

## Project-2 | Self-Hosted Git Server on Ubuntu



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## Objective

Deploy a **self-hosted Git server** using Gitea on an Ubuntu machine, allowing private Git repository hosting, user management, and CI/CD automation.

### Step-by-Step Implementation

#### 1. Install Ubuntu & Update System

```
sudo apt update && sudo apt upgrade -y
```

---

#### 2. Install Required Packages

```
sudo apt install git mariadb-server nginx certbot python3-certbot-nginx -y
```

---

#### 3. Secure MariaDB

```
sudo mysql_secure_installation
```

- Set a **strong root password**
  - Remove **anonymous users**
  - Disable **remote root login**
- 

#### 4. Create Gitea Database & User

```
sudo mysql -u root -p
```

Run:

```
CREATE DATABASE gitea CHARACTER SET 'utf8mb4' COLLATE 'utf8mb4_unicode_ci';
CREATE USER 'gitea'@'localhost' IDENTIFIED BY 'Devopsshack@123';
GRANT ALL PRIVILEGES ON gitea.* TO 'gitea'@'localhost';
FLUSH PRIVILEGES;
EXIT;
```

---

#### 5. Install & Configure Gitea

##### Download & Install Gitea

```
sudo mkdir -p /var/lib/gitea
```

```
sudo useradd --system --home /var/lib/gitea --shell /bin/bash gitea
```

```
sudo wget -O /usr/local/bin/gitea https://dl.gitea.com/gitea/1.23.4/gitea-1.23.4-linux-amd64
```

```
sudo chmod +x /usr/local/bin/gitea
```

#### Create Configuration & Data Directories

```
sudo mkdir -p /etc/gitea /var/lib/gitea/{custom,data,log}
```

```
sudo chown -R gitea:gitea /var/lib/gitea /etc/gitea
```

```
sudo chmod -R 750 /var/lib/gitea /etc/gitea
```

```
sudo touch /etc/gitea/app.ini
```

```
sudo chmod 640 /etc/gitea/app.ini
```

---

#### 6. Configure app.ini

Open the Gitea configuration file:

```
sudo vi /etc/gitea/app.ini
```

#### Update Repository Paths

```
[repository]
```

```
ROOT = /var/lib/gitea/data/gitea-repositories
```

#### Update Server Configuration

```
[server]
```

```
APP_DATA_PATH = /var/lib/gitea/data
```

```
DOMAIN = git.skjptpp.in
```

```
SSH_DOMAIN = git.skjptpp.in
```

```
HTTP_PORT = 3000
```

```
ROOT_URL = https://git.skjptpp.in/
```

```
LFS_CONTENT_PATH = /var/lib/gitea/data/fs
```

#### Update Log Configuration

```
[log]
```

```
ROOT_PATH = /var/lib/gitea/log
```

---

Fix permissions:

```
sudo chown -R gitea:gitea /etc/gitea  
sudo chmod 640 /etc/gitea/app.ini
```

---

## 7. Configure Systemd Service for Gitea

```
sudo vi /etc/systemd/system/gitea.service
```

Add:

[Unit]

Description=Gitea Self-Hosted Git Server

After=network.target mariadb.service

[Service]

User=gitea

Group=gitea

ExecStart=/usr/local/bin/gitea web --config /etc/gitea/app.ini

Restart=always

WorkingDirectory=/var/lib/gitea

Environment=USER=gitea HOME=/var/lib/gitea

[Install]

WantedBy=multi-user.target

### Reload Systemd & Start Gitea

```
sudo systemctl daemon-reload  
sudo systemctl enable --now gitea  
sudo systemctl status gitea
```

---

## 8. Set Up Reverse Proxy with Nginx

```
sudo vi /etc/nginx/sites-available/gitea
```

Add:

```
server {  
    listen 80;  
    server_name git.skjptpp.in;  
  
    location / {  
        proxy_pass http://localhost:3000;  
        proxy_set_header X-Real-IP $remote_addr;  
        proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;  
        proxy_set_header Host $host;  
    }  
}
```

### Enable & Restart Nginx:

```
sudo ln -s /etc/nginx/sites-available/gitea /etc/nginx/sites-enabled/  
sudo systemctl restart nginx
```

---

## 9. Secure Gitea with SSL (Let's Encrypt)

```
sudo certbot --nginx -d git.skjptpp.in
```

### Set up auto-renewal:

```
sudo crontab -e
```

Add:

```
0 3 * * * certbot renew --quiet
```

---

---

**10** Enable SSH Access for Git Repositories

```
sudo usermod -aG gitea $(whoami)
```

```
sudo systemctl restart gitea
```

```
git clone git@git.skjptpp.in:your-username/your-repo.git
```

---

**10** Access Gitea Web Interface

- Open <https://git.skjptpp.in>
- Complete **initial setup**
- Use **Gitea database credentials**
- Create an **admin user**