
GIT

=> How to download and install git in local system?

https://git-scm.com/downloads

=> How to install git in Linux EC2 Instance?

$ sudo su

$ yum install git -y (Linux Instances)

$ apt install git -y (Ubuntu Instances)

$ git --version

=> GIT Configuration

Why?

Developers will be writing the code. To track the changes we need to configure the git.

Configuration?

Two types of configuration: 1) User Name 2) EMail ID

Ways of configuring git?

Local

System

Global

Configuring username in git?

$ git config --global user.name "Kastro"

Configuring email id in git?

$ git config --global user.email "kastro@gmail.com"

How to verify the configuration?

git config user.name

git config user.email

To see the configurations done on git;

git config --list

How to remove git credentials in PC?

In PC □ Credentials Manager □ Windows Credentials □ Select the git related creds □ remove

Note: All git commands will start with 'git'

GIT Stages:

Working directory - This is where we write the source code

Staging area - This is where we track the files

Repository - This is where we store tracked source code

Remote repository area - This is where to store the code in github

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GIT Workflow:

Create a folder in PC

Initialize the git (git init)

A .git folder will get created

Create files

Add the files to the staging area (git add)

- the files will be tracked by git

Commit the files to the local repository (git commit)

Send the files to the remote repo. (git push)

GIT Commands

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Git working process

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1. Create a folder

2. Open git bash terminal (Rightclick ---> More options ----> Click on 'Open Gitbash here' ----> Git terminal will open)

3. Initiate the empty git repository (git init)

3. Create a file (touch <FileName>)

4. Check the status of the file (git status)

5. Add the file to the staging area (git add) (git add .) (git add <FileName>)

6. Commit the file to local repository (git commit -m "<Enter Commit Message>")

7. Send the file to the remote repository

Note: Configure the git with username and user-email in the git

git config --global user.name <"UserName">

git config --global user.email <"UserEmail">

How to check the configuration details

Method 1:

git config user.name

git config user.email

Method 2:

git config --list

How to add multiple files at the same time to the staging area?

git add .

How to add specific file to the staging area?

git add <FileName>

How to add specific set of files (python files) to the staging area?

git add <FileStartingName>*

Ex: git add python*

How to commit multiple files at the same time to the repository area?

git commit -m "<EnterCommitMessage>"

How to commit specific file to the repository area?

git commit -m "<EnterCommitMessage>" <FileName>

How to commit specific set of files (python files) to the repository area?

git commit -m "<EnterCommitMessage>" <FileName>*

Ex: git commit -m "added python files" python*

How to rename a file in git?

git mv <OldFileName> <NewFileName>

How to delete a file in git?

git rm <FileName>

How to see the commit history?

git log

Note: Press 'down arrow' or 'up arrow' to see the older/latest commits.

Note: To come out of the commit history, press 'q'

Commit ID is a 40 character alphanumeric id

How to see the commit history in a simplified way?

git log --oneline

You will see only the commit id (first 6 characters) and the commit message

How to see the commit history in reverse order

git log --oneline reverse

git log reverse

How to see the commit history of a specific file

git log --oneline -- <filename>

git log --oneline -- <commit id>

How to see the top commits

git show HEAD

How to remove .git folder?

rm -rf .git

Note: it is not recommended to delete the .git folder.

Working with git restore

=> Restore is a polymorphic command

If the file is added to the staging area, if you want to unstage the file;

git restore --stage <FileName>

If the file is unstaged, and you want to remove the changes in the file;

git restore <FileName>

How to skip the staging area?

Note: This method is not recommended

How to see the status of a file in shortcut?

git status -s

If you see A in green colour, this means the file is added to the staging area

If you see ?? in red colour, this means the file is not being tracked by the git (unstaged area)

Recovering a deleted file

1. Create a file, Add, Commit
2. Remove the file (git rm <FileName>)
3. Commit the file (git commit -m "<Commit Message>"
4. To view commit history (git log --oneline -- <FileName>)
5. To restore a deleted file (git checkout <2nd Commit ID from top> <FileName>)
6. Commit the restored file (git commit -m "<Commit Message>")
7. To verify the restoration of a file (ls)

Finding the author of a specific line

1. Create a file and add content inside it, Add, Commit
2. To see the author name (git blame <FileName>)
3. To see the author email (git blame -e <FileName>)
4. To see the author of a specific line (git blame -L 2,2 <FileName>)
5. To see the content from line 1 to 3 (git blame -L 1,3 <FileName>)
6. (git blame -L 1,+2 <FileName>)

Skipping the staging area

git commit -am "<Commit Message>"

GITHUB

=> Github is a remote repository

=> Remote repository is used to store the source code of our application

=> Github is GUI based

=> Internet connection is required to connect with github

=> Microsoft developed github

Sing-up to github account

=> Repositories available in github

1. Public Repository - all the files available in public repository can be accessed by anybody

2. Private Repository - all the files available in private repository cannot be accessed by anybody

=> We can create any type of repository.

=> For every repository, there will be a repository url

=> Repository url's are of two types;

HTTPS - (most commonly) used for public repositories

SSH - (most commonly) used for private repositories

=> By using repository url's we can integrate the repository with multiple tools (jenkins, k8s, docker, terraform) in devops

=> By using repository url we can clone the others repository into our local system

=> Clone is nothing but getting a copy of the existing code

Github gui overview

Creating a github public repository & Pushing the files from local to remote

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1. New ---> Enter the repository name ---> Give the description (optional) ---> Choose the type of repository ---> Click on Create Repository

HTTPS Link: https://github.com/KastroVKiran/staragile-kastro.git

SSH Link: git@github.com:KastroVKiran/staragile-kastro.git

2. Create a file in local system, Add the file the file to the staging area, Commit the file

3. git branch -M main

4. git remote add origin git@github.com:KastroVKiran/staragile-kastro.git

5. git push -u origin main

6. Goto remote repo. and reload the page. You will be able to see the modified content

I have files in local system, I want to send those files to the github repository

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1. Clone the repository

To copy the repository available in github.com, we have to clone the repository

git clone <HTTPS Repository URL>

2. Open the git terminal in the cloned folder/repository

3. Create a file in local system, Add the file the file to the staging area, Commit the file

4. git push

5. Goto remote repo. and reload the page. You will be able to see the modified content

Note: All git commands should be executed wherever the .git folder is available.

How to download the github repository and its contents to the local system?

Goto the repo in github

Click on Code

Click on Download Zip

The Repo and its content will get downloaded to the local system (check 'downloads' folder)

How to delete a github repo?

Open the repo

Settings

Scroll down till you see 'delete repo'

Click on delete