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Designed for Professionals

ROLINE 40Gbit USB4 Type C Enclosure

Specifications

- **Model / Part No.**: ROLINE 16.01.4149-10 (USB4 Gen3×2 Type-C Enclosure)
- **External Interface**: USB4 Gen3×2 Type-C, up to 40Gbit/s (≈5GB/s)
- **Backwards Compatibility**: Compatible with USB3.2 (up to 20Gbps) and USB2.0;

also works with Thunderbolt3/4 hosts

- **Supported SSDs**: PCIe Gen4×4 NVMe M.2 2280, 2260, 2242, 2230 (M-Key)
- **Bus Power**: Powered entirely via USB, no external power supply required
- **Materials & Design**: Slim aluminium housing (~15×46×124mm), toolless design for drive installation, thermal pad included
- **Operating Temperature (storage)**: –10°C to +70°C
- **Weight**: Approx. 105g
- **Included Items**: Enclosure, ~30cm USB-C cable, thermal pad, user manual in multiple languages

Introduction

The ROLINE USB4 NVMe SSD Enclosure is a compact, high-performance external enclosure designed to house a single NVMe M.2 SSD and deliver ultra-fast data transfer rates via USB4 Type-C. Targeted at professionals and power users, it supports up to PCIe Gen4×4 speeds and is compatible with both USB and Thunderbolt host systems. Its sleek aluminium chassis doubles as a heatsink, ensuring thermal efficiency during sustained data transfer tasks—all within a bus-powered, tool-free design. Perfect for portable high-speed storage and backups.

Usage

1. **SSD Installation**:
    1. Remove the single screw to open the top cover.
    2. Tilt and slide off; insert the M.2 SSD and use the locking lever.
    3. Affix the supplied thermal pad against the SSD to the enclosure cover.
    4. Close the enclosure and tighten the screw. No tools required.
2. **Connect to Host**:
    - Use the included USB4 Type-C cable (≈30cm) to connect to a USB4, Thunderbolt4, Thunderbolt3, or compatible USB-C port.
    - Enclosure is bus-powered; no external adapter necessary.
3. **Operation**:
    - Supports plug-and-play; no driver installation required.
    - Works across Windows, macOS, Linux (32/64-bit support).
4. **Performance**:
    - Capable of sustained transfers near the USB4 limit (~3GB/s real-world

read/write), depending on SSD model and host support. Refer to user experiences like the Reddit discussion showing ~3.1–3.3GB/s transfer speeds.

Safety & Operational Tips

- **Heat Warning**: USB4 enclosures can get warm. The aluminium shell plus thermal pad help, but allow cooling time before handling or storing. High-speed transfers may raise internal temperature.
- **Electrical Caution**: Use certified USB4 cables. Avoid damaged ports or cables that could compromise power delivery or data integrity.
- **Mechanical Handling**: Although tool-free, ensure the SSD is firmly secured and the enclosure cover fully closed before connecting.
- **Storage Conditions**: Keep the enclosure and SSD within operating/storage ratings (–10°C to 70°C). Avoid moisture or drops.
- **Compatibility Note**: Some systems may default to USB 3 speeds—ensure the host port supports USB4 or Thunderbolt for full 40Gbps throughput.

Introduction

This is a portable USB NVMe SSD enclosure that enables ultra-fast file transfer speeds for backup or external storage applications. Utilising the latest USB4 technology, this device can deliver up to 40 Gbps bandwidth. The toolless mechanical design improves ease of use when installing M.2 SSDs, and the aluminium enclosure provides excellent thermal performance for reliable and durable operation.

Features

- Supports USB4 Gen3x2 Type-C host connection of up to 40Gbps
- Backwards compatible with USB 3.2 and USB 2.0
- Supports BOT and UAS protocols
- Supports PCIe Gen 4×4 NVMe SSD at 2280 / 2260 / 2242 / 2230 M.2 form factor
- Bus-powered device
- Supports USB Power Delivery over Type-C
- Toolless design for trouble-free M.2 SSD drive installation
- The aluminium housing acts as a large heat sink for the SSD drive
- Plug-n-play, no installation of a software driver is needed

- Compatible with Thunderbolt 3 and 4 host

Systems Requirements

Supported operating systems (both 32 and 64-bit):

- Windows 11/10/8.x/7
- Linux
- Apple macOS X

Product Diagram

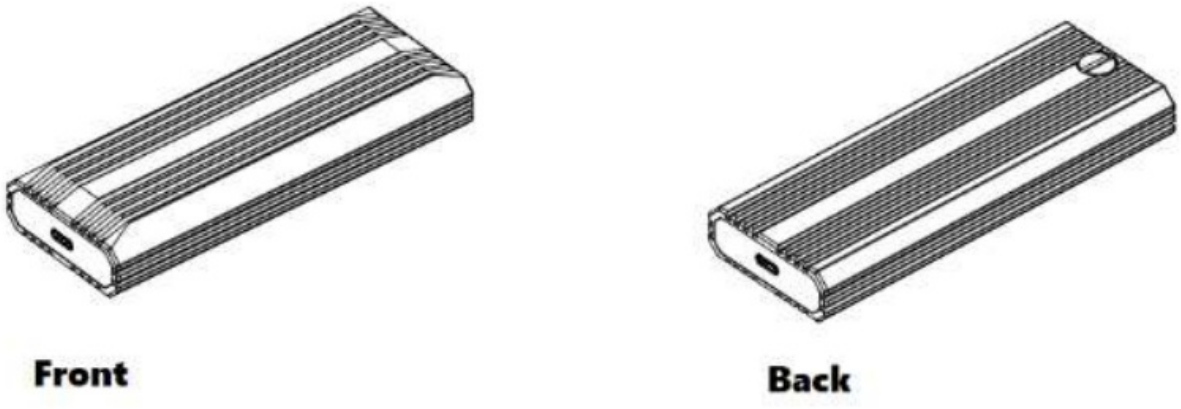
Package Contents

- USB4 40Gbps NVMe SSD Enclosure
- USB4 Cable, C-C, ca. 30cm
- Thermal Pad
- User Manual

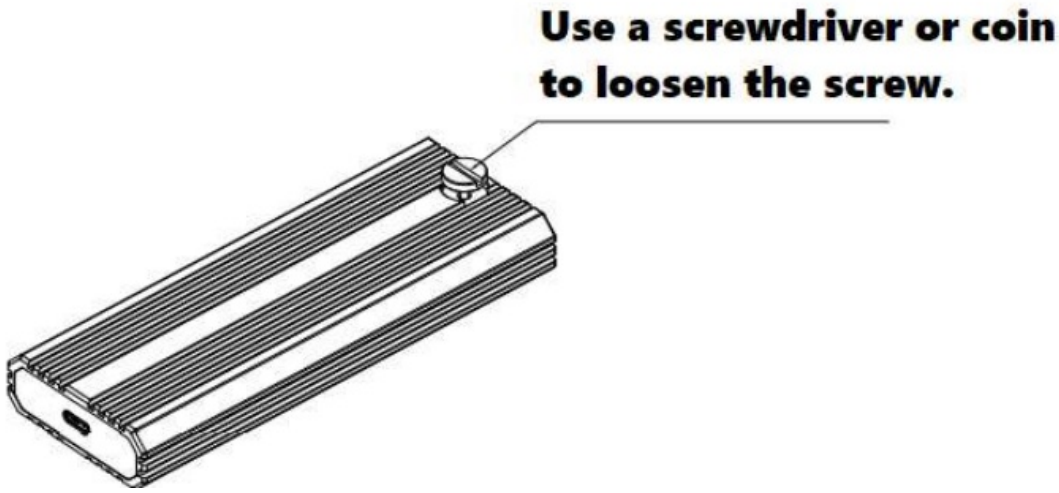
Getting Started

Hard Drive Installation

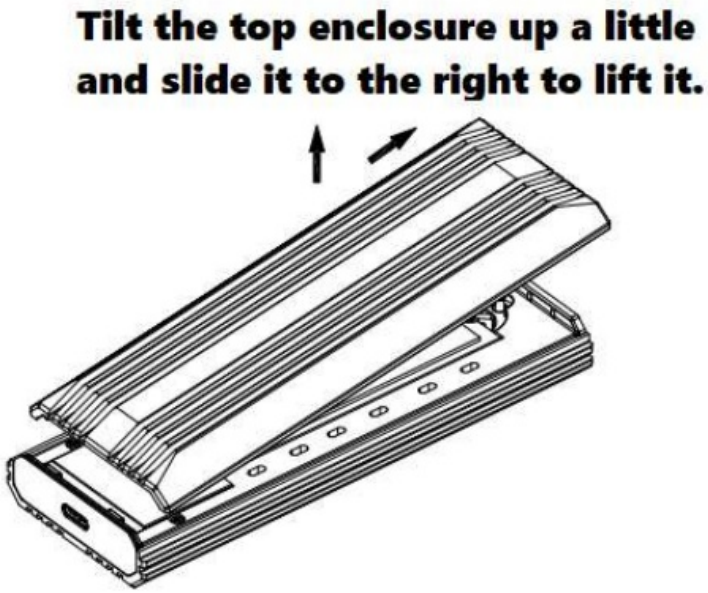
Follow the steps to install the SSD.



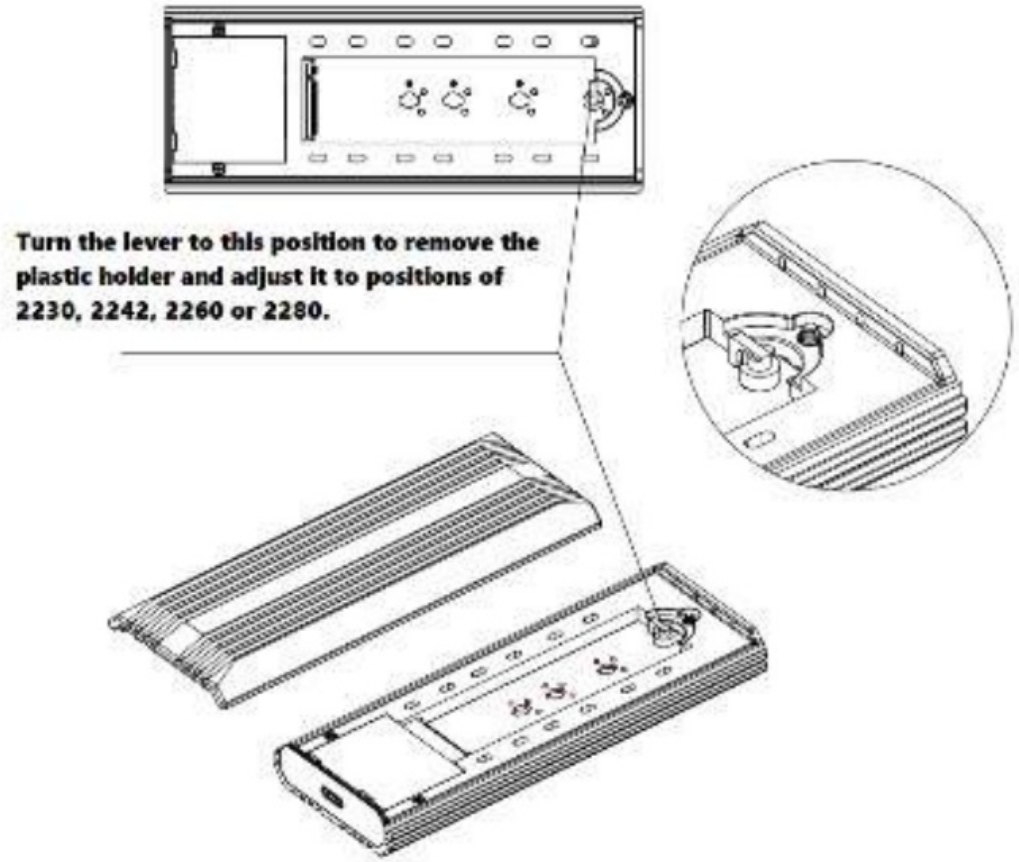
1. Remove the screw first. Use a screwdriver or coin to loosen the screw.



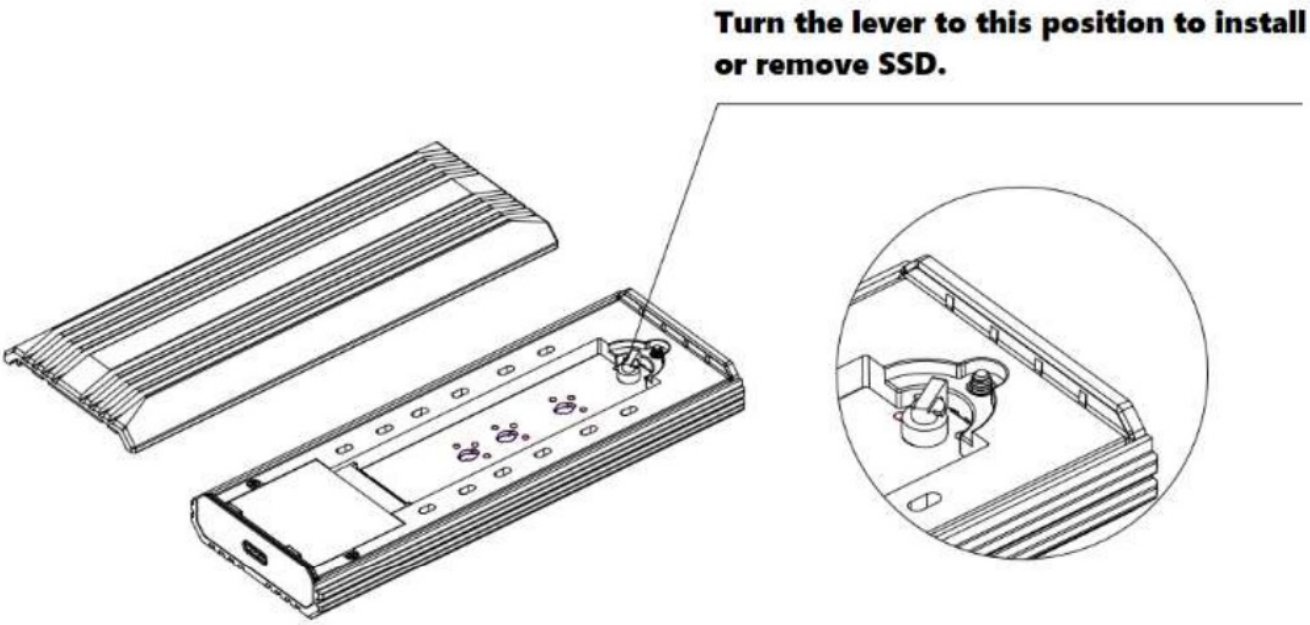
2. Tilt up to lift the enclosure. Tilt the top enclosure up a little and slide ot to the right to lift it.



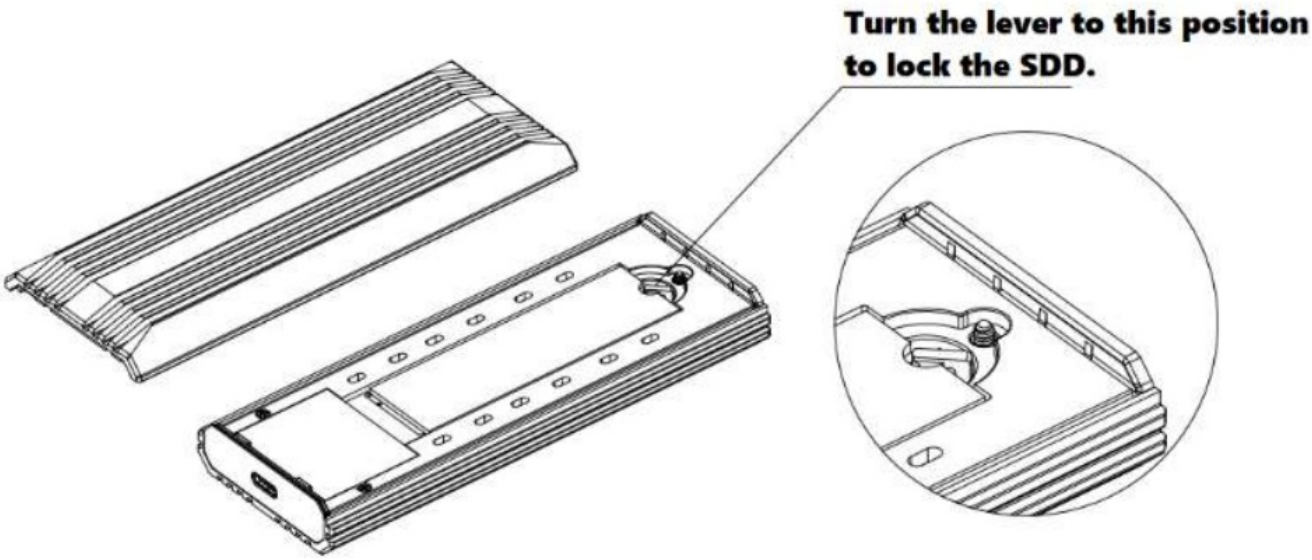
3. Insert the SSD, and then turn the lever clockwise towards the notch. Turn the lever to this position to remove the plastic holder and adjust it to positions of 2230, 2242, 2260 or 2280.



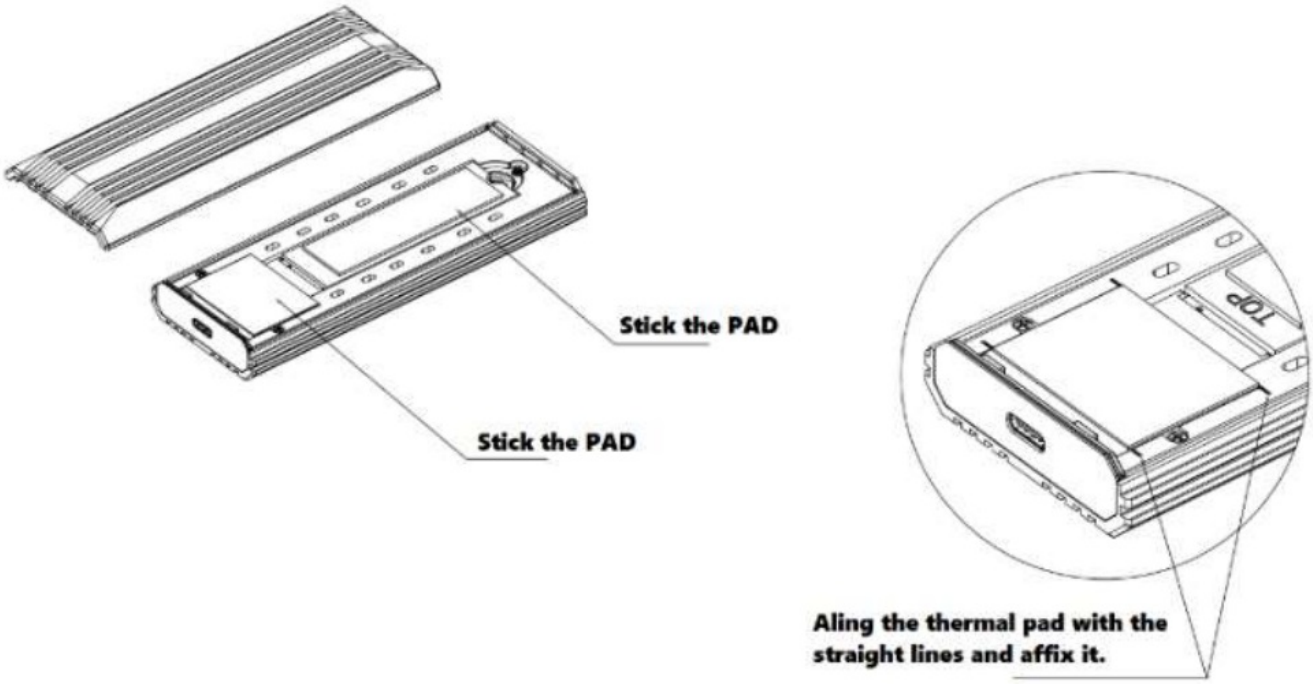
4. Turn the lever to this position to install or remove the SSD.



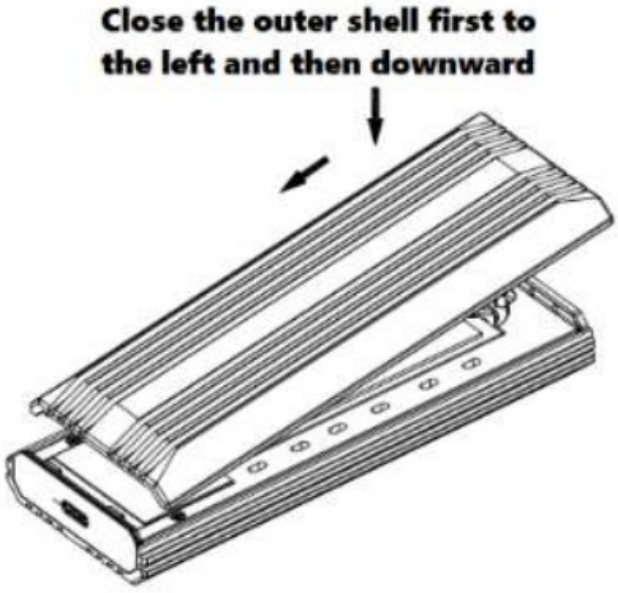
5. Turn the lever to this position to lock the SSD:



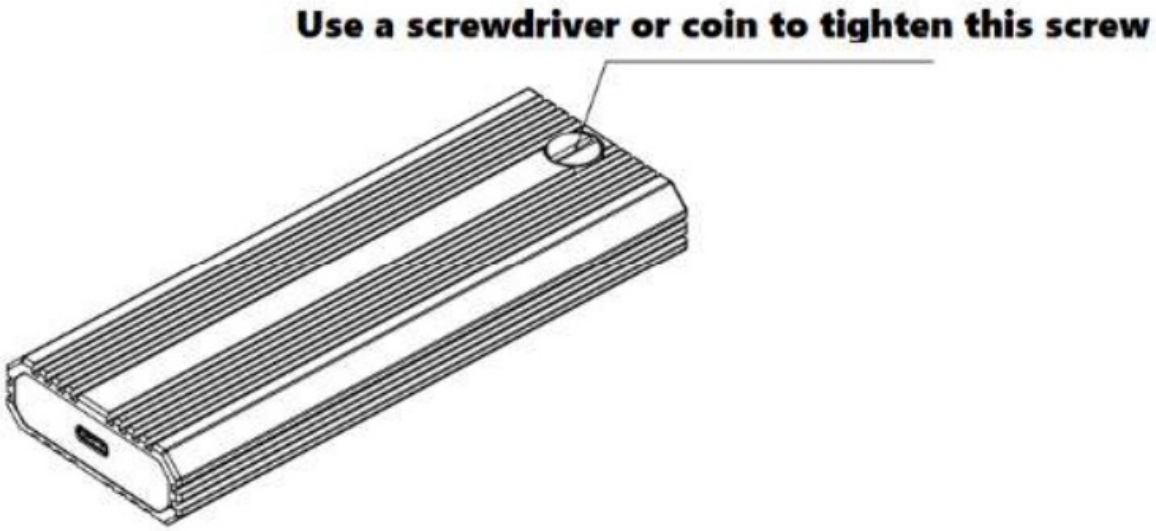
6. Affix the thermal pad. Align the thermal pad with the straight lines and affix it.



7. Tilt down to install the enclosure. Close the outer shell first to the left and then downwards.



8. Install the screws. Use a screwdriver or coin to tighten this screw.



9. The Enclosure Kit is now assembled and ready for connection to a computer.

Warning!

Since this model is a USB4 device, which is very fast and gets hot, it is designed with a heat dissipation function. Please be sure to remove the sticker on the product before use, so as not to affect heat dissipation and trigger the protection mechanism to slow down the speed.

FAQs

Q1: Will this enclosure provide full 40Gbit/s transfer speed?

A1: Yes—when connected to a compatible USB4 or Thunderbolt3/4 host and using a Gen4×4 NVMe SSD, real-world read/write performance can approach ~3GB/s due to protocol overhead, as reported in practical tests.

Q2: Do I need to install drivers or software?

A2: No—this enclosure supports plug-and-play operation under Windows, macOS, and Linux; no additional driver needed.

Q3: How is it powered and is external power required?

A3: It is fully bus-powered via the USB Type-C cable—no external power supply needed. Ensure your host port provides adequate power.

Documents / Resources

	ROLINE 40Gbit USB4 Type C Enclosure [pdf] User Manual 16.01.4149, 40Gbit USB4 Type C Enclosure, USB4 Type C Enclosure, Type C Enclosure, Enclosure

References

- User Manual

ROLINE

16.01.4149, 40Gbit USB4 Type C Enclosure, Enclosure, ROLINE, Type-C Enclosure, USB4 Type C Enclosure

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