

GIT

A free and open source distributed version control system

User Guide

January, 2018

Department of Computer Science and Engineering

Indian Institute of Technology, Kharagpur

Table of Contents

What is Git Service?	3
User Registration Procedure	3
Creating a Project.....	3
Deploying SSH key.....	5
Configuring Linux Client	7
Install package git-core in the client system.....	7
Open terminal and setup git global variable for one time only.....	7
Locate and existing key pair.....	7
Generate a new SSH key pair	7
Clone a project	8
Add existing folder to the repository.....	8
Configuring Windows Client	9
Install Git for Windows	9
Locate and existing key pair.....	10
Generate a new SSH key pair	10
Clone a project.....	10
Add existing folder to the repository.....	11

What is Git Service?

Git (<https://git-scm.com>) is the most commonly used open source distributed version control system. Git is distributed, so the local copy is fully equivalent to the original repository and enables users to commit offline. The service 'git.cse.iitkgp.ac.in' is configured to provide a reliable git repository to the department. A web based 'github' like interface called 'gitlab' is provided to maintain the projects more effectively.

User Registration Procedure

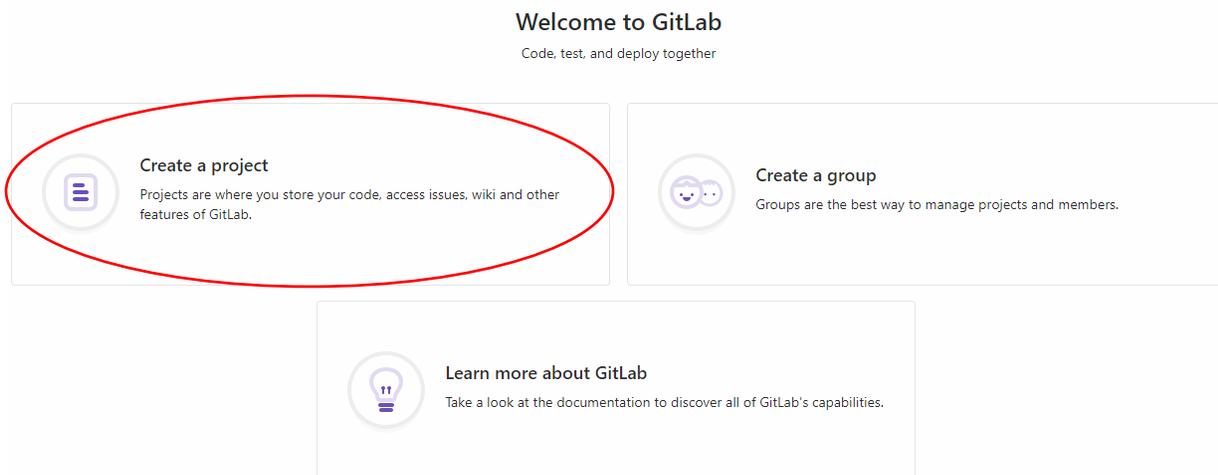
To use the Git service at least one user needs to be registered in **git.cse.iitkgp.ac.in**. Registered users can create projects, assign systems to the project and/or add other existing users to the project. To create a login in the Gitlab portal, please send a mail to the **gitadmin.cse@iitkgp.ac.in** mentioning the following information.

1. Name
2. Supervisor's Name (for non-faculty login)
3. Email Id
4. Preferred username

User will get a confirmation mail once the account is created containing the username and password. User will have to change the password provided on the first login.

Creating a Project

To create a project, login to the **git.cse.iitkgp.ac.in** and click on the **Create a project** link shown below.



Enter **project name** and **description** and select **visibility level** as shown below.

Blank project	Create from template	Import project
Project path http://git.cse.iitkgp.ac.in/testuser/		Project name test
Want to house several dependent projects under the same namespace? Create a group		
Project description (optional) Description format		
Visibility Level <ul style="list-style-type: none"> <input checked="" type="radio"/> Private Project access must be granted explicitly to each user. <input type="radio"/> Internal The project can be accessed by any logged in user. <input type="radio"/> Public The project can be accessed without any authentication. 		
Create project		Cancel

The following screen appears if the project is created successfully.

Test User > test > Details

Project 'test' was successfully created.



test test project

[Star](#)
[Clone](#)
HTTP
<http://git.cse.iitkgp.ac.in/test>
[Share](#)
[+](#)
[Global](#)

The repository for this project is empty

If you already have files you can push them using command line instructions below.

Otherwise you can start with adding a [README](#), a [LICENSE](#), or a [.gitignore](#) to this project.

You will need to be owner or have the master permission level for the initial push, as the master branch is automatically protected.

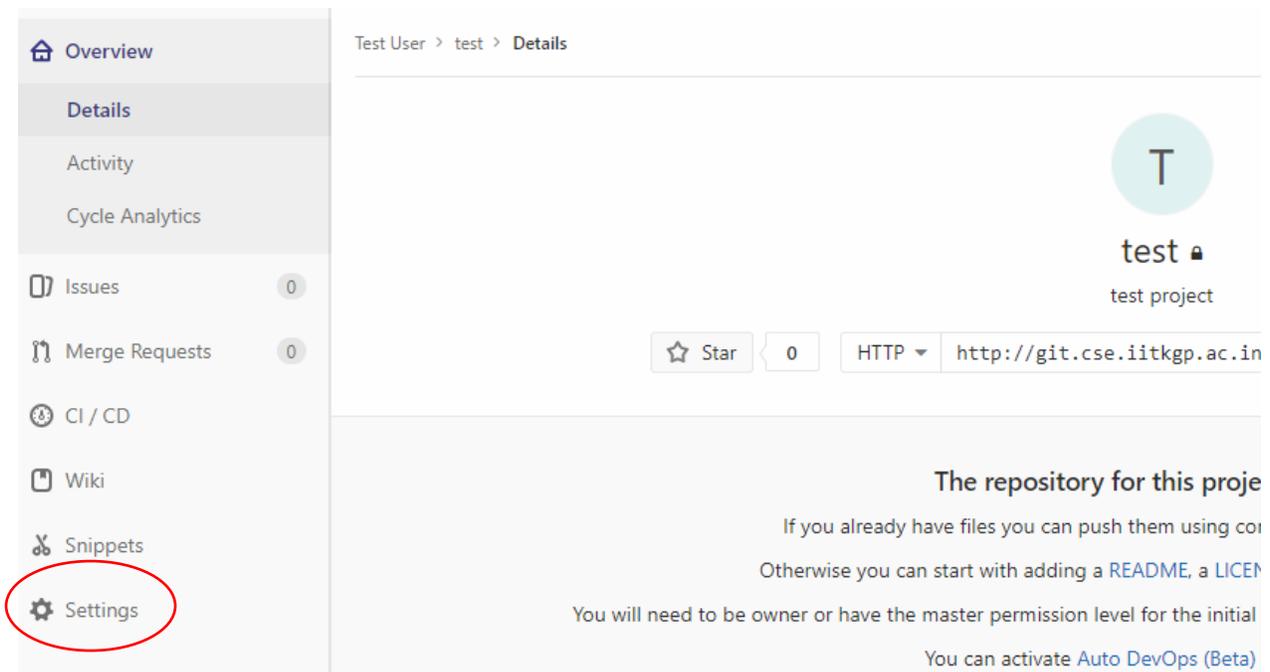
Change the protocol from the dropdown and select **SSH**. Please note the complete URL which is required to setup the client. For example, a project test is created under the user testuser and the repository path is shown below.

SSH <git@git.cse.iitkgp.ac.in:testuser> [Share](#)

Project URL: <git@git.cse.iitkgp.ac.in:testuser/test.git>

Deploying SSH key

Open project and click on the settings button as shown below.



Click on the Repository link from the dropdown shown below.



Click on the Expand button in the Deploy keys section as shown below.

Protected Branches Expand
 Keep stable branches secure and force developers to use merge requests.

Protected Tags Expand
 Limit access to creating and updating tags.

Deploy Keys Expand
 Deploy keys allow read-only or read-write (if enabled) access to your repository. Deploy keys can be used for CI, staging or production servers. You can create a deploy key or add an existing one.

Copy the contents of the `id_rsa.pub` received from the client and paste it in the key box. Enter a title for reference. Check Write access allowed check box if you want to allow this client to push the changes to the repository. Click Add key button to add the key to the project repository.

Deploy Keys Collapse
 Deploy keys allow read-only or read-write (if enabled) access to your repository. Deploy keys can be used for CI, staging or production servers. You can create a deploy key or add an existing one.

Create a new deploy key for this project

Title

Key

```
ssh-rsa
AAAAB3NzaC1yc2EAAAABIwAAAQEA6G/LHn/wGQ6WB+2FCyFyCc2HO4uA9yqZVw9VPuEo07Wr9SdPW8r/xvbwz/jCYunwCdhqyYC416
byWbzepaCnyO3aubuwmuZt6T5sBJp1/FsCVJNQDIdoT/nQbSIOTFpDPtGbCOVpW+Dm6eA9cBX/HnoxekUmvHywi9TdJXNkrVxwgy3r1B
sTY50HaR+QS2HgSgCBT2eo78LVHqDmU65mkUTb34ZzsCjbL6oKz0FlwLq17N/rsNxEVsLgM524IE2CrVOvGIEjLRImz6Vqz+VsiAsSem2oR
LGBNoDDCWtws7d7RTUTjQ1kKRa76MGpljRPhGHlHdeo+mQueiPys8QHw== user@user-desktop
```

Paste a machine public key here. Read more about how to generate it [here](#)

Write access allowed
 Allow this key to push to repository as well? (Default only allows pull access.)

Add key

If the key is successfully added, the key appears in the Deploy keys section as shown below.

Write access allowed
 Allow this key to push to repository as well? (Default only allows pull access.)

Add key

Enabled deploy keys for this project (1)

User Test User / test created less than a minute ago Edit Remove
 43:15:ef:fc:ee:d0:dd:45:10:0f:70:34:db:de:da:4f
 Write access allowed

Configuring Linux Client

Install package git-core in the client system.

Example:

Ubuntu: `sudo apt-get install git-core`

Centos: `yum install git-core`

Open terminal and setup git global variable for one time only.

```
git config --global user.name "username"
```

```
git config --global user.email "email address"
```

Note: The **user.name** and **user.email** variable is for the user who will be using the client system. This name and email will appear in the log of repository.

Locate and existing key pair

Open terminal and enter the following command

```
cat ~/.ssh/id_rsa.pub
```

If you see a string starting with ssh-rsa you already have an SSH key pair and you can skip the key generate portion.

Generate a new SSH key pair

```
ssh-keygen -t rsa -C "email address"
```

Select the default options and press enter to complete the process.

Send the generated file (`~/.ssh/id_rsa.pub`) to the project administrator assigning into the project.

Once the key is deployed in the project and you have received the project URL, you can now either clone the project or add existing code the project.

Clone a project

Change the current directory where you want to keep the project.

```
git clone git@git.cse.iitkgp.ac.in: testuser/test.git  
cd test
```

Now, you can add or modify any file. To commit the changes to the repository use the following command.

```
git commit -m "comment"  
git push -u origin master
```

The above command '**git push -u origin master**' pushes the master branch to the project repository.

Add existing folder to the repository

```
cd existing_folder  
git init  
git remote add origin git@git.cse.iitkgp.ac.in:testuser/test.git  
git add .  
git commit -m "comment"  
git push -u origin master
```

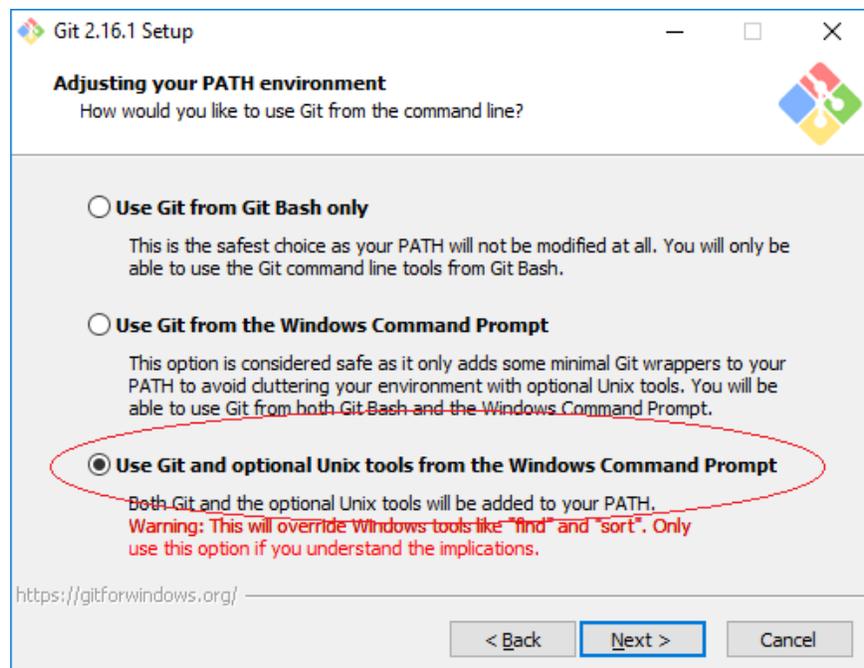
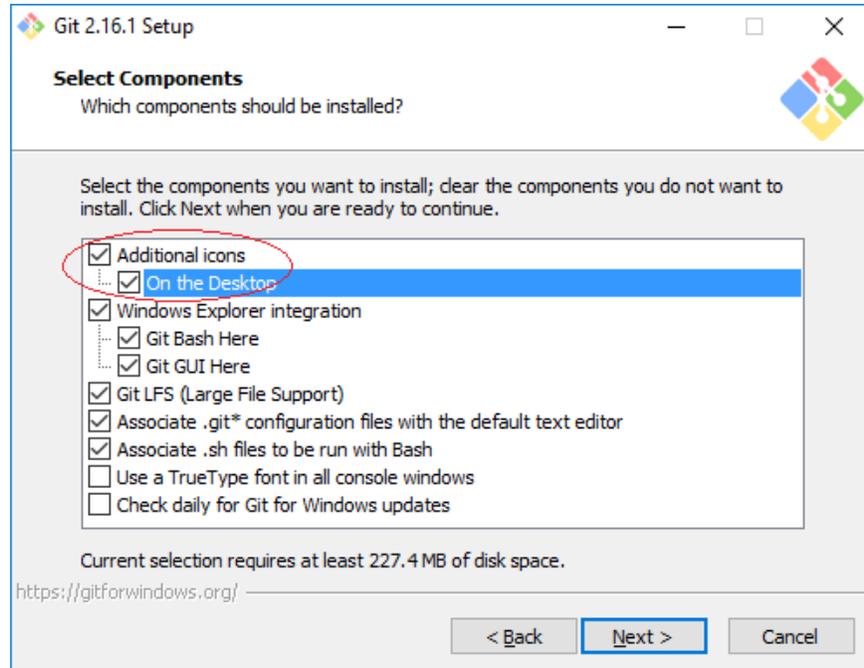
Configuring Windows Client

Install Git for Windows

Download the Windows setup from the link given below.

<https://git-scm.com/download/win>

Start the installation procedure and make sure that the following settings are checked during installation.



Keep all other default options as it is and finish the installation.

Locate and existing key pair

Open command prompt and enter the following command

```
notepad %homepath%\ssh\id_rsa.pub
```

If you see a string starting with ssh-rsa you already have an SSH key pair and you can skip the key generate portion.

Generate a new SSH key pair

Open command prompt and enter the following command.

```
ssh-keygen -t rsa -C "email address"
```

Select the default options and press enter to complete the process.

Send the generated file (C:\Users\

Once the key is deployed in the project and you have received the project URL, you can now either clone the project or add existing code the project.

Clone a project

Change the current directory where you want to keep the project.

```
git clone git@git.cse.iitkgp.ac.in:testuser/test.git  
cd test
```

Now, you can add or modify any file. To commit the changes to the repository user the following command.

```
git commit -m "comment"  
git push -u origin master
```

The above command '**git push -u origin master**' pushes the master branch to the project repository.

Add existing folder to the repository

```
cd existing_folder  
git init  
git remote add origin git@git.cse.iitkgp.ac.in:testuser/test.git  
git add .  
git commit -m "comment"  
git push -u origin master
```