Strato Pi CM - Strato Pi CM Duo Raspberry Pi OS image

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Introduction

This document describes the configuration of a Strato Pi CM or Strato Pi CM Duo with Raspberry Pi OS pre-installed when purchased directly from Sfera Labs. It also provides a quick-start guide to help you get the device up and running.

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OS Configuration

Raspberry Pi OS

- **Version:** Raspberry Pi OS Lite (64-bit)
- **Kernel:** 6.18
- **Debian:** 13 (Trixie)

User

- **Username:** `pi`
- **Password:** `stratopicm`

Networking

DHCP is enabled on the Ethernet interface (`eth0`), and the hostname is set to `stratopicm`.

On most networks with a DHCP server, you should be able to reach the unit using: `stratopicm.local`

SSH

SSH access is enabled on the standard port 22, with password authentication enabled.

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Strato Pi Configuration

Strato Pi Kernel module

The Strato Pi kernel module is installed and configured to load automatically at boot. Its sysfs files are accessible by the `pi` user.

For further details, visit: https://github.com/sfera-labs/strato-pi-kernel-module

RTC driver

The RTC driver is installed and configured to load automatically at boot.

The operating system is configured to synchronize the system date and time with the time stored in the RTC.

For further details, visit: https://github.com/sfera-labs/rtc-pcf2131

Dual SD card

The `sdio` overlay is enabled, which is required by the Strato Pi CM Duo to access the SD card connected to the secondary SD bus.

The following line is added to `/boot/firmware/config.txt`:

```
dtoverlay=sdio,bus_width=4,poll_once=off
```

Serial console

The Linux serial console is enabled by default on the `ttyAMA0` device, which is connected to the RS-485 interface of the Strato Pi CM. The baud rate is set to **115200**.

You can access the console by connecting a host computer to the RS-485 interface using, for example, a USB-to-RS-485[1] adapter and a serial terminal application.

Note: The RS-485 hardware interface is half-duplex, meaning that both ends cannot transmit simultaneously. Since the Linux console echoes every character it receives, rapidly sending multiple characters—for example, by pasting an entire command into the console—can result in corrupted text in both directions.

To disable the serial console and use the RS-485 interface for other purposes, refer to the product User Guide.

[1] https://www.sferalabs.cc/product/ftdi-usb-to-rs-485-adapter/

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Quick Start

Power on

Connect the **+** and **–** terminal block pins to a suitable power supply with a DC output voltage in the **9-28 V** range and capable of supplying at least **6 W**, or more if USB devices are connected.

Refer to the product User Guide for detailed power supply requirements.

Switch on the power supply and wait for the unit to boot.

The blue **ON** LED should start blinking, followed by alternating periods of steady illumination and irregular blinking. The **TX** LED will blink irregularly as the Linux serial console produces output. Approximately 30 seconds after power-on, the **ON** LED should remain steadily lit, indicating that the system has finished booting.

System access

The simplest way to access the system is to connect it to a network with DHCP enabled and log in via SSH.

Connect an Ethernet cable and make sure the Ethernet port LEDs are active.

From a host computer connected to the same network, use your preferred SSH client and connect to `stratopicm.local`.

For example, from a Linux terminal:

```
$ ssh pi@stratopicm.local
```

When prompted, enter the password `stratopicm`.

You are now ready to use the Strato Pi CM.

If `stratopicm.local` cannot be reached

If the SSH connection fails, first try to ping the hostname:

```
$ ping stratopicm.local
```

If the unit responds, the ping output should show its IP address. You can then use that address to connect via SSH, e.g.:

```
$ ssh pi@192.168.1.13
```

If the hostname does not resolve or the unit does not respond to ping, access your router, modem, or DHCP server control panel and look for the IP address assigned to the Strato Pi.

Alternatively, use a network scanner application to list the devices connected to the network and identify the Strato Pi. It should appear as a standard Raspberry Pi device.

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Direct Ethernet Connection

If you cannot access a DHCP-enabled network, you can try connecting the Strato Pi CM directly to the Ethernet port of your host computer.

Depending on the operating system and network configuration of the host computer, the unit may be reachable using `stratopicm.local` or its assigned IP address.

RS-485 Console

As a final option, you can access the Linux console through the RS-485 interface as described in the *Serial Console* section above.

At the login prompt, enter the credentials to log in.

You can then check the unit's IP address using:

```
$ ifconfig
```

The system can also be used directly through the RS-485 serial console. While this is less convenient than using SSH, it provides an alternative way to configure and operate the system.

Usage

Once connected to the unit, you can use it like a standard Raspberry Pi OS installation. You can configure the required network settings and install your application stack as needed.

As a quick test, you can turn on the **L1** LED by running:

```
$ echo 1 > /sys/class/stratopi/led/status
```


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