

Readiness report — OpenPLC Soft-PLC on Raspberry Pi

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Verdict: Ready · 2026-09-03 · est. parts cost \$47-\$113 **Cybersecurity — software & network: Do not place on an open network**

This cold check establishes the sourcing baseline and unit pricing for future drift measurement. Sourcing for all hardware bill of materials components is unblocked: the core Raspberry Pi single-board computers, official 5 V / 3 A power supplies, and optional USB CDC-ACM microcontroller peripherals are active, available at normal market pricing, and in deep stock across authorized distributors.

Action required

None — all checked parts are sourceable.

Cybersecurity — software & network

Do not place on an open network — OpenPLC Runtime v3 is an end-of-life platform running a network-facing web interface with a high-severity vulnerability pinned against updates.

Component	Version	How known	Support status
OpenPLC Runtime version 3	not determined	unpinned (git clone command in installation instructions has no tag or commit)	—
OpenPLC Editor	not determined	not determined	—
Linux Mint	21	inferred (Docker setup documentation in snapshot)	supported until 2027-04-30
Raspberry Pi OS	not determined	not determined	—
Flask	1.0.2	inferred (requirements.txt stated in snapshot)	—
Flask-Login	0.4.1	inferred (requirements.txt stated in snapshot)	—

Component	Version	How known	Support status
pyserial	3.4	inferred (requirements.txt stated in snapshot)	—
pymodbus	2.2.0	inferred (requirements.txt stated in snapshot)	—
background_installer.sh	not determined	not determined	—
EtherNet/IP and EtherCAT subsystems	not determined	not determined	—

Component	Finding	Severity	Fix available?
Flask	Flask 1.0.2 fails to set the Vary: Cookie header, allowing cached responses to leak session cookies to unauthorized users. — GHSA-M2QF-HXJV-5GPQ , CVE-2023-30861 , GHSA-68RP-WP8R-4726 , CVE-2026-27205	high	No — project pins ==1.0.2
OpenPLC Runtime version 3	OpenPLC Runtime version 3 has reached end of life and is no longer maintained upstream.	posture	No — requires platform migration

What this means for your lab

Anyone on the same local network can connect to the OpenPLC web management interface and industrial protocol ports. Because the underlying web server software has unfixable session security flaws and the entire OpenPLC Runtime v3 project is officially discontinued by its authors, these services cannot be safely updated in place. Furthermore, default login credentials and background build tools were not documented in the project files. Keep this device completely disconnected from shared campus networks, run it strictly on an isolated private lab network or standalone switch, and raise the setup with campus IT before use.

Not checked

- OpenPLC Runtime version 3: Vendor git repository is at end of life and has no package ecosystem database.
- OpenPLC Editor: Version not stated and no package ecosystem database.
- background_installer.sh: File missing from upload; background toolchain dependencies are unpinned and could not be determined.
- EtherNet/IP and EtherCAT subsystems: Implementation source and versions not stated.
- Raspberry Pi OS and other host distributions: Versions not stated and unpinned in setup scripts.

Parts

Part	Spec/Package	Status	Stock	Price	Source
Host Single-Board Computer	Raspberry Pi 4 Model B 4GB (SC0194(9)), 40-pin GPIO, 5 V DC, 3.3 V LVTTTL	Active	12,270	\$100.00	DigiKey
DC Power Supply for Host Platform	Raspberry Pi 15.3W USB-C Power Supply (SC0218), 5.1 V DC, 3 A output	Active	4,499	\$6.75	Newark
Serial Communication Peripheral (Optional)	Raspberry Pi Pico RP2040 (SC0915), USB CDC-ACM serial emulation	Active	43,665	\$4.59	DigiKey

Substitutes

For part	Substitute	Differences	Verified	Judgment
Raspberry Pi 3 Model B+ (SC0073)	Raspberry Pi 4 Model B 4GB (SC0194(9))	Dimensions: 85.00 mm x 56.00 mm vs 85.09 mm x 55.88 mm; power input uses USB-C (≥ 3.0 A recommended) instead of micro-USB (≥ 2.5 A); compute/memory of 1.5 GHz 4-core with 4 GB RAM exceeds 1.4 GHz with 1 GB RAM; shares identical 40-pin GPIO pinout and 3.3 V LVTTTL logic rail.	verified: package form factor and dimensions (DigiKey parametrics: 85.00 mm x 56.00 mm vs 85.09 mm x 55.88 mm), 40-pin GPIO layout and 3.3 V logic levels (snapshot platform specification), 5 V DC supply voltage rail; noted difference: USB-C connector replaces micro-USB connector.	Acceptable superior replacement.

Instructors should verify any substitute against its datasheet before ordering.

Other dependencies

- Upstream OpenPLC Runtime v3 Git Repository (https://github.com/thiagoralves/openplc_v3.git): not checked.
- Upstream OpenPLC Runtime v4 Git Repository (<https://github.com/autonomy-logic/openplc-runtime>): not checked.
- OpenPLC Editor Documentation & Download Portal (<https://openplcproject.com/docs/installing-openplc-editor/>): not checked.
- Docker CE Ubuntu Installation Documentation (<https://docs.docker.com/install/linux/docker-ce/ubuntu/>): not checked.
- Docker Compose Linux Mint 21 Installation Guide (<https://computingforgeeks.com/install-docker-docker-compose-on-linux-mint/>): not checked.
- Fabrication / Custom PCBs: None required. All hardware consists of commercial off-the-shelf single-board computers and peripheral modules.

Watch list

- **Raspberry Pi 3 Model B+ (SC0073):** Marked "Not For New Designs" by the manufacturer with zero stock at Mouser and a 16-week lead time, although DigiKey retains remaining stock. Labs should deploy Raspberry Pi 4 Model B (SC0194(9)) or newer hardware.
- **Raspberry Pi 15.3W USB-C Power Supply (SC0218):** Out of stock at DigiKey with a 30-week factory lead time, though currently well-stocked at Newark and Mouser. Monitor distributor stock before ordering.