Gerrit

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About the Tutorial

Gerrit is a web-based code review tool, which is integrated with Git and built on top of Git version control system (helps developers to work together and maintain the history of their work). It allows merging changes to Git repository when you are done with the code reviews.

Audience

This tutorial will help beginners learn the basic functionality of Gerrit tool. After completing this tutorial, you will find yourself at a moderate level of expertise in using Gerrit tool from where you can take yourself to the next levels.

Prerequisites

We assume that you are going to use Gerrit to handle all levels of Java and Non-Java projects. Hence, it will be good if you have some amount of exposure to software development life cycle and a working knowledge of developing web-based and non-web-based applications.

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1. Gerrit – Overview

Gerrit is a web-based code review tool, which is integrated with Git and built on top of Git version control system (helps developers to work together and maintain the history of their work). It allows to merge changes to Git repository, when you are done with the code reviews.

Gerrit was developed by Shawn Pearce at Google which is written in Java, Servlet, GWT (Google Web Toolkit). The stable release of Gerrit is 2.12.2 and published on March 11, 2016 licensed under *Apache License v2*.

Why Use Gerrit?

Following are certain reasons, why you should use Gerrit.

- You can easily find the error in the source code using Gerrit.
- You can work with Gerrit, if you have regular Git client; no need to install any Gerrit client.
- Gerrit can be used as an intermediate between developers and git repositories.

Features of Gerrit

- Gerrit is a free and an open source Git version control system.
- The user interface of Gerrit is formed on Google Web Toolkit.
- It is a lightweight framework for reviewing every commit.
- Gerrit acts as a repository, which allows pushing the code and creates the review for your commit.

Advantages of Gerrit

- Gerrit provides access control for Git repositories and web frontend for code review.
- You can push the code without using additional command line tools.
- Gerrit can allow or decline the permission on the repository level and down to the branch level.
- Gerrit is supported by Eclipse.

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Disadvantages of Gerrit

- Reviewing, verifying, and resubmitting the code commits, slows down the time to market.
- Gerrit can work only with Git.
- Gerrit is slow and it's not possible to change the sort order in which changes are listed.
- You need administrator rights to add repository on Gerrit.

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Setting Up Gerrit

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2. Gerrit – Installation

Before you can use Gerrit, you have to install Git and perform some basic configuration changes. Following are the steps to install Git client on different platforms.

Installation of Git Client

Linux

You can install the Git on Linux by using the software package management tool. For instance, if you are using Fedora, you can use as:

```
sudo yum install git
```

If you are using Debian-based distribution such as Ubuntu, then use the following command:

```
sudo apt-get install git
```

Windows

You can install Git on Windows by downloading it from the Git website. Just go to msysgit.github.io link and click on the download button.

Mac

Git can be installed on Mac using the following command:

```
brew install git
```

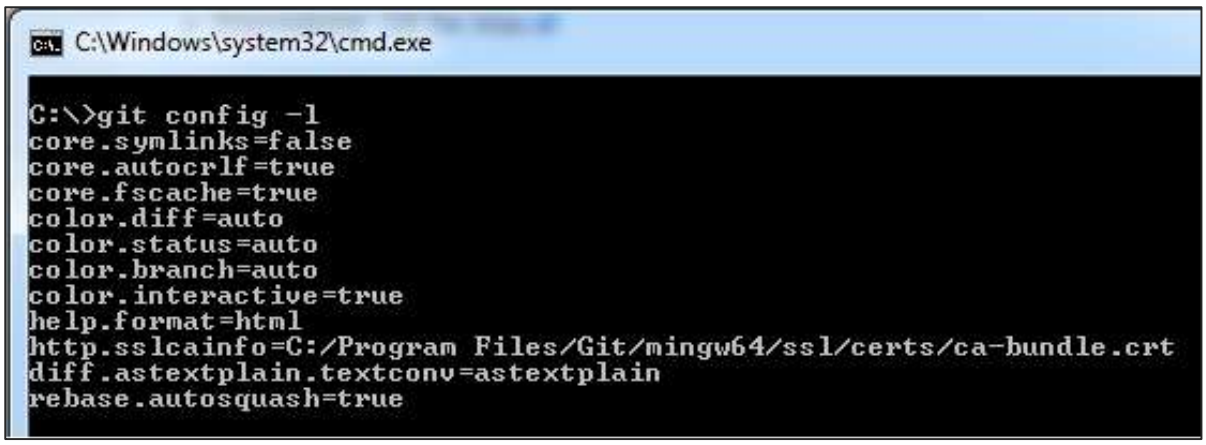
Another way of installing Git is, by downloading it from Git website. Just go to Git install on Mac link, which will install Git for Mac platform.

3. Gerrit – Configure Git

Once you have installed Git, you need to customize the configuration variables to add your personal information. You can get and set the configuration variables by using Git tool called *git config* along with the -l option (this option provides the current configuration).

```
git config -l
```

When you run the above command, you will get the configuration variables as shown in the following image.



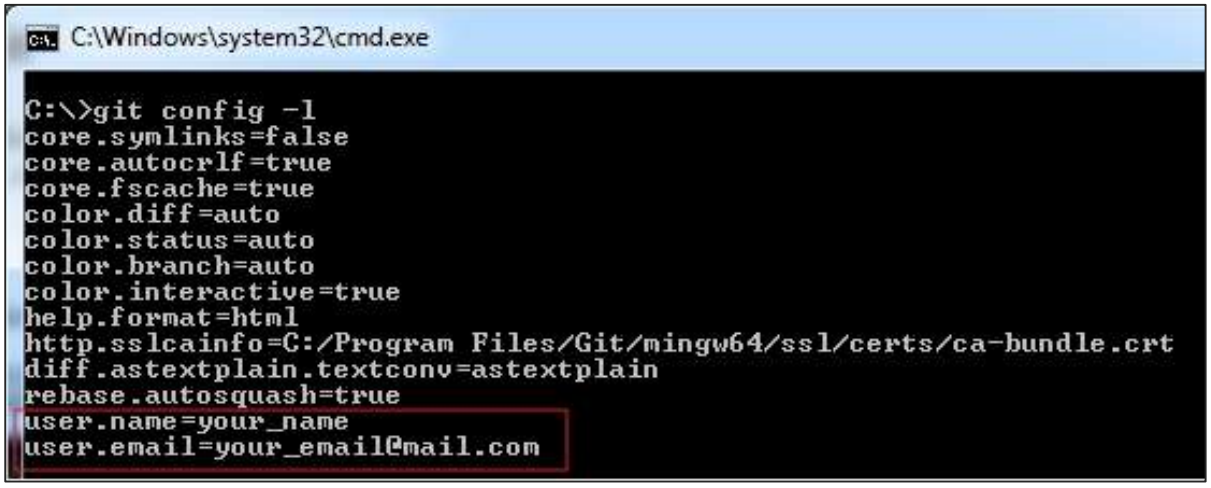
You can change the customized information any time by using the commands again. In the next chapter, you will learn how to configure the user name and user Email by using *git config* command.

4. Gerrit – Set Username & Email

You can track each commit by setting *name* and *email* variables. The name variable specifies the name, while the email variable identifies the email address associated with Git commits. You can set these using the following commands:

```
git config --global user.email "your_email@mail.com"
git config --global user.name "your_name"
```

When you run the above commands, you will get the user name and email address as shown in the following image.



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Set Up SSH Keys in Gerrit

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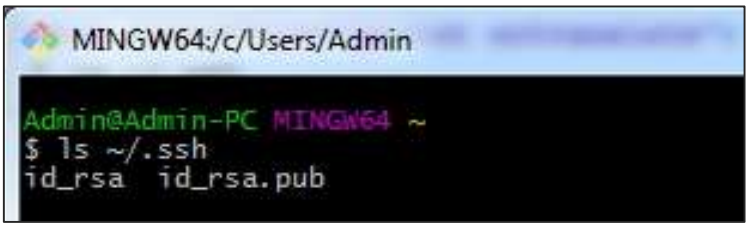
5. Gerrit – Generate New SSH Key

SSH stands for *Secure Shell* or sometimes *Secure Socket Shell* protocol used for accessing network services securely from a remote computer. You can set the SSH keys to provide a reliable connection between the computer and Gerrit.

You can check the existing SSH key on your local computer using the following command in Git Bash:

```
$ ls ~/.ssh
```

After clicking the enter button, you will see the existing SSH key as shown in the following image:



If you don't find any existing SSH key, then you need to create a new SSH key.

Generating New SSH Key

You can generate a new SSH key for authentication using the following command in Git Bash:

```
$ ssh-keygen -t rsa -C "your_email@mail.com"
```

If you already have a SSH key, then don't a generate new key, as they will be overwritten. You can use *ssh-keygen* command, only if you have installed Git with Git Bash.

When you run the above command, it will create 2 files in the *~/.ssh* directory.

- **~/.ssh/id_rsa**: It is private key or identification key.
- **~/.ssh/id_rsa.pub**: It is a public tv.

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