



CODESYS 4

CODESYS 4 is a web-based IEC 61131-3 development environment for industrial control and automation technology, available for Windows x64, Linux x64, and Linux ARM64.

Technical description

Overview

Development environment in accordance with IEC 61131-3

Type	Web-based development environment for programming programmable logic controllers (PLCs)
Backend/Server	C#/.NET on Windows x64, Linux x64, and Linux ARM64
Frontend/Client	TypeScript/JavaScript works with Webbrowser
Architecture	Backend-frontend architecture; communication via HTTP(S) and WebSocket (JSON-RPC)
Extensibility	Core with basic features and general infrastructure; additional functionality (e.g. editors, fieldbus configurators) via the Extension Platform

Compatibility

Compiler and libraries	Identical to the CODESYS Development System 3
Runtime	Identical to the CODESYS Development System 3
Parallel use	With the CODESYS Development System 3 throughout the lifecycle

Project storage and CI/CD integration

Project files	Plaintext, JSON and XML in an open directory structure; Several projects can be edited concurrently in the same workspace.
Versioning	Projects can be versioned via external Revision Control Systems like Git or SVN; Libraries support Semantic Versioning; manifest and lock file with SHA384 integrity hashes
Command line	Library builds (Compiled Library) and application builds (boot application)

Variant 1: Windows x64 (.exe)**Product**

Short description	Windows installer for Windows x64. Provides the desktop application (c4-desktop-win) for single-user use and the command-line tool (c4-cli) for scripts and CI/CD. The desktop app starts in its own window, sessions in external browsers can be started with c4-cli.
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Delivery form	Windows installer (.exe)
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System requirements

Operating system	Windows x64 (64-bit)
CPU architecture	x64
RAM (minimum available)	3 GB
RAM (recommended available)	8 GB
Disk space (minimum available)	4 GB
Additional requirements	• .NET Desktop Runtime 8.0.* (most current release) • ASP.NET Core Runtime 8.0.* (most current release)

Restrictions

Restrictions	The Windows installer supports only local desktop usage, no multi-user server support.
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Variant 2: Linux x64 (.deb amd64)**Product**

Short description	Debian package for Linux x64. Provides the multi-user server (c4-server) for team development, a browser-based single-user session via the command line (c4-cli standalone-session), and the command-line tool (c4-cli) for scripts and CI/CD.
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Delivery form	Debian package (.deb, amd64)
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System requirements

Operating system	Debian Linux x64 (64-bit)
CPU architecture	x64
RAM (minimum available)	3 GB (single user)
RAM (recommended available)	8 GB (single user)
Disk space (minimum available)	4 GB
Additional requirements	• aspnetcore-runtime-8.0 (>=8.0.30) (available from Microsoft via public apt repository and docker base images)

Restrictions

Restrictions	Local desktop UI usage support via external browser (Chrome, Firefox etc.) launched via c4-cli, no standalone desktop application with integrated UI yet.
	Multi-user server operation requires an external reverse proxy for TLS termination and (D)DoS protection. We recommend multi-user server operation only in secure network environments, with appropriate security mechanisms and policies in place, e.g. password policies, user and permission management, backup and restore, network intrusion detection monitoring etc.

Variant 3: Linux ARM64 (.deb arm64)**Product**

Short description	Debian package for Linux ARM64. Same scope as the Linux x64 package (multi-user server, browser-based single-user session, command-line tool) for ARM64-based systems, e.g. Raspberry Pi.
Delivery form	Debian package (.deb, arm64)

System requirements

Operating system	Debian Linux ARM64 (64-bit)
CPU architecture	ARM64
RAM (minimum available)	3 GB (single user)
RAM (recommended available)	8 GB (single user)
Disk space (minimum available)	4 GB
Additional requirements	• ASP.NET Core Runtime 8.0 ($\geq 8.0.30$) (available from Microsoft via install script and docker base images)

Restrictions

Restrictions	Local desktop UI usage support via external browser (Chrome, Firefox etc.) launched via c4-cli, no standalone desktop application with integrated UI yet.
	Multi-user server operation requires an external reverse proxy for TLS termination and (D)DoS protection. We recommend multi-user server operation only in secure network environments, with appropriate security mechanisms and policies in place, e.g. password policies, user and permission management, backup and restore, network intrusion detection monitoring etc.

General (valid for all variants)**System requirements**

Programming system	-
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Runtime system	Supports CODESYS Runtime V3.5 SP19 and newer Target CPUs: x86, x64, ARM, ARM64 (compact download not supported yet)
Supported browsers	Tested with current versions of Chromium based browsers (Chrome, Edge) and Mozilla Firefox
Recommended hardware *	• Current multi-core processor • SSD with sufficient free space • Sufficient RAM * The specified minimum requirements allow you to launch the product and perform simple operations, while recommended hardware requirements depend directly on the kind, amount and complexity of projects loaded and processed, and the number of concurrent users. Better hardware noticeably improves performance, especially for large projects, multiple concurrent users and intensive use.
Example configuration (small projects)	• Raspberry Pi 5 with 4 GB RAM • Raspberry Pi OS 64-bit • Industrial-grade SD card

Functions

Supported Device Descriptions	• CODESYS Control for Raspberry Pi 64 SL • CODESYS Control RTE V3 • CODESYS Control Win V3 • CODESYS Control for Linux ARM64 SL • CODESYS Control for Linux ARM SL • CODESYS Control for Raspberry Pi MC SL
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Extensions included in setup

Extensions	• CODESYS 4 Ladder • CODESYS 4 Modbus
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Restrictions

Restrictions	While library projects can be shared with the CODESYS Development System 3 via the "CODESYS File-Based Storage" AddOn for CODESYS 3, application projects need an explicit conversion step between CODESYS 3 and CODESYS 4, and the resulting machine code is not bit identical between CODESYS 3 and CODESYS 4. Certificate authentication and TLS encryption for PLC communication are not supported yet, we recommend operation only in secure network environments. Touch screen support is limited, using a keyboard and a pointing device (like mouse or trackpad) is recommended. Small screens (mobile phones, small tablets) are not supported.
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Standards and conformance

Standards	IEC 61131-3
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Licensing

Licensing



No license is required.

Required accessories

Required accessories	-
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General information

Supplier:

CODESYS GmbH
Memminger Strasse 151
87439 Kempten
Germany

Support:

Technical support is not included with this product. To receive technical support, please purchase a CODESYS Support Ticket.

<https://support.codesys.com>

Item:

CODESYS 4

Item number:

2101000024

Sales/Source of supply:

CODESYS Store
<https://store.codesys.com>

Included in delivery:

- Installer package for Windows x64 (.exe)
- Debian Linux package for amd64 (.deb)
- Debian Linux package for arm64 (.deb)
- Included extensions: CODESYS 4 Ladder, CODESYS 4 Modbus

System requirements and restrictions

Programming system	-
Runtime system	CODESYS Runtime V3.5 SP19 and newer
Supported platforms	• Windows x64 • Debian Linux x64 • Debian Linux ARM64
Hardware requirements	• RAM (available): 3 GB minimum, 8 GB recommended • Disk space (available): 4 GB minimum • Linux values refer to single-user operation
Supported browsers	Tested with current versions of Chromium based browsers (Chrome, Edge) and Mozilla Firefox
Additional requirements	• Windows: .NET Desktop Runtime 8.0 and ASP.NET Core Runtime 8.0

- Linux amd64: aspnetcore-runtime-8.0 ($\geq 8.0.30$) via apt
- Linux arm64: ASP.NET Core Runtime 8.0 ($\geq 8.0.30$) via install script (no Debian package available)

Supported device descriptions

- CODESYS Control for Raspberry Pi 64 SL
- CODESYS Control RTE V3
- CODESYS Control Win V3
- CODESYS Control for Linux ARM64 SL
- CODESYS Control for Linux ARM SL
- CODESYS Control for Raspberry Pi MC SL

Restrictions

- Application projects need an explicit conversion step between CODESYS Development System 3 and CODESYS 4
- Certificate authentication and TLS encryption for PLC communication are not supported yet
- Multi-user server operation (Linux) requires an external reverse proxy; recommended only in secure networks
- Windows installer: local desktop use only, no server
- Touch screen support is limited; small screens are not supported

Licensing

No license is required.

Required accessories -

Note: Technical specifications are subject to change. Errors and omissions excepted. The content of the current online version of this document applies.

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