SIMATIC NET PC Software

SIMATIC NET is the name of an entire family of industrial communication networks and products by Siemens. The addressing of objects contained in an automation component or automation system is done via object names.

High performance, fast reaction time and efficient data interchange between a process component and an application for further processing, e.g. Control- or HMI software.

Network-wide availability of automation data and process information.

Communication based on S7 and S7opt-communication, S5-comp.-communication (SEND/RECEIVE) and PROFINET for Industrial Ethernet.

Communication based on S7-communication, S5-comp.-communication (FDL), DP-protocol for PROFIBUS.

OPC Automation Interface for Data Access and for Alarms and Events.

OPC Scout as a client with browsing interface.

The following table lists your SIMATIC NET PC product with the corresponding software components (setup modules):

Install the components shown on the right for your SIMATIC NET product listed below	SIMATIC NET, PC Software, Edition 2008	SIMATIC NCM PC V5.4 + SP5 HF 1 (service pack 5)
Industrial Ethernet		
S7-1613	Yes	Yes
S7-REDCONNECT	Yes	
Upgrade S7-REDCONNECT	Yes	
TF-1613	Yes	
SOFTNET-S7	Yes	Yes
SOFTNET-S7 Lean	Yes	Yes
SOFTNET-PG	Yes	
SNMP OPC server		
SNMP OPC Server Basic	Yes	Yes
SNMP OPC Server Extended	Yes	Yes
SNMP OPC server	Yes	Yes

PROFINET		
PN OPC server	Yes	Yes
SOFTNET PN IO	Yes	Yes
PROFIBUS		
S7-5613	Yes	Yes
DP-5613	Yes	Yes
FMS-5613	Yes	Yes
SOFTNET-S7	Yes	Yes
SOFTNET-DP	Yes	Yes
SOFTNET DP slave	Yes	Yes
CP 5613 (DP Base Programming Interface)	Yes	Yes

This file contains important information on the products of the
"SIMATIC NET, PC Software, Edition 2008 + SP2" CD.

The version of the "SIMATIC NET, PC Software, Edition 2008 + SP2" CD is V7.1.2.

The "SIMATIC NET, PC Software, Edition 2008 + SP2" CD supersedes the „SIMATIC NET, PC Software Edition 2007", "SIMATIC NET, PC Software, Edition 2008" CD and the "SIMATIC NET, PC Software, Edition 2008 + SP1" CD.

It also supports the CP 1612 A2 and CP 5623 or CP 5624 and CP 5711.

The following sections deal with the SIMATIC NET PC products (Sections 1 to 24), and these are followed by general topics.

Please read the section relevant to your product carefully. If there are other sections that are important for a product, this will be pointed out in the product sections themselves.

The SIMATIC NET products are available on different data media:

- On the CD "SIMATIC NET, PC Software".
- Service packs and hotfixes are available as downloads from the Internet. Here, the software is divided into 2 packages:
  - SIMATIC NET PC Software 2008

  - NCM PC, Version 5.4 SP4

  Link for German: http://support.automation.siemens.com/WW/view/de/12660737

  Link for English: http://support.automation.siemens.com/WW/view/en/12660737

Please note that you can only install SIMATIC NET PC Software obtained from the Internet if a product from the "SIMATIC NET, PC Software, Edition 2007" CD has already been installed.

All authorizations (licenses) that you have for previous products (Edition 2007 or older) must be replaced. To do this, use our upgrade products with upgrade license keys.

You will find the electronic version of the Installation Instructions and other SIMATIC NET documents on the accompanying CD "SIMATIC NET, Manual Collection".
You will also find SIMATIC NET documents on the Internet:
http://supportauthoring.automation.siemens.com/ -> section **Self-help**, enter the **product name**;
Reaction: In the search area **Manuals/BA** you will see a list of documents.

Contents

1. Communications processor CP 5613, CP 5613 FO, CP 5614, CP 5614 FO, CP 5613 A2, CP 5614 A2, CP 5603, CP 5623, CP 5624

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

Where the CP 5613 is referred to below, this relates to the communications processors CP 5613, CP 5613 FO, CP 5603, CP 5623, CP 5614, CP 5614 FO, CP 5613 A2, CP 5614 A2, CP 5624 unless specific types are named explicitly.

Where the CP 5614 is referred to below, this relates to the communications processor types CP 5614, CP 5614 FO, CP 5614 A2, CP 5624; unless specific types are named explicitly.

1.1 Version history

Version	Changes/additionally supported functions
V7.1.2	• New communications processors CP 5623 and CP 5624 • The CP 5603, CP 5613 A2 and CP 5613 can be operated as DP slaves (DP-V0 and DP-V1)
V7.1	• Windows Server 2008 32 Bit is supported. • Quad-core processors are supported.
V7.0	• Windows Vista 32-bit is supported.
V6.4	• Dual-core processors are supported. • Windows Server 2003 R2 is supported.

1.2 GSD file handling for the slave submodule CP 5614/CP 5613 A2/CP 5623 and CP 5603

For information on using the device master file (GSD), refer to the FAQ under entry ID 21687843 on the pages of SIEMENS Customer Support http://support.automation.siemens.com/WW/view/de/21687843.

1.3 Restrictions

Restriction for constant bus cycle time for CP 5623 and CP 5624

The DP_cycle_time function is not supported by the SIMATIC NET CD Edition 2008.

Interface parameter setting "Auto"
Operation of the CP 5613 with the "Auto" interface parameter setting has not been released.

Installation of the SIMATIC NET CD

If the computer name (My Computer ->System Properties ->Computer Name) contains special characters such as ä, ü, ß or similar, it is not possible to install the SIMATIC NET CD.

Do not uninstall/deactivate the CP

Configured CPs must not be uninstalled/deactivated.

If you use the WinAC software product, the CPs must never be deactivated.

Hot plugging

The communications processors CP 5613 and CP 5614 are not released for hot plugging.

Do not modify user-specific parameter assignment data in the GSD file

User-specific parameter assignment data in the GSD file should not be modified when operating along with to FDL.

Rack PC 840 V2 with CP 5613 A2/CP 5614 A2 with product versions 1 and 2

The communications processors CP 5613 A2/CP 5614 A2 with product versions 1 and 2 may be operated in the rack PC 840 V2 only in the PCI slots 5, 6 and 8.
This restriction no longer applies as of product version 3.

Expanded addressing with DPC2

Subnet addressing is not supported in DPC2.

Receiving bus parameters

Receiving bus parameters is supported only by the "Set PG/PC Interface" program.

Hyperthreading

Operation with hyperthreading activated is released only for the CP 5603, CP 5613 A2, CP 5614 A2, CP 5623 and CP 5624.

To work with the other CP 5613/CP 5614 module types, turn hyperthreading off in the BIOS.

1.4 Notes on project engineering and configuration

Configuring the CP 5614/CP 5614 FO/CP 5614 A2/CP 5624 as a slave

The CP 5614/CP 5614 FO/CP 5614 A2/CP 5624 are configured as slaves using GSD files. If necessary, you can orient yourself on two sample files for the CP 5614/CP 5614 FO/CP 5614 A2/CP 5624, that are copied to "<Installation folder>\SIMATIC.NET\DP\DEMO_GSD" when you install software. You can import these files in SIMATIC STEP 7/NCM PC and change their configuration accordingly. If you require the Ident number of the slave, you can take this from the relevant GSD file. Refer to Section 1.2 for related information.

Configuration limits and performance data of the modules

You will find the configuration limits and performance data of the modules on the Siemens Web pages as FAQs under entry ID 15227599.

Link German: http://support.automation.siemens.com/WW/view/de/15227599

Link English: http://support.automation.siemens.com/WW/view/en/15227599

Bus parameters

When using PG operation, please note that if the bus parameters are incorrectly set, you must reset and restart with the "Set PG/PC Interface" program or Configuration Console after correcting the bus parameters.

1.5 Notes on the "Programming Interface DP-Base for CP 5613/CP 5614" manual

Access point for the Transfer sample program for CP 5614

The Transfer sample program for the CP 5614 always uses access point "CP_L2_1:"

Use of cycle start and cycle end interrupts in the constant bus cycle time mode

The DP user program can synchronize itself with the constant bus cycle time using Windows semaphores. These signal the cycle start and cycle end (see manual "Programming Interface DP Base for CP 5613/CP 5614").

Due to the high time requirements, the DP user program should not use both but only one of the two possible Windows semaphores for synchronization.

If the cycle start interrupt is used with the CP 5623/24 to synchronize the user program and bus cycle, delay the cycle start interrupt using the DP_delay_irq function until the cyclic part of the constant bus cycle time is completed before accessing the dual-port RAM.

If the DP_delay_irq function is not available, use the cycle end interrupt instead for synchronization.

2. DP-5613

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

Where the CP 5613 is referred to below, this relates to the communications processors CP 5603, CP 5613, CP 5613 A2, CP 5613 FO, CP 5623, CP 5614, CP 5614 FO, CP 5614 A2, CP 5624; unless specific types are named explicitly.

2.1 Version history

Version	Changes/additionally supported functions
V7.1.2	• New communications processors CP 5623 and CP 5624
V7.1	• Windows Server 2008 32 Bit is supported.

	•	Quad-core processors are supported.
	•	The CP 5603 is supported (detected by the software as a "CP 5613 A2")
V7.0	•	Windows Vista 32-bit is supported.
	•	Windows 2000 Professional and Server are no longer supported.
	•	OPC Data Access 3.00 (only the Custom interface is supported).
V6.4	•	Dual-core processors are supported.
	•	Windows Server 2003 R2 is supported.

2.2   Restrictions

Communication partners

The DP master of the CP 5613 can be operated with certified DP slaves. With non-certified partners such as S7 slaves, the full range of functions is not guaranteed in all cases.

The DP slave of the CP 5614 can be operated with certified DP master stations.

The "DP_get_pointer( )" function call returns timeout during simultaneous operation with the DP OPC server

The DP OPC server uses the powerful DP Base interface for communication.
It can therefore not be used at the same time by a C user program. One effect of the double usage is that the "DP_get_pointer( )" function call returns a timeout when used simultaneously with the DP OPC server.

DPC2 transport calls are not supported

DPC2 transport calls are not supported by the CP 5613.

Further restrictions

For information on the following topics, refer to Section 1.3, "Restrictions":

- Interface parameter setting "Auto"

- Installation of the SIMATIC NET CD

- Hot plugging

- Rack-PC 840 V2 with CP 5613 A2/CP 5614 A2

- Receiving bus parameters

- Hyperthreading

2.3 Notes on project engineering and configuration

Further information

For more detailed information, refer to Section 1.4, "Notes on project engineering and configuration":

3. S7-5613

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

Where the CP 5613 is referred to below, this relates to the communications processors CP 5613, CP 5613 FO, CP 5614, CP 5614 FO, CP 5613 A2, CP 5614 A2 unless specific types are named explicitly.

3.1 Version history

Version	Changes/additionally supported functions
V7.1.2	• New communications processors CP 5623 and CP 5624
V7.1.0.1	• The S7 OPC symbols of the type ATI are also released for continuous operation.

V7.1	• Windows Server 2008 32 Bit is supported.
	• Quad-core processors are supported.
	•
V7.0	• Windows Vista 32-bit is supported.
	• Windows 2000 Professional and Server are no longer supported.
	• OPC Data Access 3.00 (only the Custom interface is supported).
V6.4	• Dual-core processors are supported.
	• Windows Server 2003 R2 is supported.

3.2   Restrictions

S7 programming interface: return values of the "s7_receive" function

When evaluating the return values of the "s7_receive" function, if unexpected values occur, the "s7_discard_msg" function must be called in the default branch of the corresponding switch instruction.

Further information

For information on the following topics, refer to Section 1.3, "Restrictions":

- Interface parameter setting "Auto"

- Installation of the SIMATIC NET CD

- Hot plugging

- Receiving bus parameters

- Hyperthreading

3.3   Notes on project engineering and configuration

Configuration limits and performance data of the modules

You will find the configuration limits and performance data of the modules on the Siemens Web pages as FAQs under entry ID 15227599.

- Link German: http://support.automation.siemens.com/WW/view/de/15227599

- Link English: http://support.automation.siemens.com/WW/view/en/15227599

CP 5613 as MPI interface

If you use a CP 5613 as MPI interface, make sure that the PROFIBUS profile is enabled automatically if no further access point is mapped on the MPI profile. This occurs, for example, when S7ONLINE was the only access point for the CP 5613, is mapped from "CP5613_5614(MPI)" to "PC internal (local)" and you want to continue using the CP 5613 as MPI interface.

Further information

For more detailed information, refer to Section 1.4, „Notes on project engineering and configuration“:

4. FMS-5613

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

Where the CP 5613 is referred to below, this relates to the communications processors CP 5603, CP 5613, CP 5613 FO,CP 5623, CP 5614, CP 5614 FO, CP 5613 A2, CP 5614 A2, CP 5624; unless specific types are named explicitly.

4.1 Version history

Version	Changes/additionally supported functions
V7.1.2	• New communications processors CP 5623 and CP 5624
V7.1	• Windows Server 2008 32 Bit is supported. • Quad-core processors are supported. • The CP 5603 is supported (detected by the software as a "CP 5613 A2")
V7.0	• Windows Vista 32-bit is supported. • Windows 2000 Professional and Server are no longer supported. • OPC Data Access 3.00 (only the Custom interface is supported).
V6.4	• Dual-core processors are supported. • Windows Server 2003 R2 is supported.

4.2 Restrictions

Always access protection for FMS variables

When a connection is established, both FMS partners send information indicating whether or not access protection for their variables is supported. The PC end always indicates "no access protection supported" even if access protection was configured. Illegal read or write access is, however, rejected by the PC end.

Hardware requirements

Remember that when you configure FMS communication, you may possibly demand more performance from your PC than it is capable of. In this case, use a more powerful PC or reduce the demands placed on it by the configuration.

Further information

For information on the following topics, refer to Section 1.3 "Restrictions":

• Interface parameter setting "Auto"

• Installation of the SIMATIC NET CD

• Hot plugging

- Receiving bus parameters

4.3 Notes on project engineering and configuration

CP 5613 as MPI interface

If a CP 5613 is used as an MPI interface, remember that the PROFIBUS profile is activated automatically if no further access point is mapped to the MPI profile (keep this in mind when S7ONLINE is mapped to PC internal (local)).

Further information

For more detailed information, refer to Section 1.4, „Notes on project engineering and configuration":

Hyperthreading

For more information on the topic of hyperthreading, refer to Section 1.3, "Restrictions".

5. The CP 5511 communications processor

Please read the Installation Instructions supplied in paper form with the CP 5511.

Please make sure that you read the following sections in this document:

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

5.1 Restrictions

CP 5511

Operation of the CP 5511 is released only for Windows XP.

No multiprocessor system

The CP 5511 is not approved for operation in a PC with several processors or multicore-CPUs. This also applies to operation in a PC with activated hyperthreading (BIOS).

Restriction with notebooks

The CP 5511 has not been released for the Compaq Armada 110 notebook.

Restriction with SIMATIC Power PG

The CP 5511 can only be plugged into the front slot of the SIMATIC Power PG (the slot next to the screen).

Expanded addressing with DPC2

Subnet addressing is not supported in DPC2.

5.2 Notes on commissioning

Removing a CP 5511 from the PC

Before you can remove a CP 5511 from the PC, the following steps must be taken:

1. Delete the CP 5511 in the Station configuration Editor.
   This changes the CP to PG operation.

2. Double-click on the "Remove or eject hardware" icon in the taskbar and deactivate the CP 5511.

5.3 Notes on project engineering and configuration

Operation in the PG 740 PIII

When operating the CP 5511 in the PG 740 PIII, set the BIOS option CARDBUS/PCMCIA-Slot to "enable" prior to installation.

6. The CP 5512 communications processor

Please read the Installation Instructions/product information supplied in paper form with the CP 5512.

Please make sure that you read the following sections in this document:

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

6.1 Restrictions

Expanded addressing with DPC2

Subnet addressing is not supported in DPC2.

7. CP 5611 communications processor/CP 5611 A2/CP 5621

Please read the Installation Instructions supplied in paper form with the CP 5611.

Please make sure that you read the following sections in this document:

You only need to read the other sections if they relate directly to your product.

7.1   Restrictions

Restrictions for PCs

If a SIMATIC Box PC 620 Compact Celeron 300 MHz is operated with two CP 5614 modules, problems arise when using a CP 5611 at a data transmission rate of 12 Mbps. You should avoid using a CP 5611 with two CP 5614 modules in the SIMATIC Box PC 620.

Expanded addressing with DPC2

Subnet addressing is not supported in DPC2.

7.2   Notes on project engineering and configuration

Properties page in the Station configuration Editor

In the properties page of the Station configuration Editor, only fixed PROFIBUS bus profiles can be created for node initialization.

User-specific bus parameters for large network spans and networks such as redundant OLM rings can be specified with the "STEP 7/NCM PC" software tool.

The CP 5611 is no longer detected

If a CP 5611 communications processor is no longer detected by the SIMATIC environment after inserting it in a different PCI slot, all the CPs of the type CP 5611 will have to be uninstalled in the "Device Manager" under SIMATIC NET.

Afterwards start the "Find New Hardware" in the Device Manager and follow the instructions of the operating system.

8. The CP 5711 communications processor

Please read the Installation Instructions/product information supplied in paper form with the CP 5711.

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

8.1 Restrictions

Configuration Console -> Modules -> CP 5711 -> Bus Statistics
This page may only be called after starting an application otherwise it is sometimes not possible to start the application. In addition to this, the page has not been released for diagnostic purposes because the values may be incorrect in some situations.

Number of supported CP 5711 modules:
Currently one CP 5711 is supported

Expanded addressing with DPC2

Subnet addressing is not supported in DPC2.

Properties page in the Station configuration Editor

In the properties page of the Station configuration Editor, only fixed PROFIBUS bus profiles can be created for node initialization.

User-specific bus parameters for large network spans and networks such as redundant OLM rings can be specified with the " STEP 7/NCM PC " tool.

Restrictions configuring S7 connections

All communications modules of a PC must always be connected to a network in the STEP 7 project, otherwise even the S7 connections of a connected communications module do not work.

S7 programming interface: return values of the "s7_receive" function

When evaluating the return values of the "s7_receive" function, if unexpected values occur, the "s7_discard_msg" function must be called in the default branch of the corresponding switch instruction.

9. SOFTNET-S7 (for PROFIBUS)

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

9.1 Version history

Version	Changes/additionally supported functions
V7.1.0.1	The S7 OPC symbols of the type ATI are also released for continuous operation.
V7.1	• Windows Server 2008 32 Bit is supported. • Quad-core processors are supported.
V7.0	• Windows Vista 32-bit is supported. • Windows 2000 Professional and Server are no longer supported. • OPC Data Access 3.00 (only the Custom interface is supported).
V6.4	• Dual-core processors are supported.

	• Windows Server 2003 R2 is supported.

9.2 Restrictions

No parallel operation

Operating several SOFTNET CPs in one computer is not supported unless the second CP is used solely for configuration purposes with STEP 7.

The parallel operation of several protocols via SOFTNET CPs is not supported.

Properties page in the Station configuration Editor

In the properties page of the Station configuration Editor, only fixed PROFIBUS bus profiles can be created for node initialization.

User-specific bus parameters for large network spans and networks such as redundant OLM rings can be specified with the " STEP 7/NCM PC " tool.

Versions

If you use the CP 5511 or CP 5611, this CP must have at least hardware version 4.

CP 5411

The CP 5411 is no longer supported by the SIMATIC NET software.

CP 5511

The CP 5511 is supported by the SIMATIC NET software only under Windows XP.

Restrictions configuring S7 connections

All communications modules of a PC must always be connected to a network in the STEP 7 project, otherwise even the S7 connections of a connected communications module do not work.

S7 programming interface: return values of the "s7_receive" function

When evaluating the return values of the "s7_receive" function, if unexpected values occur, the "s7_discard_msg" function must be called in the default branch of the corresponding switch instruction.

9.3   Notes on project engineering and configuration

Module cannot be started in the Station Configuration Editor

If there is a disruption on PROFIBUS (for example a bus short-circuit or duplicate node address), it is not possible to start the SOFTNET PROFIBUS module. In this case, eliminate the disruption before you try to start the module again.

Configuration limits and performance data of the modules

You will find the configuration limits and performance data of the modules on the Siemens Web pages as FAQs under entry ID 15227599.

- Link German: http://support.automation.siemens.com/WW/view/de/15227599

- Link English: http://support.automation.siemens.com/WW/view/en/15227599

Message "CP 5611 is no longer detected"

For information on the problem "CP 5611 is no longer detected", refer to Section 7.2, "Notes on project engineering and configuration".

10.   SOFTNET-DP (for PROFIBUS)

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

10.1 Version history

Version	Changes/additionally supported functions
V7.1	• Windows Server 2008 32 Bit is supported. • Quad-core processors are supported.
V7.0	• Windows Vista 32-bit is supported. • Windows 2000 Professional and Server are no longer supported. • OPC Data Access 3.00 (only the Custom interface is supported).
V6.4	• Dual-core processors are supported. • Windows Server 2003 R2 is supported.

10.2 Restrictions

No parallel operation

Operating several SOFTNET CPs in one computer is not supported unless the second CP is used solely for configuration purposes with STEP 7.

The parallel operation of several protocols via SOFTNET CPs is not supported.

Versions

If you use the CP 5511 or CP 5611, this CP must have at least hardware version 4.

CP 5411

The CP 5411 is no longer supported by the SIMATIC NET software.

CP 5511

The CP 5511 is supported by the SIMATIC NET software only under Windows XP.

DPC2 transport call is not supported

DPC2 transport calls are not supported.

10.3 Notes on project engineering and configuration

Module cannot be started in the Station Configuration Editor

If there is a disruption on PROFIBUS (for example a bus short-circuit or duplicate node address), it is not possible to start the SOFTNET PROFIBUS module. In this case, eliminate the disruption before you try to start the module again.

Properties page in the Station configuration Editor

In the properties page of the Station configuration Editor, only fixed PROFIBUS bus profiles can be created for node initialization.

User-specific bus parameters for large network spans and networks such as redundant OLM rings can be specified with the " STEP 7/NCM PC " tool.

Message "CP 5611 is no longer detected"

For information on the problem "CP 5611 is no longer detected", refer to Section 7.2, "Notes on project engineering and configuration".

11. SOFTNET DP slave (for PROFIBUS)

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

11.1 Version history

Version	Changes/additionally supported functions
V7.1	• Windows Server 2008 32 Bit is supported. • Quad-core processors are supported.
V7.0	• Windows Vista 32-bit is supported. • Windows 2000 Professional and Server are no longer supported. • OPC Data Access 3.00 (only the Custom interface is supported).
V6.4	• Dual-core processors are supported. • Windows Server 2003 R2 is supported.

11.2 Restrictions

No parallel operation

Operating several SOFTNET CPs in one computer is not supported unless the second CP is used solely for configuration purposes with STEP 7.

The parallel operation of several protocols via SOFTNET CPs is not supported.

Versions

If you use the CP 5511 or CP 5611 as the DP slave, this CP must have at least hardware version 4.

CP 5411

The CP 5411 is no longer supported by the SIMATIC NET software.

CP 5511

The CP 5511 is supported by the SIMATIC NET software only under Windows XP.

11.3 Notes on project engineering and configuration

Module cannot be started in the Station Configuration Editor

If there is a disruption on PROFIBUS (for example a bus short-circuit or duplicate node address), it is not possible to start the SOFTNET PROFIBUS module. In this case, eliminate the disruption before you try to start the module again.

Properties page in the Station configuration Editor

In the properties page of the Station configuration Editor, only fixed PROFIBUS bus profiles can be created for node initialization.

User-specific bus parameters for large network spans and networks such as redundant OLM rings can be specified with the " STEP 7/NCM PC " software tool.

Active / passive slave

The CP 5511, 5512, CP 5611 and CP 5621 modules can be operated as active slaves (a special form of slave that is also master at the same time) or as passive slaves.

In the configured mode, you can decide whether the slave is an active or passive slave in SIMATIC NCM PC or STEP 7.

Note the following: The configuration cannot be downloaded to a passive slave from a remote station.

The data transmission rate and the station address are only adopted from the C interface for a passive slave.

With an active slave, the values are set in the configuration or in "Set PG/PC Interface" since they are common to the master and slave.

Message "CP 5611 is no longer detected"

For information on the problem "CP 5611 is no longer detected", refer to Section 7.2, "Notes on project engineering and configuration".

12.   CP 1613, CP 1613 A2 communications processor

Please make sure that you read the following sections in this document:

You only need to read the other sections if they relate directly to your product.

Where the CP 1613 is referred to below, this relates to the communications processor types CP 1613, and CP 1613 A2; unless specific types are named explicitly.

As of the "SIMATIC NET PC Software, Edition 2007" CD, the two drivers for the CP 1613 (for industrial communication and for office/NDIS access) have been replaced by a common driver. This is displayed in the Device Manager under Network adapters.

12.1 Restrictions

Not with SOFTNET IE

It is not possible to operate SOFTNET IE over the CP 1613.

IP addresses

The IP address for the automation protocols via ISO-on-TCP (synonymous with TCP/IP (RFC 1006)) must be different from the NDIS IP address for communication over PC networks.

Uninstalling / deactivating CPs using the "Device Manager"

Configured CPs must not be uninstalled/deactivated using the "Device Manager".

If you use the WinAC software product, the CPs must never be deactivated.

Deactivating protocols

The protocols TCP/IP and ISO must be deactivated since they are necessary for configured operation!

MIB and profile file

The installation instructions on the "SIMATIC NET, PC Software, Edition 2008" CD describe in Section 3.2 that special MIB files are supplied for the CP 1613 and CP 1623 in STEP 7 as of version 5.4.5, or NCM PC as of version V5.4.4.

This is incorrect. General MIB files ship with STEP 7 or NCM PC and these are also valid for the CP 1613 and CP 1623.

The simplest method is to select the suitable profile file for the CP 1613 and CP 1623 in STEP 7 or NCM PC "cp1613_v10.txt" or "CP1623_v10.txt".

12.2 Notes on commissioning

Current driver diskette (exclusive PC network operation)

Compare the version of this SIMATIC NET CP 1612 software product with the version of your driver diskette. If the version of the SIMATIC NET CP 1612 software product is newer than that of the driver diskette, please create a new driver diskette by copying the content of the folder (e.g.: sw\Driverdisk\CP1612A2) to an empty diskette and then use this as the driver diskette.

Two TCP/IP addresses

On the CP 1613, you can set two IP addresses during configuration; the reason for this is as follows:

On the one hand, the CP 1613 communications processor is intended for operation with office communications protocols, for example TCP/IP. The office communications protocols run on the PC.

On the other hand, the CP 1613 can also be used for automation purposes with the SIEMENS industrial protocols (SEND/RECEIVE, SAPI-S7, STEP 7, and TF). The protocols can either be handled over the transport protocol ISO or TCP/IP. Both transport protocols run in the firmware of the CP 1613. The interfacing of the TCP/IP transport protocol to the SIEMENS industrial protocol is according to the RFC 1006 specification.

This means that a total of **two** TCP/IP transport protocol functions can be operated on the CP 1613 at the same time:

- Office communications interfacing

- Interfacing SIEMENS industrial protocols

Both interfaces must be assigned different TCP/IP addresses to identify them uniquely.

MAC addresses

After installing a new CP 1613 module, you should always compare its active MAC address with the MAC addresses of other CP 1613 modules or other Ethernet modules. Make sure that all the Ethernet modules operated in a network have different MAC addresses.

If the CP 1613 installed in the computer is replaced by another CP 1613 in the same slot, the new CP 1613 will be assigned the MAC address of the CP 1613 that was removed from the computer.

Even if the module is taken out of configured mode, it retains the MAC address. If you do not want the module in the network any more, change the MAC address or uninstall the CP.

Follow the steps below:

1. After it has been taken out of the Station configuration Editor (out of configured mode), select the relevant module and uninstall it.

2. Then restart your computer.

Time-of-day frames

When configuring the time intervals with STEP 7, only intervals of 1 s or 10 s are possible.

CP 1613 is displayed in the device manager as "Ethernet Controller"

Select the relevant module and uninstall it. Then restart your computer.

Driver signature is not recognized

Sporadically, the signature of the CP 1613 driver is not recognized.

If this occurs, confirm the warning from the operating system with "Yes" to install the driver.

Passive connection establishment with the CP 1613

If connections are established to the CP 1613, the connection establishment timeout should not be set too low (for example with 64 connections, higher than 8000 ms).

Disabling the NDIS interface

The NDIS interface of the CP 1613 must not be disabled. The linked protocols may only be removed if the CP 1613 is not in configured mode.

12.3 Notes on project engineering and configuration

Configuration limits and performance data of the modules

You will find the configuration limits and performance data of the modules on the Siemens Web pages as FAQs under entry ID 15227599.

* Link German: http://support.automation.siemens.com/WW/view/de/15227599

* Link English: http://support.automation.siemens.com/WW/view/en/15227599

13. CP 1623 communications processor

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

13.1 Restrictions

General

The restrictions to the CP 1613 listed in Section 12.1 also apply to the CP 1623.

XDB import when more than one CP 1623 is inserted in the computer

If more than one CP 1623 is installed in the computer, importing a configuration in the Station configuration Editor (XDB import) is possible only when the set addresses of the CP 1623 communications processor were adapted to the configuration previously in the "Configuration Console".

If only the MAC addresses were configured, only the MAC addresses need to be set.

If only the IP addresses were configured, only the IP addresses need to be set.

If MAC and IP addresses were configured, both must be set.

Configuration in mixed operation CP 1613/CP 1623

If the CP 1613 and CP 1623 are used at the same time in one computer and you want to assign the configuration of a CP 1613 to a CP 1613, the module assignment must be adapted in STEP 7/NCM PC.

The module assignment is made in the "HW Config"/"PC Config" program in the object properties of the module, "Assignment" tab. The interface of the CP 1623 you want to configure must be entered there in the input boxes of the interface parameter assignment used.

This must be adapted for every CP 1623 that is to receive the configuration of a CP 1613.

Port diagnostics over SNMP

Only the diagnostics of port 1 can be queried via SNMP.

Restriction for XDB import

Please note that an XDB import can only be made when the Station configuration Editor shows that >all< components can be replaced by compatible components.

STEP 5 online

STEP 5 cannot be operated via the CP 1623 online.

As an alternative, the serial interface to the S5 CPU or to the S5 CP can be used.

MIB and profile file

The installation instructions on the "SIMATIC NET, PC Software, Edition 2008" CD describe in Section 3.2 that special MIB files are supplied for the CP 1613 and CP 1623 in STEP 7 as of version 5.4.5, or NCM PC as of version V5.4.4.

This is incorrect. General MIB files ship with STEP 7 or NCM PC and these are also valid for the CP 1613 and CP 1623.

The simplest method is to select the suitable profile file for the CP 1613 and CP 1623 in STEP 7 or NCM PC "cp1613_v10.txt" or "CP1623_v10.txt".

13.2 Notes on commissioning

Current driver diskette (exclusive PC network operation)

Compare the version of this SIMATIC NET CP 1612 software product with the version of your driver diskette. If the version of the SIMATIC NET CP 1612 software product is newer than that of the driver diskette, please create a new driver diskette by copying the content of the folder (e. g.: …\SW\cp1512_cp1612) to an empty diskette and then use this as the driver diskette.

General

The notes on the CP 1613 listed in Section 12.2 also apply to the CP 1623.

13.3 Notes on project engineering and configuration

Configuration limits and performance data of the modules

You will find the configuration limits and performance data of the modules on the Siemens Web pages as FAQs under entry ID 15227599.

- Link German: http://support.automation.siemens.com/WW/view/de/15227599

- Link English: http://support.automation.siemens.com/WW/view/en/15227599

14.   S7-1613

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

14.1 Version history

Version	Changes/additionally supported functions
V7.1.0.1	The S7 OPC symbols of the type ATI are also released for continuous operation.
V7.1	• Windows Server 2008 32 Bit is supported. • Quad-core processors are supported.
V7.0 HF1	• The product can also be operated with the CP 1623.
V7.0	• Windows Vista 32-bit is supported. • Windows 2000 Professional and Server are no longer supported. • OPC Data Access 3.00 (only the Custom interface is supported).
V6.4	• Dual-core processors are supported. • Windows Server 2003 R2 is supported.

14.2 Restrictions and notes

Passive connection establishment with the ISO protocol

Passive connection establishment with the ISO protocol has not been released.

PC network operation

PC network operation is released only for the TCP/IP protocol.

Number does not match slot

If there is more than one CP 1613 module plugged in, the number of the module assigned by the SIMATIC NET software provides no information about the physical slot.

Restrictions configuring S7 connections

All communications modules of a PC must always be connected to a network in the STEP 7 project, otherwise even the S7 connections of a connected communications module do not work.

S7 programming interface: return values of the "s7_receive" function

When evaluating the return values of the "s7_receive" function, if unexpected values occur, the "s7_discard_msg" function must be called in the default branch of the corresponding switch instruction.

T communication

T communication is not supported by the SIMATIC NET PC products.

PC-PC communication with CP 1613 to SOFTNET-S7 with Fast Acknowledge

Communication between a PC with a CP 1613 communications processor and another PC with SOFTNET-S7 over ISO-on-TCP (synonymous with TCP/IP (RFC 1006)) is not possible under the following conditions:

- PC with CP 1613 only sends.

- PC with CP 1613 does not provide receive resources.

- "Fast Acknowledge is activated" ("Configuration Console").

  Remedy: Disable fast acknowledge in SOFTNET S7.

14.3 Notes on project engineering and configuration

Configuration limits and performance data of the modules

You will find the configuration limits and performance data of the modules on the Siemens Web pages as FAQs under entry ID 15227599.

Link German: http://support.automation.siemens.com/WW/view/de/15227599

Link English: http://support.automation.siemens.com/WW/view/en/15227599

15. TF-1613

For all software products relating to the CP 1613, refer to the information in Section 14, "Restrictions and Information for All Software Products of the CP 1613".

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

15.1 Version history

Version	Changes/additionally supported functions
V7.1	• Only Windows XP and Server 2003 are supported.
V7.0 HF1	• The product can also be operated with the CP 1623.
V7.0	• Windows 2000 Professional and Server are no longer supported. • OPC Data Access 3.00 (only the Custom interface is supported). • Vista is not supported.
V6.4	• Dual-core processors are supported. • Windows Server 2003 R2 is supported.

15.2 Restrictions

PDU size

The "PDU size" parameter of an "application relation" must not exceed the value 4000! This is set when you create a database with the "COML TF" program.

Simultaneous use of the TF Protocol with other protocols

Simultaneous operation of the TF protocol and other protocols is not permitted on one CP 1613 communications processor.

Restriction compared with TF-1413

In contrast to TF-1413, TF-1613 does **not** support multiplexing of TF connections.

15.3 Notes on project engineering and configuration

TF communication over the ISO transport protocol

TF communication is possible only over the ISO transport protocol.

Adaptation of the stf_conf.dat file

Please change the following line in the "stf_conf.dat" file

        SCP_device = /CP_H1_1:/SCP /* SCP device path name   */
        to:
        SCP_device = /CP_H1_1:/AP /* SCP device path name   */

The "stf_conf.dat" file must be copied to the working folder of the TF application!

COML TF

In the "COML TF" program, the standard CP type "CP 1413 TF" is compatible with the CP type "CP 1613 TF".

Configuration example

An example of TF configuration is described in the following files:

- "Readme.txt" in the "simatic net\tf1613\tf\sample" folder describes the example.

- "h1tfcl1.txt", "h1tfsv11.txt" and "h1tfsv12.txt" contain the sample configuration files in the "simatic net\tf1613\tf\sample\db" folder.

- "h1.txt" in the "simatic net\comh1tf" folder describes the structure of the TF configuration files.

Configuration limits and performance data of the modules

You will find the configuration limits and performance data of the modules on the Siemens Web pages as FAQs under entry ID 15227599.

Link German: http://support.automation.siemens.com/WW/view/de/15227599

Link English: http://support.automation.siemens.com/WW/view/en/15227599

Parallel synchronous TF jobs in different threads

The use of parallel synchronous TF jobs in different threads of an application is not permitted.

Driver signature is not recognized

Sporadically, the signature of the CP 1613 driver is not recognized.

If this occurs, confirm the warning from the operating system with "Yes" to install the driver.

16.   S7-REDCONNECT and S7-REDCONNECT upgrade

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

Please note the descriptions of fault tolerant systems in the "Industrial communication with PG/PC" manual.

16.1 Version history

Version	Changes/additionally supported functions
V7.1.0.1	The S7 OPC symbols of the type ATI are also released for continuous operation.

V7.1	• Windows Server 2008 32 Bit is supported.
V7.0 HF1	• The product can also be operated with the CP 1623.
V7.0	• Windows Vista 32-bit is supported. • Windows 2000 Professional and Server are no longer supported. • OPC Data Access 3.00 (only the Custom interface is supported).
V6.4	• Dual-core processors are supported. • Windows Server 2003 R2 is supported.

16.2 Notes on the product

Use of the "Power Pack S7-REDCONNECT" product

The "Power Pack S7-REDCONNECT" product is intended for users who have already installed the "S7-1613" product (with the current CD, "SIMATIC NET, PC Software, Edition 2008") and now want to use the functions of "S7-REDCONNECT".

16.3 Restrictions

Do not use AUI cable

The CP 1613 has two jacks for connecting network cables: The 15-pin sub-D female connector with slide locking mechanism both for connection of an AUI transceiver cable (AUI - **A**ttachment **U**nit **I**nterface) and for connecting an ITP cable (ITP – **I**ndustrial **T**wisted **P**air), and the RJ-45 jack for connecting a TP cable (TP – **T**wisted **P**air).

For fault-tolerant connections, use only the 15-pin D-sub female connector for ITP cable or the RJ-45 jack for TP cable but not the AUI port for AUI transceiver cables!

Not between PCs

Redundant S7 connections between PCs are not possible.

Uninstalling / deactivating CPs using the Device Manager

Configured CPs must not be uninstalled/deactivated using the Device Manager.

If you use the WinAC software product, the CPs must never be deactivated.

Deactivating protocols

The protocols TCP/IP and ISO must be deactivated since they are necessary for configured operation!

Restrictions configuring S7 connections

All communications modules of a PC must always be connected to a network in the STEP 7 project, otherwise even the S7 connections of a connected communications module do not work.

S7 programming interface: return values of the "s7_receive" function

When evaluating the return values of the "s7_receive" function, if unexpected values occur, the "s7_discard_msg" function must be called in the default branch of the corresponding switch instruction.

Sporadic connection aborts

- When using older versions of the CP 443-1 (up to "CP 443-1 EX02"), switching over between stop/start on an H-CPU can lead to connection aborts; Remedy: Replace the CP with a new version of the CP.

- If there is continuously high CPU usage on the PC, connection aborts are possible with slower network components; Remedy: Whenever possible, use 100 Mbps, full duplex.

16.4 Notes on configuration, project engineering and NCM

Fixed parameter values

The settings of persistence count and abort timeout using the SAPI S7 mini DB have no effect on fault-tolerant S7 connections. On such connections, fixed internal values are used to achieve the necessary, short failover times.

How to configure fault tolerance

Step	Description
1	Enter all the hardware components of your automation system in STEP 7, HW Config. These include both the CPs in the SIMATIC S7 stations as well as the user applications on the PCs and the SIMATIC NET network adapters.
2	Following this, you can configure the fault tolerant S7 connections for the individual user programs: • After saving in HW Config, you set the addresses for the CPs with STEP 7, NetPro and connect the CPs to the appropriate subnets. • Select "S7 connection fault-tolerant" for the connection type parameter. • In the properties dialog, you decide whether you want to 2 or 4 path redundancy for this connection by activating the "max. CP redundancy" check box.
3	Save and compile in NetPro to generate the databases (SDB and XDB files). Download the databases to the S7 stations and download or import them to the configure PC stations. For more detailed information, refer to the "Commissioning PC Stations (with Advanced PC Configuration)" manual.

Please remember that following any change in the connection configuration in STEP 7, NetPro the current configuration must be downloaded or imported again into the S7 and PC stations.

Configuring a CP 443-1

If you insert a CP 443-1 into a SIMATIC S7 station, the "Activate fast failover of the connection" check box must be activated (dialog box "Properties – CP 443-1 ..." ->Options -> Ethernet Profile for Fault-Tolerant Connections -> activate fast failover of the connection).

Do not activate a TF database

When working with fault-tolerant connections, **no(!)** database (LDB file) must be activated in the "Set PG/PC Interface" program under "Interface parameter assignment used" -> Properties -> TF Protocol. Database (LDB file) activated.

The use of LDB files for connection configuration is intended to allow compatibility with older products under the Windows 2000 operating system and has not been released for operating fault-tolerant connections on the same CP.

How 4-path redundancy functions

If you have configured your fault-tolerant S7 connection with maximum CP redundancy (4 paths), if the productive or reserve path fails, another connection path will be established (assuming it is available). The failover can take between several seconds and several minutes depending on your configuration.

The connection is then redundant again (over a new path).

Please note that depending on the configuration, it is possible that the two connection paths now include non-redundant components (not ideal redundancy). At this point, one further redundant component can fail without S7 communication being disturbed (as long as it is not used by both paths).

For more detailed information, refer to the document "Industrial Communication for PG/PC".

Configuration limits and performance data of the modules

You will find the configuration limits and performance data of the modules on the Siemens Web pages as FAQs under entry ID 15227599.

Link German: http://support.automation.siemens.com/WW/view/de/15227599

Link English: http://support.automation.siemens.com/WW/view/en/15227599

16.5 "S7 Connection Diagnostics"

Area of application

This program makes it easier to commission fault-tolerant connections and informs you when there is a problem on a specific connection path.

Start

The use of the diagnostic program is possible only when you have downloaded a STEP 7 configuration.

You start the diagnostic program from the SIMATIC path (Windows Start menu **Start -> ... -> SIMATIC -> SIMATIC NET -> S7 Connection Diagnostic**).

Online help

Click on the **?** menu command**-> Contents** for information on the program.

Dealing with memory access violations

If there is a memory access violation in an application that works with S7-REDCONNECT, or if it no longer reacts for one reason or another, it is possible that the display in the diagnostic program is no longer refreshed. In this case, close all applications that use S7 connections and restart them.

Software diagnostic interface

It is also possible to read diagnostic data from your own user program. See Section "Diagnostic Services for Fault-tolerant Connections" in the "S7 Programming Interface" manual.

17. The CP 1612 and CP 1612 A2 communications processor

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

17.1 Version history

Version	Changes/Additionally Supported Functions
V7.1.2	• The CP 1612 A2 is also supported; The CP 1612 A2 also supports Windows Vista and Windows Server 2008
V7.1	• CP 1612: Only Windows XP and Server 2003 are supported.

17.2 Notes

Current driver diskette (exclusive PC network operation)

Compare the version of this SIMATIC NET CP 1612 software product with the version of your driver diskette. If the version of the SIMATIC NET CP 1612 software product is newer than that of the driver diskette, please create a new driver diskette by copying the content of the folder (e.g.: sw\Driverdisk\CP1612A2) to an empty diskette and then use this as the driver diskette.

17.3 Restrictions

Modules per computer

Per computer, only one (1) module can be used in configured mode.

Hot plugging

The CP 1612 and CP 1612 A2 communications processors are not approved for hot plugging.

18.   SOFTNET PN IO

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

18.1 Version history

Version	Changes/additionally supported functions
V7.1	• Windows Vista, • Windows Server 2003 and • Windows Server 2008 are supported.

V7.0	• SN PN IO is supported only with Windows XP.
	• OPC Data Access 3.0 (only the Custom interface is supported).
V6.4	• Dual-core processors are supported.

18.2 Notes on the product

PNIO_data_read( ) without user data

The PNIO_data_read( ) function can also be called with the parameters "BufLen=0" and "pBuffer=NULL" to simply read the remote status of the communications partner.

Recompiling applications

Improvements were made to SN PN IO that have repercussions on earlier versions. You should therefore recompile applications that use the C interface of SN PN IO if your application was created with a version of the SIMATIC NET CD older than Edition 2008.

Defining the "PNIO_SOFTNET" macro

In an SOFTNET PN IO application that uses the C interface of SOFTNET PN IO , the macro PNIO_SOFTNET must be defined before header files are linked.

18.3 Restrictions

Number of network adapters

A maximum of one (1) network adapter with SOFTNET PN IO can be operated.

Deactivating Ethernet network cards

Ethernet network cards must not be deactivated.

Deactivating protocols

None of the protocols TCP/IP, PROFINET IO RT, and ISO must be deactivated since they are necessary for configured operation!

Writing to individual submodules of an ET 200S

It is only possible to write to individual submodules of an ET 200S station after all submodules of this station (with status=Good) have been written to. This applies both during startup and when a station returns following station failure.

This restriction is due to the firmware version of the ET 200S and does not apply as of version V2.0.0.

Update times for cyclic data exchange

The update time proposed by STEP 7 must be increased as follows if you have a larger hardware configuration:

- up to 16 devices: 8 ms

- up to 32 devices: 16 ms

- up to 64 devices: 32 ms

The information above applies in 100 Mbps full duplex mode.

Operation with CP 1613 or CP 1623

It is not possible to operate SN PROFINET IO over the CP 1613 or CP 1623 .

Restrictions in the PROFINET IO-Base user programming interface

The use of CLEAR mode in the current version is not adequate to switch IO devices to the safe status. For all modules, the function "PNIO_data_write" must be called with the parameter "IOLocState=BAD".

The "PNIO_data_read" function can be executed even in CLEAR mode.

The use of the CLEAR mode is therefore not released even with the OPC interface using the "&mode()" and "&modeval()" items.

The "PNIO_controller_close()" function must only be used in the OFFLINE mode.

The user may only call "PNIO_set_mode" again when a previous "PNIO_set_mode" job was acknowledged with PNIO_CBE_MODE_IND.

PNIO_rec_read_req (send read data record job) parameter "Length"

"Length" parameter: Maximum length of the data record (in bytes) to be transferred by the IO device. The pointer to the data record and its actual length is returned by the callback event PNIO_CBE_REC_READ_CONF.

Callback event PNIO_CBE_REC_READ_CONF (report result of a read data record job)

"Length" parameter: Length of the transferred data record (in bytes) to which "pBuffer" points.

"pAddr": Address of the module of the device that answered the read data record job.

Hyperthreading

On PCs with activated hyperthreading, it may take longer for the PROFINET IO system to start up (several minutes): Remedy: Disable hyperthreading (BIOS).

Data records

This version supports reading of data records only up to a length of 480 bytes.

"Accessible nodes" and "Assign Ethernet address" in PROFINET IO mode

When running a PROFINET IO user program, the "Accessible nodes" function in STEP 7 or the "Assign Ethernet Address" function in NCM S7 diagnostics must not be executed via the same Ethernet interface. First exit your PROFINET IO user program or use different Ethernet interfaces.

Download during PROFINET IO operation

While a PROFINET IO user program is active, there must be no download of a configuration. First shut down your PROFINET IO user program.

No XDB import in "offline mode"

During the XDB import of a SOFTNET PN IO project, the "Work in offline mode" check box must not be selected. Otherwise calls for the PROFINET IO Base interface are rejected with the error message "PNIO_ERR_INVALID_CONFIG"

18.4 Notes on project engineering and configuration

Network bridge

With a network card that has been added to a "Network bridge" added, it is not possible to operate SOFTNET Industrial Ethernet.

If you want to use a network card inserted in a network bridge for SIMATIC NET products, you must first remove it from the network bridge before installing the "SIMATIC NET, Software CD".

Deactivated network adapters

When you install the SIMATIC PC software over older versions, deactivated network adapters are reactivated.

Configuration limits and performance data of the modules

You will find the configuration limits and performance data of the modules on the Siemens Web pages as FAQs under entry ID 15227599.

Link German: http://support.automation.siemens.com/WW/view/de/15227599

Link English: http://support.automation.siemens.com/WW/view/en/15227599

Registering a network adapter for configured mode

A network adapter only needs to be registered for configured mode when the configuration was downloaded with STEP 7/NCM PC to the PC station or imported using an XDB file before the computer was restarted.

PROFINET IO OPC server and security settings

If the "Disable" button was clicked in the "Security" dialog in the "Configuration Console" program, you will need to click the "Enable" button (remote basic and OPC communication first before you can resume remote communication over the PROFINET IO OPC server.

Windows update and security settings

If you want to install the "SIMATIC NET, Software CD" on an operating system that has not yet been upgraded, you will first have to upgrade to Windows XP with SP2 and then install the "SIMATIC NET, Software CD".

In the Windows XP SP2 operating system, you will need to click the "Allow" button (remote basic communication and OPC communication) in the "Security" dialog in the "Configuration Console" program first before you can resume remote communication over the PROFINET IO OPC server

19. SOFTNET-S7 for Industrial Ethernet

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

19.1 Version history

Version	Changes/additionally supported functions
V7.1.0.1	• The S7 OPC symbols of the type ATI are also released for continuous operation.
V7.1	• Windows Server 2008 32 Bit is supported. • Quad-core processors are supported.
V7.0	• Windows Vista 32-bit is supported. • Windows 2000 Professional and Server are no longer supported. • OPC Data Access 3.00 (only the Custom interface is supported).
V6.4	• Dual-core processors are supported. • Windows Server 2003 R2 is supported.

19.2 Restrictions

S7 programming interface: return values of the "s7_receive" function

When evaluating the return values of the "s7_receive" function, if unexpected values occur, the "s7_discard_msg" function must be called in the default branch of the corresponding switch instruction.

Passive connection establishment with the ISO protocol

Passive connection establishment with the ISO protocol has not been released.

Number of network adapters

A maximum of 1 (one) network adapter with SOFTNET-S7 can be operated.

Deactivating Ethernet network cards

Ethernet network cards must not be deactivated.

Deactivating protocols

None of the protocols TCP/IP, PROFINET IO RT, and ISO must be deactivated since they are necessary for configured operation!

Note on the SEND/RECEIVE programming interface and OPC, use of expedited data over ISO connections

If data packets of the "Expedited Data" type are transferred on a SEND/RECEIVE ISO connection, the receiving application at the PC must make sure that this data is actually accepted. Otherwise, the buffering of these data packets can lead to a lack of memory that can eventually cause the connection to be terminated.

This means that if you use an ISO connection with your OPC user program, a receive item must be activated on this connection.

Restrictions configuring S7 connections

All communications modules of a PC must always be connected to a network in the STEP 7 project, otherwise even the S7 connections of a connected communications module do not work.

S7 programming interface

Return values of the "s7_receive" function: When evaluating the return values of the "s7_receive" function, the "s7_discard_msg" function must be called if unexpected values occur, for example in the default branch of the corresponding switch instruction.

T communication

T communication is not supported by the SIMATIC NET PC products.

Loss of connections

If the number of input buffers of the used CP is less than the number of packets that come from the network, connections may abort.

High number of connections with long frames

If you have a high number of connections (for example more than 32) and the PDU length is greater than 960 bytes, you should disable fast acknowledge otherwise there may be a frame overload.

WLAN (Wireless LAN)

WLAN PC modules (Wireless LAN) are supported only with PG functionality with the TCP/IP protocol.

19.3 Notes on project engineering and configuration

IE General in stop mode after starting up

In individual cases, it is possible that a component of the type "IE General" configured in a PC station remains in Stop mode after the PC station has started up and the diagnostic entry indicates an 0x381 error in the router subsystem. In this case, reconfigure and load the PC station again.

Special parameter setting

If you want to operate a configured ISO transport connection between a PG/PC and a SIMATIC programmable controller, please use the parameter settings shown below on the SIMATIC programmable controller.

Parameters	Value
Retransmission Time for data transfer	2000 ms or higher
Retransmission max. count for data transfer	10 or higher

Lower values, for example the default values, can cause the connection to break down.

Multiple protocol operation

Multiple protocol mode means that you can communicate with the S7 protocol and the SEND/RECEIVE protocol at the same time. With each of these protocols, you can decide whether or not you want to use the ISO or ISO-on-TCP (synonymous with TCP/IP (RFC 1006)) transport protocol.

Message MAC address does not exist in Configuration Console

If you receive the message that the MAC address does not exist in the "Configuration Console" program, you have probably accidentally deleted the "SIMATIC Industrial Ethernet (ISO)" protocol. Reinstall the protocol.

Network bridge

With a network card that has been added to a "Network bridge" added, it is not possible to operate SOFTNET Industrial Ethernet.

If you want to use a network card inserted in a network bridge for SIMATIC NET products, you must first remove it from the network bridge before installing the "SIMATIC NET, Software CD".

Deactivated network adapters

When you install the SIMATIC PC software over older versions, deactivated network adapters are reactivated.

Multiple IP addresses

For the S7 connections, only the last IP address in the IP address list can be used.

IP address list, see: "Extended TCP/IP Settings" dialog.

Configuration limits and performance data of the modules

You will find the configuration limits and performance data of the modules on the Siemens Web pages as FAQs under entry ID 15227599.

Link German: http://support.automation.siemens.com/WW/view/de/15227599

Link English: http://support.automation.siemens.com/WW/view/en/15227599

Registering a network adapter for configured mode

A network adapter only needs to be registered for configured mode when the configuration was downloaded with NCM PC/STEP 7 to the PC station or imported using an XDB file before the computer was restarted.

Matching up connection monitoring times

In STEP 7/NCM PC, HW Config, you can select the connection monitoring time of an Industrial Ethernet SOFTNET module in the "Options" tab. This should be lower than the value of the connection establishment timeout and job timeout in the "OPC" tab of the "Properties S7 Connection" dialog in STEP 7/NCM PC, NetPro.

Note specifically for "SOFTNET-S7 for Industrial Ethernet":

Out-of-date STEP 7 hardware catalog

SOFTNET-S7 supports connections as of V6.0 64.

STEP 7 to V5.1 SP2 does not display this in the hardware catalog.

The "Configuration Console" program does not detect installation removal in isolated cases

In isolated cases, it is possible that the "Configuration Console" program does not recognize the installation or removal of a module. In this case, restart your computer.
Note: If "Configuration Console" has not recognized the module after it is installed, the module will not be able to communicate over SIMATIC NET.

Unsatisfactory transmission rate on a separate network

If the transmission rate on a separate network is not satisfactory, check the following conditions:

- You have installed two SOFTNET IE network adapters in a PC

- The first network adapter is used for SIMATIC NET products

- The second network adapter communicates over the separate network

To increase the transmission rate, delete the gateway entry of the first network adapter used by SIMATIC NET products in the Windows network settings.

20. SOFTNET-S7 Lean for Industrial Ethernet

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

20.1 Version history

Version	Changes/additionally supported functions
V7.1.0.1	The S7 OPC symbols of the type ATI are also released for continuous operation.
V7.1	• Windows Server 2008 32 Bit is supported. • Quad-core processors are supported.
V7.0	• Windows Vista 32-bit is supported. • Windows 2000 Professional and Server are no longer supported. • OPC Data Access 3.00 (only the Custom interface is supported).
V6.4	• Dual-core processors are supported. • Windows Server 2003 R2 is supported.

Note

- The same **restrictions** apply to "SOFTNET-S7 Lean for Industrial Ethernet" as for "SOFTNET-S7 for Industrial Ethernet" in Section 19.2, "Restrictions".

- The same **Notes on configuration and project engineering** apply to "SOFTNET-S7 Lean for Industrial Ethernet" as for SOFTNET-S7 for Industrial Ethernet in Section 19.3, "Notes on configuration and project engineering".

21. SOFTNET-PG for Industrial Ethernet

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

21.1 Version history

Version	Changes/additionally supported functions
V7.1	• Windows Server 2008 32 Bit is supported. • Quad-core processors are supported.
V7.0	• Windows Vista is supported. • Windows 2000 Professional and Server are no longer supported.
V6.4	• Dual-core processors are supported. • Windows Server 2003 R2 is supported.

21.2 Restrictions

PG functions only

The "SOFTNET-PG" product allows operation of PG functions only (STEP 7/STEP 5).

Number of network adapters

A maximum of 1 (one) network adapter with SOFTNET-PG can be operated.

21.3 Notes on project engineering and configuration

Further information

For information on the following topics, refer to Section 19.3, "Notes on configuration and project engineering":

- Message MAC address does not exist in Configuration Console

- Network bridge

- Deactivated network adapters

22. PN OPC server

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

22.1 Version history

Version	Changes/additionally supported functions
V7.1	- Windows Server 2008 32 Bit and Vista SP1 are not supported. - Quad-core processors are supported.
V7.0	- Windows Vista 32-bit is supported. - Windows 2000 Professional and Server are no longer supported. - OPC Data Access 3.00 (only the Custom interface is supported).

	• Support of general structural and multidimensional field elements.
	• Elimination of the restrictions for numbers of connections by a thread pool.
V6.4	• Windows Server 2003 with SP1 and Windows Server 2003 R2 are supported.
	• Dual-core processors are supported.

22.2 Restrictions

Delayed recovery function following connection abort

Due to the existing connection monitoring, the PN OPC server detects a connection abort. The re-establishment of the connection and the change in the quality from "BAD" to "GOOD" can, however, take up to several minutes.

Deleting all protocols except "Connection-oriented TCP/IP" can speed up the re-establishment of the connection.
Follow the steps outlined below in Windows XP/Windows Server 2003/Windows Server 2008 :

Step	Description
1	Open the "Run" dialog in the Windows Start menu.
2	Enter "dcomcnfg" and confirm with "OK". **Reaction** The "Component Services" dialog box appears.
3	In the left-hand pane of the dialog box, go to "My Computer" in the tree (expand Console Root -> Component Services -> Computers -> My Computer).
4	Right-click on "My Computer" and select "Properties".
5	Select The "Default Protocols" tab in the "My Computer Properties" dialog box.
6	Delete all protocols in the "DCOM Protocols" list box except for "Connection-oriented TCP/IP".
7	Restart your computer.

Use only one subnet per PC station

If there are several subnets (network adapters in the PC station), the PN OPC server cannot uniquely assign the partner IP address to the network adapter. This means that no connection can be established. The use of several network adapters in a PC station on various Ethernet networks is not recommended.

Create the PROFINET CBA components with array variables with zero-based lower array limit

In STEP 7, array variables can be defined in data blocks with a negative, zero-based or positive array limit, for example, MultiArray[-3...3, 0...4, 1...5]. If the PROFINET Interface Editor is used to create a CBA component for iMap from this, the arrays will be mapped to a zero-based indexing. The symbols for individual elements in an OPC symbol file exported from iMap as of V3.1 are therefore named accordingly, for example MultiArrayElement[4,1,0].

To obtain a unique assignment, we therefore recommend that you only create PROFINET CBA components with array variables with a zero based lower array limit, for example MultiArray[0...6, 0...4, 0...4].

22.3 Note

Consistency of symbol files

For PROFINET, you can use the iMAP Workbench to generate symbols for the PROFINET variables and store them in an OPC symbol file. You can also display and modify a symbol file with the Symbol File Configurator. Avoid simultaneous access to the same symbol file.

Tag files with extended variables

Tag files with S7 variables generated with iMAP V1.0 are no longer supported if the iMap V1.1 project has been downloaded to the hardware.

To ensure consistency, symbol files generated with iMap and suitable for the current iMap project should be used.

SIMATIC iMap V2.0 uses shorter symbol names.

In previous iMap symbol files, all item names began with "Project...".

An additional prefix could be defined in the "Configuration Console" so that these items had the following structure: "Prefix.Project...".

As of SIMATIC iMap V2.0, a default prefix, for example, "Project" can be assigned per iMap symbol file. Items now no longer have an explicit preceding "Project".

If the recommended default prefix is used with the "Configuration Console", this means a shorter syntax "Project...".

Another prefix or no prefix can, however, also be used. In this case, the item name is shortened. An OPC client must take modified item names into account.

SIMATIC iMap V2.0 does not support symbol files of the type SSD

As of version 2.0 of SIMATIC iMap, only efficient symbol files of the type STI will be created with the "create OPC symbol file" function. We strongly recommend that you use only the STI symbol files to operate the PN OPC server.

SIMATIC iMap V2.0 SP1 now only exports structure element variables

With version 2.0 of SIMATIC iMap, simple structure variables can also be exported as VT_ARRAY of VT_VARIANT with the "Create OPC Symbol File" function. As of version 2.0 SP1, however, only individual structure element variables will be created in the OPC symbol file in a folder with the symbol name. There is therefore no symbolic variable available for the complete structure. If this variable is required, it must be inserted in the symbol file later with the Symbol File Configurator. To do this, take a structure element variable as a template and remove the element identifier, for example change "struct1" -> "struct" in the runtime name of the variable.

23.   SNMP OPC server

Please make sure that you read the following sections in this document:

Section 25, **"General requirements, notes, and restrictions"**
Section 26, **"Information, restrictions and notes relating to OPC"**
Section 27, **"Notes on license keys"**
Section 28, **"Requirements and restrictions relating to hardware in general"**
Section 30, **"Notes on C programming interfaces"**
Section 31, **"Notes on project engineering, configuration and NCM"**
Section 34, **"Operating systems 32 bit"**
You only need to read the other sections if they relate directly to your product.

23.1 Version history

Version	Changes/additionally supported functions
V7.1	• Windows Server 2008 32 Bit is supported. • Quad-core processors are supported.
V7.0	• Windows Vista 32-bit is supported. • Windows 2000 Professional and Server are no longer supported. • OPC Data Access 3.00 (only the Custom interface is supported).
V6.4	• Dual-core processors are supported. • Windows Server 2003 R2 is supported.

23.2 Licenses

There is a license key for each performance level of the "SNMP OPC server":

• 1 license key for administration of up to 20 IP addresses in the "Basic" version.

• 1 license key for administration of 20 or more IP addresses with the "Extended" version.

The Extended version therefore uses 2 license keys and both must be transferred from the supplied USB key stick.

SNMP OPC server "PowerPack" is an extension package for the basic version and contains the license key for administration of more than 20 IP addresses.

23.3 Restrictions

Memory leaks with communication to Windows 2000 SNMP agents that have not yet started

When monitoring SNMP variables of a PC station when the SNMP agent has not yet started,

under Windows 2000, there are memory leaks in the SNMP OPC server. A hotfix is available from Microsoft for the SNMP service.

Under some circumstances, SNMP variables cannot be modified in less than 2 seconds

Depending on the SNMP device, SNMP variables cannot be modified or read in less than 2 seconds.

Update and cycle times of one millisecond

Update and cycle times of one millisecond cause 100% CPU utilization even with a medium sized configuration and make the computer unusable.

Information variable &ping( ) does not send ICMP ping packets on the network

The information variable &ping( ) uses the Microsoft ICMP ping functions. Under certain circumstances that cannot be defined in detail, this does not send any ICMP ping packets on the network.

23.4 Notes on project engineering and configuration

SNMP profile "Profil_IPC_V11.txt" must not be modified.

The SNMP profile "Profil_IPC_V11.txt" is a predefined profile. This must not be modified.

Below, you will find two notes on the monitoring of SNMP devices:

Note 1 on monitoring SNMP devices

If you want to monitor a network adapter in a PC station as an SNMP device, make sure that you make the following settings:

- The SNMP service must be installed on station.

- The community configuration for the SNMP service must match your plant configuration.

- The UDP port for the SNMP service must be enabled in the firewall configuration.

Note 2 on monitoring SNMP devices

You want to monitor CP 1613 as an SNMP device, make sure that the following settings are made:

- The software of the CD "SIMATIC NET, PC Software" version 6.2 SP1 or higher must be installed on the PC in which the CP 1613 is inserted.

- The "private" or "public" community must be set in the plant configuration if you want to read values.

- The "private" community must be set in the plant configuration if you also want to write values.

23.5 Examples

ActiveX controls and application samples

ActiveX controls and application samples for the SNMP OPC server are available on the Siemens Internet pages as FAQs under entry ID 13051333.

Link German: http://support.automation.siemens.com/WW/view/de/13051333

Link English: http://support.automation.siemens.com/WW/view/en/13051333

24. DX OPC server

24.1 Version history

As of this version - in other words, as of SIMATIC NET, PC Software, Edition 2008 - the DX OPC server is no longer supported.

Version	Changes/additionally supported functions
V7.1	• DX OPC server is no longer supported!
V7.0	• Windows Vista 32-bit is supported. • Windows 2000 Professional and Server are no longer supported. • OPC Data Access 3.00 (only the Custom interface is supported).
V6.4	• Dual-core processors are supported. • Windows Server 2003 R2 is supported.

25.   General requirements, notes, and restrictions

25.1 Restrictions

Installation of the SIMATIC NET CD

If the computer name (My Computer ->System Properties ->Computer Name) contains special characters such as ä, ü, ß or similar, it is not possible to install the SIMATIC NET CD.

When you install the SIMATIC NET software or install an update of it, no SIMATIC NET modules may be in operation.

Functionalities that cause problems

The following functionality is not supported because of potential problems during operation with SIMATIC NET:

- Files installed by SIMATIC NET must not have the "hidden" or "superhidden" status.

- The on-demand installation of the SIMATIC NET software using Windows Server 2003 is not possible.

- It is not possible to assign UNC path names for databases or programs of SIMATIC NET.

- User programs that communicate using SIMATIC NET must not be used as Windows services (background processes) and must not be triggered in the Autostart group to avoid undefined initialization statuses during startup. Instead, use the Autostart function for applications and services in the "Configuration Console".

- Configuration Console: Changing bus profiles (DP, standard, ...) is not permitted. Instead use Set PG/PC Interface.

- Set PG/PC Interface: When you set the bus parameters in the "Standard" and "Universal (DP/FMS)" profiles, the network configuration must be specified explicitly.

Functions that have not been released

The following functions are not released because they have not been tested:

- It is not possible to install on replaceable disks or enlarged hard disks ("DFS").

- Installation in a folder that references other drives (known as "junction points") is not supported.

- The "Disk Quota" property is not supported, in other words, if you have set a maximum value, this could nevertheless be exceeded when you install SIMATIC NET software.

- Industrial Ethernet must not be operated with IPSec.

- Industrial Ethernet must not be used in VPN (**V**irtual **P**rivate **N**etworks).

Server operation with domain controller support is not released

The "SIMATIC NET, PC Software, Edition 2008" CD has not been released for server operation with domain controller support.

25.2 Further notes

Fujitsu-Siemens PC with mainboard D2608

If you are installing the SIMATIC NET CD on a Fujitsu-Siemens PC with mainboard D2608 and BIOS version 6.00 R1.04.2608.A1, you will first need to update the BIOS to version 6.00 R1.11.2608.A1 from Jan. 28, 2009 or a newer version.

Error message while installing over an existing installation

If you install over an existing installation, the following message may be displayed by the service control manager:

"At least one service or driver failed during system startup. Use Event Viewer to examine the event log..."

You can ignore this message. The error is irrelevant because the PC will be started up again and the service will start then.

DCOM error in the Event Viewer

The configuration of a PC station with PCS7/APACS + option V6.0 replaces the DA0350.DLL from version 3.50.3602 with version 3.51.1608.0. As a result, the Event Viewer displays the message "DCOM Error" every two minutes for the SIMATIC NET Configuration Server and SIMATIC NET Configuration Service.

DCOM settings and MSI installation

If you have changed the standard DCOM settings as described in the "Commissioning PC Stations Manual and Quick Start" to allow communication with the DCOM OPC server, you cannot install/uninstall any further MSI-based programs (this also applies to installing or configuring Microsoft IIS and activating the OPC XML DA Web service because the Microsoft Management Console does not accept the authorization). This restriction does not, however, apply when you install a "SIMATIC NET, PC Software" CD or a new service pack.

If you need to do this, you must change the default DCOM settings while you install and configure. Follow the steps below:

1. Note down the settings made on your PC for the parameters "Default Authentication Level" and "Default Impersonation Level" (taskbar **Start -> Run -> "dcomcnfg"** and open **-> Default Properties ->** tab, dialog section **Default Distributed COM Communication Properties**).

2. Set the parameters as follows:

Parameters	Setting
Default Authentication Level	Connect
Default Impersonation Level	Identify

It is now possible to install/uninstall a further MSI-based program. SIMATIC NET applications that communicate using the DCOM server, are, however, no longer fully functional.

3. Set the original settings for the "Default Authentication Level" and "Default Impersonation Level" again.

Trace paths

Storage space for trace paths must be set up for all users with write permissions.

Insert Microsoft Office CD

Although you have changed nothing in the Microsoft Office programs, you will be prompted to insert the Microsoft Office CD. Follow the instructions and start an Office program such as Word or Excel. More detailed information is available from Microsoft at:
http://support.microsoft.com/default.aspx?scid=kb;en-us;298385

Use of virus scanners

Please note the following information on using virus scanners:

- Script blockers and worm protection must be configured so that the user is prompted for confirmation (no automatic blocking).

- When using the FMS protocol, there must be no virus scanner active.

- Norton Antivirus
  Norton's own firewall was not tested..
  The worm protection warning relating to "CCAgentService" must be acknowledged with "Allow".

Use in Vista: The DCOM settings must NOT be customized (if necessary reset) otherwise the setup of Norton Anti Virus fails without a warning to this effect.

- McAfee
  The script blocker message relating to "MsiExec.exe" during the installation of the "SIMATIC NET PC Software" CD must be acknowledged with "Allow" within 20 minutes, otherwise the installation is aborted.

New installation paths for configuration and program data as of the "SIMATIC NET, PC-Software, Edition 2007" CD

To support the Windows Vista 32-bit operating system as of Edition 2007, new installation paths for modifiable configuration and program data as recommended by Microsoft:

- Program data (trace and log data) for all users

  - Path in the file system in Windows Vista:
    <drive:>\Users\Public\Documents\Siemens\SIMATIC.NET
  - Path in the file system in Windows XP: <drive>\Documents and Settings\All Users\Documents\Siemens\SIMATIC.NET
  - Language-dependent display (link) in the Explorer in Windows Vista: User -> Public -> Public Documents -> Siemens -> SIMATIC.NET
- Configuration data, for example for the OPC protocol server

  - Path in the file system In Windows Vista (hidden path in the file system):
    <drive:>\ProgramData\Siemens\SIMATIC.NET.
  - Path in the file system in Windows XP:<drive:>\Documents and Settings\All Users\Application Data\Siemens\SIMATIC.NET\opc2\binS7

The subfolder "opc2\bins7", for example, contains the OPC S7 Alarms and Events message text file "scores7.msg".

Removing modules in the Device Manager and installation

When you remove a module from the PC, the operating system usually asks you whether or not you also want to remove the driver. If you answer this question with "Yes", the driver must then be reinstalled if you want to use this module again. All drivers can be reinstalled from the SIMATIC NET CD; Ethernet drivers can also be installed from the driver disk.

Delays in TCP communication with multiple network adapters on different networks

When using more than one network adapter with various TCP/IP configurations, delays of up to several seconds are possible in TCP/IP communication.

If, for example, a standard gateway is configured on a second network adapter, the re-establishment of a TCP/IP SNMP connection over the first network adapter can take many seconds if the connection establishment is first attempted over the second adapter.

Remedy: Enter the required IP addresses in the local static ARP table.

Installation error when overinstalling SIMATIC software

If you are overinstalling, the message "s7oiehsx.exe – Error in application" is output in rare cases. You can ignore the error message and continue the installation.

Adopting security settings for other firewall manually

If you use a firewall from another vendor instead of the firewall from Microsoft, the security settings from the "Configuration Console" are not adopted. In this case, the settings must be made by the user as described in the online help for this topic. When blocking communication, the procedure is the same.

Error message when overinstalling

In rare cases, the system error message "CCEServer no longer functioning" may be displayed when updating the "SIMATIC NET, PC Software, Edition 2007" CD to the "SIMATIC NET, PC Software, Edition 2008" CD. The reason for this error message does not, however, have any effect on the execution of the setup program and does not restrict the installation of the "SIMATIC NET, PC Software, Edition 2008" CD. Ignore and close any such message.

26. Information, restrictions and notes relating to OPC

26.1 OPC as standard interface

The SIMATIC NET software products have access via OPC as the default interface. The user therefore has standardized access options for all protocols of these products.

26.2 Restriction with OPC

OPC UA functionality after changing the computer name has not been released

If the computer name is changed after installing the CD, the certificates installed for OPC UA are invalid and OPC UA is therefore no longer functional.

Remedy: Reinstall the SIMATIC NET CD Edition 2008 + SP2 to create valid certificates again.

OPC UA: discovery of computer names, no distinction made between upper and lower case

When finding computer names (OPC UA Discovery), the names must differ by more than just upper and lower case characters.

OPC UA user authentication has not been released

The use of OPC UA user authentication has not been released in contrast to the information in the manual "Industrial Communication with PG/PC Volume 2 - Interfaces", Section 4.4.1.2 "Authentication".

OPC Scout: use with up to 500 items only

The OPC Scout has only been released for use with up to 500 items. If this number of items is exceeded, you may experience unusual delays, inoperability and exceptions.

OPC Scout V10: No support of OPC UA methods

The OPC Scout V10 does not support calls of OPC UA methods.

OPC Automation interface is not released for multi-thread user programs

The OPC Automation interface cannot ensure data consistency if there is simultaneous access by several threads. There is also a possibility of illegal memory access. The use of the OPC Automation interface in multi-thread user programs is therefore not released.

Automation Interface for Alarms and Events not yet available

The Automation Interface for Alarms and Events described in the documentation supplied with the "SIMATIC NET, PC Software" CD is not yet available in this version of the "SIMATIC NET, PC Software" CD.

100 % CPU utilization with OPC Alarms and Events leads to memory leaks

At 100 % CPU utilization of the OPC Alarms and Events server, no memory can be released. Avoid this high utilization.

OPC XML Web service: PROFINET byte array returns "E_BADTYPE"

When accessing OPC XML items of the PROFINET byte array data type "VT_ARRAY|VT_UI1", the error "E_BADTYPE" is returned for the "GetProperties" or "Browse" call.

Detectable data types when converting from symbol files of the type SSD

When you convert a symbol file of the type SSD to the type STI in the Symbol File Configurator, only the data types of symbols of imported STEP 7 projects and free symbols with protocol ID S7 can be detected.

If there is high CPU utilization, OPC DP hardware events slave IO data change messages arrive more slowly

If there is a high CPU utilization (approaching 100%), data change messages may be reported over the DP OPC server to the OPC client with a delay. This also applies when "Hardware Events of Slave IO Data" was configured.

If you use a single thread C user program that uses the DP-Base interface instead of OPC, this delay does not occur.

Polling time restriction in DP slave operation of the CP 5614/CP 5614 FO/CP 5614 A2

If you use consecutive calls for synchronous reading from the device or synchronous writing to device over OPC with DP-V1 protocols, make sure that this does not occur faster than the standard polling time.

Restrictions to the CP 5613 as DP slave

A CP 5603 / CP 5613 A2 / CP 5623 communications processor as DP slave can only communicate with one (1) DP master using the DPC2 protocol (1) DP master. DPC2 data record jobs from other class 2 masters are rejected with a communications error. Reading I/O data and slave diagnostics are possible without any restrictions.

Which DP mode for the CP 5613/CP 5614 as DP slave?

A CP 5603 / CP 5613 A2 / CP 5623 / CP 5614 / CP 5614 FO / CP 5614 A2 / CP 5624 communications processor as a DP slave can only be operated as a DP-V0 slave via OPC.

Restricted operation of a SOFTNET DP master class 2, for example CP 5611, with an active hardnet DP master, for example CP 5613 A2

Browsing the OPC address space of the slaves of a Softnet DP master class 2 and the use of its OPC items is not possible while a Hardnet DP master class 1 is monitoring these DP slaves over OPC. The slaves then no longer appear in the address space, OPC items belonging to them cannot be used.

Writing output items when the DP master is not in the OPERATE mode

Please note that written output items can only be sent to the DP slave when the DP master is in the OPERATE mode. In another DP master statuses, although the operation is acknowledged with S_OK, the items are not sent to the DP slave.

Downloading the configuration of a PC station

Close the Symbol File Configurator during download of the project engineering PC station.

PROFINET IO OPC server: browsing for DP slaves downstream from the IE/PB Link PN IO

If an IE/PB Link PN IO is used as a proxy IO device, the actual names of the slaves on PROFIBUS cannot be displayed. "IE-PB-Link" is displayed as the name plus a device ID.

Symbol File Configurator: User interface inoperable during time-intensive activities

During activities such as CSV import, CSV export and saving files with an extensive content, there may be long waiting times. The user interface is not updated during this time. This makes parallel operation impossible. Please wait until complete.

S7 connections with OPC over Industrial Ethernet

If a PC is used both as client and server for S7 services, for example S7 variable server, the connection property

"Maximum number of parallel network jobs" must be set to 1 in STEP 7. You will find this parameter in the "Properties S7 Connections" dialog.

Otherwise the parameter can be set to 2.

S7 Server services with OPC server V6.3 configuration released

The S7 server services have been released only with OPC server V6.3 configurations of the PC station.

Do not use OPC Alarms & Events from the S7-200 station

S7-200 stations do not support OPC Alarms & Events. Do not configure any S7 connections to an S7-200 or S7-300 station over the OPC server in STEP 7 or NCM PC/NetPro with activated alarms. Otherwise connections may abort.

Absence of DP slave data in the OPC Scout with DP master class 2

The absence of DP slaves in the display in the master class 2 part of the OPC Scout (DP master class 2) indicates that the TTR time set in the configuration is too short.

The TTR time should be increased in the configuration (user-defined parameters).

Supported data types with deadband functionality

The SIMATIC NET OPC server supports deadband functionality with the following data types:
Analog data (EUType =1) and canonical types VT_I1,VT_I2, VT_I4, VT_R4, VT_R8, VT_UI1, VT_UI2, VT_UI4.

OPC Scout: Error message after multiple interruptions to the remote OPC server

After hours of line interruptions between the OPC Scout and remote OPC server, the error message "Local ident. generates error 0" can occur. The OPC Scout as a sample OPC client is not designed for permanent operation with possible line interruptions. Restart the OPC Scout.

Incorrect status display of the security settings in the "Configuration Console" program following a language switchover

Following a language switchover in the "Configuration Console", and incorrect status is displayed for the security settings when using Windows XP SP2.

If the security setting for OPC was enabled, following the language switchover, there is a message indicating that this must be enabled again. In fact, only the display is incorrect, the enable remains active.

If you click on the "Enable" button again, the status is correctly displayed.

Symbols in the root directory of the symbol file with V6.2.1

A symbol file created with "SIMATIC NET, PC Software" CD V6.2.1 with symbols in the root directory of the symbol file cannot be opened with the Symbol File Configurator version V6.3. It is also not possible to browse the name space with OPC.
Workabout: CSV export of the symbols in V6.2.1 then CSV import as of V6.3.

No PN IO communication over OPC

Sporadically, it is possible that no PN IO communication can be established over OPC after starting up the PC. If this occurs, close down the OPC server in the "Configuration Console" using "Applications" ->

"OPC Settings" -> "Exit OPC Server".
Then restart your OPC application.

Reading/writing data records over OPC with a CP 5614/CP 5614 A2 DP slave

Reading/writing data records over OPC is not supported with the
CP 5614/CP 5614 A2/CP 5603/CP 5613 A2/CP 5623 DP slave.

Replacing a CP 5614 with a CP 5614 A2

If OPC is used as the interface in a DP slave, when you replace a CP 5614 communications processor with a CP 5614 A2 communications processor or vice versa, note the following:

- Before uninstalling the CP, operation with OPC must be deactivated in the DP slave settings in the "Configuration Console" (uncheck "Use DP slave module with OPC" and confirm with "Apply")

- After installing a new CP, the settings must be made again in the "Configuration Console". For more detailed information, refer to the "Commissioning PC Stations" manual.

This also applies if you replace a CP 5614/CP 5614 A2 communications processor with a CP 5624 communications processor.

DP-V1 slave diagnostic interrupts are not acknowledged over the DP OPC server

Configured diagnostic interrupts are not explicitly acknowledged by DP-V1 slaves over the DP OPC server. Use the DP Base interface for this.

PROFINET IO OPC server: Changes OFFLINE <-> OPERATE are permitted

Contrary to the description in the "Industrial Communication with PG/PC Volume 2 - Interfaces" manual Section 2.9.7, mode changes to any mode are possible with the "&mode()" OPC or "&modeval()" item, so that, for example, a direct change from OFFLINE to OPERATE is possible and vice versa.

The OFFLINE mode can be set, for example, to stop the IO controller. Only during startup (when the first client connects to the OPC server), contrary to the description, there is no automatic change to CLEAR mode but to OPERATE mode if "Set PNIO controller automatically to OPERATE" was configured with NCM.

Release of the SIMATIC NET OPC data OCX

The OPC data OCX is released for the following operating systems and compilers:

- Under Windows Server 2003, Windows Vista

Visual Studio 2003 and 2005, C# and VB.NET

- Under Windows XP

  - Visual Basic for Applications VBA Excel 2003

  - Visual Basic V6.0 SP5 or SP6

No graphic linking of operator control elements in Visual Studio .NET with the SIMATIC NET OPC data OCX

The graphic linking of operator control elements such as text boxes with OPC communication variables in the properties dialog of the SIMATIC NET OPC data OCX component is not possible with Visual Studio .NET. Operator control elements must be linked directly in the program code.

No browsing of OPC servers or OPC items in Visual Studio 2005 in Windows Vista with the SIMATIC NET OPC Data OCX

If Visual Studio 2005 is started in Windows Vista without full administrator privileges, it is not possible to browse for OPC servers or OPC items in the properties dialog of the SIMATIC NET OPC Data OCX component.

You can only use the "Browse..." button in the "OPC Server" tab and the "Link..." button in the "Variables" tab of the properties dialog when Visual Studio 2005 was started in Windows Vista with administrator privileges.

Restricted data types in SIMATIC NET OPC data OCX in Visual Basic

The SIMATIC NET OPC data OCX in Visual Basic does not support the following data types of OPC items and VT_ARRAY arrays of this data type:

Data types: VT_I1 (CHAR), VT_UI2 (WORD), VT_UI4 (DWORD)

Instead, use the existing the automation data types, for example:
BYTE instead of CHAR, INT instead of WORD and LONG instead of DWORD.

SEND/RECEIVE ISO connections and data packages of the "Expedited Data" type

If data packets of the "Expedited Data" type are transferred on a SEND/RECEIVE ISO connection, the receiving application at the PC must make sure that this data is actually accepted. Otherwise, the buffering of these data packets can lead to a lack of memory that can eventually cause the connection to be terminated.

This means that if you use a SEND/RECEIVE ISO connection with your OPC user program, a receive item must be activated on this connection.

Connection establishment when necessary

OPC function communication is established only when required and, as a result, connection establishment can take longer and OPC may signal errors in the startup phase.

OPC symbols: "\" in the folder name has not been released

The "\" character (backslash) is not released for use in folder names in OPC symbols.

OPC XML-DA: Product-specific error messages without error text

With product-specific error messages, no error text is returned with OPC XML-DA but rather the error number. Refer to the manual "Industrial Communication with PG/PC Volume 2" for the error text.

Waiting for the OPC server to finish

When you close an OPC application, it may take the underlying OPC server several seconds and even up to several minutes to finish. Do not start any new OPC applications during this time and wait until the OPC server has finished. You can monitor the status of the DA OPC server "OPC.SimaticNet" in the "Configuration Console" program, in "Exit OPC server".

OPC SEND/RECEIVE: Connection establishment timeout must be higher than 2000 ms

The "connection establishment timeout" parameter of the OPC server in STEP 7/NetPro, OPC property for ISO, ISO-on-TCP and TCP connections must be higher than 2000 ms.

OPC-S7 server can terminate itself when memory is exhausted

If there is no more free memory on the PC, the OPC-S7 server can terminate itself.

Memory requirements of the OPC server

When using configurations approaching the configuration limits, make sure that the OPC server has adequate free memory for managing data.

OPC SEND/RECEIVE: Optimization of FETCH/WRITE direct access variable services cannot be disabled

The configurable optimization of direct variable services for ISO, ISO-on-TCP and TCP connections of the type FETCH or WRITE cannot be permanently disabled.

OPC Data Access 3.0: MaxAge functionality has not been released

The OPC Data Access 3.0: MaxAge functionality has not been released If this functionality is used, data is always read from the IO device. This makes reading from the cache impossible.

Avoid further OPC access to IO devices in OPC callbacks

We strongly recommend that you avoid further OPC access to remote data in OPC callbacks. You should also avoid further function calls with longer execution times to prevent delaying other callbacks.

The simultaneous receipt of multiple language OPC Alarm and Event message texts is not possible

It is not possible to receive multiple language OPC Alarm and Event message texts simultaneously; Example: A German OPC Alarm and Event client (LocaleID = 1031) logs on for alarms at the OPC Alarms and Events server. The expected German alarms are received with German message texts. If a second English client (LocaleID = 1033) logs on, the first client only receives English message texts from this point on.

Use a local copy of the OPC RCWs for .NET-OPC-RCW programs

For .NET-OPC-RCW programs, a local copy of the OPC RCWs used must be copied to the folder of the application. This setting (local copy) for the OPC RCW references can also be made in the MS Visual Studio project of the OPC application.

Restricted language selection for OPC Alarms and Events servers

The default language is used with the OPC Alarms and Event servers in the following situations:

- The "SetLocaleID" function is not called.

- The "SetLocaleID" function is called with parameter 0.

The following restrictions apply:

- The factory set language is German regardless of the operating system.

- Default error texts are nevertheless output in English, even if the LocaleID is set to 1031 for German.

- If the SetLocaleID function is called with parameter 0, the message texts will be requested in the default language. The default language can, however, also be configured as English (see syntax of the" scores7.msg" message text file).

Loss of alarm messages when changing languages

If an OPC Alarms and Events application changes languages during operation, incoming alarm messages can be lost in another OPC Alarms and Events application running at the same time.

Symbol File Configurator: Following CSV import, new symbol entries are not displayed

New symbol entries are not displayed following a CSV import. The imported values are only visible after closing and reopening the symbol file.

OPC XML DA: Period (.) in path names of the trace file for OPC XML

The path name of the trace file for OPC XML must not include a period (.).

The extension of the file name, for example "SOPCWeb.log", may contain a period (.).

OPC DA: Time stamp 1.1.1601 for "OnDataChange" with BAD quality

With data change messages ("OnDataChange") with the quality OPC_QUALITY_BAD, a time stamp 1.1.1601 can be reported although a message with quality OPC_QUALITY_WAITING_FOR_INITIAL_DATA with an up-to-date current time stamp was returned earlier.

It was not possible to shut down all OPC servers

The command to shut down the OPC servers can be sent with the "Configuration Console".

Please note the following situations:

• In some situations, the entire communication is not terminated and lower-level processes continue to run.

• The fact that it was not possible to shut down all OPC servers is shown in the "Configuration Console". To shut down the entire communication, the system must be restarted.

OPC S7 symbol field elements are not displayed in OPC UA browsing

OPC S7 symbol field elements are not displayed in OPC UA browsing
To ensure compatibility, OPC S7 symbol field elements are still displayed in OPC DA browsing

OPC Scout V10: Only one OPC server per view tested and passed

Only one OPC server per DA and AE view has been passed during testing. Use multiple views for multiple OPC servers and, where necessary, adapt the update times for server and view specifically.

OPC Scout V10: While browsing the name space of an OPC DA server, if it shuts down, this is not displayed

While browsing the name space of an OPC DA server, if it shuts down, this is not displayed. In the workbook, the shutting down of an OPC DA server (if there is a IShutdown interface) is indicated by a special server icon.

OPC XML-DA: Configuration change during runtime without error message

It is possible that when the OPC XML DA Web service is running in communication mode, a change in the configuration, in other words download or XDB import of the PC station, is made without an error message being displayed. Afterwards, however, error-free XML-DA mode can no longer be guaranteed.

Before making any configuration changes, you should exit the Internet Information server Web service and restart it again after the changes.

OPC Scout V10: Error states of an OPC XML DA server in the DA view

In the DA view of the OPC Scout V10, some error states of an OPC XML DA server are not detected and dealt with. Among other things, the loss of the connection to an XML-DA server is not detected nor whether it has stopped or been restarted.

DA OPC Server: The RemoveItems() call is slow in the active group

The RemoveItems() call from the DA OPC server is slow within an active OPC group. Disable the group first or remove the group completely.

DA OPC Server: Individual RemoveItems() calls are not recommended in the active group

Individual RemoveItems( ) calls by the DA OPC server within an active OPC group are not recommended. If you want to achieve higher performance with a large number of items, disable the group first.

OPC Alarms and Events Server: Filters with wildcards at top area level impede alarms

If you use wildcards („*" or „?") at the highest level, no alarms are sent to the client.

Symbol editor

If the high-speed PNIO OPC server (inproc) is configured, it is not possible to browse the PNIO name space in the "Add New Symbol" dialog of the symbol editor.

If you want to use this function, the normal PNIO OPC server (outproc) must be configured, for example by selecting several additional protocols.

OPC UA method calls

The OPC UA method calls for the following S7 block services described in "Industrial Communication with PG/PC Volume 2 - Interfaces" are not released:

- blockread( )

- blockwrite( )

- blocklinkin( )

- blockcompress( )

- blockdelete( )

- password()

OPC Scout V10: Long wait times with slow response by the OPC server

With slow responses by the OPC server, for example, when browsing a name space with tens of thousands of items per level or with multiple reads of value attributes that have no connection to the device, you will have to expect correspondingly long wait times on the operator interface. During this time, no input to the Scout V10 is possible, monitored items are not updated.

OPC Scout V10: Browsing the address space of an OPC server

When browsing the address space of an OPC server, up to 500 items per level are supported.

Browsing is synchronous. If the number of items is exceeded at a level, this can cause noticeable delays that impact the updating of the display of already displayed items.

S7 UA OPC server: No deadbands

Deadbands are not supported in the version of the S7 UA OPC server.

UA S7 OPC server does not support access to multidimensional arrays

Do not access multidimensional arrays, because the UA S7 OPC server does not support interpretation of this data.

UA S7 OPC server incorrectly allows lower update times than the configured cycle time

With the UA S7 OPC server, if the requested update time of a subscription, for example with OPC Scout V10, is lower than the cycle time of the S7 OPC server configured in STEP 7/HW Config, the lower update time is nevertheless confirmed.

Non-existent but configured symbol file prevents connection to the OPC server

A non-existent symbol file that is entered in the configuration prevents the connection being established to the OPC server. Connection establishment is rejected with an error message.

UA OPC library (uastack.dll) without refresh function of the encryption on the client

The supplied UA OPC library (uastack.dll) does not have a refresh function when encryption is activated. This function does exist on the server.
If you require this function on the client, download a newer version of the uastack.dll from the OPC Foundation.

OPC XML DA, call "SubscriptionPolledRefresh", parameter "HoldTime": Delays before reaching the "HoldTime"

During the wait period before reaching the "HoldTime", the execution of any other jobs can be delayed.

Before the next SubscriptionPolledRefresh call with a new "HoldTime", you will need to wait for at least the intended wait time once again after reaching "HoldTime".

OPC Scout V10: Aborted connection to UA OPC server and remedy

After a connection abort, the OPC Scout V10 does not re-establish the connection to a UA OPC server automatically. If you re-open the same project, the connection is established again.

Communications problems during parallel operation of UA S7 OPC and COM DA S7 OPC with a large configuration

During testing with 10 UA OPC clients with a total of 100 000 UA S7 items and 1 COM DA OPC client also with 100 000 DA S7 items, communications problems occurred when writing, reading and monitoring the local and remote data block variable values and expected values were not obtained.

Ending communication in interruption tests between a UA S7 OPC server and a local and remote UA S7 OPC client

The test consists of a local UA S7 OPC client and UA S7 OPC server as well as a remote UA S7 OPC client. The Ethernet connection between the remote UA S7 OPC client and UA S7 OPC server is interrupted cyclically. Local and remote S7 data block variables are written, read and monitored on the UA S7 clients. During this test, communications problems, connection interruptions and ending of the S7 and OPC communication occurred.

OPC XML-DA, no error message when there are multiple write jobs in which the first item is correct but subsequent ones are incorrect

XML-DA write jobs that contain a correct first item along with other incorrect items are responded to as not being incorrect.

OPC Alarms & Events: Event messages for non-existent alarms

If the Notify (SFB36) or Alarm (SFB33) alarms are pending when the connection from the OPC server to the PLC is established, alarms for signals 2 to 8 are generated and require acknowledgment, although these do not exist on the PLC.

OPC Alarms & Events: OPC Alarms & Events server crashes after an uncoordinated client is shut down

If a client of the OPC Alarms & Events server shuts down uncoordinated and does not release all interfaces of the Alarms & Events server, the next time a client connects, this can cause the OPC Alarms & Events server to crash. In this situation, the OPC Alarms & Events server (opcalarmserver.exe) must be closed down using the task manager of the operating system before starting a client.

OPC Alarms & Events: Delayed availability of selectable event attributes

With the first event messages after activating a subscription, there are occasionally situations in which only the default attributes are available. Other requested attributes are only provided by the OPC Alarms & Events server with subsequent event messages.

OPC Alarms & Events: No support for Notify_8P

The current version of the OPC Alarms & Events server does not support alarm messages of the type Notify_8P (SFB31). The alarms are not reported.

26.3 Note

Incorrect help page in the "Microsoft Management Console" in Windows XP and Windows Server 2003

If you select a help page in "Microsoft Management Console" in the German online help for the "Configuration Console", the page is not displayed. The problem is in the general help file of the Management Console of Microsoft.

Hidden message window of the Management Console

When you close the Management Console, and have not saved all the changes, a message window sometimes appears with the prompt "Do you want to apply the new settings?" after you have closed the main window. The text in the title bar of the message window indicates the dialog in which you have not saved the last changes.

Assigning permissions for using symbol files with the OPC XML-DA Web service

The OPC XML-DA Web service uses other services to work with symbols. These services require adequate rights for access to the folders in which the STI or SSD symbol files are stored and for the files themselves.

Please make sure that the following users have "full access" to these files and folders:

Operating system	User in a German operating system	User in an English operating system
Windows XP	User "ASPNET" and "NETZWERKDIENST"	User "ASPNET" and "NETWORK SERVICE"
Windows Server 2003	User "NETZWERKDIENST"	User "NETWORK SERVICE"
Windows Vista	User "NETZWERKDIENST" and the user "IUSR_<computername>"	User "NETWORK SERVICE" and the user "IUSR_<computername>"
Windows Server2008	User "NETZWERKDIENST"	User "NETWORK SERVICE"

Assigning permissions for creating trace files of the OPC XML-DA Web service

The OPC XML-DA Web service uses the following additional services to create trace files:

- under Windows XP, the ASP.NET services

- under Windows Server 2003 and Server 2008, the network services

Please assign read and write permissions to these services for the folders in which the trace files will be stored.

Automatic resetting of the OPC XML-DA Web service

The Internet Information server can be configured so that it is automatically reset when certain events occur.

In Windows Server 2003 and Server 2008, the default for automatic resetting is after 29 hours operating time. Note the following:

- This setting can lead to response delays.

- Following each reset, active subscriptions are lost and must be sent again.

Error "0xC00481FF - E_SERVER_DOWN" when browsing

When browsing symbols using the OPC XML-DA interface, the error "0xC00481FF - E_SERVER_DOWN" occurs sporadically; please repeat your browsing.

Values when browsing without adequate privileges

When browsing a symbol file without the required permissions and with default prefix, the value "E_FAIL" is returned and without prefix, the value "S_FALSE".

OPC XML-DA server requires enabling of remote basic and OPC communication

If you want to use the OPC XML-DA server, you will need to click the Allow "remote basic communication and OPC communication" button in the "Configuration Console" program in "SIMATIC NET Configuration -> Applications -> OPC Settings -> Security".

Expanded OPC XML-DA Web service trace without adequate rights

Generally, the Web service writes its traces in two circulating files whose path can be specified with the "Configuration Console". If these files cannot be created or written to due to an error, for example inadequate access rights, a context trace entry is generated. This is only possible if the following entry is made in the configuration file "<installationpath>\simatic.net\opc2\binxml\web.config":

```
<trace

  enabled="true"
```

```
requestLimit="10"

pageOutput="false"

traceMode="SortByTime"

localOnly="false"

/>
```

With the instruction >`enabled="true"`<, the trace is always enabled.

With >`pageOutput="true"`<, the trace can also be displayed automatically on the first page of the Web service in Debug mode.

The context trace is an online trace provided by the Web service as long as it is running. It can be displayed with any browser, for example the Internet Explorer.

To achieve this, "Trace.axd" instead of the start page "SOPCWeb.asmx" is simply appended to the corresponding virtual directory, for example http://localhost/OPC.Simatic.NET/ Trace.axd.

OPC XML Web service "RequestOptions.ItemPath"

If parameter "RequestOptions.ItemPath" is set to "true" or "false", the ItemPath in the path is returned and not zero.

The "SIMATIC NET Core Server" services are logged in the Event Viewer

Starting or exiting the "SIMATIC NET Core Server" OPC protocol services is logged as information in the Event Viewer of the operating system under System. This is a system property. Remember that the Event Viewer can only hold a limited number of entries.

PROFINET IO OPC server: Cycle time must not be the same as the protocol call rate

The configured cycle time of the PROFINET IO OPC server is not automatically the interval at which the underlying PROFINET IO protocol interface calls are made. Depending on the required update rate of an OPC client, the call rate can also be slower.

OPC Scout: Items with time-of-day values are displayed with only second accuracy

In the OPC Scout, items with time-of-day values are displayed with only second accuracy or rounded. Only the time stamp of the items is specified exactly with millisecond accuracy.

Improved performance with group calls when reading and writing

If you use group calls instead of individual calls one after the other when reading and writing OPC items, it is possible to improve throughput considerably since the OPC server can often achieve an internal optimization. Conversely, loss of performance can be expected if you use lots of individual jobs at short intervals.

Configuration Console: Check box "Use as target for S7 symbol download" not activated

If the "Use as target for S7 symbol download" check box is deactivated, the downloading of symbols from STEP 7 will be rejected. If you have configured S7 symbols, activate this check box.

Configuration Console: OPC protocol selection with symbols

As of SIMATIC NET V6.3, OPC symbols can be used without protocols activated in the OPC Protocol Selection. One use case is to use symbols to provide a restricted address space with restricted access permissions. The symbols can also be used with more than one selected protocol regardless of the type. The selected protocol (or protocols) is/are then displayed in the name space. If only one protocol is selected, the activate configuration is more efficient; only the selected protocol can be used in the symbols as previously.

OPC Scout signals "Run-time error '481', Invalid picture"

If the space for temporary files is exhausted, the OPC Scout cannot be started and signals "Run-time error '481,: Invalid picture". In this situation, delete any files you no longer require to create space on the data medium.

Incompatibility of symbolic item names in project files (*.opp) of the OPC Scout

Project files (*.opp) of the OPC Scout created with a version earlier than version 6.1 and containing symbolic item names cannot continue to be used in the current version. The symbolic item names were entered in the project file with a slash (/) as delimiter. The current version of the SIMATIC NET PC software, however, expects a period (.) as delimiter and therefore rejects the old entries as invalid.

Remedy: After replacing the slashes with periods in the names of the symbolic items, the project file can also be used in the current version of the OPC Scout.

Differing access permissions with the OPC methods "ValidateItem" and "GetProperties"

If different access permissions are specified for symbolic items in the Symbol File Configurator from close that actually exist, the actual permissions are returned when the access permissions are queried using the "ValidateItem" OPC method. The "GetProperties" method returns the permissions assigned in the symbol file.

Updating RCWs in .NET applications

With new versions of the "SIMATIC NET, PC-Software" CD, new versions of the custom interface for .NET (Runtime Callable Wrapper (RCW), OpcRcw.Da, OpcRcw.Comn) are supplied by the OPC Foundation.

Please note: If you have not used a local copy of the previous .NET-RCWs in your application, you must recompile your program.

OPC.SimaticNetAlarms: Alarm block message severity with default priority for alarm messages

With the "OPC.SimaticNetAlarms" OPC alarm and events server, S7 alarms can be received with a message severity. These messages can be configured in STEP 7/NetPro in Properties S7 Connection of the OPC server. Note the following:

The programmable alarm message severity of an ALARM, ALARM_8P or NOTIFY block in the S7 program overrides the configurable default priority for alarm messages.

The configured alarm priorities for certain alarm numbers also overrides the general default priority for alarm message is and programmed message severity. ALARM_S and ALARM_SQ do not have a severity so that the configured message severity is always used.

OPC security settings when changing domains

In the "Configuration Console", the OPC security settings for the Windows Firewall and DCOM can be enabled. Note that the settings for the Windows Firewall and DCOM configuration depend on the Windows logon. If, for example, you subsequently enter the PC in a Windows domain, the OPC security settings for the Windows Firewall and DCOM must be enabled again in the "Configuration Console".

Additional messages after reestablishing the connection of the S7-OPC alarm and events server

If there is an ALARM or NOTIFY alarm in the message memory when the connection is established to the S7 OPC alarm and events servers on the S7 partner device, then not only the messages for the existing alarm signals ALARM, for the signal 1, and NOTIFY, for the signal 1, are triggered but also for the non-existent signals 2 through 8. Either take these possible additional messages into account or use ALARM_Q, ALARM_SQ or ALARM_8P, NOTIFY_8P with signals 2 through 8 set to zero.

New SEND/RECEIVE receive data item with OnDataChange callback even without a data change

New SEND/RECEIVE item:

"SR:[<connectionname>]receivedata{,subarea_address}{Itemattribute}"

Functionally, the item corresponds to the previous receive item with the following difference: When an item of this type is active, new data is signaled even if the content has not changed. This makes it possible for a client to receive both changed and unchanged data buffers sent by the partner. This is, however, not OPC-compliant. The OnDataChange callback is also no faster than the negotiated update rate. You should therefore always set update rates faster than the send rate of the SEND/RECEIVE data.

New DP SlaveXXRestart item for restarting DP slaves

New DP item:

"DP:[<devicename>]SlaveXXSlvRestart"; data type: VT_BOOL, write access only.

Slaves can be restarted with this new DP item; in other words, deactivated and reactivated with one item. The two function calls are made at an interval corresponding to the configured cycle time; possible values:

- Write "True":   restart slave XX.

- Write "False":   no function (return value: value range error).

No CSV import of EUHi and EULo values in exponential representation

Values in exponential representation for the relative deadband high and low limits "EUHi" and "EULo" cannot be adopted in the Symbol File Configurator with a CSV import. Do not use and high numbers in exponential representation. The only important value for the OPC deadband function, in any case, is the difference between the EUHi and EULo.

OPC XML-DA: Slower performance with a large name space

Function calls over OPC XML-DA do not depend on previous calls. Prior results are not buffered. This means that the entire name space must be searched again for every call, individual calls are therefore slowed down depending on the size of the name space. For cyclic reading, we therefore recommend the use of subscriptions so that the name space does not need to be searched for every query.

Extended range of values for quality

The range of values for the quality of an item has been extended. In particular for data that has not yet initialized, the quality OPC_QUALITY_WAITING_FOR_INITIAL_DATA (0x20) can be returned when reading. Please remember this when creating OPC applications.

Prior to evaluation, mask the returned value for the quality with OPC_QUALITY_MASK (0xc0) if you are only interested in the following quality values:

- OPC_QUALITY_GOOD (0xc0)

- OPC_QUALITY_UNCERTAIN (0x40)

- OPC_QUALITY_BAD (0x00)

Extended project engineering with OPC server V6.4

The OPC server V6.4 has been extended by the following functions:

- The EU values for symbols set by STEP 7/NCM PC are supported when the symbols are downloaded.

- If the "Maintain connection permanently" option was selected in STEP 7/NCM PC, an immediate response is possible when interrupted connections are detected (see option "Immediate response when interrupted connection is detected"):

  - On S7 connections
  - On SEND/RECEIVE connections with the FETCH or WRITE jobs.

Improved value range checks when writing OPC items

The value range check when writing OPC items has been improved.
Values outside the valid range are rejected with an error message.
Example: Writing -127 to an unsigned byte item (range of values 0 through 255) is not possible.

OPC XML-DA: .NET Framework 1.1 clients should use localized times

.NET Framework 1.1 clients should use localized times.
The OPC XML-DA server then converts these to UTC time. Only as of .NET Framework 2.0, is it possible to distinguish system DateTime variables between local and UTC time representation using the "Kind" property.
If possible, use .NET Framework 2.0.
.NET Framework 1.1 clients should transfer local times; the UTC time can be obtained from the reply time of the "GetStatus Response" function. This is calculated as UTC time in the OPC XML-DA server.

New error codes if "Immediate response when interrupted connection is detected" is configured

For the S7 protocol, the additional error codes 0x85270206L and 0x05270206L have been introduced with the meaning "no connection to the S7 communication partner, immediate error return configured".

For the SEND/RECEIVE protocol, the additional error codes 0x85270301L and 0x05270301L have been introduced with the meaning "No connection to the SR communication partner, immediate error return configured".

OPC XML-DA server: Correction for variables of the "dateTime" type

If an OPC client writes variables of the type "dateTime", the OPC XML-DA server converts the values of the variable to UTC time and forwards them in this form.

When they are read, the variables are interpreted as UTC time by the OPC XML-DA server, converted to local time and forwarded.

If you want to correct the values of the variables on the OPC client, the following conversion can be made. This is suitable for C# or VB.NET.

"dt" is the value of a variable of the type "dateTime".

- Correction before writing the value "dt" of client in partner device:
  dt = dt.Add(dt.Substract(dt.ToUniversalTime( )))

- Correction after reading the value "dt" from the client:
  dt = dt.Subtract(dt.Subtract(dt.ToUniversalTime( ))

A change in the configuration may require a restart on the computer

If components involved in a configuration change are still being used, it is possible that the Station configuration Editor reports the still active components and proposes a computer restart.

If the component is still active during a repetition, exit the remote OPC client programs and OPC servers that access the computer using DCOM. If necessary, disable the automatic startup of OPC client programs before the restart.

As soon as the configuration changes have been made following the restart, the automatic startup of OPC client programs can now be enabled again. All programs that were previously exited, can be started again.

Possible language mixtures on the OPC interface

Remember that a mixture of languages can occur on the OPC interface when the operating system language and installation language differ from the language requested on the OPC interface ("localeID"). This becomes noticeable, for example, when reading and writing the data types VT_R4, VT_R8 and VT_DATE in string format:

Examples of mixed languages:

1.) Writing on a German system with an English "localeID".

VT_R4: "1,0" – German, despite English "localeID"; in this case a comma instead of a period.

VT_DATE: "30.11.2006" – German despite English "localeID".

2.) Reading on a German system with an English "localeID".
VT_R4: "1.0"
VT_DATE: "11/30/06"

Updating of time stamps in OPC PROFIBUS DP

During DP communication with communications processors (CP 5613 or CP 5614), when reading over OPC, the time stamp never changes unless the values have changed (applies to both inputs and outputs).

SOFTNET DP (CP 5511, CP 5512, CP 5611, CP 5621) supplies new time stamps for inputs (updated as a result of reading), however, not for outputs.

Necessary changes in the .NET OPC examples for .NET Framework 2.0

If you want to adapt the .NET OPC examples from .NET Framework 1.1 to .NET Framework 2.0, an additional renewed check should be disabled to avoid exceptions in the data exchange of unmanaged data between the main thread and display dialogs. To do this, use the parameters ThreadExceptionDialog.CheckForIllegalCrossThreadCalls = False and ThreadExceptionDialog.CheckForIllegalCrossThreadCalls = True before and after the dialog accesses such as Edit_OnDataVal_0.Text = Convert.ToString(pvValues(0)).

Close OPC clients before making project engineering and configuration changes

Prior to making any project engineering or configuration changes, please close your OPC clients. Start the OPC clients only after completing the changes, for example, XDB import in the Station configuration Editor.

Changed startup on the OPC DA server

When activating OPC groups with items, the OPC server can initially only return the quality OPC_QUALITY_WAITING_FOR_INITIAL_VALUE (= 0x20) with data values of the type VT_EMPTY. This behavior is in compliance with the standard, however, an OPC client should be in a position to handle this returned information. Please check your existing OPC clients to see whether adaptations are necessary.

Adapting the OPC job timeout of SR and S7 connections to the communication load and CPU usage

Please adapt the OPC job timeout of SR and S7 connections to the communication load and CPU usage. If you are unsure, use the default settings.

Asynchronous OPC jobs not executed deterministically

Depending on the available operating system resources and delay time on the network and on the partner device, multiple consecutive asynchronous OPC jobs are executed almost simultaneously. One job overtaking another is perfectly possible, the practically simultaneous accesses do not keep to any deterministic order. An OPC client must take this behavior into account.

Configurable S7-OPC Alarms and Events message texts in local text file "scores7.msg"

Configurable multiple language S7 OPC Alarms and Events message texts can be entered in the local text file "scores7.msg" in the following hidden path in the file system

- Windows Vista and Windows 2008:
  <systemdrive:>\ProgramData\Siemens\SIMATIC.NET\opc2\bins7

- Windows XP and Windows Server 2003:
  <systemdrive:>\Documents and Settings\All Users\Application Data\Siemens\ SIMATIC.NET\opc2\bins7

Use the syntax description and the examples in the comments in this file.
Example of an English (LCID=1033) message text for the alarm event ID "200" of the S7 connection "S7 connection_01":

```
[S7-Connection_01]
ALARM200=0,1033,"Message text for ALARM200, neutral and US language"
```

The value "DatabaseMessages=<path to 'scores7.msg'>" must also be entered in the "Protocol" section of the "scores7.ini" file.

Path to Scores7.ini:

- Windows Vista and Windows 2008:
  <systemdrive:>\ProgramData\Siemens\SIMATIC.NET\opc2\ini

- Windows XP and Windows Server 2003:
  <systemdrive:>\Documents and Settings\All Users\Application Data\Siemens\ SIMATIC.NET\opc2\ini

With the SuppressUnusedMessages=1 parameter setting in the global section of the "scores7.msg" file, only the alarms configured in the scores7.msg file are forwarded. This parameter therefore represents a flexible and configurable filter for unwanted alarm messages.

Select cycle times for the OPC server that are significantly shorter than the monitoring times

The cycle time configured in STEP 7/NCM PC for the various protocols of the OPC server should be selected so that it is significantly shorter than the shortest configured monitoring time (recommendation: at least a factor of 5).

IOPCBrowse::Browse: The ContinuationPoint loses its validity after browsing further at a different level

The OPC-DA-3.0 feature, IOPCBrowse::Browse" always returns a ContinuationPoint other than the zero string when there are other elements at the relevant browsing level. This ContinuationPoint must be specified when continuing to browse the next elements of the level. If, however, you have browsed a different level in the meantime between calling the function the first and second time, the previously obtained BrowsingPoint loses its validity and cannot be used to browse further elements.

New S7 OPC A&E attribute EVENT_ATTR_S7_EVENT_SUBEVENTID

Over and above the information in the "Industrial Communication with PG/PC" manual, there is an additional attribute for the S7 OPC Alarms and Events server:

EVENT_ATTR_S7_EVENT_SUBEVENTID with decimal value 6047, data type VT_UI1.

This makes the alarm subnumber readable when alarms have more than one source, for example for ALARM_8P.

Write-protected symbol files cannot be used

STI and SSD symbol files cannot be used if the "write-protected" attribute is set.

Assigning permissions for using symbol files with the DA OPC server

The DA OPC server uses other services to work with symbols.

These services require adequate rights for access to the folders in which the STI or SSD symbol files are stored and for the files themselves. Make sure that the "interactive" or "configured" users have "full access" to these files and folders:

OPC DA 3.0: OPCBrowseServerAddressSpace::BrowseProperties( ) also reads from IO devices

Note that the OPC DA 3.0 method "IOPCBrowseServerAddressSpace::BrowseProperties( )" also reads properties and data values from IO devices.

If the IO device is unobtainable, the method call can take a long time.

PROFINET IO OPC server: Precise length information for addressing

Remember that with simple addressing, reading and writing of PROFINET IO data requires the precise configured length information (with advanced addressing, subaddressing is also possible).

Example:

An IO module with a length of 4 bytes can only be partially read via an OPC item PNIO:[CTRL1]EWORD0 (2 bytes).

The following are, for example, permitted: "PNIO:[CTRL1]IB0,4" or "PNIO:[CTRL1]IDWORD0".

Programming recommendation: Implement exception handling for OPC interfaces

We recommend that you implement exception handling for OPC applications (try {... IOPCServer:: ...} catch(exception){...}) to cover exceptions as can occur when shutting down the OPC servers.

OPC XML DA: Allowing remote OPC communication necessary

To work with OPC XML DA, allow remote OPC communication in the security settings in the "Configuration Console" program.

OPC XML DA: Writing DateTime variables in unspecified format

Writing DateTime variables in unspecified format is not permitted.

Symbol files with prefix simplify the name resolution

For OPC symbols, it is possible to use several symbol files that differ from each other in the prefix. The first symbol file in the list has no (or an empty) prefix.

In OPC, a symbol must be assigned directly to the symbol files or the various protocols (S7:, DP:, PN:, ...). If a symbol file without a prefix is used, this assignment can take longer since it is necessary to search through all possible protocols. To simplify this search, you should only use symbol files with a prefix, since the assignment between prefix and symbol file is unique for these symbols.

OPC DA: Monitored data changes can be old

Monitored data changes (OnDataChange) can be old until the confirmed update interval (RevisedUpdateRate) because data is read cyclically on the OPC server and in the underlying communication protocol of the PC station according to the update rate.

If the communication protocol signals new values to the OPC server shortly after a message has just been sent to the OPC client by the OPC server, this new value can only be signaled to the OPC client after the update interval has expired.

Differences between written and read values in DPC2 data records

A written value of an OPC DPC2 data record item cannot be read out identically using the same item or an item with the same address, slot and index. There may be device-specific differences in DPC2 data records between the written and read value.

No S7 connection termination after exiting the OPC clients with the OPC UA protocol activated

If the OPC S7 server is operating, for example permanently if the OPC UA protocol is active, S7 connections via OPC itself are not terminated if the OPC client deregisters the corresponding items. The S7 connection is terminated only if the option "Automatic termination after e.g. 60 s" is configured in NCM.

Alternatively, if not required, disable the OPC UA protocol.

Permanent S7 connection establishment even without OPC clients with the OPC UA protocol activated

If the OPC UA S7 protocol is active, configured permanent S7 connections are established even if no OPC client connects to the OPC server. If the OPC UA S7 protocol is not activated, the configured permanent S7 connections are established as long as an OPC client has connected to the OPC server.

Access permissions for symbolic items

The access permissions for symbols can be selected freely. These permissions are displayed when browsing. When accessing the items, these permissions may be further restricted by the OPC server.

Example: A symbol for peripheral output is defined with write/read permissions.

When it is accessed, however, only writing is permitted since the system does not allow peripheral outputs to be read.

Paths to symbol files following update installation of CD 2007

If you download a symbol file again after an updating installation from CD 2007 to CD 2008, the previously set path is changed to the factory-set path, the previously used file name is changed to the factory-set file name and file extension is changed from .STI to .ATI. The newly created configuration can be checked with the "Configuration Console" in the "Manage Symbol Files" dialog.

S7 UA OPC server: Relationship between cycle time and update time

The update rates used by the S7 UA OPC server for SIMATIC NET are multiples of the cycle time set for the S7 protocol in the configuration. The shortest possible update time is the cycle time.

OPC Scout V10: Only suitable data types can be written

The data type of the value to be written, must match the read data type of the OPC item. If no usable data type is returned by the item, for example, VT_EMPTY, it is not possible to write to this item with the OPC-Scout V10.

OPC servers retain items that have been used in work memory

The COM DA, XML DA and UA OPC servers retain items that have been used in work memory. This memory is released again only after exiting the OPC servers.

OPC: Procedure for avoiding connection aborts

As a general rule, all configuration parameters, in particular timeout times, cycle time, alarms, must be matched up with each other depending on the plant configuration (hardware and software), the configuration limits and the way the client and other active applications work.

If the job timeout times are too short, this can result in connection aborts if larger jobs are sent at the same time by COM or UA clients, for example, when initializing, reading, writing, enabling and disabling larger amounts of items.

High handle usage of the UA S7 OPC server

The UA S7 OPC server uses a maximum of one event handle of the operating system per used "MonitoredItem". During operation, the number of these handles can therefore rise to the number of used items.

Programming manual "Industrial Communication with PG/PC Volume 2 - Interfaces, Release 8": Errors in the syntax and in some to the examples for the UA S7 OPC server in Sections 2.6.9.2 and 2.6.9.3 (buffer-oriented services)

- Page 128: Syntax for "bsend"
  incorrect (period (".") instead comma (",") between "buffer length" and "address"):
  `<connectionname>.bsend<rid>.<bufferlength>.<address>{`
  Correct:
  `<connectionname>.bsend<rid>.<bufferlength>,<address>{`

- Page 129: Example of "brcv" (period (".") after BRCV instead no period)
  incorrect: S7-OPC-1.BRCV.1.10,X4,78
  correct: S7-OPC-1.BRCV1.10,X4,78

- Page 130: Example (period (".") after "16" instead comma (",") and "D" instead "DW")
  incorrect: S7-OPC-1.BSEND1.16.2,D
  correct: S7-OPC-1.BSEND1.16,2,DW

- Page 130: Example (period (".") after "32" instead comma (","))
  incorrect: S7-OPC-1.BSEND1.32.20,R,2
  correct: S7-OPC-1.BSEND1.32,20,R,2

Remote UA OPC server mode requires IP name resolution

The IP name resolution of the remote computer name must work to allow use of the remote mode of a UA OPC server.

You can test this with the ping function in a command console.
If the name cannot be resolved, check in the Windows Firewall, to see whether "File and Printer Sharing" is permitted as an exception.

The name resolution in the <system folder>\system32\drivers\etc\hosts file can also be achieved by assigning the reachable remote IP address to the remote computer name.

An incorrect number of items causes an access violation

The COM DA AddItems() or ValidateItems() call with less items than specified in the number of items parameter causes an exception (0xC0000005 access violation) in the lower-level operating system file RPCRT4.dll as of Windows Vista SP1 when accessing the high-speed inproc DP-OPC server OPC.SimaticNET.DP. Avoid such parameter assignment errors and provide an exception handling routine in the user program to deal with the exception.

27.   Notes on license keys

The basis on which the software on this "SIMATIC NET, PC Software" CD is used are the following "General Conditions for Use of Software" of Siemens AG

- Within the Federal Republic of Germany
  The "General Conditions for Use of Software Products for Automation and Drives Engineering" apply to licensees with offices registered in Germany.

- For the export market
  The "General Conditions for Use of Software Products for Automation & Drives" apply to licensees with offices registered outside Germany.

27.1 Trial mode

As long as no other license to use this software has been obtained, this software only runs in its trial mode. The user is granted a non-exclusive and non-transferable license for the program in trial mode. The end user is not entitled to copy, pass on or distribute this software. Furthermore the end-user is not entitled to decompile or modify the software or to link it into other programs. The use of this software in its trial mode is at the end-user's own risk. Since the software in the trial mode is distributed free of charge, the authors are only liable in case of intent or gross negligence. The software is provided "as is" without any representation or warranty of any kind either expressed or implied including but not limited to implied warranties for merchantibility or fitness for use.

AS LONG AS THIS PROGRAM ONLY RUNS IN ITS TRIAL MODE, IT IS ONLY MEANT TO BE AN EXAMPLE OF THE FULL VERSION OF THE PROGRAM. IT IS NOT MEANT TO BE USED IN CONNECTION WITH LIVE MACHINE OPERATIONS. ANY SUCH USE IS AT THE USER'S OWN RISK.

27.2 USB key stick

(Does not apply to the product CP 5613/CP 5614 (DP Base))

You require a USB key stick for each of the SIMATIC NET software products. This contains one or more license keys required to operate the product. A USB key stick can also contain license keys for several products. During installation, these keys are transferred to the hard disk of the destination system. The products cannot be operated normally without license keys. In emergencies (loss of the USB key stick), the software can be operated and messages are displayed indicating the absence of the license. If a fault or error occurs (problem with USB key stick), please contact our Customer Support, , Tel.: +49 (180) 5050-222, Fax: +49 (180) 5050-223, E-mail: mailto:adsupport@siemens.com.

27.3 Important notes on handling USB key sticks and license keys

Note the following:

- It is not possible to make a backup of the USB key stick.

- The license keys are stored in the hidden folder "\ax nf zz" on the drive you specified during installation.
  Do not delete the "\ax nf zz" folder or any files it contains.

- It is not possible to transfer the license keys by simply copying them from the hard disk to a USB key stick or from the USB key stick to hard disk..

- If you uninstall SIMATIC NET products with an uninstaller that uninstalls programs in Windows, you may lose the license keys.
  If you want to uninstall these products with the uninstaller, you must first transfer the license keys back to the USB key stick. Use the "Automation License Manager" program for this. If you do not remove the licenses, the uninstaller may destroy the license keys for these products.

- If you want to reformat your hard disk, you must first transfer the license keys back to the USB key stick using the "Automation License Manager" program (Start menu **Start ->... -> SIMATIC -> License Management -> Automation License Manager**, alternative: link on desktop). Otherwise the license keys will be lost and you will no longer be able to use the products. When you transfer the license keys back, make sure that you insert the same USB key stick from which you originally installed them.

27.4 Installing and uninstalling license keys at a later point in time

Make sure that you transfer the license keys back to the original USB key sticks.

Uninstalling license keys

You can uninstall license keys at any time with the "Automation License Manager" program.

Follow the steps outlined below to transfer (uninstall) license keys from the hard disk to the USB key stick(s):

- Insert the USB key stick in a USB interface.

- Open the "Automation License Manager" from the Start menu (**Start -> ... -> Simatic -> License Management -> Automation License Manager,** alternative: link on **Desktop**) and transfer the license keys back to the USB key stick.

Transferring UCL license keys

To transfer the UCL license keys to the PC, please use the "setup.exe" program on the UCL license key CD.

Retransferring license keys

To transfer license keys from the hard disk back to the USB key stick under Windows, please use the Automation License Manager installed from the "SIMATIC NET, PC Software" CD.

27.5 Incompatibilities/restrictions relating to licenses

If the "SIMATIC NET, PC Software, Edition 2008" CD is installed along with the SOFTNET Security Client Edition 2008 (V2.0.0.0) product or an older version, the "SIMATIC NET, PC Software" CD must be installed last.
If it is installed first, then contrary to the note in the readme file of the SOFTNET Security Client, the "SIMATIC NET, PC Software" CD must be installed again afterwards.

28. Requirements and restrictions relating to hardware in general

Where the CP 5613 is referred to below, this relates to the communications processors CP 5603, CP 5613, CP 5613 FO, CP 5614, CP 5614 FO, CP 5613 A2, CP 5614 A2, CP 5623, CP 5624 unless specific types are named explicitly.

28.1 Note

Using ACPI (standby and hibernation mode)

ACPI (standby and hibernation mode) is not supported.

Preventing a change to hibernation

When communicating via a SIMATIC NET module, your computer should not go into hibernation automatically. You can prevent hibernation in the following ways:

- Disable the "Hibernation" option (Start menu **Start -> Control Panel ->** power options in the **Hibernate** tab **->Hibernate**).

- Change the module to configured mode.

- Reject hibernation in your application.

Power saver mode not allowed

The power saver mode is not allowed when working with the "SIMATIC NET, PC Software" CD. The current profile is therefore adapted by the installation.

If you go to the "Power Options" menu in Vista, (Start menu **Start -> Hardware and Sound -> Power Options**) and change to a different power saving profile or reconfigure your PC's power saving mode, change the settings so that your PC does not change to power saving mode after a longer period of inactivity ("**Change plan settings" -> set the power saving mode to "never"**).

A single service for which the Station Manager waits during startup was not started.

The following error entry may be found in the diagnostics of the Station configuration Editor:
"1 service(s), which the Station Manager waits for when it starts up was (were) not started."
This entry means that a function that must be processed before the Station Manager starts is not yet complete.

This function might be the plug-and-play manager of the "SIMATIC NET, PC Software" CD that looks for new hardware. If it is the plug-and-play manager, you can ignore the entry. This is then simply a delay and not an error. To check whether the plug-and-play manager is still running, follow the steps below:

Check the status of the service "SIMATIC NET P&PManager" in the services in the Control Panel of your operating system . If the status is still "Starting", the search for new hardware is not yet complete.

Removing communication modules in configured mode

Communication modules (CPs) in configured mode (including PCMCIA or PC cards) must not be removed from the PC during operation; this also applies to the information area of the Start bar of Windows "Stop <module>").

Recommendation for communications processors with preprocessing

If the utilization of the PC CPU can briefly exceed 90 %, we recommend CPs with separate preprocessing (CP 1613, CP 1623, CP 5613 and CP 5614) because the communication can then be handled mainly on the communications module.

Installing / uninstalling new hardware

After installing or removing new hardware, Windows must be started at least once by a user with administrator privileges.

28.2 Restrictions

Using a SIMATIC NET CP in a docking station

Docking stations with the dock in/dock out functionality are not supported.

28.3 Computer requirements

Minimum requirements for PG/PCs

The products of this SIMATIC NET Software Products service pack were tested on PGs/PCs that meet the following minimum requirements:

Operating system	Minimum requirements
Windows Vista 32-bit	2.4 GHz PCs with 1 GB RAM, XGA 1024x768 with 16-bit color
Windows XP Pro	600 MHz PCs with 512 MB RAM, XGA 1024x768 with 16-bit color
Windows Server 2003	2.4 GHz PCs with 1 GB RAM, XGA 1024x768 with 16-bit color
Windows Server2008	2.4 GHz PCs with 1 GB RAM, XGA 1024x768 with 16-bit color

29.   Compatibility

29.1 Operation with SIMOTION

SIMOTION V2.1 is not released for Windows XP/Windows Server 2003

SIMOTION V2.1 is not released for Windows XP and not for Windows Server 2003. For current information on SIMOTION products, please refer to the SIMOTION documentation.

SIMOTION V2.0 is not released with SIMATIC NET OPC V2.2 SP2 for Simotion.

Reason: With SIMOTION V2.0, only a hierarchical exporters possible and as a result, it is no longer possible to browse with SIMATIC NET OPC Version V2.2 SP2 for SIMOTION, for example bad variable information in the OPC Scout or ProTool/Pro-CS.

No OPC communication and configuration possible after uninstalling SIMOTION V3.0 SP1

After uninstalling SIMOTION V3.0 SP1, no OPC communication over the OPC scout or configuration using the Configuration Console is possible because the file "melbreg.dll" is deregistered in the system folder. To remedy this, (over)install the "SIMATIC NET PC Software" CD again.

OPC Data for SIMOTION

Please note the following constraints and functional restrictions:

- With asynchronous writes to a read-only variable, no error message is returned although the value cannot be written and is not written. (synchronous write OK, here comes and error message.)
- The valid range of values of variables of the type "Date" and "DT" is not kept to over OPC. Values can be written to variables that are outside the valid range.

- When writing to variables beginning with "tracecontrol" or "internaltotrace", the error message "unexpected error in communication" is generated.

OPC Alarms and Events for SIMOTION

Please note the following constraints and functional restrictions:

- User-defined Diagnostic Buffers are not exported with "Export OPC Data". No message text is therefore supplied for these events.

- The OPC client that starts the OPC server, also receives diagnostic buffer entries entered from this point onwards.

- Only one language setting for all clients:
  Alarm texts are distributed to all clients in the same language (the language that was set last) even if you previously set different LocaleIDs.

- Maximum 40 Alarm_S permitted:
  If more than 40 different alarms of the category Alarm_S are triggered in quick succession, only the first 40 will be delivered.

- Restriction in the use of the automation wrapper, for example with VB OPC clients:

  If a client creates several instances of a subscription using the automation wrapper "sopcdaauto.dll", the first subscription to be activated receives the events for both subscriptions; in other words, subscriptions activated later do not receive any alarms.

- If "Alarm_S" and "Alarm_SQ" arrive in fast succession and all alarms are acknowledged by the client, the following response can occur:

  - Some Alarm_S alarms can be successfully acknowledged (incorrect), an acknowledgment event, however, does not arrive (correct).
  - Some Alarm_Sq alarms cannot be acknowledged (incorrect), some Alarm_S alarms can be acknowledged (correct), an acknowledgment event, however, does not arrive (incorrect).
- Time stamp is changed: If the time zone of the client computer deviates from GMT, the OPC server adds the difference between the local time of the client computer and GMT to the time stamps of the events. If there is daylight-saving time on the client computer, a further hour is added; Example: The module time is 11:33, the client works with CET (+ daylight saving), so the event has the time 13:33.

  Workabout:

  In the exported alarm XML file, it is possible to use a text editor to insert the "TimeDifference" parameter in the <HANDLERS> <SIMOTION> <DEVICES> node.

  Example:

  ```
  <DEVICES>
    <Simotion_p
      TypeID = "02D0A106-7ED2-4F92-B647-CB3B23097472"
      CheckSum = 2002-10-29-09:11:44.175"
      TimeDifference="-60"
      MPIDefault = "2">
    </Simotion_p>
  </DEVICES>
  ```
  The Alarms and Events calculates the time stamp of the alarm as follows:
  Time stamp := (S7 time stamp on the hardware) + (time difference compared to GMT in min) – (value of the TimeDifference parameter) + (60 min, if daylight-saving time is set on the client computer)
  The value of the parameter is therefore calculated as follows:
  TimeDifference := (time difference compared to GMT in min) + (60 min, if daylight-saving time is set on the client computer)
  Example:
  The same time is set on the target hardware (S7 time) as on the client computer.
  At the time at which the alarm occurs, central European daylight-saving time is set on the client computer, in other words, time difference = 60 min. due to the time zone and 60 min. due to the daylight-saving => time difference = "120". The OPC server returns the time stamp that the alarm must have on the basis of S7 time.
- If you only export alarms during the OPC export in the SIMOTION Scout V2.1, an XML file is created. To make this XML file known to the OPC server, a dummy file with the extension .SSD must be created in the same folder in which the XML file will be saved. This .SSD file is specified in the "Configuration Console" or in the "Commissioning Wizard".
  As of SIMOTION V3.0, this dummy file is generated automatically during OPC export.

- If you disconnect the OPC client from the OPC server, wait at least 15 seconds before reconnecting.

No access to OPC_Data.sti during OPC export

Make sure that no other program accesses OPC_Data.sti during OPC export.To ensure this, you must close down all OPC clients. If the OPC_Data.sti file could not be written, the following must be done:

1. Close down the OPC client, for example the OPC Scout.

2. Delete the *.ssd- and the *.ldb file.

3. Start OPC Export again.

Access to SIMOTION projects

If you require access to the data of several SIMOTION projects, the files exported from every SIMOTION project (an . STI and a .XML file per project) must be merged. For STI files, this can be done with the "Symbols" tab in the Configuration Console from SIMATIC NET. For XML files, the SIMOTION OPC File Manager tool is available as of version V6.2.

Remember that the HMI consistency check must be deactivated in the download settings in the SIMOTION SCOUT for each project.

Storage of the XML file

As of SIMATIC NET V7.0, the XML file exported by the SIMOTION scout must be saved in the installation path of SIMATIC NET on the target drive:

- Windows XP and Windows Server 2003)
  <systemdrive:>\Documents and Settings\All Users\Application Data\Siemens\ SIMATIC.NET\opc2\bins7\simotion\xml\opc_ae.xml

- Windows Vista and Windows Server 2008
  <systemdrive:>\ProgramData\Siemens\SIMATIC.NET\opc2\bins7\simotion\xml\opc_ae.xml

Compatibility

During an OPC export, the same version of SIMATIC NET must be used as at runtime on the target hardware. With the Windows NT operating system this is V6.0.5 and with Windows 2000 and Windows XP it is version V6.4.

Project download with the OPC Scout running

If a project or hardware configuration download is made while the OPC Scout is running, the connection to the controller is terminated and the OPC Scout must be restarted. This occurs only if an OPC server is configured in the Station configuration Editor. Before restarting the OPC Scout, make sure that the configured OPC server is in "Run" mode.

OPC File Manager

If the "Open" function is used in the OPC file manager to read in an existing configuration, the gateway to each target device must be checked again and if necessary reentered under "Specify gateways".

OPC File Manager

If routed connections are entered with the "Specify gateways" function, remember the following:

The subnet must be selected explicitly in the "Subnets" list box before editing the gateways/routers.

Going online with the SIMOTION SCOUT when an alarm client is running

Sporadically, it is not possible to go online with the SIMOTION SCOUT if an alarm client is running.

The alarm client must then be shut down first or the connection to the Alarms & Events server must be interrupted.

Alarm status with Alarm_SQ

If an Alarm_SQ comes and goes in quick succession and this alarm is then and acknowledged, it is possible that the status of the alarm is "and acknowledged entered state" instead of "acknowledged left state" (applies only when the time between entering and leaving is less than 10 ms).

SIMOTION module P350, startup problem

If a Protool/Pro project/application (*.fwd) is placed in the start subfolder, the Protool application is started automatically at startup. SIMATIC NET, on the other hand, does not start up completely. The Services Station Manager, Route Manager, and Configuration Service are not started.

The services can be started manually later. If ProTool/Pro is started with a delay, the problem does not occur.

ALARM_SQ alarms with status "left state" sporadically have an incorrect time stamp

When connecting an OPC_AE client to an active SIMOTION controller, the pending alarms are queried (refresh functionality). With ALARM_SQ alarms with the left state status (only acknowledgment required), and incorrect time stamp (date + time of day) is displayed sporadically.

OPC symbols of the type "STI" continue to be supported

The "SIMATIC NET, PC Software, Edition 2008" CD continues to support OPC symbols of the type "STI".

30. Notes on C programming interfaces

Following protocols are explicit supported by the C programming interface:

- SAPI-S7
- IOBase
- DPBase

30.1 Notes and restrictions relating to the SAPI-S7 programming interface

S7 communication with C applications

In STEP 7 or NCM PC, connections used by C applications should not be configured as permanent OPC connections.

Otherwise, these connections will be established when the UA protocol is activated and are no longer available for the C application.

S7 programming interface: return values of the "s7_receive" function

When evaluating the return values of the "s7_receive" function, if unexpected values occur, the "s7_discard_msg" function must be called in the default branch of the corresponding switch instruction.

Connection reestablishment

Between the call for the "s7_abort( )" function and the "s7_initiate_req( )" function, there must be a waiting period of approximately 1 second. During this time, the "s7_receive( )" function can be called (polling or in Windows Messages by SAPI-S7).

Note that if a connection is aborted due to a problem (s7_receive = S7_ABORT_IND), the subsequent connection establishment with "s7_initiate_req( )" may only succeed after a maximum wait time of 90 seconds since the connection partner continued to occupy connection resources.

Reaction to error codes

If a function returns the value ERR_RETRY, the corresponding request must be repeated.

Example: s7_get_read_cnf = ERR_RETRY -> Repeat s7_read_req

Not all variable types

The variable types supported by the S7 protocol are at present not completely supported by all S7 servers (therefore the variable types STRING, TIMER, COUNTER and bit arrays should not be used).

Duration before a timeout is signaled

In the data transfer phase, the time required before an Abort indication is received is as follows for a CP 1613 with ISO:

- No data traffic   < 80 s

- With data traffic   < 8 s

Restrictions SAPI-S7

The following functional restrictions apply to this version of the product.

Service/Function	Restriction
s7_get_vfd_ustate_ind	This service is not yet permitted.
s7_vfd_state_req	This service can only be used on other (remote) devices.
Variable services	The variable types supported by the S7 protocol are at present not completely supported by all S7 servers (therefore the variable types STRING, TIMER, COUNTER and bit arrays should not be used).

Multithread operation

Note that the "s7_receive( )" call and the corresponding processing function must run in the same thread.

Autostart

Do not start an S7 application using the Windows Autostart program group, Instead, use the Autostart functions of the "Configuration Console" tool to launch PC user programs following startup.

s7_get_diag_ind returns incorrect diagnostic information

When using "s7_get_diag_ind( )", diagnostic information can be lost.

s7_get_await_initiate_cnf

Section 3.4.4 "s7_get_await_initiate_cnf()" on page 66 of the "S7 Programming Interface" manual incorrectly states:
"...Following this, the corresponding processing function 's7_get_initiate_cnf( )' must be called for internal..."
The function described in the section is, of course, meant::

"...Following this, the corresponding processing function 's7_get_await_initiate_cnf() must be called for internal..." ;

S7_MINI_DB_TRACE_MAXLINES

For S7_MINI_DB_TRACE_MAXLINES (Section 4.3 / page 170 of the "S7 Programming Interface manual) a range of values of 1 to (2^2) - 1 is shown which would mean 1 to 3. The range 1 to 32768 is, however permitted.

PC-PC connection

If you use S7 connections for communication from PC to PC, the S7_MINI_DB_INIT_RSP_PDU_SIZE parameter set with the "s7_mini_db_set" function, may be a maximum of "480" if the ONLINE mode is set in the Station configuration Editor.

S7 programming interface: return values of the "s7_receive" function

When evaluating the return values of the "s7_receive" function, if unexpected values occur, for example, in the default branch of the corresponding switch instruction, the "s7_discard_msg" function must be called .

31. Notes on project engineering, configuration and NCM

XDB import

XDB import must only be done when there is no communication taking place with other partners.

Configuring a CP 1623 with STEP 7 or NCM PC

If two or more CP 1623s were configured in a project, an IP address is required to distinguish the CPs during online configuration with STEP 7 or NCM PC. This means that the CP 1623s (when there is more than one) must be configured with MAC and IP address.

Extra readme file for SIMATIC NCM PC

Please read the notes in the readme file ("ncm_readme.htm") for the product SIMATIC NCM PC on the "SIMATIC NET, PC Software" CD or in the service pack download area.

Diagnostics

In the Station configuration Editor, context-sensitive diagnostics of individual components is available only when STEP 7/NCM PC is installed on the PC (activated with the right mouse button -> Diagnostics).

Remote diagnostics is possible when STEP 7/NCM PC uses its own diagnostics.

Complete description of the topic

The configuration of a PC using SIMATIC NCM PC and the related software is described in detail in the "Commissioning PC Stations" and "Industrial Communication with PG/PC" manuals.

Commissioning the PC with PROFIBUS network cards

As long as the configuration of the PROFIBUS network cards is not yet completes, the modules must not be connected to the network of the operational system!

When configuring a PROFIBUS network card, the station address, for example, must be set. Randomly set addresses can cause problems on the plant bus!

Downloading a PC station via the "PC Internal" access point

With certain network configurations, the following reaction can occur sporadically:
When downloading to a SIMATIC PC station using the "PC Internal" access point, a message appears telling you that the system data block, for example, 1001 or 1007 cannot be deleted.
In this case, restart the download – and the download to the station will succeed.

Downloading to a PC station and avoiding modifications to the configuration

During a download by the SIMATIC NCM Manager, "HW Config" or "NetPro" to the locals SIMATIC PC station, no changes, for example deleting an application, must be made in the Station configuration Editor.

Dealing with problems when downloading or importing

Before downloading or importing configuration data, the "S7 Connection Diagnostics" program must be exited.

Error message immediately after installation

On some computers, the message "Application error caused a stack fault in module <unknown> ..." can appear immediately after installation and existing authorizations are not detected. To eliminate the problem, reboot your computer.

When you start SIMATIC NET, if you see the message "Softbus device not running! Cancel will terminate the S7RTM", this means that an important component of SIMATIC NET is not correctly installed. In this case, click the "Cancel" button and install the "SIMATIC NET, PC Software" CD again. If the problem persists, please contact the hotline.

When downloading configurations, note the following

User programs that do not communicate over the OPC interface must be terminated before downloading the configuration with STEP 7/NCM PC and then restarted.

Downloading or importing an XDB file of configurations with several hundred connections takes several minutes

Downloading or importing an XDB file of configurations with several hundred connections can take several minutes. Please wait until complete.

Configuring the "Access Point of the Application"

You can set an "access point of the application" both with the "Configuration Console" program and with the "Set PG/PC Interface" program. Never use both programs at the same time.

Configuration of the Information Service

When you install SIMATIC NET, an information service is installed that informs the user of special operating events. The events include the following:

- A trace is active for a protocol or a software component.

- An OPC protocol is deactivated.

The information service indicates the monitoring function with an icon in the status area of the taskbar.

A flashing warning triangle in the icon indicates a special operating event.

If you double-click on the icon, you open the window of the information service. Here, you will see the operating events listed. To read the detailed information of a message, click on the relevant row in the table of events.

You can close the information service if you are not interested in special operating events. Simply right-click on the icon in the status area of the taskbar and select the "Exit" menu command. The information service will then close down after a few seconds. It is also possible to restart the information service from the Start menu.

Installing STEP 7 after installing the "SIMATIC NET, PC Software" CD

If STEP 7 is installed after the "SIMATIC NET, PC Software" CD and if the access point S7ONLINE is assigned to the CP 5613/CP 5613 FO/CP 5614/CP 5614 FO, the assignment must be confirmed explicitly in "Set PG/PC Interface" or the "Configuration Console" prior to communication.

Installation of NCM PC on a separate PC without SIMATIC NET, PC software
If NCM PC is installed on a separate PC, it is only possible to download the configuration to other PCs if a product from SIMATIC NET PC Software is also installed, for example IE Softnet PG.

Instance DBs on the OPC server with S7 symbols

Instance DBs are taken into account in the configuration of the OPC server with S7 symbols in STEP 7 as of version 5.3 SP1.

S7 symbol names with period (.) are not permitted.

With the S7 symbols for the OPC server application, symbol names with the period "." character can be configured but they cannot be used on the PC station by an OPC server and are rejected as invalid items.

Do not set CCAgent to "Pause"

After logging on, the "CCAgent State" dialog can be started in the information area of the taskbar. Do not set the "Pause" option. Otherwise, you can no longer start, log off or change user.

The WinCC processes "CCServer" and "CCAgent" must then be exited by an administrator.

Diagnostic buffer entry in the Station configuration Editor "The CP with index ... is not operational"

If the message "The CP with index ....is not operational" appears in the diagnostic buffer of the Station configuration Editor, follow the steps below:

Change to network diagnostics of the "Configuration Console" program or "Set PG/PC Interface". Run diagnostics for the CP. The diagnostic information indicates the exact nature of the problem.

Diagnostic buffer entries when a download fails

In some situations, it is possible that a component rejects downloaded project engineering data. In such cases, the message "Module ... (index ?) in station ... cannot be started. Do you want to display the module status with the diagnostic buffer? Yes on no.". Please note that the diagnostic buffer cannot be displayed at this point. Use the diagnostic buffer of the target station.

Error message in the diagnostic buffer of the Station configuration Editor "The sdb is incorrect"

When importing XDB files ("Import Station" in the Station configuration Editor), the message "The sdb is incorrect"/"component database is invalid" can be entered in the diagnostic buffer. If this problem occurs, it means that the project engineering configuration of your DP master system was not accepted. To apply the configuration, use the download function of STEP 7/NCM PC and download the PC station again.

Assignment of the CPs to the real hardware in the Station configuration Editor

Following any change to the configuration (during station import etc.), please check the assignment of the CP modules in the Station configuration Editor compared with the hardware installed in the PC; with PROFIBUS modules using their buzz functions if available.

To be able to assign a module uniquely when importing a station, the module type, module version, and the interface parameter assignment must match the settings of the existing real hardware exactly.

Accessible PROFINET IO nodes in the SIMATIC Manager

If the "Accessible nodes" function in the SIMATIC Manager is executed by STEP 7 / NCM PC version V5,4,3 or older via a CP 1613 module, only conventional devices are detected; PROFINET IO devices are not detected.

NCM does not support archiving and dearchiving

You can, however, archive or dearchive the project data in the project directory <project path> yourself, for example with "WinZip".

To archive, follow the steps outlined below:

1. Install "WinZip"

2. Change to the Windows Explorer.

3. Select the project in the project folder (as default, the projects are in
<INSTALLDIR>\SIMATIC_NCM\S7proj)

4. By right-clicking -> WinZip, the project can be archived.

To extract, follow the steps outlined below:

1. Double-click on the archive

2. Click the "Extract" button.

3. To open the project with the NCM PC Manager, use the "Browse" button in the "Open Project" dialog.

Configuring the target system: Target computers (except your own) are not displayed in the list of accessible nodes

If the target computer was disconnected from the network or when several network adapters are attached to the network, the network adapter installed in your own PC must be reinitialized.

Follow the steps outlined below to reinitialize the network adapter:

1. Open the Windows Explorer.

2. Open "My Computer" in the Windows Explorer.

3. Click on the "SIMATIC Shell" entry with the right mouse button and select "Settings". Reaction: The "Settings" dialog appears.

4. Select the network adapter intended for communication and confirm with OK.

5. Confirm the message indicating the that the communication service will be reinitialized with OK. (Note: As a check, the name of the activated adapter is colored blue.)

Please note that a target computer can only be reached over the initialized network adapter, in other words, only over the adapter highlighted in blue in the "SIMATIC Shell".

Connection abort when downloading to the SIMATIC PC station

If the download aborts when downloading a SIMATIC PC station due to a component that cannot be stopped, the PC station may be in an inconsistent status following the aborted download. You can find the cause in the diagnostic buffer of the Station configuration Editor.
The reason why the component cannot be stopped is that there is still communication active over this component. Please close the active communication and repeat the download.

SOFTNET CP as DP slave is not displayed in the user application when browsing

Please use only the following configurations with a Softnet CP as DP slave

Module length: less than or equal to 16 bytes

Unit: byte

Consistency over: "Unit" or "Entire length"

Otherwise the SOFTNET CP as DP slave is not displayed in the user application when browsing

No symbolic addressing with OPC in a multiproject context until STEP 7 V5.4

If S7 connections are created between two different projects of a multiproject in STEP 7 up to V5.4, no symbols are available in the S7 tab of the OPC server with the "Selected" button. Even if you select "Use symbols - All", no symbol file is generated. If you want to use symbolic access, please avoid using any cross-project connections. As of STEP 7 V5.4, the OPC symbols can also be used for multiprojects. Make sure, however, that the station names are unique.

Unexpected message "Missing SW product/optional package" when opening STEP 7 project

Projects that display this error message when they are opened in NCM PC, can only be opened with STEP 7.

OPC server - PROFINET IO – Item-specific rights are not adopted

The settings item-specific rights in the "PROFINET IO" tab in the "Edit..." dialog of the OPC server are not adopted after "Save and Compile". Use the default rights for all items to restrict access rights.

Loading a configuration locally

To load a configuration on the local station, the S7ONLINE access point must be set to the interface parameter assignment "PC-internal".

XDB import failed

If the computer is restarted soon after an XDB import or download of configuration data, this can lead to an OPC client, for example the OPC Scout, not recognizing the configuration data. In this case, repeat the download of the configuration data.

Firewire modules

Network adapters such as the 1394 are not supported by SIMATIC NET and must not be inserted even in the Station configuration Editor.

Inserting/removing communications processors

If you insert a further communications processor or remove an inserted communications processor, it is possible that no component is displayed in the Station configuration Editor. In this case, reboot the computer.

Error when inserting an "IE_General" module

If you add a component of the type "IE_General" in the "Components" tab of the Station configuration Editor, an error can occur in the internal "pniopcac.exe" program (Event Viewer -> Application -> double-click on "Application Error" -> "Failed application pniopcac.exe ...").

This does not have any negative effect on the functionality of the module, unless it is used as a PROFINET IO controller. In this case, download a PROFINET IO configuration. The error then no longer occurs.

Restarting the OPC server after downloading a changed destination address

If the configuration of a non-local PC station is downloaded with a different Ethernet destination address from that of the module configured there, it is possible that the OPC server on the destination station must be restarted.

This can be done at the project engineering station.

1. Start the "NCM S7 Diagnostics" program (Start menu **Start -> ... -> STEP 7 -> NCM S7 -> Diagnostics**).

2 Open an online connection with the following parameters:

   - Node address = address of the CP on the destination computer

   - Slot = index of the OPC server in the Station configuration Editor

3a Start the OPC server with the call: Operating Mode -> Start Module.

3b The OPC server can also be started locally by selecting the OPC server in the Station configuration Editor and selecting the "Run" function in the context-menu (right mouse button).

No remote download to the PC station while the OPC XML DA Web service is running

Remote downloading to the PC station is rejected while an OPC XML DA Web service application is running on the target PC station.

Prior to remote project engineering, close down the Internet Information Server (IIS) on the target PC station and with it the OPC XML DA Web service and your application.

Remote configuration of the PC station

For the remote configuration of the PC station in STEP 7/NCM PC, you should also allow "remote basic and OPC communication" on the target computer ("Configuration Console" under "Security").

Changing the Ethernet station address by configuration

If you download a configuration to a target PC and the station address (for example MAC address or IP address) of the communications processor of the target PC is changed as a result, the download aborts since the remaining data can no longer be downloaded after changing the station address.

For this reason, changing the MAC address or the IP address by configuring is not permitted.

"Automatic termination after:" of a "TCP connection" not released

The setting "Automatic termination after:" available with the "Details of Connection Establishment" button in the properties of a "TCP connection" of the OPC server is not released in STEP 7/NCM.

Language changeover

After changing the language, the PC should be restarted or the user should be logged off from time to time so that all applications adopt the new language.

Constraints for downloading 1 000 000 OPC S7 symbols

1 000 000 OPC S7 symbols with an average symbol length of 15 characters of the SIMATIC S7-station name length, data block name length and data block variable name length can be configured, compiled and downloaded to the PC station or imported there in STEP 7. If you reduce the average character length, you can configure more OPC S7 symbols.

Configured access protection of the S7 OPC servers in "HW Config" is not effective for UA OPC access

On the properties page of "HW Config" of the S7 OPC server, the access protection and OPC item-specific rights can be set. This configuration does not take effect for the UA S7 OPC protocol after downloading. To assign rights, set the OPC item-specific rights using the S7 symbols on the same properties page.

Indexing for faster searching can lead to communications problems
If, for example, in Windows Vista, the indexing of the PC files is enabled, and if traces were created in the indexed area, the high processing load can disrupt communication (recognizable, for example, by loss of connections to partner devices).
In this case disable indexing of these folders or the indexing on the entire PC.

Compatibility between modules

Configurations of compatible modules can be downloaded to modules installed in the PC. The following overview shows the combinations available.

Module	Compatible (STEP7/NCM) configuration that can be loaded
CP 1612 A2	CP 1612
CP 1613 A2	CP 1613
CP 1623	CP 1613
CP 5603	CP 5613 + CP 5613 FO
CP 5613 A2	CP 5613 + CP 5613 FO
CP 5613 FO	CP 5613
CP 5614	CP 5613 + CP 5613 FO + CP 5614 FO
CP 5614 A2	CP 5613 + CP 5613 FO + CP 5613 A2 + CP 5614 + CP 5614 FO
CP 5614 FO	CP 5613 + CP 5613 FO + CP 5614
CP 5621	CP 5611 + CP 5611 A2
CP 5623	CP 5613 + CP 5613 FO + CP 5613 A2
CP 5624	CP 5613 + CP 5613 FO + CP 5614 + CP 5614 FO + CP 5613 A2 + CP 5614 A2 + CP 5623
CP 5711	CP 5512

XDB import when more than one compatible CP is inserted in the computer

If several compatible CPs are installed in the computer, it is only possible to import a configuration in the Station Configuration Editor (XDB import) if the module assignment has already been adapted in STEP 7 or NCM PC. The module assignment is made in the "HW Config" or "PC Config" program in the object properties of the module, "Assignment" tab. Here, the interface of the CP to be configured should be entered in the input boxes of the interface parameter assignment being used so that several CPs of the same type can be assigned.

32.   Development environments and compilers supported

Compilers supported:

The following compilers can be used with the SIMATIC NET products under the following Windows operating systems:

- **Windows Server 2003 and Server 2008 32 Bit**
  - Visual Studio 2005, C, C++; with OPC also C# and VB.NET
  - Visual Studio 2008, C, C++; with OPC also C# and VB.NET

- **Windows XP**
  - Visual Studio 2005, C, C++; with OPC also C# and VB.NET
  - Visual Studio 2008, C, C++; with OPC also C# and VB.NET

- **Windows Vista 32 Bit**
  - Visual Studio 2005, C, C++; with OPC also C# and VB.NET
  - Visual Studio 2008, C, C++; with OPC also C# and VB.NET

.NET Framework

.NET Framework V3.5 from Microsoft is installed automatically because it is required by the SIMATIC NET software.

Borland Compiler for Windows Vista/ Windows XP

The companies "SoftwareOption" and "AIXO" offer products for support of Borland compilers. The following sources provide more detailed information on the available Borland support for SIMATIC NET products:
- Internet page http://www.aixo.com/ or by E-mail to Info@aixo.com
- Internet page http://www.softwareoption.de/ or by E-mail to Info@SoftwareOption.de.

Under Windows Server 2003, interfacing applications created with MS Visual Basic or Borland Compiler is possible only over OPC.

33.   Routing

Routing

If you use this SIMATIC NET product on a PC/PG with a STEP 7/NCM PC V5 product, you can use the routing functionality. For information on configuring, refer to the STEP 7 documentation.

What is routing?

As of STEP 7 V5, it is possible to reach S7 stations online beyond the boundaries of a subnet using a PG/PC, for example to download user programs or a hardware configuration or to run tests and diagnostic functions. You can attach the programming device at any point in the network and establish an online connection to all stations accessible via gateways.

Operating inter-subnet connections

As of Version V6.0.5 of the SIMATIC NET PC software with STEP 7 as of V5.2/SIMATIC NCM S7 as of V5.2 it is possible to operate S7 connections over several subnets, for example from a PC over Ethernet, an IE/PB Link to an AS station with a PROFIBUS CP. Currently only configurations with one (1) gateway and from Ethernet to PROFIBUS or vice versa are released.

34. Operating systems 32 bit

The products of this "SIMATIC NET, PC Software" CD can be operated with the following operating systems:

Operating Systems 32 bit	Minimum requirements
Windows Vista, Ultimate/Business	with SP1
Windows XP Professional	with SP2/3
Windows Server 2003 Standard	with R2 SP2
Windows Server2008 Standard	

Restrictions for the server variants: Terminal server services are not released for all modules or software products. For further information, refer to the chapters on the individual products.

Of the Chinese language versions, only the language version "Simplified Chinese" is supported, however not in the Multilanguage versions of Windows. The multilanguage version is released for the languages German and English; the other languages were not tested.

The service packs listed are necessary!

You will find service packs for Windows XP, Windows Server 2003 and Windows Vista on the Microsoft home page and can download them.

34.1 General information

All operating systems

The "SIMATIC NET, PC Software" CD consists of several setups and after they have been installed, the Microsoft operating systems create restore points. It is pointless to restore to an interim setup status, in other words, to the status of a half installed "SIMATIC NET, PC Software" CD.

Windows Vista, Windows Server 2008

If you change Ethernet adapters or modify (configure) the MAC addresses, Microsoft changes the installation ID. This affects the activation ID, in other words, after several changes, it becomes necessary to reactivate the license.

Windows XP embedded

To run an update installation of existing SIMATIC NET PC software under Windows XP embedded on the platforms released for this (see: http://support.automation.siemens.com/WW/view/en/21661049), the existing installation must first be uninstalled since there is not enough space on the flash memory for an update installation. Flash-based embedded systems that do not have a paging file require 1 GB of RAM.

Required privileges

Under Windows XP and Windows Server 2003, you must have or administrator privileges to start the software tool "Set PG/PC Interface" or "Configuration Console".

To install SIMATIC NET or SIMATIC NCM PC and to set up modules using the "Set PG/PC Interface" application, you must have administrator privileges.

If you use the SOFTNET-PG for Industrial Ethernet product, user permissions are adequate.

Upgrade to newer Windows operating systems

If you upgrade from Windows NT 4.0, Windows 2000 or Windows XP to Windows XP, Windows Server 2003, Server 2008 or Windows Vista you must first uninstall all the SIMATIC NET products. After uninstalling the products, you can then upgrade to the new Windows version. The SIMATIC NET PC software can then be installed.

Only one operating system per computer permitted

SIMATIC NET PC software products are supported only on computers on which one operating system and one only is installed. Computers with multiple selectable operating systems are not permitted.

New hardware wizard dialog in Windows Vista, XP + SP2 and Windows Server 2003 or + SP1 and Windows Server 2008

If a SIMATIC NET module is installed in the computer, it is possible that after you have installed the SIMATIC CD and restarted the PC, the module is not installed automatically. Instead, the Hardware Manager or its Wizard for new hardware appears. Under Windows XP + SP2, the wizard starts by asking you whether it should search for current drivers on the Windows Update Server. Choose "No, not this time" and then click the buttons "Next" and "Next" again and then "Finish".

Uninstalling the CD "SIMATIC NET, PC Software" under Windows Server 2003

After uninstalling the CD "SIMATIC NET, PC Software" under Windows Server 2003, the following error can occur: The system reports that the PROFINET IO RT communication protocol cannot be started after booting because the system cannot find the required driver.

In this case, please follow the steps outlined below to clear the message.

If it exists, delete the following key in the registry:

`HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\SNTIE`

`HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\s7snsrtx`

`HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\vsnl2ada`

`HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\dpmconv`

Downgrade to CD "SIMATIC NET, PC Software, Edition 2007"

If you want to go back from an installed CD "SIMATIC NET, PC Software, Edition 2008" to an Edition 2007, first uninstall the Edition 2008 and then install Edition 2007.

The configuration data is **not** retained.

Language detection of Windows Vista

The language detection of Windows Vista is not supported.

Restoring files

When Windows prompts you to insert the Windows CD to restore files, follow the instruction and confirm with "OK".

Windows domain profiles overwrite local settings

In a Windows domain, a domain administrator can make local settings on workstations that are adopted when the workstation logs on with the domain and overwrite the existing local settings.

Among other things, this affects:

- Windows Firewall

- Virus scanners

- Group policy

- Entries in the registry

- Access rights in the file system

Note that settings relevant to SIMATIC NET involving the firewall, the DCOM configuration and necessary access permissions in the file system can be changed and the functionality impaired.

Windows Vista firewall allows the configuration of outgoing connections

In the default setting, outgoing connections are allowed in Windows Vista. You can, however, change this behavior and/or define your own rules. The SIMATIC NET software assumes the default setting. If you make changes for outgoing connections that impact SIMATIC NET, SIMATIC NET functionality may be impaired.

Windows System Resource Manager (WSRM) with Server 2008

If you want to create your own policies in WSRM, please remember that applications, functionalities and performance of the Simatic Net CD may possibly be restricted.

Windows Defender causes communication interruptions of several seconds

The Windows Defender regularly checks the system for malware. This check can cause interruptions of SIMATIC NET communications lasting several seconds.

34.2 Restrictions

Messages from the Windows Defender service

Ignore the messages when the Microsoft Defender service classifies the "SIMATIC NET, Software CD" as potentially unwanted.

Parental control

The use of parental control can lead to restrictions in operator control and the running of the SIMATIC NET PC software that may affect safety.Parental control has not been approved with the "SIMATIC NET, PC Software, Edition 2008" CD.

Network load balancing

Distributed servers are not supported for automation networks by SIMATIC NET.

Quality Windows Audio Video Experience

Changes in the prioritization can reduce the performance of SN PN IO and lead to failure of IO devices.

RPC over HTTP proxy

Was not tested and is therefore not released.

Windows System Resource Manager

The limitation of resources can lead to non-functioning of industrial communication.

Connection Manager Administration Kit

Supports the administrator in management of remote nodes. Network access protection allows the configuration of access conditions but this has not yet been tested and released for industrial networks.

Server core installation

Server core installation is an installation option of Windows Server 2008 that has not been tested and released with the "SIMATIC NET, PC Software, Edition 2008" CD.

Failover Clustering

Failover clustering has not been approved with the "SIMATIC NET, PC Software, Edition 2008" CD.

Group Policy Management

Group policy management has not been approved with the "SIMATIC NET, PC Software, Edition 2008" CD.

34.3 No real time

Windows

Windows is not a real-time operating system. Real-time requirements cannot therefore be met.

As a result, it is possible that when starting programs or reading files, your application is not executed for several 100 ms.

The points below will help you to optimize your system and to achieve reaction times **approaching** those of a real-time system:

- You should have enough memory so that Windows only seldom needs to use the page file.

- Avoid intensive access to diskettes, hard disks, or CD drives such as occurs when starting up large programs.

Simultaneous network load

If there is a high network load due to parallel communication, for example copying files, a temporary station failure followed by return of the station can occur. This is due to the lack of real-time properties in WINDOWS.

This must be taken into account in the user program.

Increasing the update time of the PROFINET IO system reduces the incidence of these failures.

34.4 Terminal services with Windows Server 2003 and Windows Server 2008

Description

With the terminal service, all work with SIMATIC NET PC software products can be performed via a Windows Vista/ XP Terminal. Possible conflicts due to connecting several terminals have been eliminated. For a terminal user, this means:

- Programs for configuring and assigning parameter values for the SIMATIC NET software such as "Configuration Console" or "Station configuration Editor" can be operated at the same time from one terminal.

- From a terminal, the Station configuration Editor has only read access.

- Messages from SIMATIC NET products (error messages, run-time messages) are displayed on all logged on terminals.

Further important aspects of using terminal services

The terminal client may not shut down a terminal server that handles industrial communication.

Installation of SIMATIC NET PC products

Please note that Setup switches the Windows Server with installed terminal services to the "installation mode" from the "user mode" during installation of SIMATIC NET PC Products.

Once the installation is successfully completed, the server continues in the user mode again after you restart.

Further information

You will find wide-ranging help on the terminal services in the help system of the Microsoft Windows Server.

Restrictions affecting configuration

It is not possible to configure with the SIMATIC NET PC Manager and the PC Station Wizard in SIMATIC NCM PC on terminal service clients.

Programs started from a remote terminal client can hang for several seconds

If you start an application on a terminal server from a remote terminal client, this may hang for several seconds if the connection between the terminal client and terminal server is disrupted or the terminal client computer changes to the sleep mode. This can lead to temporary computer blockages of several seconds on the terminal server if the communication connection between the PC/PG and terminal is interrupted.

Remote application

Programs running under Windows Server 2008 that use the SIMATIC NET CD 2008 must not be started as remote applications.

Configuration with the Station Configuration Editor and other services with remote desktop or terminal services

Configuring modules with several sessions running at the same time causes problems because this can result in inconsistent statuses. For this reason, configuration with more than one open service is blocked at critical points. This may mean that boxes that can normally be edited are grayed out if terminal services are operating. Before you can edit in this situation, the terminal services must be disabled.

To use the "Set PG/PC Interface" program, it is advisable to disable the terminal services that are already enabled after installing Server 2008.