SIEMENS

SIMATIC

Process Control System PCS 7 PCS 7 Readme V8.1 (online)

Readme

Version: 2015-01-19 (Online)

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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

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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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Security information

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Siemens provides products and solutions with industrial security functions that support the secure operation of plants, solutions, machines, equipment and/or networks. They are important components in a holistic industrial security concept. With this in mind, Siemens' products and solutions undergo continuous development. Siemens recommends strongly that you regularly check for product updates.

For the secure operation of Siemens products and solutions, it is necessary to take suitable preventive action (e.g. cell protection concept) and integrate each component into a holistic, state-of-the-art industrial security concept. Third-party products that may be in use should also be considered. For more information about industrial security, visit:

- Internet link (http://www.siemens.com/industrialsecurity)

To stay informed about product updates as they occur, sign up for a product-specific newsletter. For more information, visit:

- Internet link (http://support.automation.siemens.com)

Version of the security information: Version 3.4 (14 November 2013)

Overview

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Note

Read these notes carefully; they contain information that will be important to you and upgrades to PCS 7.

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

You have received the software package SIMATIC PCS 7 V8.1.

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
- 21 CFR Part 11 compliance

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

Your PCS 7 team

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3.1 General information

Information about PCS 7 on the Internet

All product and order information regarding PCS 7:

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

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

- Internet link (http://www.siemens.com/industry/onlinesupport/pcs7)

All information on Support and Service in the Industry Online Support:

- Internet link (http://support.automation.siemens.com)
  Here, you can also subscribe to the newsletter, which keeps you constantly up-to-date with current information about our products.

Content of the PCS 7 Readme file

The PCS 7 readme for PCS 7 V8.1 is available in two versions:

1. 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. PCS 7 Readme (online)
   This is the version which contains all information on the installation and use of 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 101094704 in the Industry Online Support:
   – Internet link (http://support.automation.siemens.com/WW/view/en/101094704)

Note

It is vital that you use the information from the most recent version of the PCS 7 Readme (online) before you begin the installation or use of PCS 7 V8.1.

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 PCS 7.

Electronic manuals and help system on PCS 7

Pre-installed manuals

Once you have installed PCS 7 on your computer, the following PCS 7 documentation is immediately available:

- You can find this documentation in the section SIMATIC > Documentation or the product information in the Start menu of Windows:
  - PCS 7 - Catalog Overview (PDF)
  - PCS 7 - Operating Instructions - OS Process Control (PDF)
  - PCS 7 - Installation Manual - PC Configuration (PDF)
  - PCS 7 - Configuration Manual - Engineering System (PDF)
  - PCS 7 - Configuration Manual - Operator Station (PDF)

You can also access this documentation at any time on the SIMATIC PCS 7 DVD 1/2 in the folder "_Manuals\English" or "_Product_Information\English".

Complete documentation for PCS 7 on the internet and document updates

The complete PCS 7 documentation is available in multiple languages at the following Internet site:

- Internet link (http://www.siemens.com/pcs7-documentation)

You also have the option of updating the installed PCS 7 help system installing the PCS 7 system documentation later. The "PCS 7 Documentation Portal Setup" required for this is available for download under the entry ID 101140601 in the Industry Online Support:

- Download link (http://support.automation.siemens.com/WW/view/en/101140601)

Note

Timeliness of online documents

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

Information on modified documents

In order to keep yourself informed about changes to the PCS 7 Readme and the other PCS 7 documentation, we recommend that you subscribe to the newsletter in the Industry Online Support:

- Internet link (http://support.automation.siemens.com)

3.2 Type of delivery

3.2.1 Delivery package

The products listed in the table below are delivered with the required installation medium for the respective product:

- SIMATIC PCS 7 DVD:
  2 DVDs in a jewel case or as software download

or

- SIMATIC PCS 7 DVD ASIA:
  2 DVDs in a jewel case
- Certificate of License
- The license keys required to operate the software for the supplied product are located on the License Key memory stick.

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

3.2.2 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 PCS 7 may not be used outside the PCS 7 environment without prior written consent from Siemens.

3.3 Hardware requirements

3.3.1 PC hardware

3.3.1.1 Recommended PC hardware configuration

Recommended basic hardware configuration

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

Parameters	**Central engineering station with server operating system, Process Historian[1], Information Server, PCS 7 OS / SIMATIC BATCH / SIMATIC Route Control on a PC, Engineering station, OS server, OS single station, Maintenance Station, PCS 7 Web server, OS client, and BATCH client on a PC, BATCH server, BATCH single station, Route Control server, Route Control single station**	**OS client, BATCH client, Route Control client**
Basic PC (see catalog)	SIMATIC IPC 847C / 847D / 647C / 647D / 547D / 547E	SIMATIC IPC 847C / 847D / 647C / 647D / 547C / 547D / 547E
Processor	min. INTEL Core 2 Duo; >=2.4GHz, INTEL Core 2 Quad	
Work memory (RAM)	4 GB (32-bit operating system) >=6 GB (64-bit operating system)	4 GB (32-bit operating system) >=4 GB (64-bit operating system)
Hard disk Partition size	>=200 GB HDD/SSD C:\ 100 GB	>=160 GB HDD/SSD C:\ 100 GB
Network adapter/communications interfaces • For terminal bus communication • For plant bus communication	• RJ45 on-board gigabit Ethernet • CP 1613 A2 / CP 1623 or BCE network adapter for engineering station and OS server	• RJ45 on-board gigabit Ethernet
Opt. drive	DVD	DVD

Parameters	**OS client**
Basic PC (see catalog)	SIMATIC IPC427C / IPC427D / IPC477D
Processor	Intel Core2 Duo / Intel Core i7-3517UE

Parameters	OS client
Work memory (RAM)	4.0 GB
Hard disk Partition size	>=200 GB HDD or >=50 GB SSD C:\ 100 GB HDD or >=C:\ 35 GB SSD
Network adapter/communications interfaces	• 2 x RJ45 on-board Gigabit Ethernet • without PROFINET or PROFIBUS interface
Purpose	Approved for OS/Batch client operation only

We recommend the following configuration for Box / Microbox components (the higher the quality of the equipment, the better):

Parameters	SIMATIC IPC627C / IPC677C / IPC627D / IPC677D	SIMATIC IPC427C
Processor	min. Intel Core i7-610E Prozessor	Intel Core2 Duo
Clock-pulse rate	2.53 GHz	>=1.2 GHz
Work memory (RAM)	4.0 GB	2.0 - 4.0 GB
Hard disk Partition size	>=200 GB HDD / SSD C:\ 100 GB	Compact Flash card: 8.0 GB
Network adapter/communications interfaces	• 2 x RJ45 on-board Gigabit Ethernet • CP 5611/CP 5622 on-board	• 2 x RJ45 on-board Gigabit Ethernet • CP 5611 on-board
Opt. drive	DVD	-
Purpose	SIMATIC IPC627C / IPC677C / IPC627D / IPC677D (BOX PC) is released as part of the PCS 7 BOX systems.	PCS 7 AS RTX based on SIMATIC IPC427C released only for AS operation.

Note

Please note the following:

- In the case of multiproject engineering, it is beneficial for the engineering stations if you use PCs with high clock-pulse rates, large main memories and hard disks, and high-speed disk drives. In addition to the Microsoft recommendation of "15% free space", we recommend that you reserve at least 2 GB of free space (depending on the size of the project) on the system partition.
- [1)] For operation of the Process Historian, also read the notes in the "Hardware requirements" section in the Process Historian 2014 installation manual.

Additional information

- Catalog *ST PCS 7 for V8.1*
- Add-on catalog *ST PCS 7 for V8.1*

3.3.1.2 Compatibility matrix SIMATIC IPC and accessories for PCS 7 V8.1

Compatibility matrix SIMATIC IPC and accessories for PCS 7 V8.1

PCS 7 V8.1	MLFB	Windows Embedded Standard 2009	Windows 7 Ultimate / Enterprise 32bit SP1	Windows 7 Ultimate / Enterprise 64bit SP1	Windows Server 2008 R2 Standard 64bit SP1
RACK IPC					
IPC547C	6ES7 660-0....-....	-	X (OS client only)	-	-
IPC547D	6ES7 660-3....-....	-	-	X	X
IPC547E	6ES7 660-4....-....	-	-	X	X
IPC647C	6ES7 660-1....-....	-	-	X	X
IPC647D	6ES7 660-5....-....	-	-	X	X
IPC847C	6ES7 660-2....-....	-	-	X	X
IPC847D	6ES7 660-6....-....	-	-	X	X
BOX IPC					
IPC627C, IPC677C BOX with/without RTX 2010	6ES7 650-4A...-....	-	X	-	-
IPC627D, IPC677D BOX with/without RTX 2010	6ES7 650-4B...-....	-	X (with WinAC RTX)	X (without WinAC RTX)	-
Microbox					
IPC427B, AS RTX (RTX 2008)	6ES7 654-0UE12-0XX0	X	-	-	-
IPC427C, AS RTX (RTX 2010)	6ES7 654-0UE13-0XX0	X	-	-	-
IPC427C, OS clients	6ES7 650-0RG..-....	-	X	-	-
IPC427D, IPC477D OS clients	6ES7 650-0UG..-....	-	-	X	-
CPs					
CP 1613 A2	6GK1 161-3AA01	-	X	X	X
CP 1623	6GK1 162-3AA00	-	X	X	X
CP 1628	6GK1 162-8AA00	-	-	X	X
Accessories					
Redundant terminal bus adapter package PCIe	6ES7 652-0XX01-1XF1	-	X	X	X
Multi monitor card X2 (M series) PCIe	6ES7 652-0XX04-1XE0	-	X	X	X
Multi monitor card X4 (M series) PCIe	6ES7 652-0XX04-1XE1	-	X	X	X

PCS 7 V8.1	MLFB	Windows Embedded Standard 2009	Windows 7 Ultimate / Enterprise 32bit SP1	Windows 7 Ultimate / Enterprise 64bit SP1	Windows Server 2008 R2 Standard 64bit SP1
SIMATIC PCS 7 USB smart card reader (OK3121)	6ES7 652-0XX02-1XC0	-	X (with SIMATIC Logon)	X (with SIMATIC Logon)	X (with SIMATIC Logon)
Signal module, PCI card for installation in an operator station	6DS1 916-8RR	-	X	X	X

3.3.1.3 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:

- PCS 7 Security Concept PCS 7 & WinCC (Basic)

The document is available for download under the Entry ID 60119725 in the Industry Online Support:

- Download link (http://support.automation.siemens.com/WW/view/en/60119725)

3.3.2 AS hardware

Documentation on hardware

The versions of the AS hardware components that are approved for PCS 7 V8.1 are described in the manual "PCS 7 - Released Modules". This document is located on the website for SIMATIC PCS 7 Technical Documentation:

- Internet link (www.siemens.com/pcs7-documentation)

CPUs 6ES7 414-3EM05-0AB0, 6ES7 416-3ER05-0AB0, 6ES7 414-3EM06-0AB0 and 6ES7 416-3ES06-0AB0

Time synchronization

- These CPU types can only be synchronized using the NTP method when using the internal ETHERNET/PROFINET interface. We recommend that you use the central SICLOCK TC 400 system clock. For the previous CPU types, we continue to recommend that you use the SIMATIC mode.
- You can find notes on SICLOCK TC 100 / TC 400 in the function manual "PCS 7 – Time synchronization".
  This document is located on the website for SIMATIC PCS 7 Technical Documentation:
  – Internet link (www.siemens.com/pcs7-documentation)

3.4 Installation of the software, software requirements

3.4.1 Software installation

3.4.1.1 Requirements

Released operating systems

The following operating systems are supported in PCS 7 V8.1 :

- Windows 7 Ultimate / Enterprise SP1 (32Bit)
- Windows 7 Ultimate / Enterprise SP1 (64Bit)
- Windows Server 2008 R2 SP1 Standard Edition (64 Bit)

Note

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) are not supported.

Not all configurations are suitable for every operating system. The following table shows the relationship of the most common configurations of 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.

	Windows Embedded Standard 2009	Windows 7 Ultimate / Enterprise 32bit SP1	Windows 7 Ultimate / Enterprise 64bit SP1	Windows Server 2008 R2 Standard 64bit SP1
ES		X	X	X
OS-Single Station		X	X	X
ES/OS-Single Station		X	X	X
OS-Server				X
OS-Client		X	X	X
Web-Server		X[1)]		X
Web-Client		X	X	X
Process Historian				X
Information Server		X	X	X
SIMATIC Management Console		X	X	X
PCS 7 BOX		X	X	
PCS 7 BOX RTX		X		
OS-Client Microbox		X	X	
PCS 7 AS mEC RTX	X			
PCS 7 AS RTX	X			

1) only on ES or OS single-station system

Microsoft Internet Explorer

Only Internet Explorer 11 is permitted.

- Internet link (http://windows.microsoft.com/en-US/internet-explorer/ie-11-worldwide-languages)

Note:

Internet Explorer 11 attempts to automatically install the required Microsoft Patches (KB) during the installation. If this installation fails, for example because no Internet connection can be made, the installation procedure is aborted. In this case, you need to install the required KBs manually before you can install Internet Explorer 11.

- Internet link (http://support.microsoft.com/kb/2872074)

Microsoft .NET Framework

The Microsoft. NET Framework feature must be enabled prior to the installation of the PCS 7 software for operating systems based on Windows 7 and Windows Server 2008 R2.

- For Windows 7 under: Control Panel -> Programs and Features -> Turn Windows features on or off
- For Windows Server 2008 R2 under: Control Panel -> Programs and Features -> Turn Windows features on or off -> Server Manager -> Features

Microsoft SQL Server

The Microsoft SQL Server 2008 R2 Service Pack 2 is installed automatically by the PCS 7 system setup. The computer name must be set before SQL Server is installed. The computer name must not be changed afterwards.

Notes on installing the operating system

Before installing PCS 7, ensure that the correct operating system variant for the planned PCS 7 role is installed on the computer. If needed, re-install the operating system for the computer.

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 Windows Vista to Windows 7 has not been approved.

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

- XP mode (only available with Windows 7)
- HomeGroup (only available with Windows 7)
- Parental Control (only available with Windows 7 Ultimate)
- Windows Defender
- BitLocker
- 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 DVD 1/2 in the folder _Manuals\English "PCS 7 - PC Configuration.pdf" in the section "How to disable user switching")

Using INTEL network adapters

If you use an INTEL network adapter, install the driver corresponding to your device type and operating system variant located on the "PCS 7 Software Support & Tools DVD 2014.02" in the separately available "PCS 7 V8.x Software Support Package" (article number 6ES7 650-4XX08-0YT8) under "01_Drivers\NETWORK\Intel".

Windows Software Update Service (WSUS)

The WSUS cannot install software versions that are not described in this document as a minimum system requirements. This includes service packs for Microsoft operating systems, SQL Server, Office or new versions of Internet Explorer.

This guideline does not apply to security patches published under entry ID 18490004:

- Internet link (http://support.automation.siemens.com/WW/view/en/18490004)

Permitted domain controllers (DC)

- Domain Controller (DC) based on Windows Server 2008 R2 SP1 (Standard Edition)
- Domain Controller (DC) based on Windows Server 2012 (Standard Edition)

Operating system languages

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

If you use 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 PCS 7 software.
- For the "Display language", select "English (USA)" if you have set the language of the PCS 7 user interfaces to English.
- For the "Display language", select "English (USA)" or "Chinese (Simplified)" if you have set the language of the PCS 7 user interfaces to Chinese.
- For the "Format", select "Chinese (PRC)".

Rules for computer names

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

- Invalid characters: . , ; : ! ? " ' ^ ´ ` ~ - + = / \ ¦ @ * # $ % & § ° ( ) [ ] { } < > space character, 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.

Before installing the PCS 7 software

- Message queuing must be installed for PCS 7.

When required, the following Microsoft Patches are installed automatically by the PCS 7 system setup depending on the installed operating system and type of installation:

- KB979231 for Windows Server 2008
- KB2483185 for Windows Server 2008
- KB908002 for Microsoft .NET Framework 2.0
- KB2905569 for 64-bit operating systems (installation of this Microsoft patch requires a restart of the computer)
- KB2516889 for Windows Server 2008 R2 and Windows 7
- KB2554746 for Windows Server 2008 R2 and Windows 7 (installation of this Microsoft patch requires the computer to be rebooted)
- KB2938478 for Windows Server 2008 R2

Security settings

You can find information about the security settings in the "_Manuals\English" folder, "PCS 7 - PC Configuration.pdf" file on the SIMATIC PCS 7 DVD 1/2 in the sections "Security settings for the PC configuration" and "Firewall".

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

Before the installation begins, the "Setup - System Settings" dialog appears. 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) using the menu command **Start > Program Files > 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 and make this change again after each execution of the "Security Controller".
- If you need to make local Windows firewall settings that differ, they should be adapted afterwards.
- The settings in the exception list of the Windows firewall are made when the Windows firewall is disabled.

Security patches

You can find information on the use of the latest Microsoft security patches in the Industry Online Support under entry ID 18490004:

- Internet link (http://support.automation.siemens.com/WW/view/en/18490004)

To ensure secure and stable operation of the operating system and therefore PCS 7, we recommend the installation of "Security Updates" and "Critical Updates".

Activation of the revised Windows Authenticode signature verification

The change of the Windows Authenticode signature verification described in Microsoft Security Advisory 2915720 cannot be activated in PCS 7.

- Internet link (https://technet.microsoft.com/library/security/2915720)

Additional information on the PCS 7 security concept

You can find additional documents and information on the PCS 7 security concept on the Internet in the Security Concept entry list and in the document "PCS 7 Compendium Part F - Industrial Security":

- Internet link (http://support.automation.siemens.com/WW/view/en/35231330/130000)
- Internet link (http://support.automation.siemens.com/WW/view/en/77507462)

OPC XML DA

OPC XML DA has not been released.

Setting the permissions for restarting the system

When using Windows Server operating systems, users without administrator rights must be provided authorization for "System Shutdown".

Without these rights, the system cannot be restarted.

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

1. In the Windows Start menu, open the "Run" dialog box and enter gpedit.msc.
2. In the "Group Policy Object Editor" dialog box, select the folder "Local Computer Policy > Computer Configuration > Windows Settings > Security Settings > Local Policies > User Rights Assignment."
3. Add the required user groups for the "System Shutdown" object.

Notes on installing the software via a network

To be able to install on multiple computers at the same time, you need to make the contents of the two SIMATIC PCS 7 DVDs available in one storage location (shared network path).

The following rules apply to the storage:

- The folders must be called "DVD_1" and "DVD_2" and must be located within a shared folder (see example).
- The name of the access path to the network copy of the DVDs (including the folder "DVD_1" or "DVD_2") cannot contain more than 85 characters.

Example:

Create a network copy of the two SIMATIC PCS 7 DVDs with the following structure:

- …\PCS7_Vxx\
  - DVD_1\
  - DVD_2\

Use of additional software for creating and viewing PDF documents

The PDF-XChange 5.5.x software for creating and viewing PDF documents has been tested for compatibility with PCS 7 V8.1 and can be installed subsequently.

3.4.1.2 Notes on installing the software

New installation

There are two possible ways to install PCS 7:

1. Installation of a previously backed up image of the operating system.
   This image cannot contain a PCS 7 installation.
   You can then install PCS 7 on this image.
2. New installation of the operating system followed by new installation of PCS 7.

You can find detailed information about the installation requirements and procedure in the "PCS 7 - PC Configuration.pdf" document located in the "_Manuals\English" folder on the SIMATIC PCS 7 DVD 1/2.

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 (http://support.automation.siemens.com/WW/view/en/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 on computers with an operating system based on Windows 7 and Windows Server 2008 R2, ensure that 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.

Installation of keyboard filter for 32-bit operating systems

Once the PCS 7 software has been successfully installed, you are prompted to reboot the computer. When you subsequently log on with user or power user rights, you may see a dialog

for installing the drivers for "Keyboard_Filter_01" or "Keyboard_Filter_02". Enter the name and password for a user with administrator rights in this dialog and confirm the dialog with "OK".

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 (ieexplore.exe), for example, using the Windows Task Manager.

Installation via SIMATIC Management Console

You cannot install the following products from the "Additional_Products" folder of the SIMATIC PCS 7 DVD 2/2 using the SIMATIC Management Console:

- DiagMonitor
- ReportBuilder3
- SDT_2013_3
- SimaticRights

You can find a list of all products and PCS 7 components that can be installed via the SIMATIC Management Console V8.1 under entry ID 107796665 in Industry Online Support:

- Internet link (http://support.automation.siemens.com/WW/view/en/107796665)

Installation of the SIMATIC Management Agent

The SIMATIC Management Agent is automatically installed with every installation of PCS 7 to facilitate the integration of your computers in a plant managed with the SIMATIC Management Console.

However, if the SIMATIC Management Agent has not been selected for installation, the corresponding service with the same name is deactivated subsequently. The computer cannot be managed through the SIMATIC Management Console in this state.

To enable its active use, proceed as follows:

1. Select the following depending on your operating system
   - Windows 7: "Computer Management > Services and Applications > Services".
   - Windows Server 2008 R2: "Server Manager > Configuration > Services".
2. Open the Properties dialog by double-clicking on "SIMATIC Management Agent".
3. Change the "Startup type" to "Automatic".
4. Start the service by pressing the "Start" button.
5. Click "OK" to close the dialog.

3.4.1.3 Notes on updating the software

Updating PCS 7 projects

When updating the software, read the manuals "Software Updates Without Utilization of New Functions" or "Software Updates With Utilization of New Functions". You can find both of these documents on the website for SIMATIC PCS 7 Technical Documentation:

- Internet link (www.siemens.com/pcs7-documentation)

Software update with utilization of new functions from the PCS 7 Advanced Process Library

A software update of the Advanced Process Library (APL) to V8.1 with utilization of new functions can only be performed in STOP operating mode of the AS and complete compilation of the OS.

You can find detailed update information in the Advanced Process Library Readme (V8.1).

Updating the PCS 7 Software

Computer reboot

If you use the "Update" function in the PCS 7 setup, we recommend you reboot the PC before performing the installation.

During the software update, there may be some instances when a message appears prompting you to reboot your PC. Reboot the PC. The installation is then automatically continued.

INTEL network adapter

If you use an INTEL network adapter, install the driver corresponding to your device type and operating system variant located on the "PCS 7 Software Support & Tools DVD 2014.02" in the separately available "PCS 7 V8.x Software Support Package" (article number 6ES7 650-4XX08-0YT8) under "01_Drivers\NETWORK\Intel" .

Updating a redundant Process Historian system

PCS 7 V8.1 contains the version "Process Historian 2014".

If you want to update the Process Historian to this version, follow the instructions in the Process Historian readme file, section 5.2 "Upgrading the Process Historian as a redundant system".

You can find the file "InstallNotesPRHIenEN.pdf" on the SIMATIC PCS 7 DVD 1/2 in the "27b_PH+IS_Install_and_Release-Notes" folder.

Updating a Process Historian System V8.0 Update 1

An update of Process Historian V8.0 Update 1 to version 2014 (included in PCS 7 V8.1) must be performed in an intermediate step.

First, Process Historian V8.0 Update 1 must be updated to version 2013 (included in PCS 7 V8.0 SP1 and PCS 7 V8.0 SP2) before version 2013 is updated to version 2014 in the next step.

Software update in runtime using Process Historian (PH)

If you want to update your plant to PCS 7 V8.1 in runtime, use the following procedure when using the PH:

1. Before you begin the update, ensure that you have configured a sufficiently large circular archives on the OS servers. It should be able to handle the downtime of the PH, the time needed for the plant update and the full data migration of the PH server. The data migration of the PH server can take several hours to several days, depending on the amount of data.
2. Close PH 2013 and start the software update to PCS 7 V8.1 using the PCS 7 system setup.
3. When the software update is complete, do not restart the PH server in the PCS 7 system setup. Shut down the computer instead.
4. Then update the redundant OS servers or the OS servers for the entire plant to PCS 7 V8.1:
   - See also *PCS 7 - Function Manual Fault-tolerant Process Control Systems*
   - Configure the PH-Ready service on all OS stations that export data to the PH.
   - Put the OS server into runtime.
5. Wait until the archive synchronization is completed on the redundant OS servers.
6. Now, switch on the PH and put it into operation.

Updating a SIMATIC WinCC WebNavigator Diagnose Client

If you are performing an PCS 7 V8.1 update for a computer on which SIMATIC WinCC WebNavigator Server and SIMATIC WinCC WebNavigator Diagnose Client are installed, you need to take the following steps after successful software update:

1. Open the Program management in the Windows Control Panel.
2. Select the entry "SIMATIC WinCC/Diagnostics Client".
3. Select the menu command "Edit".
4. Run a repair installation using the SIMATIC WinCC/Diagnostics Client Setup.

3.4.2 Microsoft Windows settings

General information

You can find information about the settings on the SIMATIC PCS 7 DVD 1/2 in the folder _Manuals\English in the document "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 - PC Configuration.pdf".

3.4.3 Installation of Engineering System (ES) and Operator Station (OS) on a single PC

If you wish to install an ES on an existing OS, it is absolutely essential to remove the installed PCS 7 OS version first and then perform the "Engineering Station" installation.

3.4.4 Installation of SIMATIC NET products

Installation of the SIMATIC NET product

SIMATIC NET is a product which always has to be installed by the system setup for PCS 7.

Installation of the SIMATIC NET SOFTNET-IE RNA V12.0 product

The SIMATIC NET SOFTNET-IE RNA V12.0 product can be installed directly through the PCS 7 system setup.

See also entry ID 77377603

- Internet link (http://support.automation.siemens.com/WW/view/en/77377603)

Possible applications for the SCALANCE S, CP 443-1 Advanced and CP 1628 security products in the PCS 7 environment

You can learn how to use the SIMATIC security products SCALANCE S, CP 443-1 Advanced and CP 1628 with PCS 7 from entry ID 67329379 in Industry Online Support:

- Internet link (http://support.automation.siemens.com/WW/view/en/67329379)

3.4.5 Use of the Media Redundancy Protocol (MPR) for PROFINET fieldbus

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 may only consist of devices that support MRP functionality.

The following Industrial Ethernet switches support the MRP function:

- SCALANCE X-200 as of Firmware-Version V4.0
- SCALANCE X-200 IRT as of Firmware-Version V4.0
- SCALANCE X-300 as of Firmware-Version V3.0
- SCALANCE X-400 as of Firmware-Version V3.0

	HRP High Speed Redundancy Protocol	MRP Media Redundancy Protocol
Separate terminal and plant bus	X	-
Common terminal and plant bus	X	-
PROFINET fieldbus	-	X

Configuration of the watchdog time

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 (http://support.automation.siemens.com/WW/view/en/46636225)

3.4.6 Settings for standard network adapters (BCE and Softnet)

3.4.6.1 Plant bus with TCP/IP protocol

Make the following settings for the plant bus:

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

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".

3.4.6.2 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 be installed and enabled for the network adapter.
- Only a network adapter (BCE) can be used for time synchronization on an OS.

- Otherwise, the settings and information for CP 1613 in the "PCS 7 time synchronization" manual apply to the time synchronization.
- When using time synchronization with BCE, the following destination address multicast must be used: address 09-00-06-01-FF-EF.
- Broadcast may not be used.

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

3.4.7 Installation of older versions of PCS 7 libraries

If you install or remove an older version of the PCS 7 Library, PCS 7 Basis Library or PCS 7 Advanced Process Library following the installation of PCS 7 V8.1 , you must re-install the current versions of PCS 7 Basis Library or PCS 7 Advanced Process Library by means of the PCS 7 system setup afterwards. Do not use the product setup of these libraries to do this. This applies, for example, toPCS 7 libraries, which are located in the Additional_Products folder of SIMATIC PCS 7 DVD 2/2.

3.4.8 Using antivirus software and whitelisting protection mechanisms

Approved antivirus software

An overview of the approved virus scanners for each version of the software is available in the Internet under entry ID 64847781:

- Internet link (http://support.automation.siemens.com/WW/view/en/64847781)

You can find additional documents about the PCS 7 and WinCC security concept on the Internet in the Security Concept entry list:

- Internet link (http://support.automation.siemens.com/WW/view/en/35231330/130000)

The following virus scanners have been tested for compatibility with PCS 7 V8.1 and can be installed subsequently even with an existing PCS 7 installation:

- Trend Micro OfficeScan V11.0
- Symantec Endpoint Protection V12.1.4
- McAfee VirusScan Enterprise V8.8

Using Whitelisting protection mechanisms

Existing anti-malware protection for PC systems, from anti-virus programs for example, can be effectively supplemented with Whitelisting protection mechanisms.

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

Additional security applications are installed to enable such protection.

The following Whitelisting software has been tested for compatibility with PCS 7 V8.1:

- McAfee Application Control V6.1.1

You can find more information about the "Utilization of Whitelisting with McAfee Application Control in a PCS 7 / WinCC environment" in Industry Online Support under entry ID 88653385:

- Internet link (http://support.automation.siemens.com/WW/view/en/88653385)

3.4.9 Use of Multi-VGA graphics cards

The following graphics cards and drivers are recommended for PC stations in PCS 7:

	Windows 7 (32-bit)	Windows 7 (64-bit) Windows Server 2008 R2 (64-bit)
M9120 Plus LP PCIe x16 (widescreen resolution possible) • Article number: 6ES7 652-0XX04-1XE0	wddm32_404_03_002_whql.exe	wddm64_404_03_002_whql.exe
M9140 LP PCIe x16 (widescreen resolution possible) • Article number: 6ES7 652-0XX04-1XE1	wddm32_404_03_002_whql.exe	wddm64_404_03_002_whql.exe

Updating the BIOS graphics card

For M-series devices (Matrox_M91x0LP), we recommend updating the BIOS graphics card to version 2.00.17.02:

- Unzip the file "setup_pm200_17_002.exe" to a temporary folder with a double click.
- Follow the instructions in the file "readme.txt", which you will find in the unzipped folder, for the installation.

Availability of drivers and BIOS

You can find the drivers and the BIOS on the "PCS 7 Software Support & Tools DVD 2014.02" in the separately available "PCS 7 V8.x Software Support Package" (article number: 6ES7 650-4XX08-0YT8) in the folder "01_Drivers\DISPLAY".

Detailed information is available on the SIMATIC PCS 7 DVD 1/2 in the folder _Manuals \English in the section "How to activate a multi-VGA graphics card" of document "PCS 7 - PC Configuration.pdf".

3.4.10 Using a DCF 77 client

Install the latest version V2.00 when using the DCF 77 client service. It is available on the "PCS 7 Software Support & Tools DVD 2014.02" in the separately available "PCS 7 V8.x Software Support Package" (article number: 6ES7 650-4XX08-0YT8) in the folder "02_Timesynchronization\DCF77Client_V2.00".

Install "DCF 77 Client V2.00" with the default settings of the setup program.

3.4.11 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".
Do not use "standby mode" and "idle state".

3.4.12 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

Make sure that you re-format all smart cards that were formatted with SIMATIC Logon < 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. You can always log on with your name and password via the keyboard, however.
If you log on with a smart card and then remove this during configuration in the SIMATIC Logon role management, all changes you have made up to this point and not saved will be discarded. Reinserting the card will not solve this problem.

Notes on the Windows workgroup

If you require high availability, you need to work in a domain environment, since no redundancy is offered by SIMATIC Logon in a Windows workgroup.

Notes on the SIMATIC Logon Event Log Viewer

If you want to print the events in the 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 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.

3.4.13 Using smart card readers

When using the USB smart card reader, use the drivers on the "PCS 7 Software Support & Tools DVD 2014.02" in the separately available "PCS 7 V8.x Software Support Package" (article number: 6ES7 650-4XX08-0YT8) in the folder "01_Drivers\CHIPCARD".

Driver:

	Windows 7 (32-bit)	**Windows 7 (64-bit)** **Windows 2008 R2 (64-bit)**
OMNIKEY CardMan 3121 USB	OMNIKEY3x21_V1_2_6_5.exe	OMNIKEY3x21_V1_2_6_5_x64.exe

3.4.14 Using Microsoft Office

The following Microsoft Office products have been tested for compatibility with PCS 7 V8.1 :

- Microsoft Office Professional 2010 32-bit SP2 (Excel, Word, Access and PowerPoint)
- Microsoft Office Professional 2013 SP1 (Excel, Word, Access and PowerPoint)
- Word Viewer 2003 SP3
- Excel Viewer 2007 SP2
- PowerPoint Viewer 2010

The Microsoft Office applications Word, Excel, and Access can be used in process mode on client computers (OS, BATCH, Maintenance, WEB). However, their use may result in significantly reduced performance in some situations. Office must not be used in process mode on any other operator stations and BATCH stations.

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

- Internet link (http://support.automation.siemens.com/WW/view/en/64847781)

3.4.15 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 - PC Configuration.pdf" located on the SIMATIC PCS 7 DVD 1/2 in the folder _Manuals\English.

3.4.16 Changing the storage location for projects/multiprojects

The project path in "Storage location for projects/multi-projects" is set by default to "SIEMENS \STEP7\S7Proj" and all necessary access rights are set for this project path.

If you use another project path, you need to set the necessary access rights using the "SimaticRights.exe" tool.

To do this, start the "SimaticRights.exe" program on the SIMATIC PCS 7 DVD 2/2 in the folder "Additional_Products\SimaticRights". Enter the new project path or select it in the dialog. The new project path must be available when the tool starts.

3.4.17 Remote service and remote operation

Use of the Remote Desktop Protocol (RDP) is permitted only for remote maintenance of PCS 7 OS clients. The RealVNC 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. The reason for this lies in 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.

VNC

The "RealVNC" Enterprise Edition software is approved for use for remote service access as of PCS 7 V8.0.

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

- Internet link (http://support.automation.siemens.com/WW/view/en/64847781)

CAUTION

Access to the operating system level of the local PCS 7 Operator Station (OS) with remote access

During remote access to an OS via RealVNC, the remote operator has the possibility of accessing the operating system level of the local OS. The local operator of the OS thus also has the opportunity - for example via Windows Explorer opened by the remote operator - to access the operating system level of the local OS at the same time as the remote operator.

You can find more information about the use of "RealVNC" in PCS 7 plants in the Industry Online Support under entry ID 55422236:

- Internet link (http://support.automation.siemens.com/WW/view/en/55422236)

SIMATIC Management Console

Remote access to the SIMATIC Management Console is generally not approved.

3.4.18 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.

3.4.19 Installation of WinAC software

You can find the software for WinAC controllers on the "PCS 7 Software Support & Tools DVD 2014.02 in the separately available "PCS 7 V8.x Software Support Package" (article number: 6ES7 650-4XX08-0YT8) under "03_WINAC_RTX\V4.6+SP2".

You can also find a previous version under "03_WINAC_RTX\V4.4+SP1+HF1" for the use on IPC427B.

The latest corrected versions are available for download under entry ID 15227402 in the Industry Online Support:

- Download link (http://support.automation.siemens.com/WW/view/en/15227402)

3.4.20 Information on 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, and change the style again by running PCS 7 Setup -> Install -> User-defined installation.

When changing from Classic style to APL style, the selection field for entering

- BATCH WinCC APL Client Options V8.1 or
- Route Control APL Faceplate V8.1

is grayed out and cannot be selected. The installed styles are indicated by a blue check mark.

To select the alternate style, you first need to select the entry for the currently installed style. This unlocks the entry of the respective other style, which can then be selected.

3.5 Licensing

3.5.1 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 (www.siemens.com/pcs7-documentation)

3.5.2 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.

Notes on usage

4

4.1 Automation system (AS)

4.1.1 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 sub-assembly 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 (http://support.automation.siemens.com/WW/view/en/22557362)

If you do not follow this instruction, F modules may 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 (http://support.automation.siemens.com/WW/view/en/12490443)

4.1.2 ET 200S

4.1.2.1 ET 200S diagnostics of load voltage failure

The digital input/output modules of the ET 200S have no diagnostics in the event of load voltage failure. This means that when the load voltage supply fails on the channel blocks, no "Bad" is reported. When there is no voltage supply, outputs can no longer be switched via the application program and the last available value is indicated on inputs.

You can get around this with the following configuration:

- Use DI, DO modules with 24 V DC with power module PM-E DC 24 V: 6ES7 138-4CA00-0AA0
  Because the entire station (IM151 and power modules) is supplied from a common 24 V DC source, a failure in the voltage supply causes a station failure. This is reported in PCS 7 and causes passivation of all the modules involved, i.e. all channel blocks are set to "Bad".
- Use of DI, DO modules with 120/230 VAC with power module PM-E AC 120/230 V: 6ES7 138-4CB10-0AB0: Applicative monitoring of load voltage in an application program.

4.1.2.2 ET 200S counter module (article number 6ES7 138-4DA04-0AB0)

When using the counter module in an ET 200S, an interface module >= article number 6ES7 151-1BA01-0AB0 must be used.

4.1.3 ET 200SP

The use of the ET 200SP module AI ENERGY METER ST (6ES7 134-6PA00-0BD0) is approved for operation with PCS 7 V8.1. However, the data from the process image must be manually interconnected and evaluated. Observe the information about reading out measured values under entry ID 81714201 in Industry Online Support:

- Internet link (http://support.automation.siemens.com/WW/view/en/81714201)

4.1.4 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.

4.1.5 Using S7 PLCSIM

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

The project should be adapted as follows:

1. If the AS-OS connection is "NamedConnection" (PCS 7 Standard): compile OS "Change" and change connection to network type "Industrial Ethernet."
2. Start PLCSim from the SIMATIC Manager.
3. Load HW Config.
4. Set the PG/PC interface in PLCSIM to PLCSIM(ISO) (if this has not already been done automatically)
5. Load charts / programs.
6. Set PLCSIM to operating mode "RUN".
7. SIMATIC Manager: in the Project -> OS -> "Start OS Simulation" or "Open Object" and then "activate".

Note

After using PLCSIM, it may 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.

4.1.6 Changing the address range of HART modules in ET 200iSP/ET 200M 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 may therefore be redefined. In doing this, the ability to make configuration changes in RUN is lost. Note that your project may 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.

4.1.7 Fast Mode functionality for HART devices

- **Update 6ES7 33?-?TF01-0AB0 firmware to V3.x**
  Download firmware:
  - 331-7TF01-0AB0:
    Entry ID 33273268 (http://support.automation.siemens.com/WW/view/en/33273268)
  - 332-8TF01-0AB0:
    Entry ID 32011516 (http://support.automation.siemens.com/WW/view/en/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.

4.1.8 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.

4.1.9 Isochronous mode in PCS 7

PCS 7 does not support isochronous mode.

4.1.10 Fault-tolerant connections via internal ETHERNET/PROFINET interface

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

If you would like to use fault-tolerant AS-AS connections via the internal interface of the V6.0 H-CPU, you need to be aware that the connections to the communication partner can only be configured via the internal interface of the V6.0 H-CPU or CP 443-1 EX30.

4.1.11 Using PROFINET

Shared Device

The use of PROFINET Shared Device with PCS 7 V8.1 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.

Reporting module errors

With PROFINET IO, modules errors (e.g. no external auxiliary voltage) are reported by OB82 with a general error message. To obtain detailed diagnostic information, you must use HW Config Online Diagnostics for the given module.

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 (http://support.automation.siemens.com/WW/view/en/26331274)

4.1.12 Using HART auxiliary variables with 4 F-AI HART modules

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

- 4 F-AI HART (article number 6ES7 138-7FA00-0AB0)

You can obtain additional information in the operating instructions "ET 200iSP Distributed I/O Device - Fail-safe Modules" under Entry ID 47357221 in the Industry Online Support:

- Internet link (http://support.automation.siemens.com/WW/view/en/47357221)

4.1.13 Using PROFIBUS field devices on SIMATIC PCS 7 AS mEC RTX

You need to observe the following information for the use of SIMATIC PCS 7 AS mEC RTX:

- 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) or from SIMATIC PCS 7 BOX RTX in single-station operation.
- to assign PROFIBUS field device parameters with SIMATIC PDM, connect the ES directly to PROFIBUS of the IE/PB Link.

4.1.14 Using Foundation Fieldbus (FF)

When using the IM 153-2 FF Link (article number 6ES7 153-2DA80-0XB0), you must have a firmware version >= V1.0.2.
You can find information on updating the operating system and downloading the latest firmware versions under Entry ID 68170195 in the Industry Online Support:

- Internet link (http://support.automation.siemens.com/WW/view/en/68170195)

4.1.15 Active field distributor with diagnostics (AFDiSD)

The extended fieldbus diagnostics (EFD) for comprehensive diagnostics of all components involved in a PA segment (for example, interface module, coupler, active field distributor) will be available after the release of PCS 7 V8.1. We recommend that you subscribe to the

newsletter in Industry Online Support, which continually provides you with the latest information on your products.

- Internet link (http://support.automation.siemens.com)

4.1.16 AS-Interface (AS-i) support in PCS 7

Update 3 of Step 7 V5.5 SP4 is required to use AS-i slaves in a PCS 7 plant with version V8.1. You can request this update from Industry Online Support:

- Internet link (http://support.automation.siemens.com)

4.2 Engineering system (ES)

4.2.1 Client engineering

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

4.2.2 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 CPU S7-400 Fault-tolerant automation system in 1v1 mode	Configuration manual for PCS 7 Engineering System; Modifying the System during Operation via CiR
H-CiR Configuration in Run	Fault-tolerant automation system CPU S7-400H	Fault-tolerant Systems S7-400H, chapter 17 • Internet link (http://support.automation.siemens.com/WW/view/en/60458386)

4.2.3 Settings when using two or more network adapters

If multiple network adapters are used (for example, INTEL desktop adapters), the adapter for the terminal bus must appear first in the list. (Network Properties: "Advanced > Advanced Settings"). Any non-functioning network adapters must be disabled.

Following a PCS 7 installation, a dialog appears in which you have to select the network adapter for the terminal bus. Select the correct adapter and confirm this with "OK".

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

Programs created with CFC/SFC may 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".

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.

4.2.5 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 may 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"

4.2.6 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 PCS 7 maintenance station, in the function manual "PCS 7 Maintenance Station".

WinCC Configuration Studio

The WinCC Configuration Studio cannot be open during the export of SNMP variables to the PCS 7 OS.

4.2.7 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.

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 (http://support.automation.siemens.com/WW/view/en/15227599)

4.2.8 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 one of the following groups there: At least "User", "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.

4.2.9 Notes on cross AS interconnections

- When using cross AS interconnections, the S7 program names in the multiproject must be different.
- Hardware requirements:
  - S7-400 CPU with firmware version >= V3.1
  - Communications processor >= 443-1EX10 V2.1.
  - PCS 7 AS RTX and PCS 7 AS mEC RTX
- The compact stations PCS 7 BOX RTX and PCS 7 BOX 416 cannot be used for AS-wide interconnections. Use the blocks of the PCS 7 Library V7.1+SP3+Upd2 for AS-AS communication. You can find this library on DVD 2/2 in the folder "Additional_Products \PCS7LIBRARY__V7.1+SP3+Upd2".
- 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.

4.2.10 F-monitoring time of F modules and F field devices after 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 after 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 may 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 (http://support.automation.siemens.com/WW/view/en/22557362)

4.2.11 Use of F modules in connection with SIMATIC PDM

In order to configure the following fail-safe modules in conjunction with SIMATIC PDM, use SIMATIC PDM >= V8.2 + Upd1 and S7 F ConfigurationPack >= V5.5 SP11:

- ET 200M F AI 6x HART
  Article number: 6ES7 336-4GE00-0AB0
- ET 200iSP 4 F-AI Ex HART
  Article number: 6ES7 138-7FA00-0AB0
- ET 200iSP 8 F-DI Ex Namur
  Article number: 6ES7 138-7FN00-0AB0
- ET 200iSP 4 F-DO Ex 40 mA
  Article number: 6ES7 138-7FD00-0AB0

You can find the latest version of the S7 F ConfigurationPack in the Industry Online Support under Entry ID 15208817:

- Internet link (http://support.automation.siemens.com/WW/view/en/15208817)

4.2.12 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 version of S7 F Configuration Pack used must be >= V5.5 SP11

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 "PCS 7 V8.1" module filter under PROFINET IO -> I/O -> ET 200M.
- Be sure to use a version >= V1.3 of the F-system 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).

4.2.13 Merging projects after distributed editing (multiproject engineering)

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

4.2.14 Updating SFC blocks to use new functionality in SIMATIC BATCH

For SFC types/instances, the "Restart" command is now supported in the interface to SIMATIC BATCH .

For this extension to be available, the block @SFC_BZL (FB 245) must be copied from the SFC Library to the block folder of all programs and a complete compilation and a download of changes must then be carried out.

In addition to updating the FB 245, the procedure described in the SIMATIC BATCH readme file as of version V7.1 SP1 Hotfix 8 must be followed in order to use the extended functionality.

4.2.15 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) may be active.

4.2.16 Using the D7 SYS add-on package

If you use components of the D7 SYS add-on package in your PCS 7 project, you currently cannot use the Step 7 function "Save As with Reorganization".

4.3 PCS 7 libraries

4.3.1 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" .... "Error channel 07" or
- "Error channel 08" .... "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.

4.3.2 Redundant I/O

During an update from PCS 7 V7.1 SP4 to PCS 7 V8.1 (with the use of new functions), compatible new blocks are imported into the project from the "Redundant IO CGP V52" library, if redundant I/O is used. For blocks from the RedLib V3.x and V4.x, this software update is only possible in STOP operating mode of the AS.

The blocks that you use for redundancy are available in the "Redundant IO CGP V52" library.

You can find more information on the redundant I/O in the following manuals:

- PCS 7 - Function Manual Software Update with Utilization of the New Functions
- PCS 7 - Function Manual Fault-tolerant Process Control Systems
- Manual Automation System S7-400H; Fault-Tolerant Systems

The value status of channel blocks is not supported in redundancy operation of the 6ES7 321-7TH00-0AB0 module.

4.3.3 Software update to PCS 7 V8.1

Software update with utilization of new functions

A software update of the Advanced Process Library (APL) to V8.1 with utilization of new functions can only be performed in the STOP operating mode of the AS and complete compilation of the OS.

You can find detailed update information in the APL Readme (V8.1).

Type update in RUN (TCiR) for blocks in a PCS 7 library

The type update in RUN for blocks of a PCS 7 library (APL and Basis Library) is only released when the blocks of a library version >= V8.1 are loaded in the AS.

4.4 Operator station (OS)

4.4.1 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.

4.4.2 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.

4.4.3 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.

4.4.4 Deactivating a redundant OS server

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

4.4.5 OS change download

Procedure for extensive changes

If an AS has been added, a redundancy switchover and entries in the message system may occur when changes are download. 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 may happen in the course of 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.

4.4.6 Setting access permissions in the operating system

A PCS 7 OS automatically sets the "SIMATIC HMI" local user group following installation under Windows. The currently logged on user and local administrator are registered in this user group. Enter the users who should have access to PCS 7 OS in the "SIMATIC HMI" group with their logon information.

You can find additional information in the WinCC Information System under "Installation Notes > Installation Requirements > Access Permissions in the Operating System" and in the document "PCS 7 - PC Configuration.pdf" located in the _Manuals\English folder on the SIMATIC PCS 7 DVD 1/2 .

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

4.4.7 Controls

Using controls from third-party suppliers may 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.

4.4.8 User interface and design

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

- Design "WinCC 3D"

The WinCC designs "Classic", "Glass" and "Simple" are not supported by 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.

4.4.9 Delaying the transfer of archives

If a redundant partner is not available or is deactivated, the transfer of the archives of the redundant partner will be delayed. The transfer of archives is started or continued only when the partner becomes available again and synchronization of the archives is completed.

You should therefore check the memory capacity of the circular buffer of archives in the Tag Logging editor or in the Alarm Logging editor to avoid the risk of data loss if the redundant partner fails for a long period of time.

4.4.10 Disabling / enabling messages using the WinCC Alarmcontrol

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

4.4.11 Language setting for C scripts

Note that WinCC now 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 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.

4.4.12 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.

4.4.13 Prevent operating system access through key combinations

With the option "Disable shortcut keys for operating system access" in the properties of the PCS 7 OS computer, the key combinations for ease of access are also disabled.

To prevent access to the operating system via key combinations for activating high contrast when using Windows 7 SP1 (64-bit) and Windows Server 2008 R2 SP1, you need to install the Microsoft patch KB2516889:

- Internet link (http://support.microsoft.com/kb/2516889)

4.4.14 Activating OS Runtime on the engineering station (ES)

An OS project can be unlocked in the OS project settings for local activation on the ES. Once an unlocked project is activated on the ES, this setting cannot be undone.

4.5 SIMATIC BATCH

4.5.1 Compiling and loading BATCH with the "Compile and Download Objects" function

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

4.5.2 Access permissions

The following sharing is set for SIMATIC BATCH during the installation:

- BATCH

The PCS 7 software manages the share permissions automatically.

4.5.3 Common server for PCS 7 OS and SIMATIC BATCH

A redundant server can be used at same time as a common server for PCS 7 OS and SIMATIC BATCH.

4.6 SIMATIC PDM

4.6.1 Using the Device Integration Manager

Once you have installed SIMATIC PDM, you are prompted to import the devices you are using onto the computer. Run the "Device Integration Manager" program for this.

After an update installation to PCS 7 V8.1, you will need to re-import the "Device Library" device catalog.

The devices supported by 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://www.siemens.com/simatic-pdm)

4.6.2 Canceling the module redundancy for HART modules of ET 200M and ET 200iSP 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.

4.6.3 Note on project migration

When migrating a 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".

4.7 Process Historian (PH)

Commissioning the Process Historian (PH)

If you want to integrate the Process Historian (PH) or a redundant PH partner into your system for the first time or perform a software update, you need to consider the following:

The PH only starts to reference data from the OS servers and batch servers if it is activated before they are. You therefore may need to restart the OS server or batch server to create this sequence of events.

Setting the firewall for the PH OPC UA server

After installing the PH OPC UA server, you must manually add a rule in the local Windows firewall for this OPC UA server. The default port for the "OpcUaServerPh.exe" application is port 4852.

4.8 Information Server (IS)

Displaying messages

You can display reports on messages using the Information Server. If there are formatting instructions for components of the comment dialog in the message texts (for example, computer name, logged-on user, comments), they are currently not filled out.

Using Information Server - Batch Options V8.1

Install the "Information Server - Batch Options V8.1" only after you have connected to the IS with a Batch data source.

After installation of the "Information Server - Batch Options V8.1", check the name of the template for Batch under the following path:

- Administration\Configuration\Reporting\Templates\Templates\Public\Batch

The name must be as follows:

- "Batch report"

If the name is not as specified, you must download all Batch templates once again as follows:

1. Copy templates
   - The batch templates are located, for example, at C: \Program Files (X86)\Siemens \InformationServer\Batch\8.1.0
   - Copy all the *.rdl, for example, into the "Downloads" directory
2. Rename templates
   - "Frame_sb_standard_batch.rdl" does not need to be renamed.
   - "sb_batch_template.rdl" --> "standard_batch.rdl"
   - All "subreport_old_name.rdl" --> "subreport_old_name_810.rdl" ("_810" must be added to all subreport templates)
3. Upload templates:
   Step 1: Navigate to Administration\Configuration\Reporting\Templates\Templates\Public \Batch
   - Delete the existing "Frame_sb_standard_batch.rdl".
   - Reload "Frame_sb_standard_batch.rdl" from the "Downloads" directory using the "Upload" function

   Step 2: Navigate to Administration\Configuration\Reporting\Templates\Templates\Public \Batch\Simatic Batch 8.1\Subreports
   - Check that the newly uploaded templates match the names of existing templates.
   - Delete all existing templates from the "Subreports" directory
   - Reload all templates - except for the "Frame_sb_standard_batch.rdl" already uploaded in step 1 - using the "Upload" function.

Now you can use the Batch templates.

Using Excel Add-In

The data opened with the Information Server Excel Add-in is always imported to the active Excel worksheet.

Therefore, avoid changing the active Excel worksheet while the "Run" command from the menu bar of the Information Server Excel Add-in has not yet been completely processed.

Updating from Information Server 2013 to Information Server 2014

When upgrading from IS 2013 to IS 2014, note that some settings and templates must be recreated under certain circumstances.

1. Always recreate:
   - E-mail settings
   - Dashboards
   - Connections to WinCC data sources
   - Subscriptions that were created with a WinCC data source
   - Reports that were created with a WinCC data source
2. If created by a user other than the one who performed the upgrade, recreate:
   - Private templates
   - Private subscriptions
   - Private reports

Note

If the message "Input string was not in a correct format" appears after the migration when you call a report template from the Information Server interface, check your data source in the Microsoft Report Manager.

Follow the steps below:

- Open an Internet browser on the Information Server computer.
- Copy the following link to the address bar. If necessary, adapt the protocol, port and instance name (Reports_WINCC or Reports_INFSERVER instead of Reports_HISTORIAN) to your configuration:
  http://localhost/Reports_HISTORIAN/Pages/DataSource.aspx?ItemPath=%2fDatasources%2fInfoServer&ViewMode=Detail
- In the editing field of the connection string, change the value of the "Initial Catalog" from "Master" to "Webframe":
  "Initial Catalog=Webframe;"
  Leave the other parameters unchanged and save the change by pressing "Apply".

4.9 PCS 7 Web server

Information about the PCS 7 Web add-on package is available in the "PCS 7 - Web OS Option" manual. This document is located on the website for SIMATIC PCS 7 Technical Documentation:

- Internet link (www.siemens.com/pcs7-documentation)

4.10 DataMonitor (DM)

Operating and monitoring WEB

The "Process Screen" function is no longer used for operator control and monitoring via 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.

4.11 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 may 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 49).

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.

4.12 Redundant systems

PCS 7 as of V7.1 SP2 contains advanced self-diagnostics for redundant software systems (servers). If this diagnostics routine detects an internal fault, if 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 und 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 PCS 7 OS (multi-station) redundant system, SIMATIC BATCH and 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 PCS 7 server applications
- Deactivate the "Display Shutdown Event Tracker".
  Proceed as follows:
  Call via Start > Run...: Enter "gpedit.msc"
  In the "Group Policy" dialog: Select Computer Configuration > Administrative Templates > System and open the properties of the "Display Shutdown Event Tracker". Select "Disabled".
- Before a 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 not 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.
  The availability check is only carried out in service mode if a user is logged on.

Configuring automatic Windows logon

You can use one of the two available methods for configuring automatic Windows logon:

- How can I set up auto logon for SIMATIC PCs?
  - See entry ID 23598260
    Internet link (http://support.automation.siemens.com/WW/view/en/23598260)
- Autologon for Windows v3.01
  - All operating systems
    Internet link (http://technet.microsoft.com/en-en/sysinternals/bb963905)

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).

4.13 SIMATIC NET

S7-RedConnect based on TCP/IP

Be aware of the following restrictions when using S7-RedConnect based on TCP/IP:

- CP 1613 (A1 and A2) is not supported

VLAN architectures for PCS 7

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

- Internet link (http://support.automation.siemens.com/WW/view/en/66807297)

Using SIMATIC NET Softnet IE-RNA in connection with WinCC Secure Communication

When using SIMATIC NET Softnet IE-RNA in PCS 7 V8.1, you must disable the secure communication option (WinCC Secure Communication) in SIMATIC Shell.

4.14 SIMATIC Management Console

Using whitelisting with McAfee Application Control

The following functions of the SIMATIC Management Console are not available using active whitelisting with McAfee Application Control:

- Creating setup package
- Starting computer-specific installation
- Generating an installation report

4.15 SIMATIC PCS 7 Industrial Workstation or SIMATIC IPC

Updating Management Engine firmware and Intel LAN driver

For operation of a SIMATIC PCS 7 Industrial Workstation or SIMATIC IPC, read entry ID 63647548 in the Industry Online Support regarding possible interference with the network adapter:

- Internet link (http://support.automation.siemens.com/WW/view/en/63647548)

4.16 Microsoft .NET Framework

The Microsoft .NET Framework versions required by PCS 7 are installed automatically by the PCS 7 system setup.

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

- Internet link (http://support.automation.siemens.com/WW/view/en/64847781)

4.17 SIMATIC IPC DiagMonitor

DiagMonitor V4.4+SP3+Upd1 has been tested with PCS 7 V8.1 for compatibility.

If a version of DiagMonitor < V4.4 is already installed on the system, take note of the following for installation of DiagMonitor V4.4+SP3+Upd1:

- Uninstall the installed version of DiagMonitor under Windows Control Panel > Programs and Features.
- Reboot the computer once the program has been uninstalled.

Run the following files one after the other on the SIMATIC PCS 7 V8.1DVD 2/2 under Additional_Products > DiagMonitor_V4.4+SP3+Upd1 to perform the installation:

- DiagMonitor_Silent_Install.bat
- CM_Activate.exe

You can find additional information on the installation and the approved types of computers in the document "GettingStarted.pdf" in the installation folder.

4.18 SIMATIC Safety Matrix and S7 F Systems

S7 F Systems

S7 F Systems V6.1 SP2 has been tested with PCS 7 V8.1 for compatibility.
Additional up-to-date information on S7 F Systems is available in the Industry Online Support at:

- Internet link (http://support.automation.siemens.com/WW/view/en/26091594/130000)

The manual for configuring and programming S7 F/FH Systems is available under Entry ID 101509838 in the Industry Online Support at:

- Internet link (http://support.automation.siemens.com/WW/view/en/101509838)

For S7 F systems, use the S7 F Configuration Pack >= V5.5 SP11.
You can find more information under Entry ID 15208817 in the Industry Online Support at:

- Internet link (http://support.automation.siemens.com/WW/view/en/15208817)

SIMATIC Safety Matrix

SIMATIC Safety Matrix V6.2 SP1 and V6.2 SP2 have been tested with PCS 7 V8.1 for compatibility.

Please observe the section "Migrating to S7 F Systems V6.1" in the S7 F/FH Systems configuring and programming manual:

- Internet link (http://support.automation.siemens.com/WW/view/en/101509838)

Additional up-to-date information on SIMATIC Safety Matrix is available in the Industry Online Support at:

- Internet link (http://support.automation.siemens.com/WW/view/en/26091998/130000)

Note on the use of Safety Matrix V6.2 SP1

When using PCS 7 V8.1 and SIMATIC Safety Matrix V6.2 SP1, you must install the software package SIMATIC Safety Matrix AS-OS Engineering V6.2 SP2. Compiling of the "Entire OS with memory reset" must be performed in this case the first time you compile the OS. The rest of the SIMATIC Safety Matrix products and libraries do not necessarily need to be upgraded.

The software package SIMATIC Safety Matrix AS-OS-Engineering V6.2 SP2 is available on the SIMATIC PCS 7 V8.1 DVD 2/2 under Additional_Products > SAFETY_MATRIX__V6.2+SP2

Software components in SIMATIC PCS 7 V8.1 and changes to PCS 7 V8.0 including SP2

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SIMATIC PCS 7 DVD SW components	PCS 7 V8.0 incl. SP2	PCS 7 V8.1
_Product Information		
Automation License Manager	V5.3 + Upd1	V5.3 + SP1 + Upd1
STEP 7 Basis	V5.5 + SP3 + Upd7	V5.5 + SP4 + Upd2
CFC	V8.0 + SP4 + Upd4	V8.1
S7-SCL	V5.3 + SP6 + Upd1	V5.3 + SP6 + Upd3
SFC	V8.0 + Upd1	V8.1
TH	V8.0 + SP1 + Upd3	V8.1
IEA-PO	V8.0 + SP2 + Upd2	V8.1
PCS 7 Basis Library	V8.0 + SP1 + Upd4	V8.1
PCS 7 Advanced Process Library	V8.0 + SP2 + Upd2	V8.1
VersionCrossManager	V7.1 + SP3	V7.1 + SP3 + Upd2
Version Trail	V8.0 + Upd1	V8.1
PCS 7 PID Tuner	V8.0 + SP1	V8.0 + SP1
DOCPRO	V5.4 + SP2 + Upd1	V5.4 + SP2 + Upd1
PLCSIM	V5.4 + SP5 + Upd1	V5.4 + SP5 + Upd1
SIMATIC WinCC	V7.2 + Upd7	V7.3 + Upd1
WebNavigator	V7.2 + Upd7	V7.3 + Upd1
DataMonitor	V7.2 + Upd7	V7.3 + Upd1
StoragePlus	V7.2 + Upd1	n.a.
Process Historian	V8.0 + SP1 + Upd4	Version 2014
Information Server	V8.0 + SP1 + Upd4	Version 2014
OpenPCS 7	V8.0 + SP1 + Upd4	V8.1
SFC Visualization	V8.0 + SP1 + Upd5	V8.1
AS-OS-Engineering	V8.0 + SP1 + Upd4	V8.1 + Upd1
PV InsInfo Server	V8.0 + Upd1	V8.1
PCS 7 Basis Faceplates	V8.0 + SP1 + Upd3	V8.1
PCS 7 Advanced Faceplates	V8.0 + SP2 + Upd2	V8.1
SIMATIC NET PCSW	V7.1 + SP6 + Upd1 V8.2 + SP2 + Upd3	- V12 + SP2
SIMATIC Management Console	V8.0 + SP1 + Upd2	V8.1
SIMATIC Management Agent	V8.0 + SP1 + Upd2	V8.1
SIMATIC BATCH	V8.0 + SP1 + Upd8	V8.1
SIMATIC BATCH BLOCKS	V8.0 + SP1 + Upd3	V8.1
SIMATIC Logon	V1.5 + SP2	V1.5 + SP2
SIMATIC PDM	V8.0 + SP2 + Upd2	V8.2 + Upd1

SIMATIC PCS 7 DVD **SW components**	**PCS 7 V8.0 incl. SP2**	**PCS 7 V8.1**
SIMATIC PDM Devices	Internet download: https://www.siemens.com/simatic-pdm	Internet download: https://www.siemens.com/simatic-pdm
SIMATIC Route Control	V8.0 + SP1 + Upd3	V8.1
PCS 7 System Documentation	V8.0 + SP1 + Upd1	V8.1
PCS 7 Tools	V8.0 + SP2	V8.1
SQL Server	2008 R2 SP1	2008 R2 SP2
WinCC_Options :	DVD 2/2	DVD 2/2
WinCC_WebNavigator	V7.2	V7.3 + Upd1
Additional_Products :	DVD 2/2	DVD 2/2
DiagMonitor	V4.4 + SP3 + Upd1	V4.4 + SP3 + Upd1
PCS 7 Advanced Process Library	V7.1 + SP5 + Upd4	V7.1 + SP5 + Upd5
PCS 7 Basis Library	V7.1 + SP3 + Upd8	V7.1 + SP3 + Upd9
PCS 7 Faceplates	V7.1 + SP3	V7.1 + SP3
PCS 7 Library	V6.1 + SP1 + HF17 V7.1 + SP3 + Upd1	- V7.1 + SP3 + Upd2
Report Builder	n.a.	V3.0
S7 Block Privacy	V1.0 + SP2	V1.0 + SP3
S7 F Systems	n.a.	V6.1 + SP2
SIMATIC Safety Matrix	n.a.	V6.2 + SP2
Simatic Diagnose Tool (SDT)	SDT_2013_2	SDT_2013_3
SimaticRights		
SIMATIC Management Agent	V8.0 + SP1 + Upd2	V8.1
SIMATIC Management Console InventoryDataProfile	n.a.	V8.1
Sonstiges :		
PKZIP	V12.4	V12.4
DotNetFramework	V2.0 SP2, V3.0 SP2, V3.5 SP1, V4.0	V2.0 SP2, V3.0 SP2, V3.5 SP1, V4.5.1

Change history PCS 7 Readme (online)

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Changes since delivery release PCS 7 V8.1

Version	Edition	Change
2014-09-25 (ONLINE)	09/2014	Delivery version PCS 7 V8.1
2015-01-19 (ONLINE)	01/2015	Section 4.8 Information Server (IS): • Updated notes on the update from Information Server 2013 to Information Server 2014
2015-01-19 (ONLINE)	01/2015	Section 4.1.13 Using PROFIBUS field devices on SIMATIC PCS 7 AS mEC RTX: • Update regarding SIMATIC PCS 7 BOX RTX in single-station operation
2015-01-19 (ONLINE)	01/2015	Section 4.1.16 Support of AS-Interface (AS-i) in PCS 7: • Note on Update 3 of STEP 7
2015-01-19 (ONLINE)	01/2015	Section 3.4.1.2 Notes on installing the software: • Note on entry ID 107796665 on the list of products that can be installed via the SIMATIC Management Console
2015-01-19 (ONLINE)	01/2015	Section 3.4.1.1 Software installation - Requirements: • Note on compatibility with PDF-XChange 5.5.x
2015-01-19 (ONLINE)	01/2015	Section 4.4.5 Fixed TCP/IP address for network adapters at process bus: • removed because it is no longer relevant under Windows 7 / Server 2008