Raspberry Pi 5 – Automatic Shutdown After 3 Hours (Timer-Based)

This document explains how to configure an automatic shutdown on a Raspberry Pi 5 exactly three hours after boot using a systemd timer. The solution is independent of system clock synchronization and does not require internet access.

Overview

The configuration uses a systemd timer with the OnBootSec=3h directive. This relies on a monotonic clock that starts at boot, ensuring reliable operation even when the real-time clock has not yet been updated.

1. Create the shutdown service

Create the following systemd service file:

```
sudo nano /etc/systemd/system/autoshutdown.service

[Unit]
Description=Auto shutdown 3 hours after boot

[Service]
Type=oneshot
ExecStart=/sbin/shutdown -h now "Auto shutdown after 3 hours of uptime"
```

2. Create the systemd timer

Create the timer file:

```
sudo nano /etc/systemd/system/autoshutdown.timer

[Unit]
Description=Timer to auto shutdown 3 hours after boot

[Timer]
OnBootSec=3h
Persistent=no

[Install]
WantedBy=timers.target
```

3. Enable and start the timer

```
sudo systemctl daemon-reload
sudo systemctl enable autoshutdown.timer
sudo systemctl start autoshutdown.timer
```

4. Bash aliases for control and status

Add the following aliases to your ~/.bashrc file:

```
alias autoShutdownOff="sudo systemctl stop autoshutdown.timer"
alias autoShutdownState="systemctl status autoshutdown.timer"
```

Apply the changes:

```
source ~/.bashrc
```

5. Verifying timer operation

Check remaining time until shutdown:

```
systemctl list-timers autoshutdown.timer
```