To deploy a Spring Boot application on an Ubuntu server with Nginx as a reverse proxy, follow these steps:

**1. Prepare the Ubuntu Server**

1. **Update and Upgrade the System:**
2. sudo apt update && sudo apt upgrade -y
3. **Install Java:** Ensure the required version of Java is installed. For example:
4. sudo apt install openjdk-17-jdk -y

Verify the installation:

java -version

1. **Install Nginx:**
2. sudo apt install nginx -y
3. **Allow Nginx in Firewall:**
4. sudo ufw allow 'Nginx Full'
5. sudo ufw enable

**2. Build Your Spring Boot Application**

1. **Package Your Application:** On your local machine, build your Spring Boot application into a JAR file:
2. mvn clean package

Locate the JAR file in the target directory, e.g., your-app-1.0.0.jar.

1. **Transfer the JAR File to the Server:** Use scp or any file transfer method to upload the JAR file:
2. scp target/your-app-1.0.0.jar username@server\_ip:/home/username/

**3. Set Up the Spring Boot Application**

1. **Create a Systemd Service File:** Create a service file to run your Spring Boot application:
2. sudo nano /etc/systemd/system/your-app.service

Add the following configuration:

[Unit]

Description=Spring Boot Application

After=network.target

[Service]

User=username

Group=username

ExecStart=/usr/bin/java -jar /home/username/your-app-1.0.0.jar

Restart=always

RestartSec=10

StandardOutput=journal

StandardError=journal

[Install]

WantedBy=multi-user.target

Replace username with your server username and update the path to the JAR file.

1. **Reload Systemd and Start the Service:**
2. sudo systemctl daemon-reload
3. sudo systemctl start your-app
4. sudo systemctl enable your-app
5. **Check Service Status:**
6. sudo systemctl status your-app

**4. Configure Nginx as a Reverse Proxy**

1. **Create an Nginx Configuration File:**
2. sudo nano /etc/nginx/sites-available/your-app

Add the following configuration:

server {

listen 80;

server\_name your-domain.com;

location / {

proxy\_pass http://localhost:8080;

proxy\_set\_header Host $host;

proxy\_set\_header X-Real-IP $remote\_addr;

proxy\_set\_header X-Forwarded-For $proxy\_add\_x\_forwarded\_for;

proxy\_set\_header X-Forwarded-Proto $scheme;

}

}

Replace your-domain.com with your domain name or server IP.

1. **Enable the Configuration:**
2. sudo ln -s /etc/nginx/sites-available/your-app /etc/nginx/sites-enabled/
3. **Test Nginx Configuration:**
4. sudo nginx -t
5. **Restart Nginx:**
6. sudo systemctl restart nginx

**5. Secure Your Application with SSL (Optional)**

1. **Install Certbot:**
2. sudo apt install certbot python3-certbot-nginx -y
3. **Obtain SSL Certificate:**
4. sudo certbot --nginx -d your-domain.com -d www.your-domain.com
5. **Renew SSL Automatically:**
6. sudo certbot renew --dry-run

**6. Verify the Deployment**

1. Access your application at:
2. http://your-domain.com
3. If SSL is enabled:
4. https://your-domain.com

Let me know if you encounter any issues during the deployment!