

Git Setup from Scratch

Task

Some new developers have joined xFusionCorp Industries and have been assigned Nautilus project. They are going to start development on a new application, and some pre-requisites have been shared with the DevOps team to proceed with.

Please note that all tasks need to be performed on storage server in Stratos DC.

- Install git, set up any values for user.email and user.name globally and create a bare repository /opt/media.git.
- There is an update hook (to block direct pushes to the master branch) under /tmp on storage server itself; use the same to block direct pushes to the master branch in /opt/media.git repo.
- Clone /opt/media.git repo in /usr/src/kodekloudrepos/media directory.
- Create a new branch named xfusioncorp_media in repo that you cloned under /usr/src/kodekloudrepos directory.
- There is a readme.md file in /tmp directory on storage server itself; copy that to the repo, add/commit in the new branch you just created, and finally push your branch to the origin.
- Also create master branch from your branch and remember you should not be able to push to the master directly as per the hook you have set up.

Solution

First SSH into storage server with natasha as user `ssh natasha@172.16.238.15`

a: Install git, set up any values for user.email and user.name globally and create a bare repository /opt/apps.git

- Install Git

```
1 sudo yum install git -y
```

- Add global users (telling git to trust user and git logs user metadata to track who is doing what)

```
1 git config --global user.email "ststor01.stratos.xfusioncorp.com"
2 git config --global user.name "natasha"
```

- Create directory and change to created directory

```
1 sudo mkdir /opt/apps.git
2 cd /opt/apps.git
```

- Create a bare repository (Passing this command initializes git directory as the remote/server side and acts as .git folder and Remote git does not have working directory)

```
1 sudo git init --bare
```

b. There is an update hook (to block direct pushes to the master branch) under /tmp on storage server itself; use the same to block direct pushes to the master branch in /opt/apps.git repo

- Give natasha access (-R is recursive, which tells all objects/content/folders/files in the path of the directory where the below command will be given access to user natasha)

```
1 sudo chown -R natasha:natasha .
```

- Move “update” file from /tmp to hooks/ (this is the hidden directory which helps in creating hooks and this hooks/ directory can be viewed by ls -l)

```
1 sudo cp /tmp/update hooks/
```

- Make “Update” folder executable (we need to make sure this file is executable by git as it has a script which git uses to perform the task i the file by passing below command)

```
1 sudo chmod +x hooks/update
```

c. Clone /opt/apps.git repo in /usr/src/kodekloudrepos/apps directory.

- Change to directory and give permission

```
1 cd /usr/src/kodekloudrepos
2 sudo chown -R natasha:natasha /usr/src/kodekloudrepos
```

- Create a repo and simultaneously clone the repo and change to created repo

```
1 sudo git clone /opt/apps.git /usr/src/kodekloudrepos/apps
2 cd /usr/src/kodekloudrepos/apps
```

d. Create a new branch named xfusioncorp_apps in repo that you cloned under /usr/src/kodekloudrepos directory.

- Make it a safe directory by adding it to safe.directory list(this is telling your local git that this user path is safe and local git changes its .config files) #Optional command

```
1 git config --global --add safe.directory /usr/src/kodekloudrepos/apps #optional command
```

- Create a branch and switch to that branch

```
1 git checkout -b xfusioncorp_apps #checkout helps you change to that branch while "-b" helps you create that branch
```

e. There is a readme.md file in /tmp directory on storage server itself; copy that to the repo, add/commit in the new branch you just created, and finally push your branch to the origin.

- ```
1 cp /tmp/readme.md /usr/src/kodekloudrepos/apps #copying file from /tmp folder to local /apps folder
2 git add . #adds the file to working directory
3 git commit -m "Adding readme.md to commit" #committing that file
4 git push origin xfusioncorp_apps #pushing changes to remote
```

### f. Also create master branch from your branch and remember you should not be able to push to the master directly as per the hook you have set up.

- As “Master” branch doesnt exist in local repo you need to create and then push

```
1 git checkout -b master
2 git push origin master
```

- If you see error like below that means task is completed (This restricts developers push thier “local master” branch to “remote master” branch and the update file is working).

```
1 [natasha@ststor01 games]$ git push origin master
2 Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
3 remote: Manual pushes to the master branch is restricted!!
4 remote: error: hook declined to update refs/heads/master
5 To /opt/games.git
6 ! [remote rejected] master -> master (hook declined)
7 error: failed to push some refs to '/opt/games.git'
```

1. # AVOID THIS THIS IS FOR MY LEARNING #CONTENT OF UPDATE FILE WHICH RESTRICTS REMOTE ACCEPTING MASTER BRANCH WHICH NEEDS TO BE PUT IN HOOKS DIRECTORY

```
1 #!/bin/sh
2 if ["$1" == refs/heads/master];
3 then
4 echo "Manual pushes to the master branch is restricted!!"
5 exit 1
```