

# LIFESIGNS BLE GATEWAY – DEPLOYMENT MANUAL (v1.0)

**Version:** 1.0 (Initial Release)

**Date:** January 2026

**System:** Ubuntu / Debian Linux

## 1. Overview

The **Lifesigns BLE Gateway** manages the communication between BLE devices, the MQTT Broker, and the User Dashboard. This system is designed for high resilience in critical hospital environments, featuring:

- **Auto-Healing:** Services automatically restart if they crash.
- **Nuclear Port Cleanup:** Automatically kills zombie processes holding ports 1883, 8080, or 8083 during start/stop.
- **Centralized Alerts:** Crashes are reported silently to the central **Lifesigns Master Bot** on Telegram.
- **Strict Configuration:** Uses a Linux-optimized configuration that mirrors your specific deployment needs.

## 2. Prerequisites

### 2.1 Server Requirements

- **OS:** Ubuntu 22.04 LTS (Recommended) or Debian 11+
- **User:** Root or Sudo access
- **Internet:** Required for initial installation (GitHub downloads)

### 2.2 Telegram Configuration

The system is pre-configured to use the **Lifesigns Master Bot**.

- **Bot Token:** 8585438117:AAHAXCGJk0pVjFsfioK4sL9qwUDWu9LpcKY
- **Chat ID:** 7797517403

**Note:** You do not need to configure this manually. The installer will use these credentials automatically.

## 3. Installation

1. **Copy Script:** Transfer `lifesigns-setup.sh` to the server.
2. **Run Installer:**

```
sudo bash lifesigns-setup.sh
```

3. **Select Option 1:** "Install / Reinstall Lifesigns Gateway".
4. **Hospital Identification:** Enter the **Hospital Name** and **Region**. This allows the network team to identify which specific gateway is sending alerts in the central chat.
5. **Interactive Configuration:** The script will pause and ask if you want to edit the configuration files (`mqtt.conf`, `config.json`).

## 4. Daily Operations

The system provides custom commands for easy management.

### Start Gateway

Starts all services, cleans ports, and checks config.

```
sudo gateway-start
```

### Stop Gateway

Stops all services and **disables auto-restart**.

```
sudo gateway-stop
```

### Restart Gateway

Use this if the system is acting strange. It forces a configuration reload.

```
sudo gateway-restart
```

### Check Status

Displays a dashboard of running services, listening ports, and access URLs.

```
gateway-status
```

## 5. Configuration Files

All configuration files are located in `/opt/lifesigns`. You can edit them manually or use the interactive prompts in `gateway-restart`.

Component	File Path	Notes
<b>MQTT Broker</b>	/opt/lifesigns/mqtt.conf	Linux-adapted version of your template.
<b>Orchestrator</b>	/opt/lifesigns/orchestrator/config.json	Defines MQTT broker IP and BLE settings.
<b>Dashboard</b>	/opt/lifesigns/dashboard/config.json	Dashboard settings.
<b>Alert Config</b>	/opt/lifesigns/alert_config.env	Contains Telegram Token & Chat ID.

## 6. Logs & Debugging

Log files are stored in `/var/log/lifesigns`.

### Live Monitoring (Tail)

- **MQTT:** `tail -f /var/log/lifesigns/mqtt.log`
- **Orchestrator:** `tail -f /var/log/lifesigns/orchestrator.log`
- **Dashboard:** `tail -f /var/log/lifesigns/dashboard.log` (*Press Ctrl+C to exit*)

### Historical Logs (Scrollable)

- **MQTT:** `tail -n 1000 /var/log/lifesigns/mqtt.log`
- **Orchestrator:** `tail -n 1000 /var/log/lifesigns/orchestrator.log`
- **Dashboard:** `tail -n 1000 /var/log/lifesigns/dashboard.log` (*Press 'q' to exit*)

### File Manager

To see all files and open the directory:

```
cd gateway-files
```

## 7. Troubleshooting

### "Address already in use" / Boot Loop

- **Cause:** An old instance of Mosquitto or the Orchestrator is running in the background.
- **Fix:** Run `sudo gateway-stop`. The setup script performs a "Nuclear Cleanup" that aggressively kills any process holding ports 1883, 8080, or 8083. Then run `sudo gateway-start`.

### Alerts not arriving

- **Fix:** Check your internet connection ( ping google.com ).
- **Fix:** Check the config file: sudo cat /opt/lifesigns/alert\_config.env . Ensure the Hospital Name is correct.

## 8. Uninstallation

To completely remove the gateway:

1. Run sudo bash lifesigns-setup.sh .
2. Select **Option 2 (Uninstall)**.
3. The script will:
  - Stop all lifesigns-\* services.
  - Kill all associated processes.
  - Remove /opt/lifesigns .