

LibreNMS Docker

Deployment on Raspberry Pi

5

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Category: Monitoring / Raspberry Pi Projects

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Project Overview

This guide walks through setting up **LibreNMS** on a **Raspberry Pi 5 (64-bit)** using **Docker Compose**, then configuring SNMP on the Pi to allow it to be monitored—including fixing the common “**No Processors**” graph error by enabling `extend` support in SNMP for `/proc/stat`.

Prerequisites

- Raspberry Pi 5 running 64-bit Raspberry Pi OS (Bookworm or similar)
 - Docker and Docker Compose installed
 - Static IP (e.g. `192.168.1.174`)
 - Basic familiarity with SSH and Linux commands
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Step 1: Docker Setup

Install Docker (skip if already installed):

```
curl -fsSL https://get.docker.com -o get-docker.sh
sudo sh get-docker.sh
```

Step 2: Clean Up Old LibreNMS Docker Setup (if any)

```
docker stop $(docker ps -aq)
docker rm $(docker ps -aq)
docker volume prune -f
rm -rf ~/librenms
```

Step 3: Set Up LibreNMS Docker Files

Create a new folder:

```
mkdir ~/librenms && cd ~/librenms
```

Download example files from the official repo:

```
wget https://raw.githubusercontent.com/librenms/docker/master/examples/compose/compose.yml
wget https://raw.githubusercontent.com/librenms/docker/master/examples/compose/.env
wget https://raw.githubusercontent.com/librenms/docker/master/examples/compose/librenms.env
wget https://raw.githubusercontent.com/librenms/docker/master/examples/compose/msmtpd.env
```

Step 4: Edit `.env` File

```
nano .env
```

Set your timezone and user/group IDs:

```
TZ=America/Chicago
PUID=1000
```

```
PGID=1000
```

Step 5: Start the Docker Stack

```
docker compose -f compose.yml up -d
```

Once all containers start, LibreNMS will be accessible at:

```
http://<PI-IP>:8000 (e.g., http://192.168.1.174:8000)
```

Step 6: Create LibreNMS User

Once web UI is accessible, create your first admin user through the setup wizard.

Step 7: Install and Configure SNMP on the Pi

Install SNMP daemon:

```
sudo apt update
sudo apt install snmpd snmp -y
```

Edit `/etc/snmp/snmpd.conf`:

```
sudo nano /etc/snmp/snmpd.conf
```

Modify/add the following:

```
agentAddress udp:161
rocommunity public
sysLocation Sitting on a Dusty Shelf
sysContact Me <zippybytes@protonmail.com>
extend cpuinfo /bin/cat /proc/stat
```

Restart the SNMP service:

```
sudo systemctl restart snmpd
```

Step 8: Verify SNMP Works

```
snmpwalk -v2c -c public localhost 1.3.6.1.2.1.1
```

```
snmpwalk -v2c -c public localhost system
```

Expected result includes system description, contact, location, and uptime.

Step 9: Fix “No Processors” Graph Issue

If LibreNMS shows “Error Drawing Graph: No Processors”:

Ensure `extend cpuinfo /bin/cat /proc/stat` is set in `/etc/snmp/snmpd.conf`, then test it:

```
snmpwalk -v2c -c public localhost NET-SNMP-EXTEND-MIB::nsExtendOutputFull.\"cpuinfo\"
```

You should see actual `/proc/stat` data returned.

Final Test

1. Go to **Devices** > **Add Device** in LibreNMS.
2. Enter:
 - Hostname/IP: `192.168.1.174`
 - SNMP Version: `v2c`
 - Community: `public`
3. Click **Add Device**.

After polling completes (5–10 mins), graphs will populate correctly, including CPU usage.

The screenshot shows a network monitoring interface for a device with IP 192.168.1.174. The top navigation bar includes Overview, Devices, Maps, Services, Ports, Health, Alerts, and a user profile for 'zippyb'. The main header displays the IP address and the device name 'Sitting on a Dusty Shelf'. Below this, there are tabs for Overview, Graphs, Logs, Alerts, Alert Stats, Latency, and Notes. The Overview tab is active, showing system details and a list of recent events.

System Name	pi-dt-01
Resolved IP	192.168.1.174
Hardware	Generic ARMv8 64-bit
Operating System	Linux 6.6.31+rpt-rpi-2712
Object ID	.1.3.6.1.4.1.8072.3.2.10
Contact	Me <zippybytes@protonmail.com>
Device Added	10 minutes 1 second ago
Last Discovered	42 seconds ago
Uptime	1 month 3 weeks 3 days 1 hour
Location	Sitting on a Dusty Shelf
Lat / Lng	N/A

Recent Events

- 2025-05-13 20:11:30 IP: 192.168.1.174
- 2025-05-13 20:11:27 Device status changed to Up from check.
- 2025-05-13 20:11:27 Device type: server
- 2025-05-13 20:11:27 OS Version: 6.6.31+rpt-rpi-2712
- 2025-05-13 20:11:27 Hardware: Generic ARMv8 64-bit
- 2025-05-13 20:11:27 Icon: images/os/linux.svg
- 2025-05-13 20:11:27 Location: Sitting on a Dusty Shelf
- 2025-05-13 20:11:26 1 -> 1
- 2025-05-13 20:11:24 Device 192.168.1.174 has been created

Notes

- If SNMP errors appear during walk attempts, ensure MIBs are installed:

```
sudo apt install snmp-mibs-downloader -y
sudo sed -i 's/^mibs :/#mibs :/' /etc/snmp/snmp.conf
```

- Reload or restart SNMP again:

```
sudo systemctl restart snmpd
```

☐☐ Services Started

- `librenms` (Main Web Interface)
 - `librenms_db` (MariaDB)
 - `librenms_redis`
 - `librenms_syslogng`
 - `librenms_snmptrapd`
 - `librenms_msmtpd`
-

☐☐ Next Steps

- Enable polling other devices (routers, switches, VPS)
 - Add disk, network, and service monitors
 - Create alerts for offline devices
 - Enable email notifications via `msmtpd.env`
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