

A man in a light blue shirt is seen from the side, holding a tablet. He is in a factory environment with industrial machinery and a clock in the background. Overlaid on the image are various digital graphics: a '24/7' icon with a circular arrow, a 'NEWS' section with a person icon, a 'Home' button, and a network diagram with three people icons. The overall theme is industrial digitalization and online support.

SIEMENS

PLCSIM Advanced Simulator Add-In

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1 Introduction

1.1 Overview

With the help of the S7-PLCSIM Advanced, one can simulate CPU programs on a virtual controller. With this no real controllers are needed. The CPU with STEP 7 is configured via the TIA-Portal.

This Add-In offers the possibility to run S7-PLCSIM Advanced into the Tia-Portal. A new instance is created with the same name as the PLC name. Afterwards the information is downloaded to the simulation.

1.2 Used technologies

- Visual Studio 2022
- .NET Framework 4.8
- TIA Portal V17

Table 1-1

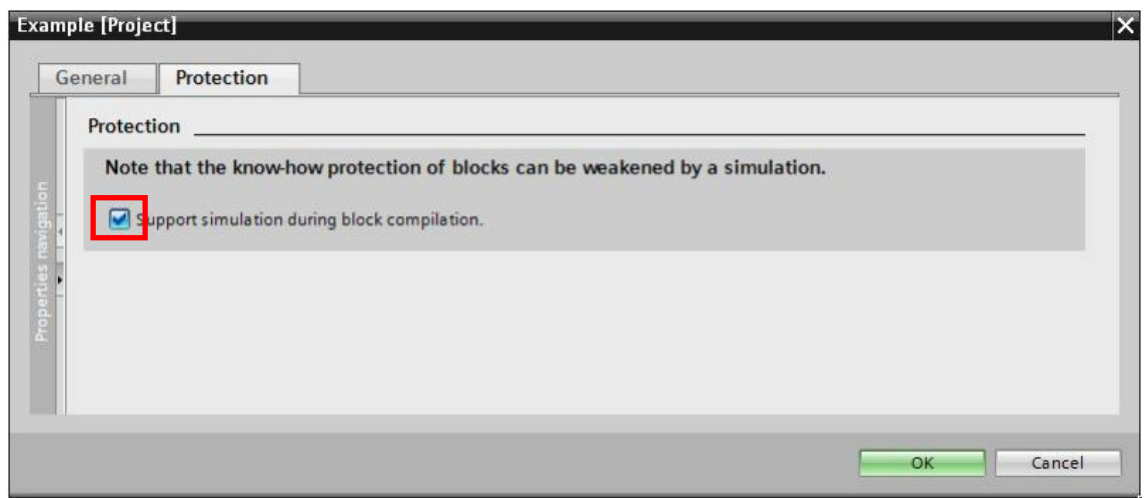
Component	Version	Task
PLCSIMAdvAddIn	V1.0.0	Contains the logic of the Add-In.
PLCSIMAdvStarter	V1.0.0	This component contains the logic of the CLI and the main program logic.

1.3 Requirement for the simulation

To use the simulation a STEP 7 project must be available, and the simulation capability must be enabled.

The enablement can be found under:

- Right click at the project
- Properties ...
- Open the tab "Protection"
- Set the tick at "Support simulation during block compilation."



NOTE

More than one CPU can be simulated, but each simulated CPU interface requires a unique IP address.

The application supports following CPUs:

- S7-1500 (C, T)
- S7-1500 R/H
- SIMATIC Drive Controller
- ET 200SP
- ET 200 SP F
- ET 200 pro
- ET 200 pro F
- SIPLUS CPUs (S7-1500, S7-1500R/H, ET 200 SP)

One of the supported target devices must be configured in the project. For the simulation S7-PLCSIM Advanced with the Version 4.0 must be installed and a valid license for the PLCSIM Advanced must be available.

2 Installation

2.1 Storage of the Add-In

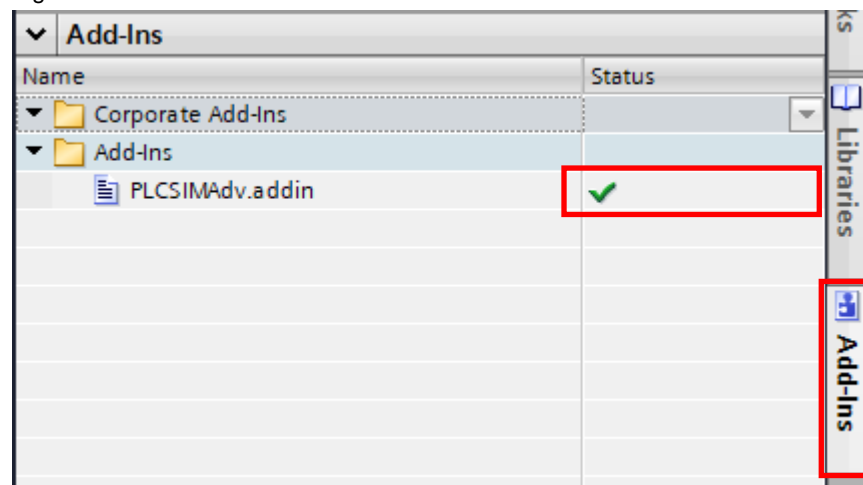
This application consists of the “Siemens.PLCSIMAdv.addin” file. To access the functions, the file must be stored at this location:

.\Program Files\Siemens\Automation\Portal V17\Add-Ins

2.2 Activating the Add-In

The activation of the Add-In can be done like this (Figure 2-1):

Figure 2-1



On the Add-ins tab, search for the “PLCSIMAdv.addin” file and activate it by using the directly adjacent drop-down list.

Afterwards an information window is opened which needs to be accepted. This grants the permissions for the execution of the Add-In. After the confirmation the Add-In is activated and can be used directly.

2.3 Openness User Group

To use any Add-In the user must belong to the “Siemens TIA Openness” user group. For further information please read the manual “SIMATIC Openness Automating creation of projects”

<https://support.industry.siemens.com/cs/ww/en/view/109477163>

3 Operating the Add-In

3.1 Start Simulation

1. Open the TIA Portal with a project. Please check if the used device is supported (Chapter 1.3)
2. Right-click on the PLC device and then navigate to the “PLCSIM Advanced Simulation”. Then click “Start Simulation”.
3. Afterwards the user interface of the PLCSIM Advanced Simulation opens.
4. First, an instance with the same name as the PLC device will be created and then the PLC will download to the instance.
5. As soon as the download is finished the PLC will go into an online mode.
6. A new information will be shown. This window shows the exact location of the logfiles. The default location is:
`.\\ProgramData\\Siemens\\Automation\\PLCSIMAdvAddIn*`
 The message window may not be visible directly. Please check the taskbar.

NOTE

If more than one instance is used the steps are the same.

Figure 3-1 shows the usage of one instance and at Figure 3-2 a total of two instances are used.

Figure 3-1

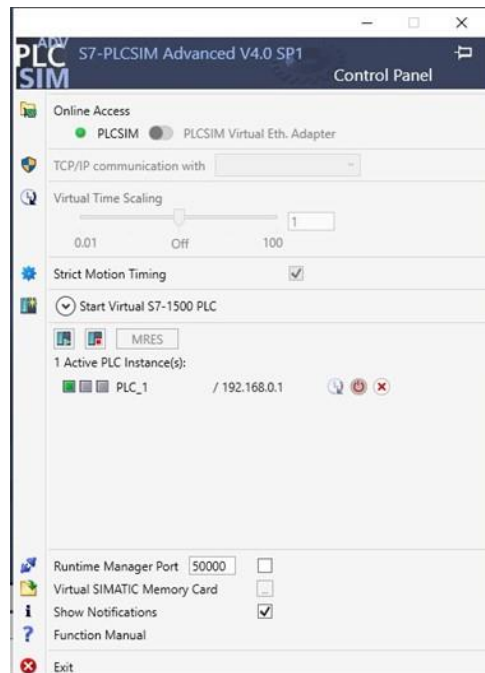
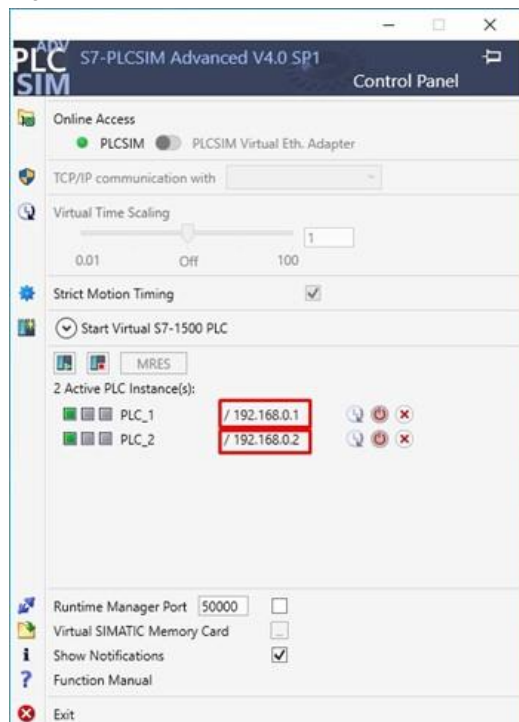


Figure 3-2



NOTE

Please make sure that the IP addresses of the PLC devices are different.

3.2 Stop Simulation

1. Right-click on the PLC device in the project navigation and select “PLCSIM Advanced Simulation Add-In”. Then click “Stop Simulation”.
2. The active PLC instance which are simulated will power off.

NOTE

Stop the simulation with the explained steps and not by closing the simulator via the X located at the top right.

4 Appendix

4.1 Service and support

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Industry Online Support app

You will receive optimum support wherever you are with the "Siemens Industry Online Support" APP. The app is available for iOS and Android:

support.industry.siemens.com/cs/ww/en/sc/2067

4.2 Links and literature

Table 4-1

No.	Topic
\1\	Siemens Industry Online Support https://support.industry.siemens.com
\2\	TIA Add-Ins https://support.industry.siemens.com/cs/document/109817270/tia-add-in-%C3%BCbersicht-f%C3%BCr-entwickler?dti=0&lc=de-WW
\3\	

4.3 Change documentation

Table 4-2

Version	Date	Modifications
V1.0.0	06/2023	First version