

Assignment 2

Assignment 2_1.

Setting up Jenkins for GitHub private repository

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This document is a set of instructions describing the process of setting up Jenkins for github private repository along with some other things. The steps taken are as follows:

Install Ngrok:

- ngrok allows you to expose a web server running on your local machine to the Internet
- Go to <https://ngrok.com/download> and follow the steps mentioned to expose the localhost that Jenkins is using to the Internet. This enables GitHub to communicate with Jenkins in case of any changes to the repository.
- Here, start a HTTP tunnel on port 8080(Or any other port), which Jenkins is using.

```
ngrok by @inconshreveable (Ctrl+C to quit)

Session Status      online
Account             soumithk (Plan: Free)
Version             2.2.8
Region              United States (us)
Web Interface        http://127.0.0.1:4040
Forwarding           http://19913ee8.ngrok.io -> localhost:80
Forwarding           https://19913ee8.ngrok.io -> localhost:80

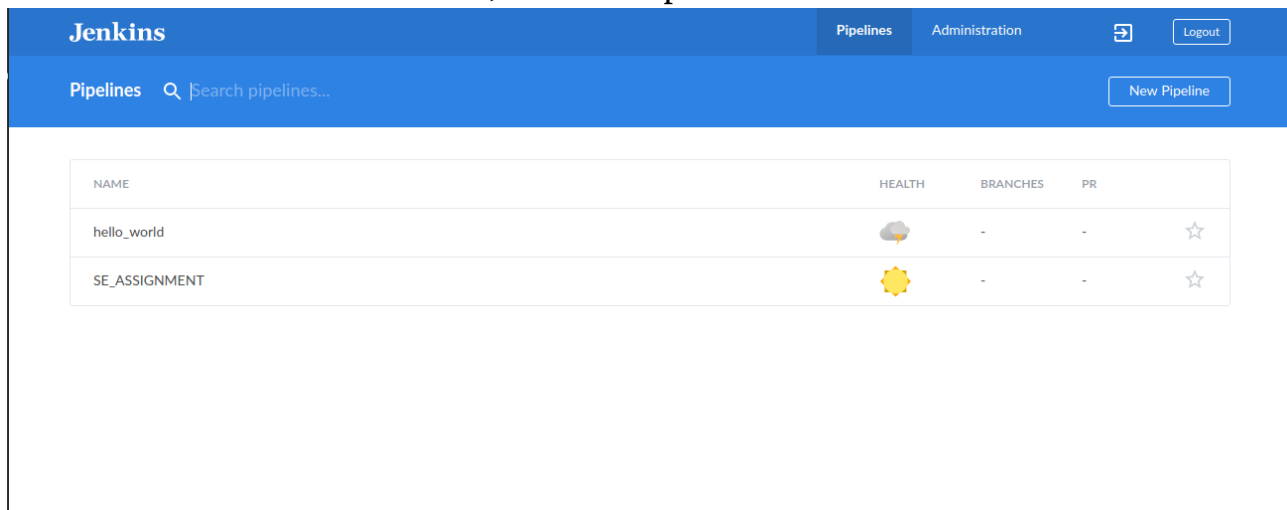
Connections         ttl      opn      rt1      rt5      p50      p90
                   0        0        0.00     0.00     0.00     0.00
```

Install Blue Ocean:

Blue ocean is a better user interface for Jenkins.

- Click on Manage Jenkins and then on Manage Plugins.
- Click on the Available tab and search for Blue Ocean in the filter. It should appear here if it is not installed.(Skip this step if already installed)
- Select the Blue Ocean plugin(It's better to install other plugins related to Blue Ocean too). Install and restart Jenkins.

- To use the Blue Ocean UI, click on Open Blue Ocean on the left menu.

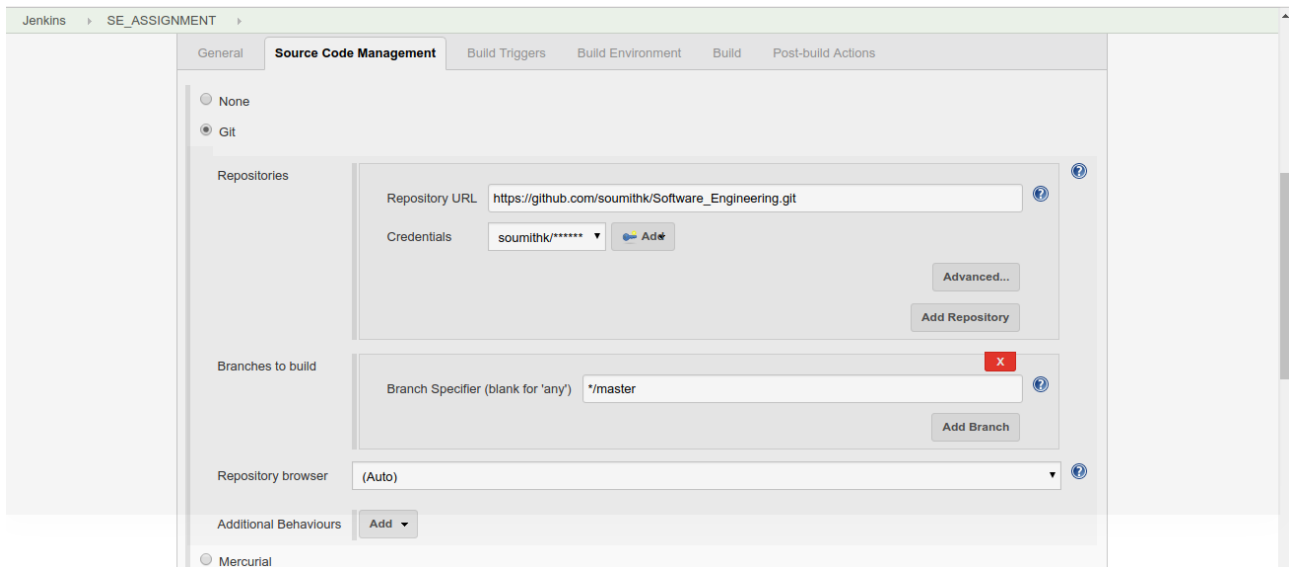


Make a private GitHub Repository: (Skip if there's already a private repository)

Create a private repository in Github. If you have not done this before, you will have to apply for github student pack using your IIITB email to be able to create private repositories for free. Apart from that the rest of the process is same as creating a normal repository (Choose the private repository option while creating repository).

Attach a Jenkins pipelint to the repository:

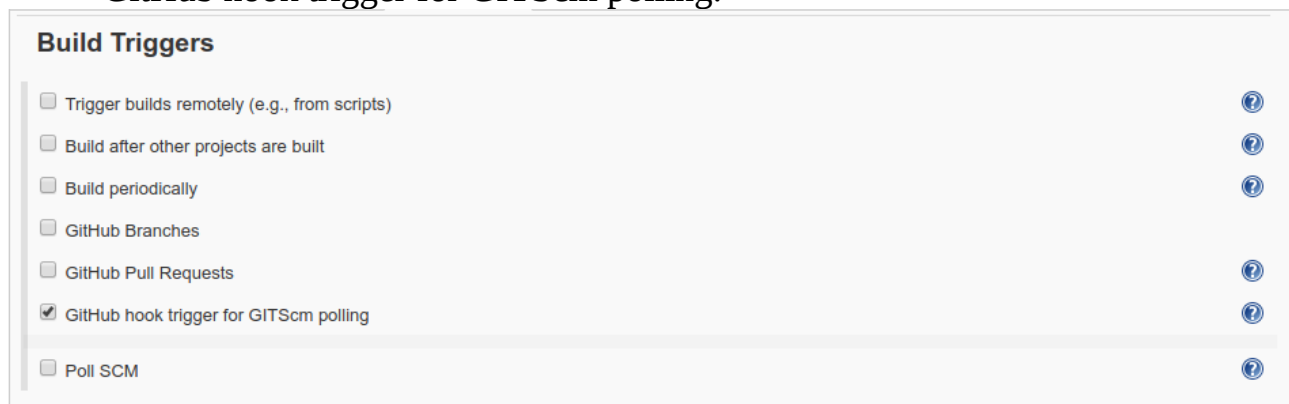
- Click on New Item in the Jenkins dashboard. Enter the project name, select Freestyle Project and click on OK.
- Now we can configure the Project as needed. Under Source Code Management select Git.
- Enter the private repository's URL(Created in the last step) in the Repository URL text box. Since the repository is private, GitHub login credentials will have to be provided.
- Click on Add Credentials, choose Jenkins from the dropdown menu, and provide the Username and Password of the GitHub account which has the above private repository.
- Choose the added credentials from the dropdown menu next to the Credentials field. Finally, it should look like the picture shown below.



Now we proceed to adding a build trigger for the pipeline. The goal is to build everytime there's a commit in the repository.

Configuring the GitSCM Poll Build Trigger:

- Under Build Triggers in the Jenkins Configuration for the project, select GitHub hook trigger for GITScm polling.



- Go to the GitHub private repository. We will have to setup the GitSCM Polling logic here.
- Click on the Settings tab and select Integrations & Services. Click on Add Service and select Jenkins (Git Plugin) from the dropdown menu.
- This will prompt for the GitHub password. Provide the password. Now, enter the Jenkins hook url as shown below.(Note that this url comes from initialising ngrok on port 80 as shown in the first step. Get the url from the image).

Details

[Jenkins](#) is a popular continuous integration server.

If you're using the standard [Jenkins Git plugin](#) to poll & check out your repository, you can quickly and easily switch to a push model using this service.

It will send a request to your Jenkins instance telling it about the repositories and branches that changed. Jenkins will then poll the repository and build if needed. See [push notification from repository](#) on the Jenkins wiki for information.

Jenkins url

`http://19913ee8.ngrok.io/github-webhook/`

☒ Active

We will run this service when an event is triggered.

Select Active to activate the service and click on Add Service. Now, GitHub can make requests to Jenkins to build whenever there's a commit.

Final step is to add email notifications whenever there's a build.

Post Build Action – Email Notifications:

- On the Jenkins dashboard, click on Manage Jenkins and then on Configure System.
- Scroll down to E-Mail Notification and click on Advanced. Enter the details as shown above and save.

E-mail Notification

SMTP server	<input type="text" value="smtp.gmail.com"/>	?
Default user e-mail suffix	<input type="text" value="@gmail.com"/>	?
<input checked="" type="checkbox"/> Use SMTP Authentication		?
User Name	<input type="text" value="*****@gmail.com"/>	
Password	<input type="password" value="*****"/>	
Use SSL	<input checked="" type="checkbox"/>	?
SMTP Port	<input type="text" value="465"/>	?
Reply-To Address	<input type="text"/>	
Charset	<input type="text" value="UTF-8"/>	

- However, since gmail has a very high degree of security, you might have to allow less-secure apps to access the account in your gmail settings. Else there will be an error like this.

```
javax.mail.AuthenticationFailedException: 534-5.7.14 <https://accounts.google.com/signin/continue?sarp=1&acc=1&split=AKGnsbtq
534-5.7.14 4bxAD6o9viceslKlFKeJAd5LsB7eT8AW6UU5a6oZgV97CQ-ef9IA8Onl7TXw9d4w5c_QIx
534-5.7.14 _lcAStKe_D99iQcIqBWTaopeg9US2GU_sD7EzWzcGU5iRoH0gV4TEprYOB3I6MQEEi0akb
534-5.7.14 1-SBtXFKSRAGIoACEA7DCxlgLBgW0zQi7I1A4HtJRZN6hClwquz75wtddcpUQPagSLFfx0k
534-5.7.14 FxMCYLTPyggKsq0MjixXFVNjq2i6LTRbsveHjH2jngCQ2hNZ0-> Please log in via
534-5.7.14 your web browser and then try again.
534-5.7.14 Learn more at
534 5.7.14 https://support.google.com/mail/answer/78754 p11-v6sm23873491pfj.72 - gsmtip
```

- Now, go to the project configurations. Scroll down to Post-Build Actions. Give the Email Addresses of the recipients and select Send e-mail for every unstable build and save.

Build

Add build step ▾

Post-build Actions

E-mail Notification

Recipients

Soumith.Kumar@iiitb.org

Whitespace-separated list of recipient addresses. May reference build parameters like \$PARAM. E-mail will be sent when a build fails, becomes unstable or returns to stable.

☒ Send e-mail for every unstable build
 ☐ Send separate e-mails to individuals who broke the build

Add post-build action ▾

Now, the GitHub Integration has been setup with Jenkins, and for every unstable build, an email will be sent to the recipients.