

# Django Channels Daphne Service Management Guide

This guide covers how to manage your Daphne service for the HeaterUI Django Channels application. It explains how to start, stop, restart and monitor the service, as well as what each component does.

## Basic Service Management Commands

### Starting the Service

To start the Daphne service:

```
bash
sudo systemctl start daphne-heaterui
```

### Stopping the Service

To stop the Daphne service:

```
bash
sudo systemctl stop daphne-heaterui
```

### Restarting the Service

To restart the Daphne service (stop and then start):

```
bash
sudo systemctl restart daphne-heaterui
```

### Checking Service Status

To check if the service is running and see basic status information:

```
bash
sudo systemctl status daphne-heaterui
```

This will show whether the service is active (running), when it was started, and the most recent log messages.

## Viewing Service Logs

## Using journalctl

To view the service logs using journalctl:

```
bash
```

```
sudo journalctl -u daphne-heaterui
```

### Additional journalctl commands:

- View only the most recent logs:

```
bash
```

```
sudo journalctl -u daphne-heaterui -n 50
```

- Follow the logs in real-time (like tail -f):

```
bash
```

```
sudo journalctl -u daphne-heaterui -f
```

- View logs since a certain time:

```
bash
```

```
sudo journalctl -u daphne-heaterui --since="2025-04-24 12:00:00"
```

- View logs with full/non-truncated output:

```
bash
```

```
sudo journalctl -u daphne-heaterui -l
```

## Viewing Access Logs

If you've configured access logs in your service file:

```
bash
```

```
cat /home/lijjith/HeaterUI/daphne_access.log
```

Or to follow new log entries:

```
bash
```

```
tail -f /home/lijjith/HeaterUI/daphne_access.log
```

# Configuring Service Auto-start

## Enable Service to Start Automatically on Boot

```
bash
```

```
sudo systemctl enable daphne-heaterui
```

## Disable Service from Starting Automatically on Boot

```
bash
```

```
sudo systemctl disable daphne-heaterui
```

## Understanding the Service Layer

The service layer refers to how your application runs as a systemd service, which is managed by the Linux operating system. Here's what each part means:

### Systemd Service File Components

Your service file (`daphne-heaterui.service`) contains several sections:

#### 1. [Unit] Section:

- Defines metadata about the service
- Specifies service dependencies (`After` and `Requires` directives)
- Example: `After=network.target` means this service starts after network is available

#### 2. [Service] Section:

- Defines how the service runs
- Specifies the command to execute (`ExecStart`)
- Sets environment variables
- Configures user/group permissions
- Sets restart policies
- Configures logging

#### 3. [Install] Section:

- Defines when the service should be started
- `WantedBy=multi-user.target` means it starts in normal multi-user mode

## Key Service File Parameters

- **User/Group:** Defines which system user runs the process (security)
- **WorkingDirectory:** Sets the directory where the command runs
- **ExecStart:** The actual command that runs your application
- **Environment:** Environment variables needed by your application
- **Restart:** Controls automatic restart behavior
- **RestartSec:** How long to wait before restarting after failure

## Benefits of Running as a Service

1. **Automatic Restart:** If your application crashes, systemd will restart it
2. **Boot-time Startup:** Your application starts automatically when the server boots
3. **Dependency Management:** Ensures required services (like Redis) are running first
4. **Resource Control:** Systemd can monitor and limit resource usage
5. **Logging:** Standard output is captured in the system journal

## Troubleshooting

### Service Won't Start

If the service won't start, check for errors:

```
bash
sudo systemctl status daphne-heaterui
sudo journalctl -u daphne-heaterui -n 50
```

Common issues include:

- Port conflicts (another service using port 8000)
- Permission problems
- Incorrect paths
- Environment issues

### Service Keeps Restarting

If the service keeps restarting (crashing):

1. Check the logs:

```
bash
```

```
sudo journalctl -u daphne-heaterui -n 100
```

2. Try running Daphne manually to see errors:

```
bash
```

```
cd /home/lijjith/HeaterUI
```

```
source /home/lijjith/HeaterSolutionEnv/bin/activate
```

```
daphne -b 127.0.0.1 -p 8000 HeaterUI.asgi:application
```

## Checking for Port Conflicts

To see if another process is using port 8000:

```
bash
```

```
sudo lsof -i :8000
```

Or:

```
bash
```

```
sudo netstat -tuln | grep 8000
```

## Service Configuration Updates

If you update your service configuration file:

1. Edit the service file:

```
bash
```

```
sudo nano /etc/systemd/system/daphne-heaterui.service
```

2. Reload systemd to recognize changes:

```
bash
```

```
sudo systemctl daemon-reload
```

3. Restart the service:

```
bash
```

```
sudo systemctl restart daphne-heaterui
```

## **Nginx Integration**

Your Daphne service works together with Nginx:

1. Daphne handles WebSockets and ASGI/Channels connections
2. Nginx acts as a reverse proxy, forwarding requests to Daphne
3. Nginx handles SSL termination and serves static files

Make sure both Nginx and Daphne are running for your application to work properly.