SIEMENS

SIMATIC

PCS 7 Process Control System PCS 7 Readme V10.0 (Online)

Readme

Version: 2024-07 (Online)

V10.0
A5E52547782-AA

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ DANGER

indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠ WARNING

indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠ CAUTION

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

⚠ WARNING

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of Siemens Aktiengesellschaft. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Cybersecurity information

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Siemens provides products and solutions with industrial cybersecurity functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial cybersecurity concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial cybersecurity measures that may be implemented, please visit
https://www.siemens.com/cybersecurity-industry.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Cybersecurity RSS Feed under
https://new.siemens.com/cert.

Industrial Security

2

This product is a part of SIMATIC PCS 7 and integrated into the overall plant security concept. Siemens strongly recommends setting up, operating, maintaining, and decommissioning the plant environment according to the SIMATIC PCS 7 Compendium Part F – Industrial Security: Technical documentation SIMATIC PCS 7 (https://support.industry.siemens.com/cs/ww/en/view/109815443).

Overview

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Note

Read these notes carefully. They contain important information and additional details about SIMATIC PCS 7.

The information given in this Readme file takes precedence over all SIMATIC PCS 7 manuals.

You have received version V10.0 of the SIMATIC PCS 7 software.

SIMATIC PCS 7 is the future-oriented process control system used in the "Totally Integrated Automation" concept by Siemens.

- Based on robust, industrial standard SIMATIC hardware and software components
- Modern, distributed system architecture
- Simple and quick system expansion and optimization in runtime
- Scalable from a small laboratory system to networks of plants
- For all applications: continuous and batch applications
- For all industries: process, production and hybrid sectors
- Efficient, plant-wide engineering
- Flexible and simple integration of field devices and drives based on PROFINET, PROFIBUS or Foundation Fieldbus
- Homogeneously integrated safety technology, certified by the TÜV (German Technical Inspectorate)
- Support for open source interfaces based on international standards such as OPC
- Increased availability through redundancy at all levels
- Modular structured and scalable batch system, SIMATIC BATCH
- Flexible route control system, SIMATIC Route Control
- Conformity with EU GMP Guideline Annex 11 and 21 CFR Part 11

We hope that you enjoy using SIMATIC PCS 7 and have a great success with it.

Yours PCS 7 team

Notes on installation

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4.1 General information

Information on SIMATIC PCS 7 on the internet

All product and order information regarding SIMATIC PCS 7:

- Internet link (https://www.siemens.com/PCS7)

Overview of the most important technical information and solutions for SIMATIC PCS 7 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/63481413)

Here, you can also subscribe to the newsletter, which keeps you constantly up-to-date with current information about our products.

- Internet link (https://support.industry.siemens.com/My/ww/en/notifications)

Content of the SIMATIC PCS 7 Readme file

The SIMATIC PCS 7 Readme for SIMATIC PCS 7 V10.0 is available in two versions:

1. SIMATIC PCS 7 Readme (Offline)
   This is the version that is installed during the PCS 7 setup.
   This file only contains general notes and links to documents on the internet.
2. SIMATIC PCS 7 Readme (Online)
   This is the version which contains all information on the installation and use of SIMATIC PCS 7 in the format you are already familiar with.
   This file is now only available on the internet so that we can keep it up to date.
   You can find the current version of this document for download under the entry ID 109813959 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109813959)

Note

Before you install or use SIMATIC PCS 7 V10.0, it is vital that you read the information from the most recent version of this document.

Each of the products comes with product-specific information in the form of readme files.

The information contained in these readme files also applies to using products in SIMATIC PCS 7.

Electronic manuals and help system on SIMATIC PCS 7

The following documentation can be accessed at any time on the SIMATIC PCS 7 USB flash drive in the folder "_Manuals\English" or "_Product_Information\English".

PCS 7 - Documentation V10.0

PCS 7 - Operating Instructions - OS Process Control V10.0

PCS 7 - Installation Manual - PC Configuration V10.0

PCS 7 - Configuration Manual - Engineering System V10.0

PCS 7 - Configuration Manual - Operator Station V10.0

Complete documentation for SIMATIC PCS 7 on the internet and document updates

The complete SIMATIC PCS 7 documentation is available in multiple languages at the following website:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109801081)

You also have the option for updating the installed SIMATIC PCS 7 help system and post-installing the SIMATIC PCS 7 system documentation. For additional information, please refer to entry ID 109744320 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109744320)

Note

Timeliness of online documents

Documents available online can be more up-to-date than the version of documents installed with SIMATIC PCS 7 setup. The statements in documents available online should therefore be given priority over installed documents.

4.2 Type of delivery

4.2.1 Delivery package

The products listed below are delivered with the installation media required for the respective product:

- SIMATIC PCS 7 V10.0 Software Media Package:
  - SIMATIC PCS 7 V10.0 on USB flash drive or as software download
  - Certificate of License
- SIMATIC PCS 7 V10.0 Software Media Package ASIA:
  - SIMATIC PCS 7 V10.0 on USB flash drive
  - Certificate of License

The license keys required to operate the software for the supplied product are located on the License Key USB flash drive.

To simplify your license management, you can also save the license keys for other SIMATIC PCS 7 products on this USB flash drive. Authorizations for older SIMATIC products must be saved on authorization disks.

Important notice

The following software products are currently excluded from sales and delivery release:

- SIMATIC BATCH V10.0
- Process Historian 2024
- Information Server 2024

These products will be released for sales and delivery with the PCS 7 V10.0 Update Collection 01 release.
Until the release of PCS 7 V10.0 Update Collection 01, the partner, trainer and test packages as well as EPL licenses are not available. SUS packages for these products are not deliverable.

4.2.2 Licensed commissioning of SIMATIC PCS 7 V10.0

You will receive the SIMATIC PCS 7 V10.0 ASIA License Keys on a License Key USB Hardlock as license storage medium.

Use the Automation License Manager to transfer the licenses to the SIMATIC PCS 7 V10.0 ASIA PC during installation or afterwards.

Note the following when handling the license storage medium:

- Do not delete any files from the License Key USB Hardlock.
- Do not copy any data to the License Key USB Hardlock.

- Do not format the License Key USB Hardlock.
- Do not remove the License Key USB Hardlock from the computer while SIMATIC PCS 7 is running.

NOTICE
Demo mode SIMATIC PCS 7 OS will change to demo mode when you remove the License Key USB Hardlock from the computer.

4.2.3 SIMATIC PCS 7 Trial Mode

The software functions and configuration limits which are activated as part of the 14-day trial mode are not authorized for productive use.

SIMATIC PCS 7 trial mode is characterized by the following features:

- PCS 7 trial mode can be activated via the PCS 7 system setup or after the first start, and used for up to 14 calendar days in non-productive operation.
  After 14 days, it can no longer be used.
- The maximum capacity in Engineering and Runtime is 250 process objects. Please note that the "System blocks" in the PCS 7 trial mode are added to the limit count (for example, OB BEGIN, etc.). These "System blocks" are not displayed in the CFC process object statistics.
- OS Runtime operation including SFC visualization is possible on a single station (no client server, no web server, no redundancy).
- SIMATIC BATCH can be used with up to 10 units.
- The BATCH API cannot be used in trial mode.
- SIMATIC Route Control can be used for up to 30 routes.
- All other PCS 7 functions/configurations/capabilities (for example Import/Export Wizard, Client server, more than 250 PO) are not available in the PCS 7 trial mode.
- After installing the licenses for productive operation (see the catalog ST PCS 7), the PCS 7 trial mode can also be installed for indefinite productive operation with a scope of functions corresponding to the license that was purchased and installed.
- If you have PCS 7 installed on Trial Mode and want to install any additional software from PCS 7 media, you have to select it in setup again.

4.2.4 Notes on the license contract for the SQL server

Note that SIMATIC PCS 7 also includes the SQL Server software licensed by Microsoft Corporation. With the use of SIMATIC PCS 7, you agree to be bound by and to abide by the attached Microsoft terms and conditions for end customers for the Microsoft SQL Server.

The Microsoft "SQL Server" supplied with SIMATIC PCS 7 must not be used outside the PCS 7 environment without prior written consent from Siemens.

4.3 Hardware requirements

4.3.1 PC hardware

4.3.1.1 Recommended PC hardware configuration

Recommended basic hardware configuration

We recommend the following configuration for PC components (the higher the performance of the equipment, the better):

Parameters	**Central engineering station with server operating system, Process Historian, Information Server, OS server, SIMATIC PCS 7 Web server, BATCH server, Route Control server**	**SIMATIC PCS 7 OS / SIMATIC BATCH / SIMATIC Route Control on a PC, Engineering station, OS single station, Maintenance Station, OS client and BATCH client on a PC, BATCH single station, Route Control single station, SIMATIC Management Console**	**OS client, BATCH client, Route Control client, OpenPCS 7 Station**
Basic PC (see catalog)	SIMATIC IPC 547J / 647E / 847E	SIMATIC IPC 547J / 647E / 847E	SIMATIC IPC 547J / 647E / 847E
Processor	Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, TB, AMT) Xeon W-1270E (8C/16T, 3.4 (4.8) GHz, 16 MB Cache)	Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, TB, AMT) Core i5-10500E (6C/12T, 3.1 (4.2) GHz, 12 MB Cache)	Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB Cache, TB, AMT) Core i3-10100E (4C/8T, 3.2 (3.8) GHz, 6 MB Cache)
Work memory (RAM)	>=16 GB (64-Bit operating system)	>=16 GB (64-Bit operating system)	>=8 GB (64-Bit operating system)
Hard disk Partition size	>=200 GB HDD/SSD C:\ 100 - 128 GB	>=200 GB HDD/SSD C:\ 100 - 128 GB	>=160 GB HDD/SSD C:\ 100 - 128 GB
Network adapter / Communications interfaces • For terminal bus communication • For plant bus communication	• RJ45 on-board gigabit Ethernet • CP 1623 or BCE network adapter	• RJ45 on-board gigabit Ethernet • CP 1623 or BCE network adapter	• RJ45 on-board gigabit Ethernet

Parameters	OS client
Basic PC (see catalog)	IPC227G / IPC277G / IPC427E / IPC477E / IPC BX-39A / IPC PX-39A
Processor	Atom X6413E (4C/4T, 1,5(3,0)GHz, 1,5MB Cache) Core i5-6442EQ (4C/4T, 1,9(2,7)GHz, 6MB Cache), Intel Xeon W-11155MLE (4C/8T, 1,8(3,1)GHz, 8MB Cache)
Work memory (RAM)	>= 8.0 GB
Hard disk Partition size	>=160 GB HDD/SSD C:\ 100 GB - 128 GB
Network adapter/communications interfaces	2 x RJ45 on-board Gigabit Ethernet without PROFINET or PROFIBUS interface
Purpose	Approved for OS / Batch client operation only

Parameters	SIMATIC PDM MS
Basic PC (see catalog)	SIMATIC IPC427E
Processor	Core i5-6442EQ (4C/4T, 1,9(2,7)GHz, 6MB Cache)
Work memory (RAM)	= 16.0 GB
Hard disk Partition size	>=160 GB HDD/SSD C:\ 100 GB - 128 GB
Network adapter/communications interfaces	3 x RJ45 on-board Gigabit Ethernet
Purpose	Approved for PDM MS operation only

Note

- In the case of multi-user engineering, it is beneficial for the engineering stations if you use PCs with high clock rates, large main memory and high-speed drives. In addition to the Microsoft recommendation of "15% free space", we recommend that you reserve at least 8 GB of free space (depending on the size of the project) on the system partition.
- Integrity check fails if a new file/folder is added to the SIMATIC PCS 7 Bundle.
- When using Process Historian, also read the notes in the "Hardware requirements" section in the Process Historian 2024 installation manual.
- In the case of multi-VGA configurations with extensive graphical engineering, a CPU clock rate that is as high as possible is recommended. In these cases deactivating Hyper-Threading in the BIOS of the OS Client can result in increased performance of the graphics output.
- When using Microsoft Windows Server 2022 Standard with Hyper-V Virtualization on IPC647E / IPC847E / 547J, read the notes in the "Hardware requirements" chapter of the *PCS 7 Virtualization - Project Engineering and Configuration* manual: Internet link (https://support.industry.siemens.com/cs/ww/en/view/51975791).

Additional information

SIMATIC PCS 7 system components catalog as well as the add-on catalog (*ST PCS 7 for SIMATIC PCS 7 V10.0*) are provided in the Information and Download Center:

- Internet link (https://support.industry.siemens.com/cs/ww/en/ps/16933/cat)

4.3.1.2 Compatibility matrix SIMATIC IPC and accessories for PCS 7 V10.0

Compatibility matrix SIMATIC IPC and accessories for PCS 7 V10.0

PCS 7 V10.0	Part-Nr.:	Windows 10 Enterprise LTSC 2019 (64-Bit)	Windows 10 Enterprise LTSC 2021 (64-Bit)	Windows Server 2019 Standard Edition, Datacenter Edition (64-Bit)	Windows Server 2022 Standard Edition, Datacenter Edition (64-Bit)
RACK IPC					
IPC547J	6ES7 660-8....-....	X	X	X	X
IPC647E	6ES7 661-0....-.... 6ES7 650-0XH03-.YA0	X	X	X	X
IPC847E	6ES7 661-1....-.... 6ES7 650-0XH03-.YB0	X	X	X	X
Microbox					
IPC427E, IPC477E OS clients	6ES7 650-0VG..-....	X	X		
IPC427E, PDM MS V5.0 [3]	6ES7 650-0RJ04-0YX0		X		
IPC BX-39A, IPC PX-39A	6ES7662-1....-....		X		
Nanobox					
IPC227G, IPC277G	6ES7650-0AG78-....		X		
CPs					
CP 1623	6GK1 162-3AA00	X	X	X	X
Accessories					
Intel Gigabit CT desktop adapter (EXPI9301CT)	A5E02639550	X	X	X	X
NVIDIA QUADRO P400	A5E44936965	X	X	X	X
NVIDIA T400	A5E51842959	X	X	X	X
SIMATIC PCS 7 USB smart card reader (OK3121)	6ES7 652-0XX02-1XC0	X[1]	X[1] [2]	X[1]	X[1] [2]
TCOS 3.0 Chipcard	6ES7 652-0XX00-1XD2	X	X	X	X
Signal module, PCI card for installation in an operator station	6DS1 916-8RR	X		X	

Legend for the table:

"X" = compatible

Footnotes:

1) Only with SIMATIC Logon

2) Only with Part No: R31210320-1, REV: E

3) Only useable with PDM MS V4.0 --> V5.0 Upgrade License and Operating System change

4.3.1.3 Network

Network configuration

The network for the PCS 7 systems must be isolated via switches, routers or gateways in such a way that no external interference can affect the PCS 7 network.

You can find recommendations for this in the document:

- SIMATIC PCS 7 Security Concept

The document is available for download under the entry ID 109780811 in the Industry Online Support:

- Download link (https://support.industry.siemens.com/cs/ww/en/view/109780811)

4.3.2 AS hardware

Documentation on hardware

The versions of the AS hardware components that are approved for SIMATIC PCS 7 V10.0 are described in the manual "PCS 7 - Released Modules". You can find this document on the website for SIMATIC PCS 7 Technical Documentation (https://support.industry.siemens.com/cs/ww/en/view/109801081).

Time synchronization

In general, usage of hardware based central system clock is recommended.

You can find notes on central time clock in the "SIMATIC PCS 7 – Time synchronization" function manual. You can find this document on the website for SIMATIC PCS 7 Technical Documentation.

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109801081)

The products from BÜRK MOBATIME GmbH have been tested for compatibility, regarding time synchronization.

You can find notes on time synchronization with BÜRK MOBATIME GmbH products under entry ID 109760344 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109760344)

When using the internal Ethernet/PROFINET interface, the following CPUs can only be synchronized with the NTP method.

6ES7414-3EM05-0AB0	6ES7416-3ER05-0AB0
6ES7414-3EM06-0AB0	6ES7416-3ES06-0AB0
6ES7414-3EM07-0AB0	6ES7416-3ES07-0AB0

For the previous CPU types, we continue to recommend that you use the SIMATIC method.

4.4 Installation of the software, software requirements

4.4.1 Software installation

4.4.1.1 Requirements

Released operating systems

The following operating systems are supported in SIMATIC PCS 7 V10.0:

- Windows 10 Enterprise LTSC 2019 (64 Bit - IoT and none IoT)
- Windows 10 Enterprise LTSC 2021 (IoT)
- Windows Server 2019 Standard Edition / Datacenter (IoT and none IoT)
- Windows Server 2022 Standard Edition / Datacenter (IoT and none IoT)

Note

Microsoft operating systems in-place upgrade is not supported.

Note

For SIMATIC IPC systems, operating systems from the IoT channel are used throughout.

Note

Installation of SIMATIC PCS 7 V10.0

Before you start with the installation of SIMATIC PCS 7 V10.0 on your computers, ensure that all the latest released Microsoft updates for the respective operating system and all further used Microsoft software installed on the computers.

For information about the handling of current Microsoft security updates in SIMATIC PCS 7 please refer to the topic "*Patch management and security updates*" in this section.

Released processor architectures

Only the x64 platform is used for processor architectures which support 64-bit memory addressing.
Systems with Intel Itanium CPU architecture (IA64) is not supported.

Compatibility list of the SIMATIC PCS 7 PC configurations and operating systems

Not all configurations are suitable for every operating system. The following table shows the relationship of the most common configurations of SIMATIC PCS 7 to the operating systems.

Before performing the installation, refer to the product-specific readme files to ensure that the product being installed is suitable for the desired operating system.

SIMATIC PCS 7 V10.0 SW components	Windows 10 Enterprise LTSC 2019	Windows 10 Enterprise LTSC 2021	Windows Server 2019 Standard Edition, Datacenter Edition	Windows Server 2022 Standard Edition, Datacenter Edition
	64-Bit	64-Bit	64-Bit	64-Bit
ES	X	X	X	X
OS-Single Station	X	X	X	X
ES/OS-Single Station	X	X	X	X
OS-Server			X	X
OS-Client	X	X	X	X
Web-Server	X[1]	X[1]	X	X
Web-Client	X	X	X	X
Process Historian			X	X
Information Server	X	X	X	X
SIMATIC Management Console	X	X	X	X
SIMATIC PDM MS		X		
SIMATIC Batch Single Station	X	X	X	X
SIMATIC Batch Client	X	X	X	X
SIMATIC Batch Server			X	X
SIMATIC Route Control Server			X	X
SIMATIC Route Control Client	X	X	X	X
OpenPCS 7	X	X	X	X
Microsoft Windows Domain Controller / WSUS / DNS / DHCP			X	X
Microsoft Hyper-V Virtualization			X[2]	X[2]

[1] Only on ES or OS single-station system

[2] For more information, refer to SIMATIC PCS 7 Virtualization (https://support.industry.siemens.com/cs/document/51975791).

Note

Released operating systems

The specifications of released operating systems made in this Readme take precedence over any other contradictory specifications made in the Readme files of the individual products.

Microsoft Internet Explorer

SIMATIC PCS 7 V10.0 supports Internet Explorer 11 and Microsoft Edge (Chromium).

- Internet Explorer V11 (still long term supported for the required Operating Systems mentioned above)
  Internet link (https://support.microsoft.com/kb/2872074)

Internet Explorer 11 attempts to automatically install the required Microsoft Patches (KB) during the installation. If this installation fails, the installation procedure is aborted. In this case, you need to install the required KBs manually before you can install Internet Explorer 11.

Note

Information Server supports Google Chrome, Mozilla Firefox and Microsoft Edge (Chromium). However, it is recommended to use Google Chrome. For more information, refer internet (https://support.industry.siemens.com/cs/ww/en/view/109809285).

Microsoft .NET Framework

Microsoft .NET Framework 3.5 is required only for Engineering Stations and must be enabled prior to the installation of the SIMATIC PCS 7 software.

For more information refer *PC Config* manual.

Microsoft SQL Server

Microsoft SQL Server 2019 is installed automatically by the SIMATIC PCS 7 system setup. The computer name must be set before SQL Server is installed. The computer name cannot be changed afterwards.

Note

SQL Server Management Studio (SSMS) is no longer delivered with SIMATIC PCS 7. SQL Server Management Studio (SSMS) can be downloaded from - Download SQL Server Management Studio (SSMS) (https://learn.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms?view=sql-server-ver15).

Notes on installing the operating system

Before installing SIMATIC PCS 7, you must install an operating system released for the planned SIMATIC PCS 7 configuration.

The use of tools such as Windows Easy Transfer to transfer data and settings between different operating systems or to perform a direct upgrade from a previous operating system (e.g. from Windows 7 to Windows 10) has not been approved.

The use of the following operating system features has not been approved for SIMATIC PCS 7:

- HomeGroup (only available with Windows 10)
- Parental Control (only available with Windows 10)
- Fast User Switching (The use of this feature can be disabled by the administrator via a group policy. You can find additional information on the procedure on the SIMATIC PCS 7 USB flash drive in the folder _Manuals\English "PCS 7 - PC Configuration.pdf" in the section "How to disable user switching").

Windows Software Update Services (WSUS)

Updates can be installed from WSUS. This includes updates for Microsoft operating systems, SQL Server, Office or new versions of Internet Explorer.

For more information, refer FAQ under the entry ID 18490004:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/18490004)

You need to operate the WSUS at least on the basis of Windows Server 2019 for patch management of plant computers using the Windows 10 and Windows Server 2019/2022 operating systems.

Also read the information from Microsoft for setting up the WSUS:

- Internet link (https://docs.microsoft.com/en-us/windows/deployment/update/waas-manage-updates-wsus)

Patch management and security updates

You can find information about the most actual system tested Microsoft updates in the Industry Online Support under entry ID 18490004:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/18490004)

To ensure secure and stable operation of the operating system and therefore SIMATIC PCS 7, we recommend to install the mentioned updates as soon as possible.

Note

Configuration for updates with Windows 10 Enterprise LTSC 2019, 2021 and Windows Server 2019, 2022

The "Patch management" section of the configuration manual "SIMATIC PCS 7 Compendium Part F - Industrial Security" (https://support.industry.siemens.com/cs/ww/en/view/109815443) describes the recommended Windows and SIMATIC PCS 7 settings for updating the systems.

If these settings are enabled, the user is notified about available updates by the Windows operating system.

The WinCC option "Disable shortcut keys for operating system access" suppresses the notification of available updates and prevents the operator from accessing the operating system desktop.

Additional information on the topic of industrial security and plant security

You can find additional documents and information on the topic of industrial security and plant security in the Industry Online Support, in the "All-round protection with Industrial Security - Plant Security" entry list and the document "SIMATIC PCS 7 Compendium Part F - Industrial Security":

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109815443)
- Internet link (https://docs.microsoft.com/en-us/lifecycle/faq/internet-explorer-microsoft-edge)

Permitted domain controllers (DC)

- DC based on Windows Server 2022
- DC based on Windows Server 2019

Operating system languages

When you use SIMATIC PCS 7, you will have to set the required language and region at every point in the Windows language settings. This affects all settings available under “Region and Language”.

If you use SIMATIC PCS 7 ASIA, make the following settings in the Windows Regional and Language Options:

- Select "Chinese (PRC)" for "Language for non-Unicode programs". You need to make these settings before installing the SIMATIC PCS 7 software.
- For the "Display language", select "English (USA)" if you have set the language of the SIMATIC PCS 7 user interfaces to English.
- For the "Display language", select "English (USA)" or "Chinese (Simplified)" if you have set the language of the SIMATIC PCS 7 user interfaces to Chinese.
- For the "Format", select "Chinese (PRC)".

Then copy these settings for the following accounts:

- Welcome page and system accounts
- New user accounts

Rules for computer names

The selection of the computer name is critical for the entire project configuration:

- Illegal characters: . , ; : ! ? " ' ^ ´ ` ~ - + = / \ ¦ @ * # $ % & § ° ( ) [ ] { } < > space, hyphen ("-"), underscore ("_")
- Max. 15 characters
- Uppercase letters only
- The first character must be a letter.

It is always advisable that only alphanumeric characters are used for the computer name. You should choose a name consisting of uppercase Latin letters (A-Z) and digits (0-9) only, starting with a letter and containing a maximum of 15 characters.

Connecting target computers using SIMATIC Management Console

- Target computer gets connected only when the "File and printer sharing" option in MS Windows is turned on in both SIMATIC Management Console and target computer.
- In the Control Panel, go to the advanced sharing settings(Control Panel > Network and Internet > Network and Sharing Center > Advanced sharing settings) select "Domain" and turn on the "File and printer sharing".
- Managed SIMATIC PCS 7 systems located in a different IP subnet than the SIMATIC Management Console has to be added manually to the managed systems list.

Security settings

You can find information about the security settings in the "_Manuals\English" folder, "PCS 7 - PCS 7 PC Configuration.pdf" document on the SIMATIC PCS 7 USB flash drive in the sections "PC configuration security settings" and "Firewall in PC stations".

Settings need to be made in the registry, the DCOM configuration and the exception list of the Windows firewall for the SIMATIC PCS 7 software to operate correctly.

These settings are made during the installation of SIMATIC PCS 7(system setup) by the "Security Controller" application.

The "Setup - System Settings" dialog box appears before the installation begins. There, the system settings to be changed are listed.

To continue the setup, you need to agree to the change to these system settings.

Note

Please note the following:

- The settings must be applied again if the work environment changes (domain, workgroups). You can open the Security Controller with the menu command:
  - Start > Siemens Automation > Security Controller > Repeat Settings.
- Start the Security Controller after the PC has been added to the domain and rebooted. Remember that the Windows services that are required for the Security Controller are not immediately available after Windows logon. If the tool is started without entries, restart it after a brief interval.
- The settings in the exception list of the Windows firewall are applied to the area of the local network (subnet). If your PC stations are located in different networks (subnets), you need to change this area manually.
- If you need to make local Windows firewall settings that differ, they should be adapted afterwards.
- Export the Windows firewall settings with the Security Controller if needed. This allows the import of the firewall settings in case of using the Security Controller again, which leads to firewall default settings.

OPC XML DA

OPC XML DA is not released.

Setting the permissions for restarting the system

When using Windows Server operating systems, users must be provided with necessary permissions to initiate "System Shutdown". Without these rights, the system cannot be restarted using the "Reboot Box" in case of a critical system failure.

As an administrator, you can set the permission for other user groups using a group policy as follows:

1. Use the search box in the start menu to open the file "gpedit.msc".
   The "Local Group Policy Editor" dialog box opens.
2. In the tree view, select **Local Computer Policy > Computer Configuration > Windows Settings > Security Settings > Local Policies > User Rights Assignment**.
3. Double-click the "Shutdown the system" object in the detailed window. The "Properties of shutdown the system" dialog box opens.
4. Click the "Add Users or Group" button. The "Select Users or Groups" dialog box opens.
5. Select all desired users or groups.
6. Click the "OK" button to apply the settings.

Note

As of Windows Server 2019, the local Administrators group is not sufficient in this context.

Use of additional software for creating and viewing PDF documents

The PDF-XChange software for creating and viewing PDF documents has been tested with SIMATIC PCS 7 V10.0 for compatibility and can be installed subsequently.

4.4.1.2 Notes on installing the software

New installation

There are two possible ways to install SIMATIC PCS 7:

1. Install SIMATIC PCS 7 on a newly set up operating system.
2. Install a previously backed up image of the operating system and install SIMATIC PCS 7 on this image.

You can find detailed information about the installation requirements and procedure in the "SIMATIC PCS 7 PC Configuration.pdf" document in the "_Manuals\English" folder on the SIMATIC PCS 7 USB flash drive.

Steady state

During the installation of the PCS 7 software, the system must be in steady state:

Make sure that no updates are being performed for antivirus software or the Windows Software Update Services (WSUS) during the installation. You can ensure this by temporarily disabling the corresponding options in each program.

Installation on computers with multi-core processor

When you install the PCS 7 software on PC hardware with multi-core processors in which the number of processors does not equal 2^n, or when you use NUMA (Non Uniform Memory Access), you must follow the instructions under entry ID 59703368:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/59703368)

PC hardware based on SIMATIC IPC recommended for PCS 7 is not affected by this.

Installation via network

When performing a network installation of PCS 7, ensure that read only access to the setup procedure is guaranteed, even if the computer reboots during the PCS 7 setup. If the computer is not in a domain, you must enter the logon information of the user in order to access the network share for the server in the Windows Credential Manager.

Note

The SIMATIC PCS 7 installation source share access rights for the users who wants to install software from this repository needs to be restricted to read only.

To be able to install on multiple computers at the same time, you need to make sure that the contents of SIMATIC PCS 7 USB flash drive are available in a shared network path.

The following rules apply to the storage:

- The folders must be located within a shared folder.
- The name of the access path to the network copy of the USB flash drive cannot contain more than 85 characters.

Close the Internet Explorer (IE11) before starting the installation

Before starting the PCS 7 setup, make sure you have correctly closed IE11. Close any processes still running (iexplore.exe), for example, by using the Windows Task Manager.

Deactivating the OPCF Bonjour Service

During the installation of SIMATIC PCS 7, the "OPCF Bonjour Service" is also installed and activated. This service can be deactivated as mentioned in the FAQ (https://support.industry.siemens.com/cs/ww/en/view/109749461).

Installation via SIMATIC Management Console

You cannot install the following products from the "Additional_Products" folder of the SIMATIC PCS 7 USB flash drive using the SIMATIC Management Console:

- MTU
- SAS-DC (SIMATIC Assessment Suite - Data Collector)
- SIMIT VC for PDM MS
- SoftwareIntegrityCheck

When creating and using setup packages for the installation of SIMATIC software, it is mandatory to input English characters for some entries. If you wish to use setup packages, always input English characters for the following entries (Asian characters are not permitted):

- Name of the software or the software package
- Name of the required, shared storage location

Installation of the SIMATIC Management Agent

From SIMATIC PCS 7 V10.0, the SIMATIC Management Agent will not be installed automatically. During setup manually select SIMATIC Management Agent to install.

Notes on uninstalling SIMATIC PCS 7

Uninstalling PCS 7 software components via the system setup is not supported.

The Uninstallation of single software components via the Windows control panel is not recommended.

4.4.1.3 Notes on update

Updating SIMATIC PCS 7

- SIMATIC PCS 7 of versions older than V9.1 cannot be directly upgraded to V10.0. The user has to reset and upgrade the machine to any one of the operating systems listed in topic "Requirements (Released operating systems (Page 22))" and install PCS 7 V10.0 as a completely new installation.
- SIMATIC PCS 7 V9.1 SP2 can be directly upgraded to V10.0.

When updating the software, read the manual "Software Update".

Note

In case of migration from PCS 7 V9.1 SP2 UC03 or later to PCS 7 V10.0, verify the "Adv. Diagnostics Settings". Restore customized settings if needed.

You can find the document "Software Update" on the website for SIMATIC PCS 7 Technical Documentation:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109801081)

Updating the SIMATIC PCS 7 Software

Note

To install SIMATIC software update of V10.0 via SIMATIC Management Console on a target computer with SIMATIC BATCH or SIMATIC Route Control software installed:

- Update SIMATIC Management Agent in the target computer manually or via SIMATIC Management Console
- Proceed with the update installation

Note

After installation, check in the SIMATIC NET Station Configurator if all network components are configured and loaded.

Note

Using Maintenance station in a plant

The "Maintenance Functions for OS" package must be installed through package selection during the PCS 7 setup for each PCS 7 Station used as OS to establish the communication with the maintenance station. Hence an update installation was executed, the package must be installed separately through the PCS 7 setup afterwards.

System Hardening

When an update installation is performed, System Hardening is not displayed during the installation process.

Only after the installation is complete, the customer can see in "Installed Software" that System Hardening has now been updated to V10.0.

Updating a Process Historian/Information Server system

SIMATIC PCS 7 V10.0 contains the version "Process Historian/Information Server 2024".

Note

- Process Historian (PH) / Information Server (IS) upgrade from 2014 SP3 Update 6 to 2024 requires a change of the operating system to Windows Server 2022 or 2019.
  Process Historian (PH) / Information Server (IS) upgrade from 2020 SP2 Update 1 to 2024 requires a change with operating system to Windows Server 2022 or without the operating system to Windows Server 2019.
  It is executed by means of full backup and full restore of the PH / IS database.
- SIMATIC PCS 7 V10.0 supports Process Historian Redundancy.

You can find the "InstallNotesPRHIdeDE.pdf" file on the SIMATIC PCS 7 USB flash drive in the folder "27b_PH+IS_Install_and_Release-Notes".

STEP 7 Monitor application integrity within SIMATIC PCS 7 V10.0

In SIMATIC PCS 7 V10.0, the safety function for monitoring application integrity was introduced for the first time with STEP 7 V5.7. This function is already enabled by default and checks whether installation files have been modified (by malware attacks, for example). With application integrity monitoring enabled, only option packages that have been customized accordingly can be used. To do this, all STEP 7 options packages on your PC must support this security function.

With SIMATIC PCS 7 upgrades to V10.0 (new installation from scratch and upgrade installation), in which additional option packages are used outside of the basic setup, it may happen that these option packages do not yet support the new STEP 7 safety function.

With PCS 7 upgrades to V10.0 (upgrade installation), in which additional option packages, which support the new STEP 7 safety function, are used outside of the basic setup, these option packages must be installed again after the PCS 7 upgrade installation.

If the following message “STEP 7 Start (257:57361) Installation data of options packages were found that cannot be used with integrity monitoring turned on.” is displayed when you start the SIMATIC Manager, you must temporarily disable the option for monitoring the application integrity to have the same system behavior as in PCS 7 V9.1 SP1.

To do this, please refer FAQ (https://support.industry.siemens.com/cs/de/en/view/109798574).

It is planned for all future updates of the PCS 7 option packages that they will support the new STEP 7 safety function.

4.4.2 Microsoft Windows settings

General information

You can find information about the settings on the SIMATIC PCS 7 USB flash drive in the folder "_Manuals\English" in the document "PCS 7 - PCS 7 PC Configuration.pdf".

Settings for the Microsoft Internet Information Service (IIS)

The Internet Information Service is a prerequisite for the installation and use of certain PC stations (Web server, Information Server).

You can learn about the settings required to configure the IIS in the documentation for the respective product used (e.g. the Web server installation instructions). You also need to read the information on configuration of the IIS in the document "PCS 7 - PCS 7 - PC Configuration.pdf".

4.4.3 Installation of engineering station (ES) and operator station (OS) on a single PC

If you wish to install an "Engineering Station" on an existing OS, it is essential that it should completely be a new installation as uninstallation is not supported.

4.4.4 Installation of SIMATIC NET products

SIMATIC NET products must always be installed using the SIMATIC PCS 7 frame setup.

SCALANCE SC

SCALANCE SC is tested on compatibility as successor to CP1628 / CP 443-1 Advanced solution.

The SCALANCE SC establishes an openVPN based tunnel. The server and client side of the tunnel is represented by a SCALANCE SC thereby, ensuring a secured communication.

Further information of the use of SCALANCE SC in SIMATIC PCS 7 can be found in the "SIMATIC PCS 7 Compendium Part F - Industrial Security (https://support.industry.siemens.com/cs/ww/en/view/109815443)"

4.4.5 Use of the Media Redundancy Protocol (MRP)

Network topologies

It is absolutely necessary to operate the PROFINET fieldbus ring with MRP (Media Redundancy Protocol) when using rings with PROFINET. The media redundancy protocols HRP (High Speed Redundancy Protocol) and MRP cannot be used simultaneously in the same ring. The PROFINET fieldbus ring can only consist of devices that support MRP functionality.

The MRP (Media Redundancy Protocol) can be used as a standard for terminal bus, plant bus and fieldbus. The advantage of using of MRP, is the continuous usage of MRP-I (Media Redundancy Protocol Interconnect) as redundant connection between MRP rings.

	HRP	Standby	MRP	MRP-I
Separate terminal and plant bus	X	X	X	X
Common terminal and plant bus	X	X	X	X
PROFINET fieldbus	-	-	X	-

Note

The SCALANCE XC/XP/XF2xx switches with a firmware version V4.2 comes with MRP-I.
The SCALANCE XR/XM switches with a firmware version V6.3 comes with MRP-I.

Configuration of the watchdog time for PROFINET fieldbus

In the event of a transmission line failure, reconfiguration of the network (switching to the redundant transmission line) can take up to 200 ms.

Increase the watchdog time for each station by:

- Selecting the "Fixed update time" setting
- Increasing the update time to a value that is smaller than the fastest update of the process image partition (PIP) for this station
- Increasing the number of accepted update cycles with missing I/O data, so that the watchdog time is > 200 ms

See also, entry ID 46636225

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/46636225)

4.4.6 Settings for standard network adapters (BCE and Softnet)

4.4.6.1 Plant bus with TCP/IP protocol

Use the following settings for the plant bus:

- Disable "File and Printer Sharing for Microsoft Networks"
- Disable "Client for Microsoft Networks"
- Activate the "SIMATIC Industrial Ethernet (ISO)"

Refer to the information in the *PCS 7 Engineering System Configuration* Manual, *PCS 7 Operator Station Configuration* Manual and the WinCC Information System: "Special aspects of communication in a server with multiple network adapters".

4.4.6.2 BCE and time synchronization

When synchronizing the time via BCE, select the following settings:

- 1 - 10 sec. intervals on the external time transmitter
- The ISO protocol needs to be installed and enabled for the network adapter.
- Only one network adapter (BCE) can be used for time synchronization on an OS.
- Use the following multicast destination address for time synchronization with BCE: 09-00-06-01-FF-EF
- Broadcast cannot be used

You can find additional information on the configuration of time synchronization in a PCS 7 plant in the "PCS 7 Time Synchronization" manual.

4.4.6.3 SIMATIC Shell

The SIMATIC Shell dialog appears after new installation of the PCS 7 software. However, if it does not appear, the user must manually open the dialog and make the required communication settings.

For more information on how to set the communication settings, refer "Components for connection to the terminal bus/plant bus" section in the *PCS 7 Engineering System Configuration* Manual, *PCS 7 Operator Station Configuration* Manual.

For more information on encrypted communication, refer "Changing settings for encrypted communication" section in the *PCS 7 - PC Configuration* Manual.

4.4.7 Installation of older versions of PCS 7 libraries

Post-installation of the current version

Following the installation of SIMATIC PCS 7 V10.0, when you install or remove an older version of the PCS 7 Basis Library or PCS 7 Advanced Process Library, you must subsequently re-install the current version of the PCS 7 Basis Library. This is necessary in order to guarantee proper functioning of the CFC driver generator.

Downloading older versions

You can find the libraries of older SIMATIC PCS 7 versions available for download under entry ID 109480136 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109480136)

Compatibility of older versions

You can check the compatibility of older libraries under entry ID 64847781 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/64847781)

4.4.8 Using antivirus software and whitelisting protection mechanisms

Approved antivirus software

You can find additional documents and information on the topic of industrial security and plant security in the Industry Online Support, in the "All-round protection with Industrial Security - Plant Security" entry list and the "*PCS 7 Compendium Part F - Industrial Security*" manual:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/50203404)
- Internet link (https://support.industry.siemens.com/cs/document/109815443)

The following virus scanner has been tested with SIMATIC PCS 7 V10.0 for compatibility and can be installed subsequently even with an existing SIMATIC PCS 7 installation:

- Windows Defender Antivirus

Note

SIMATIC Management Console provides an option for the users to configure automated e-mails that will be sent out, as and when critical Windows Defender events occur in any of the computers present in the network. The feature lets the users choose the outgoing e-mail server, encryption protocol to be used (SSL/TLS), port number through which the secured email transmission should take place, sender information and the list of recipients.

You can find the product version of the corresponding virus scanner suitable for your SIMATIC PCS 7 version in the regularly updated entry ID 64847781 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/64847781)

Using Whitelisting protection mechanisms

Whitelisting mechanisms provide protection for the installation of PC systems by prohibiting the execution of unauthorized software or modification of installed applications.

The following application Whitelisting software has been tested with SIMATIC PCS 7 V10.0 for compatibility:

- Trellix Application Control

You can find the product version of Trellix Application Control suitable for your PCS 7 version in the regularly updated Compatibility Tool under entry ID 64847781 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/64847781)

You can find additional information on the "Utilization of Whitelisting with Trellix Application Control in a PCS 7 / WinCC Environment" in Industry Online Support under entry ID 88653385:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/88653385)

Using Whitelisting on SIMATIC Management Console

The following functions of the SIMATIC Management Console are not available when using active Whitelisting with Trellix Application Control:

- Creating setup package
- Starting computer-specific installation

4.4.9 Digital certificates

Take note of entry ID 87057037 for checking digital certificates in your system. Checking of the certificates is necessary to ensure secure operation of the system and to avoid timeouts. It also helps in preventing error messages of the digital signature during installation of the Web Client and the required Web plug-ins.

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/87057037)

4.4.10 Shutting down Windows, standby mode / hibernation

Whenever you shut down Windows on your PCS 7 computers, use the command "Start > Shutdown Computer" and then select "Shutdown" or "Restart".
The use of "Standby mode" and "Hibernation" has not been released for PCS 7.

4.4.11 SIMATIC Logon

SIMATIC Logon

The term "SIMATIC Logon Admin Tool" has been replaced by "SIMATIC Logon Role Management".

Note on the use of smart cards

All smart cards that were formatted with SIMATIC Logon < V1.3 must be formatted again with a version > V1.3. This is necessary because SIMATIC Logon uses improved encryption for smart cards as of V1.3. If you attempt to log on with a smart card that is not updated, the attempt will fail. However, you can always log on with your username and password via the keyboard.

Only smart cards with TCOS version 3.0 are supported as of SIMATIC PCS 7 V9.1 SP2.

Note

If you have logged on with a chip card and remove this chip card during configuration in the SIMATIC Logon role management, all changes that you have not saved up to this point are discarded.

Reinserting the card will not recover the changes.

Notes on the Windows workgroup

If you require high availability of the user logon, you must operate SIMATIC PCS 7 in a Windows domain environment (Active Directory), because SIMATIC Logon does not support redundant logon servers in a Windows workgroup.

Notes on the SIMATIC Logon Event Log Viewer

If you want to print the events inside the SIMATIC Logon event log, proceed as follows:

- Click "Export" and export the events in PDF format.
- Print out the exported file.

Instead of the file size of the event log, the number of recorded events corresponding to the configured filter is displayed.

The filter dialog box always shows the date and time based on the settings you have selected for the date and time in Windows. Display in conformity to ISO 8601 is not possible.

4.4.12 Using Microsoft Office

The following Microsoft Office products have been tested for compatibility with SIMATIC PCS 7 V10.0:

- Microsoft Office Professional (Plus) 2021 64-Bit (Excel, Word, Access and PowerPoint)

On client computers (OS, BATCH, Maintenance, WEB), the Microsoft Office applications Word, Excel and Access can be used in process mode. This is also the case when the SIMATIC Management Console is operated on these computers. However, the usage of MS Office can result in significant reduced performance in some situations.

Note

Certain Excel add-ins like DataMonitor are not compatible with the 64-Bit version of Microsoft Office Professional (Plus) 2021. In this case you can use the 32-Bit version of Microsoft Office Professional (Plus) 2021. Please check the respective product manuals that provide Office add-ins.

You can find additional information on the compatibility of SIMATIC PCS 7 under the entry ID 64847781 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/64847781)

You can find additional information about the installation and updating of Microsoft Office Professional (Plus) 2021 under the entry ID 109808232 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/50203404)

4.4.13 Ethernet settings

Make sure there are no inconsistencies in Ethernet CPs, switches and network adapters in terms of their settings/properties for data transmission rate and bus access procedure.

We recommend using the default **Autonegotiation** setting (procedure for the automatic negotiation of the best transmission mode between two network interfaces which are directly connected to one another).

You can find information in the section "How to change the transmission rate and operating mode in the PC network" of the document "PCS 7 - PCS 7 PC Configuration.pdf" on the SIMATIC PCS 7 USB flash drive in the folder "_Manuals\English".

4.4.14 Remote service and remote operation

Use of the Remote Desktop Protocol (RDP) is permitted only for remote maintenance of PCS 7 OS clients. The VNC software should be used for remote access to other computers in a distributed PCS 7 plant (for example, OS servers, engineering stations). Only one remote session is allowed per PCS 7 station at any given time.

RDP

Note the following constraints when using RDP:

- No server services (for example, WebNavigator server, DataMonitor server, OPC server) are permitted to be active on the PCS 7 OS clients. This is due to the handling of remote desktop sessions by the Microsoft operating system.
- The existing Windows session must be accepted using the account of the Windows user logged on locally.
- The remote station cannot be in the Windows logon screen.

Note

SIMATIC Management Console

Remote access with RDP to the SIMATIC Management Console is not approved.

UltraVNC

UltraVNC is a VNC application that is tailored towards Windows PCs, with several features not found in other VNC products. It gives complete control over the remote servers. UltraVNC has been tested in SIMATIC PCS 7 V10.0 for compatibility for remote service access.

You can find the UltraVNC edition suitable for your PCS 7 version in the regularly updated Compatibility Tool under entry ID 64847781 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/64847781)

4.4.15 Remote access to OS projects

All users must have been assigned to the "SIMATIC HMI" user group. This also applies to users who want to open the OS projects remotely. Check in particular the following users:

- Users who want to connect a Connectivity Pack Client to a Connectivity Pack Server:
  These users must be registered members of the "SIMATIC HMI" group on the Connectivity Pack Server.
- Users accessing the Web center of DataMonitor:
  1) If you set up a connection to the OS database, you require an additional Windows user and password. Assign this user the necessary authorizations for access to the OS database. For this purpose, set up a separate Windows user on the server and assign this user to the "SIMATIC HMI Viewer" Windows group.
  2) To enable access to a remote computer from the DataMonitor server, the Windows user and the same password must have been set up on the DataMonitor server and relevant remote servers. Register this user and the password in the connection administration of the Web center. For this purpose, proceed as specified under point 1.
- Users who want to connect an OPC client with an OpenPCS 7 server:
  These users must be registered members of the "SIMATIC HMI" group on the OpenPCS 7 server.

4.4.16 Information about changing faceplate style variants from Classic style to APL style for SIMATIC BATCH or Route Control faceplates

You can only install one of the two style variants (Classic style or APL style) at a time. It is not possible to switch this selection without reinstalling the PC.

4.5 Licensing

4.5.1 PCS 7 licenses and quantity structures

An overview of the PCS 7 licensing concept and the quantity structures associated with licensing is available in the document "*SIMATIC Process Control System PCS 7; Licenses and configuration limits*".

This document is located on the website for SIMATIC PCS 7 Technical Documentation:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109801081)

4.5.2 Managing AS runtime licenses

In order for the licenses to be available in sufficient quantities following the activation of the license check, we recommend keeping these licenses on the engineering station from where the controller usually loads them.

Note

Installation of the AS RT PO licenses

Select the appropriate AS RT PO license installation for your engineering environment:

1. **AS RT PO license installed on the local engineering PC**
   Install the AS RT PO license(s) in sufficient numbers on the engineering PC. The favorites list in the Automation License Manager (see menu "File > Settings") must not contain entries or the PCs listed do not have AS RT PO licenses.
2. **AS RT PO license installed on a license server**
   Install the AS RT PO license(s) in sufficient number on the license server PC. The favorites list in the Automation License Manager (see menu "File > Settings") must contain the name of the license server PC. The local engineering PC must not have an AS RT PO license.

4.6 Compatibility information

Performing compatibility tests for SIMATIC PCS 7 with various applications

SIMATIC PCS 7 V10.0 has been tested successfully for compatibility with the following applications at the time of its release:

Application	Version
S7 F Systems	V6.4 Upd1
Safety Matrix	V6.3 SP1
PLCSim	V5.4 SP8 Upd3
SIMIT	V11.2
VMware ESXi	V8.0
Microsoft Defender	With a built in version of the operating system
Trellix Application Control	V8.4.1
Microsoft SQL Management Studio	V20.1
PDF-XChange Pro	V10.0
Microsoft Office Professional (Plus)	2021 (64-Bit)
SINEC NMS	V2.0 SP2
UltraVNC	V1.4.3.6

Note

To check the compatibility of your PCS 7 installation with various applications, please use the compatibility tool. The latest possible limitations as well as additional compatibility tests that were conducted after the release are constantly published there.

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/64847781)

BANY Compatibility to PCS 7

BanyScope V2.0 is compatible with PCS 7 engineering station, operator station, clients and maintenance station. The PROFINET network analysis is also possible via ServiceBridge (the BANY CTRL port connected via ServiceBridge to the host system with BanyScope).

Notes on usage

5

5.1 Automation system (AS)

5.1.1 Switching times for H CPU in connection with a fail-safe application

If you load F-modules, you must select the monitoring time of each F-module as longer than the switching time of the active channel in the H system. Notes on the high limit of this changeover time can be found in the manual "*S7 F/FH Systems - Configuring and Programming*," in Section "A.7".

Run, F-monitoring, and response times:

A table with formulas for calculating the high limit is available under entry ID 22557362 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/22557362)

If you do not follow this instruction, F-modules can malfunction when the active channel is switched.

You can find additional information in the Safety Engineering in *SIMATIC S7 system* manual under entry ID 12490443:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/12490443)

5.1.2 ET 200SP

Module AI ENERGY METER ST

You must interconnect and evaluate the data from the process image manually when using the AI ENERGY METER ST V1.0. Observe the information about reading out measured values under entry ID 81714201 in Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/81714201)

We recommend using and configuring the AI ENERGY METER ST V2.0 module, because the channel block FbEnMe is available for this module in the PCS 7 Advanced Process Library. You can upgrade an existing AI ENERGY METER ST V1.0 module to the firmware version V2.0. You can find the firmware update under the entry ID 98709668 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/98709668)

Read the notes in the manual "*PCS 7 Released Modules*".

Value status

The "Value status" functionality for ET 200SP modules is not supported.

5.1.3 ET 200pro

The use of ET 200pro with CP 443-5 Extended is only approved with the 6GK7 443-5DX04-0XE0 module, firmware version V6.4 or later.

The modules from the ET 200pro series must be configured in DPV1 mode in HW Config. In DPV0 mode, no interrupts are sent to the PCS 7 diagnostic blocks.

5.1.4 ET 200SP HA potential groups or slot rules

The following are the new potential groups or the slot rules that are supported:

- Potential group check active by default, if user engineers a new ET 200SP HA rack in the hardware configuration.
- Potential group check inactive by default, in case of existing ET 200SP HA in the hardware configuration for example: after project migration.

For more information refer to the FAQ (https://support.industry.siemens.com/cs/ww/en/view/109811985).

5.1.5 Using S7 PLCSIM

Simple application tests can be carried out with PLCSIM without the availability of AS hardware.

The required adjustments in the PCS 7 project are described in the "How to test with S7-PLCSIM" section of the "*Process Control System PCS 7 Engineering System*" manual.

A free trial version of SIMATIC S7-PLCSIM V5.4 SP8 Update 2 can be downloaded from the Trial Software SIMATIC S7-PLCSIM V5.4 SP8 including Updates (https://support.industry.siemens.com/cs/ww/en/view/109750064).

Note

For optimum performance of SIMATIC S7-PLCSIM along with SIMATIC PCS 7 V10.0, it is recommended to use SIMATIC S7-PLCSIM V5.4 SP8 Update 3 which will be released shortly.

In addition, you must set the "Send/receive raw data block" option to "No" in the connection settings for AS-OS compilation.

Note

After using PLCSIM, it might be necessary to re-establish the real connection and recompile the changes made to relevant AS including the real connection to the OS.

OS connections with a simulated WinAC Controller (WinLC RTX or WinAC Slot) are not possible. See the notes on simulation of a WinAC Controller in the PLCSIM Readme.

5.1.6 Changing the address range of HART modules leads to address displacements

If HART auxiliary variables are configured retrospectively for HART modules, this leads to an enlargement of the address field required for these modules. The I/O field might therefore be redefined. In doing this, the ability to make configuration changes in RUN is lost. Note that your project might need to be adapted (symbol tables, CFC charts).

We recommend configuring the modules with a "CiR" address placeholder in the address range of the HART auxiliary variables during configuration. This ensures that the max. address range is used and avoids address displacement.

5.1.7 Usage of "umlauts" in the names of hierarchical folders

It is allowed to use "umlauts" to name the Plant Hierarchy(PH) folders. You have to rename the folders using the option "Object properties".

5.1.8 Fast Mode functionality for HART devices

The HART Fast Mode functionality is supported as of configured module version 6ES7 33?-?TF01-0AB0 V3.x.

Update 6ES7 33?-?TF01-0AB0 firmware to V3.x

Download firmware:

- 331-7TF01-0AB0:
  Entry ID 33273268 (https://support.industry.siemens.com/cs/ww/en/view/33273268)
- 332-8TF01-0AB0:
  Entry ID 32011516 (https://support.industry.siemens.com/cs/ww/en/view/32011516)

Replace modules 6ES7 33?-?TF00-0AB0 with 6ES7 33?-?TF01-0AB0 V3.x

- To activate HART-Fast-Mode, you will have to replace the HART module in HW Config (6ES7 33?-?TF00-0AB0 with 6ES7 33?-?TF01-0AB0 V3.x).
- Then delete the HART field devices and renew the configuration.
- Then activate "HART-Fast-Mode" in the module configuration and "HART RIO SHC Mode" in the PDM settings.

Replace modules 6ES7 33?-?TF01-0AB0 with 6ES7 33?-?TF01-0AB0 V3.x

- To activate HART-Fast-Mode, you will have to replace the HART module in HW Config (6ES7 33?-?TF01-0AB0 with 6ES7 33?-?TF01-0AB0 V3.x).
- Then activate "HART-Fast-Mode" in the module configuration and "HART RIO SHC Mode" in the PDM settings.

Redundant modules

HART-Fast-Mode is not possible for redundantly configured modules.

5.1.9 Configuration in RUN (CiR) with FM 350-1, FM 350-2, FM 355, FM 355-2, CP 341

The modules FM 350-1, FM 350-2, FM355, FM 355-2 and CP 341 are CiR-compatible, which means that a configuration in RUN can be used so that they can be plugged or pulled via (hot-swapped) when the AS is in RUN.

Note the following about these modules when configuring in operating mode RUN:

- FM 350-1 and FM 350-2, CP 341:
  Changing the module parameters when the CPU is in operating mode RUN resets the module and is equivalent to restarting the module.
- FM 355 and FM 355-2:
  Bumpless channel-specific changes to module parameters when the CPU is in operating mode RUN are possible to a limited extent; refer to the documentation of the FM modules.

5.1.10 Isochronous mode in SIMATIC PCS 7

SIMATIC PCS 7 does not support isochronous mode.

5.1.11 ET 200SP HA F-modules

While using F-modules for the ET 200SP HA in redundant configuration, a process image part must be set.

For more information, refer *SIMATIC Process Control System PCS 7 Compendium Part B - Process Safety (V9.1)*. (https://support.industry.siemens.com/cs/ww/en/view/109757545)

5.1.12 Fault-tolerant connections via internal ETHERNET/PROFINET interface

The S7-400 H as of firmware V6.0 supports fault-tolerant connections via its internal ETHERNET/PROFINET interface.

If you would like to use fault-tolerant AS-AS connections via the internal interface of the S7-400 H V6 CPU, you need to be aware that the connections to the communication partner can only be configured via the internal interface or by using the CP 443-1 EX30.

5.1.13 Using PROFINET

Shared Device

Generally, the use of PROFINET Shared Device is not supported.

Assigning device numbers

Only device numbers up to 255 are supported by the driver generator in the PROFINET IO system.

CiR functionality

If you would like to use the CiR functionality on the PROFIBUS master system for S7-400 PN/DP CPU with firmware <= V6.0.2 (article number 6ES7 414-3EM06-0AB0 and article number 6ES7 416-3ES06-0AB0), you cannot configure PROFIBUS and PROFINET I/O simultaneously for the internal interfaces.

Firmware to be used with IM 153-4 PN IO

If you are using the PROFINET module IM 153-4 PN IO (article number 6ES7 153-4BA00-0AB0), you need to use a firmware version >= V4.0.1.

You can find information about updating the operating system and downloading the latest firmware versions in Industry Online Support under entry ID 26331274:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/26331274)

5.1.14 Using PROFINET over APL (Advanced Physical Layer)

PROFINET over APL is a technology to bring two-wire Ethernet with 10 Mbit/s into hazardous area via intrinsic safety and is 100% based on Ethernet-APL.

For more information, refer to Using PROFINET over APL (https://support.industry.siemens.com/cs/de/en/view/109812677).

Note

Product management approval is required to use in productive environment with PROFINET certified APL devices only.

5.1.15 Using HART auxiliary variables with failsafe modules

The configured HART auxiliary variables of the following module are not supported by the PCS 7 channel blocks:

- F-AI 8xI 2-/4-wire HART HA (article number 6DL1 136-6AA00-0PH1)
- 4 F-AI HART (article number 6ES7 138-7FA00-0AB0)

You can obtain additional information in the manual "SIMATIC ET 200SP HA F-AI 8xI 2-/4-wire HART HA Equipment Manual" under entry ID 109802504 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109802504)

and

in the operating instructions "ET 200iSP Distributed I/O Device - Fail-safe Modules" under entry ID 47357221 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/47357221)

5.1.16 Using PROFIBUS field devices with IE/PB Link

When using SIMATIC PCS 7 AS-RTX you must observe the following:

- Parameter assignment of PROFIBUS field devices which are connected to an IE/PB Link is not possible via Industrial Ethernet connections from the PCS 7 Engineering Station (ES).
- To assign PROFIBUS field device parameters with SIMATIC PDM, connect the ES directly to PROFINET of the IE/PB Link.

5.1.17 Compact Field Unit (CFU)

Note that you must not make any changes in HWConfig to the PA slots (FB0- FB7) for a CFU station opened in PDM.

5.1.18 Taking advantage of the increased I/O scaling when using CPU 410 SMART.

As of firmware version 8.2.1, CPU 410 SMART I/O scaling for each interface has been increased from 1.5 KB to 3 KB. To use the increased scaling, the following requirements must be fulfilled:

1. Object exchange in HW Config to V8.2.1.
2. Use/upgrade to FW V8.2.1 or higher for CPU 410 SMART

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109476571)

5.2 Engineering system (ES)

5.2.1 Notes on retrieving project archives

Retrieving project archives from the SIMATIC PCS 7 versions older than V9.1 SP2

While retrieving the project archives, you will receive a pop-up window asking for retrieval confirmation. The STEP 7 does not check for the archive consistency and no information about ensuring archive consistency is given in the project archive.

In case if you do not want to continue, create a new archive with the "Secure archive" option.

5.2.2 System ID

- As of SIMATIC PCS 7 V10.0, the System ID is a mandatory property of a multiproject.
- "System ID" is a unique key to identify a specific PCS 7 System based on end-customer, location, plant, and production unit. It does not change over the lifetime of the PCS 7 System.
- For Libraries, Sample Projects and Getting Started, you can use the System ID of your own PCS 7 project.

For more information, refer "Information on the launch of system ID for SIMATIC PCS 7 (https://support.industry.siemens.com/cs/document/109821295)".

5.2.3 Notes on DocPro

As of PCS 7 V9.1 DocPro is no longer part of PCS 7.

If DocPro is not needed but DocPro objects are existent in the project, an instruction on how to remove them in order to avoid error messages is provided when the user opens the project in PCS 7 V9.1 environment.

DocPro objects can be deleted with the function "Save as with reorganization (slow)".

If the user still needs DocPro, the user needs to use DocPro V9.0 SP3 Upd 1 with PCS 7 V10.0. It can be downloaded from the Internet (https://support.industry.siemens.com/cs/ww/en/view/109780528).

5.2.4 Client engineering

Opening clients on the ES can sometimes take a very long time, since it involves an implicit update of all server data (packages) that are not up-to-date. Operator input to the SIMATIC Manager is not possible during this time.

5.2.5 CFC/SFC: Download of the automation system (AS)

Programs created with CFC/SFC can only be downloaded with the following functions:

- In CFC/SFC with menu command "PLC > Download"
- In SIMATIC Manager (component view), select the project or station and then the menu command "PLC > Compile and Download Objects"
- In the SIMATIC Manager (component view), select charts and then the menu command "PLC > Download".
- In SIMATIC Manager using the menu command "Charts > Selective loading"

Only the loading function of the CFC/SFC guarantees that the engineering data will be consistent with the PLC data. Downloading changes to the CFC/SFC in the RUN mode of the S7 CPU is only possible when the download is performed exclusively with these functions.

5.2.6 Special characters for the nomenclature

Only certain characters are allowed in names, depending on the language and components. It is not recommended to use national special characters.

Special restrictions:

- A comma "," in tag names (process tags, archive tags etc.) is generally not allowed.
- The project name, picture name, and computer name must not contain multibyte characters (e.g. Chinese).

For other naming conventions for projects, refer to:

- "Engineering System Configuration Manual"
- WinCC Online Help, using the search term "Illegal characters"

5.2.7 Notes on exporting SNMP variables

Access-protected PCS 7 projects

For projects with activated FDA access protection, you must open the OS project in SIMATIC Manager before exporting the OPC configuration.

You can find additional information about exporting SNMP variables, for example, for the SIMATIC PCS 7 maintenance station, in the function manual "*PCS 7 Maintenance Station*".

Export entire plant configuration

The customer must perform the complete export once for existing devices of type switch in order to correct the variables that are created already.

The user needs to execute the step: "HW Config > OPC Server > SNMP > Tag Export > Export entire plant configuration".

5.2.8 Compiling and downloading S7 connections – downloading to an AS

If connections are to be downloaded to an AS via "PLC > Compile and Download Objects", the connections of all connection partners are compiled and loaded. Connection partners here are also all the AS that have a configured connection to the same OS as the AS to be downloaded. When downloading the connection data to the respective AS, there is a temporary break in the connection between AS and OS or between the AS with AS-AS communication.

Note

Monitoring times for fault-tolerant S7 connections

When using fault-tolerant S7 connections via TCP/IP, keep in mind that sufficient monitoring times must be configured. Additional information on this topic is available in your SIMATIC NET version under entry ID 15227599 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/15227599)

5.2.9 Empty password is accepted by the CPU during download to AS

When the hardware configuration file is imported successfully, the option “Read/Write-protection” is enabled by default in the object properties of CPU under the "Protection" tab.

Please enter a password or reduce the protection level before you download the configuration.

If you try to download the configuration without setting a password, it is downloaded successfully. However, during the next download, the system asks for a password. In this case, you will not be able to download anymore as you do not know the protection password.

5.2.10 Download

When a "Download" performed from an ES to an OS, the Windows user logged on to the ES must be known on the target station and a member in the following groups there (if available): At least "Users", "SIMATIC HMI" "SIMATIC NET", "SIMATIC BATCH" and required SIMATIC Route Control "RC_..." groups.

In addition, the user also needs full access rights for the folder into which the project should be downloaded. This includes the sharing and security settings and must be checked in advance after the installation and setup of the stations.

5.2.11 Notes on cross AS interconnections

- When using cross AS interconnections, the S7 program names in the multi-project must be different.
- Hardware requirements:
  - S7-400 CPU with firmware version >= V3.1
  - Communications processor >= 443-1EX10 V2.1.
  - PCS 7 AS RTX
- If there is an overload on the S7-400 CPU or if there are network disruptions, the following messages can appear: "Overload sender: S7 connection ID xxxx". This means that a data transfer cycle could not be executed. The data will be transferred in the next cycle.

5.2.12 F-monitoring time of F-modules and F-field devices downstream from a Y-Link/DP-PA Link

By extending the calculation of the monitoring times for updating the reserve, it is possible as of PCS 7 V7.1 SP1 to consider F-monitoring times of F-modules and F-field devices downstream from a Y-Link/DP-PA Link.

Note

When you activate the option "Calculate F-modules after Y-Link" you will change the CRC for the F-module configuration. You will have to compile the F-program once again.

You might have to adjust the F-monitoring times of the affected F-modules and F-field devices prior to the calculation.

Use the Excel file "s7ftime" to determine the F-monitoring times for F-modules after Y-Link and F-field devices on PROFIBUS PA.

SIMATIC S7 F Systems: execution times of fail-safe blocks, runtime of F-shutdown group, monitoring and reaction times.

Entry ID 22557362:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/22557362)

5.2.13 Configuration of fail-safe modules in ET 200M PROFINET stations

In order to operate fail-safe applications on PROFINET, the following requirements must be met:

- All configured devices and the employed F-drivers must support PROFIsafe V2 mode
- The S7 F Configuration Pack version used must be V5.5 SP13

Note the following before the first compilation of the hardware configuration:

- For fail-safe operation on PROFINET, be sure to use only fail-safe modules that are listed in the "PCS7_V100" module filter under PROFINET IO -> I/O -> ET 200M.
- Be sure to use a version >= V1.3 of the SIMATIC S7 F Systems library in your project. If you have not yet used F-blocks in your project, place at least one F-block from the F-library version >= V1.3 within a CFC (for example, F-channel drivers).

5.2.14 Merging projects after distributed editing (multiproject engineering)

If you merge projects into a multi-project, you have to execute the following menu command: "File > Save as... > With Reorganization (slow)".

5.2.15 Note on upgrading process objects of a CPU 410-5H system expansion card

During the upgrade of the process objects of a CPU 410-5H system expansion card (SEC), only one instance of the Automation License Manager (ALM) can be active.

5.2.16 Notes on AS-OS compilation

Using named connections

Within the context of PCS 7, we recommend using "named connections" for the AS-OS connection.

If you are using a connection type other than "named connections", you take note of the "Send/receive raw data block" option in the connection settings during AS-OS compilation. You should set this option to "No" if it is not needed for special applications.

5.2.17 Notes on updating block contacts at SFC types

There is a possibility that changes which have not been applied yet, which means updates of block contacts at SFC types, are present in existing projects. Therefore, check your project (if you are using SFC types with block contacts) to see if any such changes have been made.

To do this, select the menu command "Options > Block contacts" in the SFC Editor while the SFC type is open.

If there are still block contacts that still have to be updated, select them and click "Update".

Note

After these updates, the respective SFC instances must be stopped for downloading.

Refer to the entry ID 109751583 in the Industry Online Support for instructions on how to handle updates of block contacts at SFC types that have not been adopted:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109751583)

5.2.18 Configuration of fault-tolerant S7 connections with max. redundancy (with 4 connection paths)

Configuration of fault-tolerant S7 connections with max. redundancy (with 4 connection paths) is possible if the recommended connection schema of the interfaces to the plant bus is used.

The recommended connection schema is:

Rack0: CP1 or CPU 410-5H.X5 -> Plant bus 1

Rack0: CP2 or CPU 410-5H.X8 -> Plant bus 2

Rack1: CP1 or CPU 410-5H.X5 -> Plant bus 2

Rack1: CP2 or CPU 410-5H.X8 -> Plant bus 1

5.2.19 How to handle CiR in PCS 7

Handling CiR in PCS 7 is explained in detail in the *Process Control System PCS 7: Engineering System V10.0* configuration manual.

Notes on Configuration in RUN

Changes can be made to the distributed I/O of an S7-400 AS configuration during ongoing operation; these are described in the following documents:

Method	System configuration	Documentation
CiR Configuration in Run	Standard automation system (e.g. Single AS 410H)	Configuration manual for PCS 7 Engineering System; Modifying the System during Operation via CiR
H-CiR Configuration in Run	Fault-tolerant automation system (e.g. Redundant AS 410H)	Fault-tolerant Systems S7-400H, chapter 17 • Internet link (https://support.industry.siemens.com/cs/ww/en/view/82478488)

5.2.20 CPU 410 requests memory reset in CiR

While using AS-i links in combination with a CPU 410-5H or CPU 410E, the total amount of sub-slots within each AS-i link is < 250. Otherwise, the capability of configuration in run (CiR) is not possible anymore, the CPU request a memory reset.
The total amount of sub-slots can be estimated based on the specific hardware configuration:

- Head: 4 sub-slots
- IE-AS-i-Link-2M: 1 sub-slot
- Every IE AS-i Proxy Slave: 2 sub-slots
- Every IE AS-i A/B Slave: 2 sub-slots
- Every Input- sub module: 1 sub-slot
- Every Output- sub module: 1 sub-slot
- Every mix module: 2 sub-slots

5.2.21 TCiR in PCS 7 environment

TCiR in PCS 7 environment is supported only with a CPU firmware version V8.2 (or higher).

5.3 PCS 7 Libraries

5.3.1 Interface changes in Advanced Process Library V10.0

In SIMATIC PCS 7 V10.0, for some of the blocks of Advanced Process Library, you can see changes in the interface compared to SIMATIC PCS 7 V9.1 SP2.

For more information refer *PCS 7 Advanced Process Library*.

5.3.2 Upgrading the project

When upgrading your project, be sure to consider the compatibility of the PCS 7 libraries according to "Compatibility Tool". For more information, refer Internet (https://support.industry.siemens.com/cs/ww/en/view/64847781).

Also, follow the steps mentioned in the *Software update* upgrade manual.
For more information, refer Internet (https://support.industry.siemens.com/cs/ww/en/view/109811249) and select appropriate date from the drop-down list.

5.3.3 Diagnostic alarms for digital input modules SM 321-7BH00 and SM 321-7BH01

Diagnostic evaluation for channel-based diagnostic interrupts of the module

When using digital input modules SM 321-7BH00 and SM 321-7BH01, the diagnostic evaluation for a channel-based diagnostic interrupt is performed in channel groups.

When using digital input module SM 321-7BH01 HF, the channel-related diagnostic interrupt takes place for each individual channel.

Diagnostic option: Missing encoder supply

SM 321-7BH00 and SM 321-7BH01

- Digital input channels 0 to 7 are combined into channel group 0.
- Digital input channels 8 to 15 are combined into channel group 1.

Eight alarms are output for each channel group if the encoder supply is missing.

- "Error channel 00" to "Error channel 07" or
- "Error channel 08" to "Error channel 15"

Diagnostic option: Wire break

For SM 321-7BH01 only

- Digital input channels 0 and 1 are combined into channel group 0
- Digital input channels 2 and 3 are combined into channel group 1
- Digital input channels 12 and 13 are combined into channel group 6
- Digital input channels 14 and 15 are combined into channel group 7

The channel involved can therefore not be clearly identified in the text of the diagnostic interrupt/diagnostic message.

5.3.4 Faceplate Designer

Creation and modification of user-specific faceplates

The creation and modification of user-specific faceplates using the "Faceplate Designer" is no longer supported as of version V9.0.

5.3.5 Adjusting the Modbus configuration

Changing an existing Modbus communication setting via the `Configure` input on the MBComm block only takes effect after AS-STOP or after removing and inserting the CM.

Adjusting the Modbus configuration is mandatory. If not, it can lead to faulty behavior of the blocks.

5.3.6 Using Basis Library V9.0 SP3 with SIMATIC PCS 7 V10.0

To use Basis Library V9.0 SP3 with SIMATIC PCS 7 V10.0, the version of the Basis Library should be greater than or equal to V9.0 SP3 Update 1.

5.3.7 IE/PB Link HA as S2-Devices on H-System

When IE/PB Link HA is connected with the intelligent DP slaves in a H-system, use PCS 7 Basis Library higher than V9.1 Update 1.

5.4 Operator station (OS)

5.4.1 OS-specific information and notes on installation and use

You will find PCS 7 OS-specific information and notes on installation and use of this component in the readme file of the product.

5.4.2 Customized user programs

If you create your own applications, system tests in the relevant environment are necessary to ensure the stability of the entire system.

5.4.3 Starting process mode on the OS server

- Process mode will not be started on an OS server if this server is not connected to the network.
- When you start process mode on a redundant server, make sure that the first server takes over process mode completely before the redundant partner is started. No client should be active before process mode is started on a server for the first time. The OS clients can then be activated.

5.4.4 Deactivating a redundant OS server

Before deactivating a redundant server, ensure that the partner server is in a state that is fault-free and operational (for example, there are no process coupling faults). Archive synchronization must be completed before deactivation, which can be recognized with the corresponding process control message.

5.4.5 OS change download

Procedure for extensive changes

If an AS has been added, a redundancy switchover and entries in the message system can occur when changes are downloaded. The following procedure is recommended when extensive changes are involved: Configure the changes in single steps ("packet-by-packet") on the ES and then transfer them to the OS in individual "packets".

Changes to tags with access to an OPC-DA-Client application

It might happen during configuration that tags are deleted from a project that are requested at this time by an OPC-DA-Client application using a Subscription. Restoration of these tags in the project will not automatically initiate an update of the tags by means of OPC. Provided the tags in question are available in an OS server project and the OPC-DA-server is running on an OS client or OpenPCS 7 station, it is sufficient to initiate a redundancy switchover of the corresponding OS server project to trigger an update of the tags. Otherwise, the OPC-DA-Client application needs to re-register the tags in question.

5.4.6 Setting access permissions in the operating system

A PCS 7 OS creates the local user group "SIMATIC HMI" during installation in the Microsoft Windows operating system. The installation was performed under the user's account, and the local administrator was added to this user group. Add the Windows users who should have access to PCS 7 OS to the "SIMATIC HMI" group with their Windows credentials.

You can find more detailed information in:

- The WinCC Information System under "Installation Notes > Installation Requirements > Access Permissions in the Operating System"
- The document "PCS 7 - PC Configuration.pdf" on the SIMATIC PCS 7 USB flash drive in the folder "_Manuals\English"
- The *PCS 7 Compendium Part F - Industrial Security*.
  Internet link (https://support.industry.siemens.com/cs/ww/en/view/109804118)

All Windows users who work with PCS 7 OS or Route Control projects must also be members of the "SIMATIC NET" group.

5.4.7 Controls

Using controls from third-party suppliers can lead to errors such as performance problems or system blockage. The user of the software must assume responsibility if problems are caused by third-party controls. We highly recommend that you run a system test to ensure safe operation before putting them into use.

5.4.8 User interface and design

In SIMATIC PCS 7, make the following setting for the appearance of the user interface in process mode:

- Design "WinCC 3D"

All other WinCC designs are not supported by SIMATIC PCS 7.

Note the following:

- Make sure that the design is set in a uniform manner for all the projects of a plant.
- If you change the setting of the design, check the visualization of self-generated objects and adapt these if necessary.
- Retain the setting if you update the software. During a software update, changing the setting for the appearance of the user interface in process mode could cause considerable changes.

5.4.9 Disabling / enabling messages using the WinCC Alarmcontrol

The disabling / enabling messages functionality using WinCC Alarmcontrol has not been approved for SIMATIC PCS 7.

5.4.10 Language setting for C scripts

Note

WinCC supports Unicode.

To ensure your C scripts run without problems, you need to make sure that the language set in the Global Script C editor is correct.

If you select "Dynamic: Project setting", scripts run in the language that was set globally for the project.

You can make this global project setting under "C scripts with language setting "Dynamic" in Runtime" in the "Options" tab, which is located in the "Project properties" dialog box of the WinCC Explorer.

The "Operating system language for non-Unicode programs" option is preset and recommended as the global project setting for PCS 7. You can find additional information in the WinCC documentation (WinCC Information System) and the WinCC readme.

5.4.11 Consistency between the plant hierarchy and the Picture Tree Manager for SFC visualization

To prevent delays during the start of OS Runtime and during SFC operation on the OS client, you need to ensure the following:

- all areas of the plant hierarchy (PH) that contain SFC charts must also be created by name in the WinCC Picture Tree Manager.

OS areas which should not be available for selection in WinCC Runtime can be configured as invisible via the OS project editor.

5.4.12 Prevent operating system access through key combinations

With the option "Disable shortcut keys for operating system access" in the properties of the SIMATIC PCS 7 OS computer, the key combinations for ease of access are disabled. This also disables the Microsoft Windows Update banner if a Windows update is available on this system.

5.4.13 Setting the Windows taskbar for multi-monitor cards

In multi-monitor mode, the same zoom level must be configured for all monitors in the operating system. The Windows taskbar can only be displayed on the primary monitor and cannot be extended to other monitors.

5.4.14 Adaptation of message texts and message classes via the master data library

When making user-specific changes to message texts and message classes of module types in the master data library, please note the following:

In case of an upgrade of the library blocks, the system replaces the existing block types with the new versions of the respective library. The user-specific changed messages of the module type are not automatically transferred to the new version of the module type. The changed message texts and message classes must be saved beforehand and manually transferred back to the then updated module type in the master data library after the upgrade to the new version.

Note

Affected versions

General system behavior up to SIMATIC PCS 7 V9.1.x.

5.4.15 WinCC Service mode

The WinCC service mode is released in connection with SIMATIC PCS 7 OS for the following configurations:

- SIMATIC PCS 7 OS Server
- SIMATIC PCS 7 Maintenance Station
- SIMATIC PCS 7 OS Server combined with SIMATIC PCS 7 Maintenance Station

5.4.16 SIMATIC PCS 7 Process Tag Browser

SIMATIC PCS 7 Process Tag Browser lists process tags that are assigned to the image hierarchy of the OS project. It also lists objects from the plant hierarchy area "Diagnostics".

5.4.17 Forced comments for operator actions

This feature will be available in the future versions of SIMATIC PCS 7 V10.0.

5.5 SIMATIC BATCH

5.5.1 Compiling and loading SIMATIC BATCH with the "Compile and Download Objects" function

Note that when you modify projects, compiling and loading should always be performed in the following sequence: AS, OS, BATCH.

5.5.2 Access permissions

The SIMATIC PCS 7 software manages the share permissions automatically.

5.5.3 IS report templates for SIMATIC BATCH

The PH/IS 2024 is delivered with SIMATIC PCS 7 V10.0. Hence, the installation includes all templates from previous versions of IS-Batch-Options.

For additional information, refer *Process Control System PCS 7; SIMATIC BATCH online help*.

5.5.4 Archiving control recipes on the Process Historian

In case of archiving batches (i.e. control recipes) on the Process Historian:

Whenever a SIMATIC BATCH database restore is performed on the SIMATIC BATCH server, it must be assured, that the Process Historian machine is reachable in the automation network.

If this requirement is not met during SIMATIC BATCH database restore, subsequent batches are not treated correctly in the Process Historian.

5.6 SIMATIC Route Control

5.6.1 Route Control Wizard

The new UI is designed to display the list of deleted elements from Simatic Manager. It primarily includes a "tree view area" and a "preview area," accompanied by buttons and an information box. It is used to select multiple elements for deletion, allowing a single warning message to be displayed for all deleted elements. For more information, refer to the topic “Deleting Used Elements” in the SIMATIC Process Control System; SIMATIC Route Control V10.0 manual.

5.6.2 Route Control Engineering

- In Route Control Engineering, a consistency check and an enhanced pre-download verification process for engineered data are implemented before transferring it to the RC Server. The RC Wizard also checks for partial route elements and identifies any deleted elements in red within SIMATIC Manager. For more information, refer to the topic "Consistency Check" in the SIMATIC Process Control System; SIMATIC Route Control V10.0 manual.
- When a partial route contains any deleted elements and a user attempts to download this data to the server, the system will not allow the download of inconsistent data and will display an error. Downloading inconsistent data can result in an error during route run or might affect the running routes. For more information, refer to the topic "Transfer to the Server" in the SIMATIC Process Control System; SIMATIC Route Control V10.0 manual.
- Reports
  - Users can view the reports without any dependency on third-party software installation, and the report is visible to all users by default.
  - Crystal Report is no longer part of PCS 7 delivery.

5.6.3 Route Control Center

The user must provide a reason for updating the configuration in the comment section of the 'Update SIMATIC RC Server' dialog box in RC center. For more information, refer to the topic 'Updating the Route Control Server' in the SIMATIC Process Control System; SIMATIC Route Control V10.0 manual.

Additionally, to enhance usability, an asterisk (*) will now appear next to the material name in the material column for all running routes where the material has been changed. This asterisk will be removed after the material is applied using the 'Apply Material' option in the toolbar. This improvement allows users to view the apply material status for all routes without having to select each route individually.

5.6.4 Route Control Server

- The Route Control server automatically updates the WinCC alarm journal list during server updates. This list captures user/client comments provided in "Update SIMATIC RC Server" dialog in RC Center, including associated user and computer names. Furthermore, all this information is seamlessly synchronized with the route logs.
  Similarly, the user names and computer names are promptly updated in the operator list during RC faceplate events. Additionally, some performance improvements have been made in the server optimization of redundancy and synchronization of the configuration between 2 servers master and standby. If any new configurations are detected with identical versions, no prompts are generated. A successful download requires at least one server to be available, remaining servers automatically synchronized. If that server is temporarily unavailable, synchronization occurs once the server is up. For more information, refer to the topic "Configuring with Route Control Engineering" and "Transfer to the Server" in the SIMATIC Process Control System; SIMATIC Route Control V10.0 manual.
- Settings for redundant Route Control servers (Serial connection or LAN connection):
  - In the case of configurations with a pure Route Control server setup without PCS 7 OS/ BATCH, you have the option to choose either a serial or LAN connection.
  - In the case of configurations with SIMATIC BATCH/PCS 7 OS, you must configure a LAN connection.

5.7 SIMATIC PDM

5.7.1 Using the Device Integration Manager

Once you have installed SIMATIC PDM, you must import the devices you are using onto your computer. Run the "Device Integration Manager" program for this. The "Device Integration Manager" needs to run after every installation of SIMATIC PDM (also after Update installation).

The devices supported by SIMATIC PDM are included on the supplied "Device Library". You can download the latest version from the Support area of the SIMATIC PDM website.

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109807681)

5.7.2 Canceling the module redundancy for HART modules of ET 200M remote IOs

In order to cancel the module redundancy set in the hardware configuration (HWC), you need to adhere to the following procedure:

1. Delete the module in question and then compile the hardware project
2. Remove the deleted module from the process device plant view or network view
3. Configure the module again in HWC

This ensures that the redundancy is removed correctly.

5.7.3 Note on project migration using SIMATIC PDM

When migrating a SIMATIC PDM project from a previous version, it is absolutely necessary to do the following:

- Install all add-on packages used in the project before you open the project for the first time.
- Projects are migrated automatically when you first open them.

You can find additional important information in the SIMATIC PDM readme in the section "Migrating Projects".

5.8 Process Historian (PH)

Commissioning the PH

If you want to integrate the PH into your system for the first time, you need to consider the following:

The PH only starts to collect the data from the OS servers and BATCH servers if it is activated earlier. You need to restart the OS server or BATCH server to adhere to these sequence of events.

5.9 Information Server (IS)

Installation of IS 2024

Read the instructions in "InstallNotesINFSVenUS.pdf" for the installation of IS 2024. You will find the file on the SIMATIC PCS 7 USB flash drive in the folder "27b_PH+IS_Install_and_Release-Notes".

Upgradation

Following Information Server(IS) upgrades are supported:

- 2014 SP3 Update 6 to 2024
- 2020 SP2 Update 1 to 2024

Firewall settings

Firewall settings needs to be enhanced so that it is only allowed for IS Ready clients to access the IS server.

Reconfigure IS datasource from a standalone PH

Reconfiguring IS datasource from a standalone PH to a redundant PH without deleting old datasource/subscriptions is not possible as single PH to redundant PH configuration is not supported by PH/IS.

5.10 PCS 7 Web Option

PCS 7 Web server

Information about the PCS 7 Web add-on package is available in the "PCS 7 Web Option for OS" manual. This document is located on the website for SIMATIC PCS 7 Technical Documentation Internet link (https://support.industry.siemens.com/cs/ww/en/view/109805408)and in the dropdown list select the latest version.

It is recommended to use WinCCViewerRT for Web clients. For more information, refer to SIMATIC PCS 7 Web Option (https://support.industry.siemens.com/cs/document/109805408) manual and select the corresponding version form the "Edition" drop down list.

WinCC/WebUX

As of WinCC/WebUX V7.4, process pictures from SIMATIC PCS 7 projects are also supported. The same restrictions as for process pictures from WinCC projects apply.

5.11 DataMonitor (DM)

Operating and monitoring via the Web

The "Process Screen" function is no longer used for operator control and monitoring via the Web in DataMonitor. Instead, the "WinCCViewerRT" Web viewer can be used on the DataMonitor client.

For more information, please see the "DataMonitor Release Notes".

Restrictions on usage of the DataMonitor server

Always use the DataMonitor server on a computer that is not operated in WinCC ServiceMode.

5.12 OpenPCS 7

Evaluation of "Active Time"

"Active Time" cannot be used for evaluations with Historical Alarm&Event.

Project languages

If you have project languages other than Western European Languages (code page Windows – 1252), an OPC A&E Client can only use the languages "German" or "English", as offered by the OpenPCS 7 OPC server.

Changes to tags with access to an OPC-DA-Client application

Observe the section OS change download (Page 58).

Downloading the OpenPCS 7 station

Following installation or update of OpenPCS 7, you need to perform a "Download" of the OpenPCS 7 station on the engineering station.

Assigning OS server to SPOSA station

Assigning an OS server to SPOSA Station is not possible in a multi-project environment with SIMATIC BATCH.

OpenPCS 7 OPC UA HDA - String access

Historical access to string datatype is currently not supported by the WinCC OPC UA server and the OpenPCS7 OPC UA server.

5.13 Redundant systems

SIMATIC PCS 7 contains advanced self-diagnostics for redundant software systems (servers). If this diagnostics routine detects an internal fault while the redundant partner server is fully functioning, all communication connections on the server affected by the fault are disconnected (terminal and system bus).

Example:

- WinCC and BATCH Server are running on server (A).
- The full function of the redundant partner server (B) is achieved when WinCC and BATCH Server are running on server (B) and the runtime data of WinCC and BATCH are synchronized.

Automatic restart of the affected server is only performed when this full functionality is achieved.

Requirements

- Use of a SIMATIC PCS 7 OS (multi-station) redundant system, SIMATIC BATCH or SIMATIC Route Control.
- You must make the following configuration settings on the server systems:
  - Automatic Windows logon (not relevant for servers in WinCC service mode)
  - Automatic start of the SIMATIC PCS 7 server applications
- Disable the group policy "Display event logging for shutdown"
  Procedure:
  - Use [Windows button]+[R] to launch the "gpedit.msc" file and open the following path in the group policies editor:
    Computer Configuration > Administrative Templates > System
  - Disable the group policy from the following path : Computer Configuration > Administrative Templates > System > "Disable - Display Shutdown Event Tracker"
- Before a SIMATIC PCS 7 server application is exited, an availability check is carried out on the relevant redundant partner server. The aspect of the data synchronization is also taken into account in the availability check.
  If the partner server is not fully functional, the user is informed of this status and can proceed accordingly.
  For more information, refer to the section "Setting the permissions for restarting the system" under the chapter Requirements (Page 22).

Activation of automatic logon in Microsoft Windows

You can find a description of the options for activating automatic logon in Microsoft Windows under entry ID 23598260 in the Industry Online Support:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/23598260)

Additional information

You can find additional information in the corresponding application descriptions (manual and readme for PCS 7 OS, SIMATIC BATCH, SIMATIC Route Control, SIMATIC NET, PH/IS).

5.14 SIMATIC NET

VLAN architectures for SIMATIC PCS 7

You can find information about configurations with virtual LANs (VLAN) available with SIMATIC PCS 7 in the Industry Online Support under entry ID 66807297:

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/66807297)

Using SIMATIC NET Softnet IE-RNA

To use SIMATIC NET Softnet IE-RNA, refer section "Setting package size for communication (MTU size)" of the SIMATIC PCS 7 manual "PCS 7 - PCS 7 PC Configuration.pdf" and on the Internet (https://support.industry.siemens.com/cs/ww/en/view/109794377) under "Edition" drop down list, select the latest one.

Using secured network communication

We recommend you to use the "Automation Firewall Next Generation" released for SIMATIC PCS 7 as a back firewall for communication across the plant. For more information, refer Automation Firewall Next Generation (https://support.industry.siemens.com/cs/ww/en/sc/4984).

5.15 SIMATIC PCS 7 Audit

- PCS 7 Audit requires the installation of SIMATIC Logon on all ES and OS nodes.
- Function: Automatic log-off from SIMATIC Manager
  With SIMATIC PCS 7 V10.0, the access protected STEP 7 project cannot be closed automatically with "automatic log-off". A corresponding dialog box is shown which recommends to the user to log-off manually from SIMATIC Manager.
- PCS 7 Audit does not use GMP Flag function in Process Object View
  "GMP Flag" in "SIMATIC Manager > Process Object View" still has no function. All audit relevant Operator Input Messages which refer to PCS 7 faceplates are logged in Audit Trail database on Process Historian.
- You can find detailed information about the events, PCS 7 Audit comprises for logging, in the following SIOS article.
  Internet link (https://support.industry.siemens.com/cs/document/109963396).

5.16 Maintenance Station

Using OPC UA secure communication

To enable secure communication, a certificate exchange between communication partners is required. For more information about handling certificates and alternative settings, see *Process Control System PCS 7; PCS 7 - Maintenance Station; Section "Configuring the maintenance stations"; Chapters "Overview" and "Certificates"*.

Firmware update of the SCALANCE modules

Note

If, for example, the firmware versions of network components of the SCALANCE product family have been updated for security reasons, the use of the "WEB based Management" function within the maintenance stations of the "SIMATIC PCS 7" product family in all current versions may lead to possible access restrictions from the OS runtime.

Normal plant operation is not affected by this.

Access to SCALANCE products via "WEB based Management" can also be made outside the OS runtime, e.g. with the Microsoft Edge browser.

Note regarding "Call configuration data" function in the diagnostic screens of the maintenance station

A warning notice is displayed when a website is called with the "Call configuration data" icon whose HTTPS certificate cannot be checked.

Result:

The operator can use this warning notice to gain access to the operating system level of the local SIMATIC PCS 7 Operator Station (OS) despite enabled keylock.

Remedy:

- Enter all necessary certificates in the list of trusted certificates in Internet Explorer for all SIMATIC PCS 7 operator stations which display diagnostic screens of the maintenance station.

Recommendation:

- To increase security, we recommend replacing the default certificates with appropriate certificates for all web servers.

Note regarding the required settings while using OPC Server V8.2 in Communication settings

If OPC Server V8.2 is used in the project, ensure that OPC COM and COM/DCOM-SNMP are enabled in the communication settings.

For more details, see *Process Control System PCS 7; PCS 7 - Maintenance Station; Section "How to enable the legacy OPC Server V8.2 communication"*.

Note

SIMATIC PCS 7 V10.0 supports SNMP communication according to version 3.0 with OPC Server V9.0.

Migrated projects in focus of resource monitoring

If you have added the variables according to FAQ ID 954032 (https://support.industry.siemens.com/cs/document/954032) to resource monitoring in an older installation, you have to remove them now so that resource monitoring via SIMATIC Station Observer works correctly.
The variable names are as follows:

- @CCPERFMON@LASTRUN
- @CCPERFMON@CPU_USAGE_IDLE
- @CCPERFMON@PAGING_FILE_USAGE
- @CCPERFMON@FREE_MEMORY_IN_BYTES
- @CCPERFMON@FREE_MBYTES_x

SINEC NMS

Note

If SINEC NMS is used on a PCS 7 Maintenance Station, minimum of RAM of 16 GB is necessary.

General restriction IPC Diagnostics

IPC diagnostics in SIMATIC PCS 7 V10.0 will be available along with the release of SIMATIC IPC ORCLA Diagnostics.

5.17 SIMATIC PDM MS

Note

The standalone maintenance station for smart field devices is a product of the SIMATIC PCS 7 product family and is installed via the media package from SIMATIC PCS 7. Information on application and engineering can be found in the "*Process Control System PCS 7; Maintenance Station*" manual and on the Internet (https://support.industry.siemens.com/cs/ww/en/view/109767562). Under "Edition" drop down list, select the latest one.

The SIMATIC PDM MS can be operated on IPC stations that meet the performance data of the SIMATIC IPC 427E.

For more information, refer *SIMATIC PCS 7 Released Modules V10.0* manual.

5.18 SIMATIC IPC ORCLA

The usage of SIMATIC PC DiagMonitor with PCS 7 V10.0 is not released.
The new IPC diagnostic tool SIMATIC IPC ORCLA Diagnostics is not part of the Software media and will be released separately at a later stage.

5.19 SIMATIC Safety Matrix and S7 F Systems

SIMATIC S7 F Systems

SIMATIC S7 F Systems V6.4 Upd1 has been tested with SIMATIC PCS 7 V10.0 for compatibility.

You can find additional up-to-date information on SIMATIC S7 F Systems in the Industry Online Support at:

- Internet link (https://support.industry.siemens.com/cs/ww/en/ps/14363)

See section "4.3 Conversion to S7 F Systems V6.x" in the respective "SIMATIC Industrial Software S7 F/FH Systems; Configuring and Programming" manual.

- Internet link (https://support.industry.siemens.com/cs/ww/en/view/109773062)

SIMATIC Safety Matrix

SIMATIC Safety Matrix V6.3 SP1 has been tested for compatibility with SIMATIC PCS 7 V10.0.

You can find additional up-to-date information on SIMATIC Safety Matrix in the Industry Online Support at:

- Internet link (https://support.industry.siemens.com/cs/ww/en/ps/14364)

5.20 Notes on PCS 7 Model Predictive Control (MPC)

As of SIMATIC PCS 7 V9.1, the PCS 7 MPC V8.1 is no longer part of SIMATIC PCS 7.

For more information, refer SIMATIC PCS 7 MPC Configurator (https://support.industry.siemens.com/cs/document/109815354).

5.21 Security

Information Integrity and Authenticity

Software integrity check (content.cat)

- It checks the integrity of the whole PCS 7 delivery.
- By using the SoftwareIntegrityCheck tool, the result will be shown in the command window and in a logfile.
- Software integrity check also fails if a new file is added to the SIMATIC PCS 7 media.

Prior to the software installation in the plant, the integrity and authenticity of the software must be checked and can be safeguarded in various ways:

- Sealed delivery media
- Hash on download page
- Authenticode signatures

For more information, refer Internet (https://docs.microsoft.com/en-us/windows-hardware/drivers/install/authenticode).

Note

We recommend that you obtain the software only from trusted sources.

The physical installation media as well as the software on distribution points (for example: fileshare) must be protected in order to prevent manipulation, for example through a virus, see *SIMATIC PCS 7 Compendium Part F* chapter "5.6.3. Quarantine station as data exchange point" for more information.
SIMATIC PCS 7 offers multiple possibilities for checking the integrity and authenticity of the software:

- The packaging is sealed.
- Software and firmware downloaded from the support page is signed digitally. Before it is run, this signature is checked by the operating system. A SHA256 checksum with which the integrity can be checked at any time and is also published on the download page.
- The integrity and authenticity of the SIMATIC PCS 7 software is safeguarded with a catalog file. This file is supplied on the installation medium and is used to check the integrity of the software before the installation via SIMATIC Management Console. For more information, refer SIMATIC PCS 7 SIMATIC Management Console (https://support.industry.siemens.com/cs/document/109822515).

Module replacement

In case of replacing an existing module with CP 443-1 EX30 V3.3 as a new module the properties of "SNMP" and "Webserver" are deactivated per default. It is recommended to check SNMP settings after module replacement and proceed further with the configuration.

SNMP V3.0 is supported as of SIMATIC PCS 7 V10.0.

5.22 Notes on the documentation

PUD Manager

The key points that the user must remember while using the PUD Manager are:

- First Help call needs more time for the initialization of the PUD Manager. The autostart setting is active only on ES/single station. The first startup time ranges from 30s to 120s.
- After the initialization, the PUD Manager stays active in the main memory (RAM) in order to ensure a quick response to subsequent help calls.
- The used RAM can be emptied by the user when it is required. The PUD Manager needs to be shutdown using the option **Tray-Icon > Right Mouse > Exit**. After the exit, the PUD Manager behaves as mentioned in the above two points.

Note

When the user starts the information server from a computer where the SIMATIC PCS 7 is not installed and then the Help-Button is selected, the webviewer gets triggered.

Multifaceted search

This functionality utilizes designated attributes as criteria for users to fine-tune their search results. Users are presented with distinct and relevant filtering options, offering a user-friendly and convenient approach to content discovery.

Integrity check

The integrity check process is carried out on the documents available on PUD Manager. It is concluded through a secure signing procedure utilizing a "One-Time Key", thereby ensuring the security of the documents.

Documentation packages in PUD Manager Help Viewer

With the installation of SIMATIC PCS 7 V10.0, the help system is delivered with inbuilt PUD files of the following manuals along with the documentation of various product components of SIMATIC PCS 7:

- SIMATIC PCS 7 - Documentation V10.0
- SIMATIC PCS 7 - Operating Instructions - OS Process Control V10.0
- SIMATIC PCS 7 - Installation Manual - PC Configuration V10.0
- SIMATIC PCS 7 - Configuration Manual - Engineering System V10.0
- SIMATIC PCS 7 - Configuration Manual - Operator Station V10.0

The user can update or customize his own Manual collection. For more details, please refer to SIMATIC Process Control System PCS 7; PUD Manager Online Help (https://support.industry.siemens.com/cs/ww/en/view/109748882).

Opening .mht files compatibility with Microsoft Edge browser

When you use Microsoft Edge browser to open the .mht files, it is recommended to open them in the "Internet Explorer-compatibility" mode as it is not enabled by default.

Importing language packages in PUD Help Viewer

If the language package is not imported into the PUD Manager, the help file opens in English by default. However, if you need to open the help file in the preferred language, you must follow these steps:

1. Close the current session of the PUD Manager.
2. Launch the PUD Manager as an administrator.
3. Go to "Management" and select "Show language package".
4. Select the required language package and import it. Once imported, the user can go back to the PCS 7 Software and press F1, the help will be displayed in the required language.

Software components in SIMATIC PCS 7 V10.0

6

SIMATIC PCS 7 SW components	PCS 7 V10.0
Automation License Manager	V6.2 + Upd2
STEP 7 Basis	V5.7 + SP2 + HF2
CFC	V10.0
S7-SCL	V5.7 + Upd1
SFC	V10.0
TH	V10.0
IEA PO	V10.0
PCS 7 Basis Library	V10.0
PCS 7 Advanced Process Library	V10.0
Logic Matrix Library, Logic Matrix Engineering Tool and Logic Matrix Faceplates	V10.0
Version Cross Manager	V10.0
Version Trail	V10.0
PCS 7 PID-Tuner	V8.0 + SP1 + Upd2
Audit Util	V10.0
S7-PLCSIM	V5.4 + SP8 + Upd2
SIMATIC WinCC	V8.0 + Upd5
WinCC WebUX	V8.0 + Upd5
WebNavigator	V8.0 + Upd5
DataMonitor	V8.0 + Upd5
Process Historian	V2024
Information Server	V2024
Process Historian TrendViewer	V2024
OpenPCS 7	V10.0
SFC Visualization	V10.0
AS-OS-Engineering	V10.0
PV InsInfo-Server	V10.0
XML TRANSFER	V10.0
PCS 7 Basis Faceplates	V10.0
PCS 7 Advanced Process Faceplates	V10.0
SIMATIC NET PC-Software	V18.0 + SP1
SIMATIC NET PC Software Doc	V18.0 + SP1
SIMATIC NET SOFTNET-IE RNA	V18.0 + SP1
SIMATIC Management Console	V10.0
SIMATIC Management Agent	V10.0
SIMATIC PUD Manager	V3.0 + SP1 + Upd1
SIMATIC BATCH	V10.0

SIMATIC PCS 7 SW components	**PCS 7 V10.0**
SIMATIC Logon	V2.0
SIMATIC PDM	V9.3
SIMATIC PDM Devices	Internet download (https://support.industry.siemens.com/cs/document/109814286)
SIMATIC Route Control	V10.0
PCS 7 System Documentation	Internet link (https://support.industry.siemens.com/cs/ww/en/view/109748882)
PCS 7 Tools	V10.0
Microsoft SQL Server	2019
Additional_Products: (manual installation required)	
MTU	V1.0
S7 Block Privacy	V1.0 + SP6
SIMATIC Assessment Suite - Data Collector	SAS-DC_2024 (V3.7.1)
SIMATIC Management Agent	V10.0
SIMATIC Management Console InventoryDataProfile	V10.0
SIMIT VC for PDM MS	V5.0
SoftwareIntegrityCheck	V1.0
Other:	
PKZIP	V14.5
DotNetFramework	V4.8
S7 F Systems	V6.4 + Upd1[1]
SIMATIC Safety Matrix	V6.3 + SP1[1]

[1] Delivery on separate data storage medium

Change history PCS 7 Readme (Online) 7

Changes since delivery release PCS 7 V10.0

Version	Edition	Change
2024-07-16 (ONLINE)	07/2024	Delivery version PCS 7 V10.0