

1. Update your system

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

2. Install Nginx

```
sudo apt install nginx -y
```

Check version:

```
nginx -v
```

Start Nginx and enable it on boot:

```
sudo systemctl start nginx  
sudo systemctl enable nginx  
sudo systemctl status nginx
```

Test in browser:

```
http://<your-ip>/
```

You should see the default Nginx page.

3. Install Redis (required for Django Channels)

```
sudo apt install redis-server -y  
sudo systemctl enable redis-server  
sudo systemctl start redis-server  
sudo systemctl status redis-server
```

Redis default port: `6379`.

4. Create SSL Certificates (Self-signed for IP)

```
sudo mkdir -p /etc/nginx/ssl
sudo openssl req -x509 -nodes -days 365 -newkey rsa:2048
-keyout /etc/nginx/ssl/key.pem
-out /etc/nginx/ssl/cert.pem
```

- Common Name (CN): your IP, e.g., `192.168.68.115` - Files are located at:

```
/etc/nginx/ssl/cert.pem
/etc/nginx/ssl/key.pem
```

- Browsers will warn about self-signed certs for testing purposes.

5. Configure Nginx

Create a config file:

```
sudo nano /etc/nginx/sites-available/ipproject
```

Paste:

```
server {
    listen 443 ssl;
    server_name 192.168.68.115;

    ssl_certificate /etc/nginx/ssl/cert.pem;
    ssl_certificate_key /etc/nginx/ssl/key.pem;

    # Frontend / Django
    location / {
        proxy_pass http://127.0.0.1:8000;
        proxy_set_header Host $host;
        proxy_set_header X-Real-IP $remote_addr;
    }

    # WebSocket / Daphne
    location /ws/ {
        proxy_pass http://127.0.0.1:8001;
        proxy_http_version 1.1;
        proxy_set_header Upgrade $http_upgrade;
        proxy_set_header Connection "upgrade";
        proxy_set_header Host $host;
    }
}
```

Enable the site:

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

6. Run Backend Services

Django HTTP server:

```
python manage.py runserver_plus 127.0.0.1:8000
```

Daphne WebSocket server:

```
daphne -b 127.0.0.1 -p 8001 backendD.asgi:application
```

Redis: Already running on port 6379

7. Frontend WebSocket URL

```
const socket = new WebSocket("wss://192.168.68.115/ws/login/DEVICE_ID/");
```

- Frontend connects to `wss://` (secure WebSocket) - Nginx terminates TLS and forwards to Daphne over `ws://`

8. Verify

1. Open browser → `https://192.168.68.115/`
2. WebSocket should connect successfully without mixed-content errors.