained by administrators with periodic updates from the central repository.

Identify and use a well-chosen existing copy of the remote git repository as a reference repository for the git fetch that is being performed in the workspace. Default to dissociate the workspace repository from the reference repository during the fetch so that deletion of the reference repository will not harm the workspace repository.

Refer to [pull request 502](#) for discussions and alternatives which can be considered. Stephen Connolly recommends that the capability be created as a separate plugin which extends the git plugin. That would avoid the risk of users seeing this new feature without intentionally installing a new plugin specifically for the feature. If a separate plugin is the path that is chosen, then Mark Waite will need additional help from other mentors that are more familiar with the Jenkins extension mechanisms.

Also review the [git man page](#) with specific focus on the list of directories for alternate objects. There may be “hidden gems” of caching to be gained from using the GIT_ALTERNATE_OBJECT_DIRECTORIES list to reduce data transfer and disc use.

Skills to study/improve

- Basic knowledge of Jenkins (as a user)
- Basic knowledge of Git (as a user)
- Basic knowledge of Java programming language

The project will benefit many of the 250 000+ worldwide installations of the git plugin

Project Metadata

Created on: 2020

Goal: Improve speed of git workspace fetch by automatically using existing repositories as a cache

Champion: Mark Waite

Champion Github Id and link: <https://github.com/MarkEWaite>

Champion Jenkins JIRA/LDAP id: MarkEWaite

Champion Time Zone: UTC-7

Champion Role: I am making this proposal as a **mentor**

Project Category: plugin

SIG/Subproject: Platform

Project Gitter chat room: <https://gitter.im/jenkinsci/git-plugin>

Potential Mentors

The potential mentors are:

- 1) Mark Waite - confirmed willing to be a mentor
- 2) Francisco Fernandez - confirmed as willing to be a mentor
- 3) Robert Sandell - confirmed willing to be a mentor
- 4) Mentors could come from the other git plugin developers (Rene Scheibe, Jacob Keller, ...)