

Lab 1:

1. Generate SSH Key Pair

```
ssh-keygen -t rsa -b 4096
```

```
root@amitserver:/home/amit# ssh-keygen -t rsa -b 4096
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
/root/.ssh/id_rsa already exists.
Overwrite (y/n)? Y
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:Tz1NdMWRJqlLqHWsfiEEfKUkU7xDTaEf1qGRu3urxxz4 root@amitserver
The key's randomart image is:
----[RSA 4096]----+
 .ooot=o.ooc*|
 o+oo+++.+|
 +ooo+.+ |
 *oB.o |
 S *.= . |
 . = + . |
 . o + |
 . o E |
 ..=oo |
```

2. Add the SSH Key to the SSH Agent

Start the agent:

```
eval "$(ssh-agent -s)"
```

Add the private key:

```
ssh-add ~/.ssh/id_rsa
```

```
root@amitserver:/home/amit# eval "$(ssh-agent -s)"
Agent pid 267327
root@amitserver:/home/amit# ssh-add ~/.ssh/id_rsa
Identity added: /root/.ssh/id_rsa (root@amitserver)
```

3. Copy the Public SSH Key

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

- Copy the entire output that starts with ssh-rsa.

```
root@amitserver:/home/amit# cat ~/.ssh/id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQcp78Hq641iEDM3tbvuLARh+BWNjXWFJ+Ugk3ps+D7iWEdsXLMl96w8i+zrH/ONQzOwfFn8ImN
XxRd1bIkAa5eNLuw0gkFbPA1iVvpMeY7DYS351w0EilbMlqo1AstdkLS3tc2qt1VPFJUPMro14QQjokmZRG5q0kWFKeFogHVbJZon2T6SRNUK+v
9WfIweUfjz5gewKHYZRddm06M0dLBu01fjd+5NsroLOh+Zjp0t+ln/MckL/K3Qnx51Rke0T3h21qMHj fL6xf2hZEBOgKZgHnV5WhRUvw0311g/U
eLG+3OEAA4H1lG2u40qeJE6rlqstgESSxrUi2iRLHeFq1pRv00TALRJsjxck2aL4fhKkHb1FZcjcHJDnN+jITL1FK5LAAT4qjMS/TW58a7VkiCPZ
L+ADPGSGY3/tV/relopzWJO14fbCb2Zsn7wyKNQMvdTznAS41MsQ1UywWWA76GzCZEHTKKvKpMETM5ewy1duOh5fiduQzdiOW9RMvi72H8Pj/7
yVGMW18Z/wxjTAWCBr6rQTpFFHHSUZXa2dBFWE2QBX40a0V3HZHgU/+OP9KwoIPv0rvuDn2BOVOQuShChv3gBXXvQtridgOF63DNQcKuo7PlP
lkPlrXmaMcN7XYkI9xITz0vfwsxjLOLz09qKvzKo1F5LlrB3YLY6pSew== root@amitserver
```

4. Add SSH Key to GitLab

1. Log in to GitLab.

The screenshot shows the 'User Settings / Preferences' page. On the left, there's a sidebar with options like 'Set status', 'Edit profile', and 'Preferences'. The 'Preferences' option is highlighted with a red box. At the top right, there's a 'Search page' bar. Below it, the 'Appearance' section is titled 'Choose the appearance of the application.' It has three radio button options: 'Light' (selected), 'Dark (Experiment)', and 'Auto (Experiment)'. A red box highlights the 'Light' radio button.

2. Go to User Settings > SSH Keys.

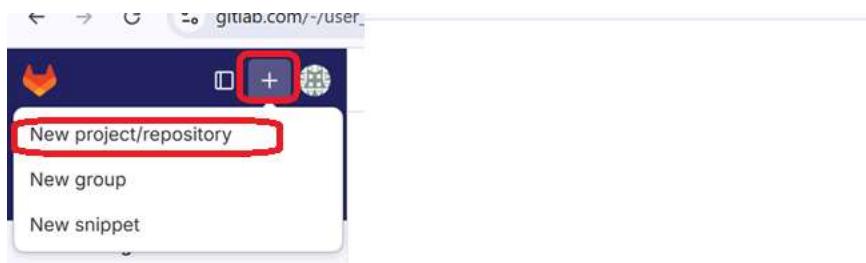
3. Paste your copied key into the **Key** field.
4. Click **Add key**.

The screenshot shows the 'User Settings / SSH Keys' page. On the left, there's a sidebar with 'User settings' and several options: 'Chat', 'Access tokens', 'Emails', 'Password', 'Notifications' (which has 'SSH Keys' highlighted with a red box), 'GPG Keys', and 'Preferences'. The main area is titled 'SSH Keys' and contains a sub-section 'Your SSH keys'. It lists two keys:

Title	Key	Usage type	Created	Last used	Expires	Actions
root@ckasetup	a2:b0:1a:12:b2:31:cc:5d:69:1a:4c:ea:bf:b4:b0:b4	Authentication & Signing	4 months ago	4 months ago	2025-12-02	<button>Revoke</button>
anotherkey	anotherkey	Another usage type	4 months ago	4 months ago	2025-12-02	<button>Revoke</button>

A red box highlights the 'Add new key' button at the top right of the table.

5. Create project → blank project



A screenshot of a web browser showing the 'Create blank project' form on GitLab. The URL in the address bar is 'gitlab.com/projects/new#blank_project'. The form has a 'Project name' field containing 'myrepo'. Other fields include 'Project URL' (https://gitlab.com/~ow1435929), 'Project slug' (myrepo), 'Project deployment target (optional)' (Select the deployment target), and 'Visibility Level' (Private selected). A sidebar on the left shows navigation links like 'requests', 'List', 'Issues', 'History', 'Pages', and 'Comments'.

6. Clone a GitLab Repository Using SSH

A screenshot of a web browser showing the 'myrepo' repository page on GitLab. The address bar shows 'gitlab.com/~ow1435929/myrepo'. A message at the top says 'Project 'myrepo' was successfully created.' The repository page includes a file tree with 'main' and 'myrepo /', a commit history with 'Initial commit' by amit, and a 'Code' dropdown menu. The 'Clone with SSH' option is highlighted with a red box, showing the URL 'git@gitlab.com:ow1435929/myrepo'. Other options in the dropdown are 'Clone with HTTPS' and a copy icon.

```
git clone git@gitlab.com:your-username/your-repo.git
```

```
root@amitserver:/home/amit# git clone git@gitlab.com:ow1435929/myrepo.git
Cloning into 'myrepo'...
The authenticity of host 'gitlab.com (172.65.251.78)' can't be established.
ED25519 key fingerprint is SHA256:eUXGGm1YGsMAS7vkcx6JOJdOGHPem5gQp4taICfCLB8.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'gitlab.com' (ED25519) to the list of known hosts.
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.
```