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

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

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

**CAUTION**
with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken.

**CAUTION**
without a safety alert symbol, indicates that property damage can result if proper precautions are not taken.

**NOTICE**
indicates that an unintended result or situation can occur if the relevant information is not taken into account.

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

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

Proper use of Siemens products
Note the following:

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

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

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

SIMATIC NET PC software products
Thank you for choosing a communications product from SIMATIC NET. You have bought an innovative product that combines fast access to automation systems with simple installation and commissioning.

Purpose of this document
This document describes how to install the SIMATIC NET PC software products on your PG/PC.

Validity of this installation manual
This installation manual relates to the products on the DVD "SIMATIC NET PC Software V8.2".
2.1 Requirements and notes

User experience

To install SIMATIC NET PC software products, you should have experience of installing software under the Windows version you are using (Windows 7 or Windows Server 2008 R2).

To configure the communications modules, you should have experience and knowledge of the following:

- Structure of the plant involved.
- Configuration of the plant.

You should only undertake the installation and configuration described below if you have this knowledge.

2.1.1 Required privileges

Privileges for installation

To install the product, you require administrator privileges.

Privileges for operating SIMATIC NCM PC

To operate NCM PC on an NTFS drive, the administrator must allow all users working with NCM PC on this computer full access to the NCM PC installation folder.

Procedure

1. Right-click on the NCM PC installation folder in the Windows Explorer.
2. Select the shortcut menu entry “Properties” and click on the “Security” tab.
3. Enable full access to the NCM PC installation folder for all NCM PC users.

2.1.2 Requirements and notes relating to the software

Operating systems

The SIMATIC NET PC software products are intended for operation under Microsoft Windows operating systems; for details, refer to the section "Technical data (Page 49)".
2.1 Requirements and notes

Update DVD for which versions?

"SIMATIC NET PC Software, V8.2" is an update DVD for the following software versions:

- SIMATIC NET PC software V8.0 with Windows 7, 32-bit
- SIMATIC NET PC software V8.1 with Windows 7, 32-bit / 64-bit, Windows Server 2008 R2

The list of products on the back of the DVD case gives you an overview of the products available.

Software licenses

**Note**

To run the SIMATIC NET products, you require one software license per PC and product.

Example: If you have installed the product "S7-1613" on a PC and therefore operate three CP 1613 modules, you require only one license (exception: SOFTNET-IE RNA).

Screen savers

Using a screen saver during operation can cause system overload.

Some screen savers do not release parts of memory again. This leads to a continuous reduction in usable memory.

Virus scanners

The use of a virus scanner during runtime can impair or severely slow down communication. Dynamic virus protection, in particular using gatekeeper mechanisms, is therefore not advisable. This is especially the case when trace files of the communication are written at the same time.

The following virus scanners have been tested in conjunction with the SIMATIC NET PC software products (the default settings of the virus scanners were not changed for the test):

<table>
<thead>
<tr>
<th>Virus scanner name</th>
<th>Tested with operating system</th>
</tr>
</thead>
<tbody>
<tr>
<td>McAfee Virus Scan Plus 2012</td>
<td>• Windows 7</td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2008 R2</td>
</tr>
<tr>
<td>Norton Antivirus 2012</td>
<td>• Windows 7</td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2008 R2</td>
</tr>
<tr>
<td>Kaspersky Anti-Virus 2012</td>
<td>• Windows 7</td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2008 R2</td>
</tr>
<tr>
<td>Trend Micro 2012</td>
<td>• Windows 7</td>
</tr>
<tr>
<td></td>
<td>• Windows Server 2008 R2</td>
</tr>
</tbody>
</table>
Notice

If you use a virus scanner, make sure that the computer has enough system resources.

Restore Points

Note

The "SIMATIC NET PC Software" DVD consists of several individual setups and after they have been installed, the Microsoft operating systems create restore points.

It is pointless to restore to an interim setup status (to the status of a partially installed "SIMATIC NET PC Software" DVD)!

2.1.3 Requirements and notes relating to the hardware

Note

We recommend that you first install the software and license as described in this documentation and install the communications processors afterwards.

Bus collisions after reinstallation

If two PROFIBUS communications processors are installed in one computer, when the computer starts up, both communications modules are assigned bus address 0. This causes collisions if both modules are connected to the same bus.

Solution

Set different bus addresses for the communications processors before attaching to the bus.
Plug and play

If the plug-and-play mechanism does not find the driver after installing the communications processor and then rebooting the computer, you will need to start the search for drivers manually. Follow the steps outlined below:

1. Restart your computer.
2. Go to the "Device Manager" dialog box:
   - Under Windows 7
     Start menu "Start" > "Control Panel" > "Hardware and Sound" > "Devices and Printers" > "Device Manager" link.
   - Under Windows Server 2008 R2
     Start menu "Start" > "Control Panel" > "Hardware" > "Devices and Printers" > "Device Manager" link.
3. Select the top expression in the list box (the local PC) and then the menu command "Action" > "Scan for hardware changes".
4. Confirm all the following dialogs with "Next".

Note
If a question appears in this dialog box asking whether or not you want to search for suitable drivers on the Internet, select "No, not this time" and then click "Next".

2.1.4 Steps in installation

Description
Follow the instructions below step by step to install the SIMATIC NET PC software products.

Note
During the installation, you will have to restart your computer several times depending on its configuration and the software you are installing.
These restarts are unavoidable parts of the installation process!
Following a restart on your computer, the installation will continue automatically with the next step. You only need to follow the installation instructions in this description. No further measures are necessary.

Note
Make sure that the same user is logged on following a restart.
Chinese or Japanese installation

The installation dialog of the SIMATIC NET PC software offers you the choice of "German" or "English". If you want to install on an Asiatic Windows platform, select English.

2.2 Procedure

Step 1 - Registering with the operating system

It is only possible to install SIMATIC NET PC software products if you have administrator privileges.

You should therefore log in with the operating system using an account belonging to the group of administrators.

Step 2 - Closing open applications

Close all active programs. This also includes all virus scanners.

Step 3 - Reading SIMATIC NET documents

Supplied information
Please read the information that ships along with the product. This is important to you because ...
- ... it may need to be (or at least should be) taken into account during installation.
- ... it may support you when configuring the hardware.
- ... it will provide you with instructions on configuring your specific product that are not contained in the "Industrial Communication for PG/PC" manual.

Descriptions of the SIMATIC NET products
You will find descriptions of the software products of this SIMATIC NET PC software on the "SIMATIC NET PC Software" DVD in the directory "doc\Manual Collection".

Step 4 - Inserting the "SIMATIC NET PC Software" DVD

Insert the "SIMATIC NET PC Software V8.2" DVD and wait until the following dialog box appears:
2.2 Procedure

**Note**

If this dialog box does not appear at the latest after 30 seconds, the autostart function of your computer is not activated.

In this case, start the "setup.exe" program in the main folder on the "SIMATIC NET PC Software" DVD.

---

**Step 5 - Reading the readme file**

The readme file contains the latest information on the SIMATIC NET PC products.

Click the "Display Readme" button and read the information displayed.

---

**Step 6 - Installing software**

Click the "Install Software" button.

Follow the instructions in the dialog boxes to select the language you require and to accept the license conditions.

**NOTICE**

If you want to install on an Asiatic Windows platform, select English.
Note
Depending on the operating system, there will be 1 or 2 more information screens relating to settings and the energy saving mode that you can confirm with the "Install Software" button if you want the installation to be performed.

Step 7 - Selecting products
The "SIMATIC NET - Setup", "Programs" dialog box appears.
The information in the figure below is an example and may differ slightly from the information actually shown on the screen.

Description and procedure
The following table describes the programs in the list box shown above. Follow the instructions and read the notes.
SIMATIC NET PC software products from an already installed SIMATIC NET PC software will be uninstalled automatically before the software products on this DVD are installed.
You will see a further warning on the screen immediately before the previous software products are uninstalled.

Then click the "Next" button.
Reaction: The software installation starts. This can take some time.

**Step 8 - Starting the transfer of license keys**

**License keys and upgrade license keys**
Current license keys are required for the products of the "SIMATIC NET PC Software" DVD. These ship with the product on a USB stick and must be transferred to your computer.
License keys
In the next dialog box, "SIMATIC NET - License Setup"; you can decide whether or not the license keys are transferred now during the installation (the Automation License Manager is then started) or later. You start the transfer dialog with the "Transfer License Key" button.

Step 9 - Transferring license keys
You can manage the license keys for running SIMATIC NET programs with the "Automation License Manager".

Note
For more detailed information on the "Automation License Manager", refer to the online help for the program.

Transferring license keys of the "Single" type
With SIMATIC NET PC products, follow the steps below to transfer license keys of the "Single" basic type to your computer:

Note
Before you can perform the next steps, the License Manager must be started if this has not already started automatically.

1. Select the data medium containing the required license key in the left-hand list (navigation area).
2. In the right-hand list (object area), select the license keys you want to transfer.
2.2 Procedure

3. Click on the menu command "License Key" > "Transfer..." > "Transfer License Key" dialog box.

4. Select the local drive of your computer to which you want to transfer the license keys and confirm with "OK".
   
   Reaction: The license keys are transferred.

Upgrade of older license keys

With authorizations of older SIMATIC products, you can use the upgrade function with new "Upgrade" license keys.

1. As described above, transfer the "upgrade" license key to the data medium on which the authorization is located.

2. Select the authorization of the older SIMATIC product and use the "Upgrade" function (menu command "License Key" > "Upgrade...").
   
   Reaction: The authorization and the upgrade license key disappear and a current license key appears instead.

After you have transferred all necessary license keys, close the "Automation License Manager" program.

Reaction: The SIMATIC NET installation continues automatically.

Step 10 - Completing the installation

After you have installed the license keys, the computer reports successful installation of the SIMATIC NET PC products.

The computer is restarted on completion of the installation.

Note

Make sure that the same user is logged on following a restart.

If there is more than one network adapter installed on the PC, the "Selection of the terminal bus" dialog box opens.

Note

If the Ethernet communications modules have not yet been installed, close the dialog with "Cancel" and continue at "Step 11".

Once you have completed "Step 11", the following dialog box appears (see figure).
Here, select the communications module via which this PC will be configured from another PC with STEP 7 or NCM PC and confirm with "OK" (the parameters TTL and WinCC compatibility are irrelevant here).

**Note**
To transfer a configuration with STEP 7 to a destination PC, a communications module is required on the destination PC that can receive the configuration data.

If several Ethernet modules are displayed, select the one that is connected to the same network and subnet as STEP 7.

**Step 11 - Installing communications modules**
To install the communications modules, follow the steps below:

1. Read the installation manual or operating instructions for the communications module and any other relevant documentation.
2. Install the communications modules as explained.
3. Restart your computer.

**Step 12 - Starting configuration**
After restarting the computer, you will need to log on with administrator privileges. It is possible that the Microsoft "Found New Hardware Wizard" will appear.

You will then be asked whether or not you want to install the software automatically. Select this option, click "Next" and close the wizard when it has completed its work with "Finish".
Your computer now contains the SIMATIC NET communications software that still needs to be configured.

The rest of the procedure is described in the "Commissioning PC Stations" manual (Start menu "Start" > "All Programs" > "Siemens Automation" > "SIMATIC" > "SIMATIC NET" > "Commissioning PC Stations").

**Installing further software components**

Please read the two following sections "Installing the OPC XML DA Web Services (Page 31)" and "SNMP service, SNMP OPC MIB compiler and profile files (Page 39)" on the installation of optional software components.
This section describes the requirements for installation as well as the installation of the "SIMATIC NET PC Software" on the "VMware vSphere 5.0" platform.

3.1 Requirements and notes

3.1.1 User experience

To install and operate the SIMATIC NET PC software products with "VMware vSphere 5.0", you require experience of the product as of "VMware vSphere 5.0.0 update 1".

Information on "VMware vSphere 5.0".

To configure the communications modules, you should have experience and knowledge of the following:

- Structure of the plant involved
- Configuration of the plant
- "SIMATIC NET PC Software"

---

**Note**

**SIMATIC NET documentation**

You have the following options for accessing the relevant information:

- Siemens Support pages (http://support.automation.siemens.com)
  - You will find the "Commissioning PC Stations" document under the entry ID 13542666.
  - You will find the "Industrial Communication with PG/PC Volume 1 - Basics" document under the entry ID 42783968.
  - You will find the "Industrial Communication with PG/PC Volume 2 - Interfaces" document under the entry ID 42783660.

- Manual Collection
  - This can be found on the "SIMATIC NET PC Software" DVD in the "doc" folder.

---

**NOTICE**

You should only undertake the installation and configuration described below if you have this knowledge.
3.1.2 Requirements and notes relating to the software

Operation on a VMware ESXi server:
The "SIMATIC NET PC software" is suitable for operation on virtual machines with the VMware server operating system "ESXi 5.0".

Note the specific product and module releases in the following sections.

Released guest operating systems:
You will find a list with the guest operating systems compatible with the ESXi 5.0 server and that are suitable for operation as a PC station in the section "SIMATIC NET modules released for ESXi (Page 22)".

**Note**
UEFI/EFI BIOS
"SIMATIC NET PC Software" does not support installations with UEFI/EFI BIOS for servers guest operating systems.

Notes on licenses

**Note**
A license is required for each instance (for example virtual machine) to operate each SIMATIC NET PC software product. This license is entered on the "Certificate of License (CoL)".

3.1.3 Requirements and notes relating to the hardware

You will find a list with the server hardware compatible with the ESXi 5.0 server on the Web page of VMware.


In addition to the hardware specified in the compatibility list of VMware, the Siemens "SIMATIC IPC 847 C" and the "SIMATIC IPC 547D" are also released.

The requirements and restrictions for operation without virtualization also apply.

Minimum requirements of SIMATIC NET for a VM:
- 2.4 GHz (2 cores)
- 2 GB RAM (for 32 bit)/4 GB RAM (for 64 bit)
3.2 VMware passthrough

Following installation, the VMware ESXi server supports only standard hardware (main boards, processors, graphics cards, network adapters, ...) from the compatibility list of VMware:


Assuming that the server hardware supports "Intel® Virtualization Technology (Intel® VT) for Directed I/O (Intel VT-d)" and this is activated in the BIOS, modules can be passed through to the virtual machine. You can install and use these modules with the drivers of the vendor.

For this method, VMware uses the terms "direct path I/O" or "passthrough". In the remainder of this document, only the term "passthrough" will be used.

Note

Industrial communication with SIMATIC NET and VMware ESXi 5.0 is supported only with "passthrough".

---

**Figure 3-1 Division of the Ethernet networks**

The figure shows a suggestion for dividing up the Ethernet networks based on their tasks:
3.2 VMware passthrough

- VM1 uses a HARDNET module (e.g. CP 1623) for the automation network.
- VM2 is only connected to one virtual adapter on a separate segment, at the same time it shares a real adapter with the other two virtual machines.
- VM3 uses a virtual Ethernet interface (SOFTNET IE) to the automation network.
- The management of the ESXi server also uses a separate segment, for example to allow a backup to be copied in without repercussions for the system.
- The terminal bus is intended for the connection of "Remote Service".

**CAUTION**

SIMATIC NET is not released for communication via a "virtual switch".

### 3.2.1 SIMATIC NET modules released for ESXi

The following SIMATIC NET modules have been released for passthrough operation.

**PCIE Ethernet modules:**
- CP 1623
- CP 1628

**PCI PROFIBUS modules:**
- CP 5611 Onboard (SIMATIC IPC 847 C)

**PCIE PROFIBUS modules:**
- CP 5621
- CP 5623

**USB PROFIBUS module:**
- CP 5711

### 3.2.2 Setting up SIMATIC NET modules for passthrough

To be able to use SIMATIC NET modules for passthrough operation, the following steps are necessary:

**Step 1 - enabling Intel Virtualization Technology in the BIOS of the server**

Requirement: The server hardware supports "Intel® Virtualization Technology (VT-d)" and you have enabled "VT-d" in the BIOS of the ESXi server.

You will find information as to whether your hardware supports "Intel® Virtualization Technology (VT-d)" on the following Intel website:

Step 2 - Configuring the module for passthrough

Follow the steps below to assign a module to a VM using passthrough:

1. Open the vSphere client.
2. Click on the server in the navigation tree on the left.
3. Click on the "Configuration" tab.
4. Click on "Advanced Settings" in the small "Hardware" dialog window.
5. Right-click on "Configure passthrough..." above the large dialog window if no modules have yet been marked for passthrough mode. If modules have already been marked for passthrough, click "Edit...".
   
   Reaction: The "Mark devices for passthrough" dialog box opens.
6. Select one or more modules based on their device ID/vendor ID and subdevice ID/subvendor ID.

Figure 3-2 Selecting modules for passthrough, for example CP 5621
7. Confirm your entries with "OK".
8. Restart the ESXi server to activate the passthrough configuration.

The following table shows the device IDs, vendor IDs, subdevice IDs, subvendor IDs and display names for SIMATIC NET modules:

<table>
<thead>
<tr>
<th>Module</th>
<th>Device ID / Vendor ID</th>
<th>Subdevice ID / Subvendor ID</th>
<th>Display name</th>
<th>Passthrough configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP 5611 onboard (SIMATIC IPC 847 C)</td>
<td>3141 / 110A</td>
<td>0001/10B5</td>
<td>Siemens Nixdorf AG SIMATIC NET CP 5611 (Profibus Adapter), see figure above, ID 10:0a.0</td>
<td></td>
</tr>
<tr>
<td>CP 5621</td>
<td>3141 / 110A</td>
<td>0001/10B5</td>
<td>Siemens Nixdorf AG SIMATIC NET CP 5611 (Profibus Adapter)</td>
<td></td>
</tr>
<tr>
<td>CP 5623</td>
<td>4069 / 110A</td>
<td>4069 / 110A</td>
<td>Unknown Unknown</td>
<td></td>
</tr>
<tr>
<td>CP 1623</td>
<td>0085/1957</td>
<td>4046 / 110A</td>
<td>Freescale Semiconductor Inc MPC 8347 PBGA</td>
<td></td>
</tr>
<tr>
<td>CP 1628</td>
<td>0084/1957</td>
<td>4074 / 110A</td>
<td>Freescale Semiconductor Inc MPC 8347E PBGA</td>
<td></td>
</tr>
</tbody>
</table>

Step 3 - assigning a module marked for passthrough to a virtual machine

PCIe module

Note
1:1 assignment between module and VM recommended

If a module marked for passthrough is assigned to several VMs, only one VM can be started because the module can only be operated exclusively by one VM. Whenever possible, the module should therefore only be assigned to one VM.

Follow the steps below to assign a module marked with passthrough to a virtual machine:
1. Open the vSphere client.
2. Click on the required virtual machine in the navigation tree on the left.
3. To edit the properties of the virtual machine, open the shortcut menu (right-click) and select "Edit Settings".

Reaction: The "Virtual Machine Properties" window opens.
4. Click the "Add..." button.

   Reaction: The "Add Hardware" dialog box opens.
5. From the list, select the device type you want to add to the virtual machine and click "Next".

6. In the drop-down list, select the module you want to add to the virtual machine and click "Next".

![Image](image.png)

Figure 3-5 Selecting a module

---

**Note**

**With a CP 5711, first add a USB controller**

To be able to assign a CP 5711 to a virtual machine, you must first add a USB controller. Follow the steps described below. Initially select "USB controller" instead of "PCI device". Repeat the steps and then select "USB device".
3.3 Installation of the SIMATIC NET PC software in a virtual machine

Note
Selecting the correct module

Depending on the module selected, the name displayed in the drop-down list may be shown as "Unknown" or similar. The correct module is selected using the assignment with the help of the "Mark devices for passthrough" dialog.

Table 3-1 "Assignment of the IDs" supports you in selecting the correct SIMATIC NET modules.

If the same modules are selected, note the ID. A passthrough module can be operated by only one VM at any one time.

Step 4 - starting the virtual machine

Once you have assigned the module marked for passthrough to a virtual machine, the device manager recognizes the virtual machine when the corresponding module starts up.

If "SIMATIC NET PC software" is installed and a SIMATIC NET module is assigned, the suitable driver will be installed automatically.

3.3 Installation of the SIMATIC NET PC software in a virtual machine

To install the "SIMATIC NET PC Software V8.2", follow the steps described in the section "Installation of the SIMATIC NET PC software products (Page 7)".

Recommended procedure for installation

To restrict the number of restarts required during installation of the virtual machine and ESXi server to a minimum, follow the steps below when using SIMATIC net modules with VMware passthrough:

1. Install the required SIMATIC NET modules in the ESXi server.
2. Start the ESXi server.
3. Select the required passthrough modules in the server settings (see section "Setting up SIMATIC NET modules for passthrough (Page 22)").
4. Restart the ESXi server.
5. Install the "SIMATIC NET PC software" in the required virtual machine.
6. Shut down the virtual machine.
7. Add the relevant module in the settings of the virtual machine.
8. Restart the virtual machine.
3.4 Notes and restrictions

- To use the CP 5711, a virtual USB controller must first be set up for the VM.
- The CP 5623 can only be used in PCIe slot 4 in the SIMATIC IPC 847 C.

3.4.1 VMware vSphere vMotion

**CAUTION**

SIMATIC NET is not released for vMotion.
"vMotion" is the term used by VMware for moving virtual machines from one server to another during operation.

3.4.2 Options for operating the virtual machines

The following options for operating virtual machines were tested and released:

- Microsoft Remote Desktop connection

See also the notes in the readme of Remote Desktop and Terminal Services.

**Note**

Operator control restriction

A virtual machine must not be operated from more than one console at any one time. Make sure that the connection between the Remote PC and VM is not interrupted. When using Remote Desktop, the connection must be established as an administrator to be able to use the full range of functions of the "SIMATIC NET PC Software".
Installing the OPC XML DA Web Services

Description

OPC XML-DA (Data Access) allows access to process variables over the Internet.

You will find more detailed information on OPC XML-DA in the manuals "Industrial Communication with PG/PC" (Start menu "Start" > "All Programs" > "Siemens Automation" > "SIMATIC" > "SIMATIC NET - Industrial Communication with PG/PC Basics" and "SIMATIC NET - Industrial Communication with PG/PC Interfaces").

OPC XML-DA can only be operated in conjunction with the "Internet Information Services" (IIS) Windows component.

Is the "IIS" Windows component already installed?

How you continue from here depends on whether the "Internet Information Services (IIS)" Windows component is already installed.

<table>
<thead>
<tr>
<th>If the &quot;Internet Information Services (IIS)&quot; Windows component is ...</th>
<th>then ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ... already activated,..</td>
<td>... you can go straight to Step 4 - &quot;Security settings for OPC&quot; and check the functionality of the OPC XML-DA Web services.</td>
</tr>
<tr>
<td>• ... not already activated,..</td>
<td>... read the following note and start the installation Step 1 - &quot;Enable Internet Information Services (IIS) Windows function&quot;.</td>
</tr>
</tbody>
</table>

Step 1 - Enable "Internet Information Services (IIS)" Windows function

The "Internet Information Services (IIS)" Windows feature is an HTTP Web server. It is required to operate OPC XML DA Web services.

Procedure in Windows 7

Enable the Windows feature in Windows 7 as follows:

SIMATIC NET PC Software V8.2
Installation Manual, 07/2012, C79000-G8900-C233-05
1. In the Control Panel, go to "Add/Remove Programs" and "Turn Windows features on or off":
   Start menu "Start" > "Control Panel" > "Programs" > "Programs and Features" > "Turn Windows features on or off" link.

2. Open the structure "Internet Information Services (IIS)" > "Web Management Tools" and enable the option "IIS Management Console".
   Confirm with "OK".

3. Open the tree structure "Internet Information Services (IIS)" > "WWW services" > "Application Development Features" and enable the option "ASP.NET".

**Procedure in Windows Server 2008 R2**
Enable the Windows feature in Windows Server 2008 R2 as follows:

1. In the Control Panel, go to "Add/Remove Programs" and "Turn Windows features on or off":
   Start menu "Start" > "Control Panel" > "Programs" > "Programs and Features" > "Turn Windows features on or off" link.
   Reaction: The "Server Manager" dialog box appears.

2. Start the Add Roles Wizard (open the "Roles" menu and click on the "Add Roles" link).
   Reaction: A new window opens.

3. Select the "Server Roles" menu item.

4. Enable the Web Server (IIS) role in the list box.
   Reaction: A new window opens.

5. Confirm with "Add Required Features" and continue the dialog with "Next".

6. Read the information displayed and confirm with "Next".
   Reaction: A list box with selectable role services appears.

7. Select the "ASP.NET" option.
   Reaction: A new window opens.

8. Confirm with "Add Required Role Services" and continue the dialog with "Next".
   Reaction: A list box with the functions to be installed opens.

9. Start the installation with "Install".
   Reaction: Wait until the installation is completed and then read the displayed text.

10. Complete the installation with "Close".
   Reaction: A window with the status of the available roles in Server 2008 R2 displays the functionalities/roles that can be used.
Step 2 - Configuring the OPC XML DA (local host) Web service

The OPC XML DA Web service provides process data that can be accessed over the Internet using HTTP.

During configuration, the following functions are performed:

- The address of the Web service is named.
- The connection to the installed SIMATIC NET software is established.

Procedure under Windows 7 and Windows Server 2008 R2

Follow the steps outlined below to configure the Web service:

1. Open the "Internet Information Services (IIS) Manager" dialog box.
   
   Start menu "Start" > "Control Panel" > "System and Security" > "double-click on "Internet Information Services (IIS) Manager".
   
   Reaction: The "Internet Information Services (IIS) Manager" dialog opens.

2. In the navigation area, add a new application pool under <current PC> "Application Pools".
   
   <current PC> > "Application Pools" > shortcut menu "Add Application Pool..."
   
   Reaction: A new window opens.

3. In the "Name" input box, enter the name "Classic SIMATIC.NET AppPool".
   
   In the drop-down list boxes, enter:
   - .NET Framework version: .NET Framework v2.0.50727
   - Managed pipeline mode: Classic
   and enable the option "Start application pool immediately".
   Confirm with "OK"
   
   Reaction: A new application pool was created.

4. In the shortcut menu of the newly created application pool "Classic SIMATIC.NET AppPool", select the menu command "Advanced Settings...".
   
   Reaction: A new window opens.

5. In the "Process Model" section, set the "Identity" value of "ApplicationPoolIdentity" to "NetworkService".

6. In Windows 7, 64-bit and Windows Server 2008 R2, 64-bit:
   
   In the "General" section, change the "Enable 32-bit applications" value from "False" to "True".
   
   Reaction: This makes it possible to load the 32-bit OPC XML DA Web service in the ISS. Close the dialog with "OK".

7. In the navigation area of the "Internet Information Services (IIS) Manager", go to "Default Web Site" via <current PC> and open its substructure.
   <current PC> > "Sites" > "Default Web Site"
8. If you find the entry "OPC.SIMATIC.NET" here, skip all other entries in these instructions. Otherwise, go to Step 4.

9. Select "Default Web Site" and open "Add Application..." in the context menu.
   Reaction: A new window opens.

10. Enter the folder name of the Web service in the "Alias" box.
    We recommend the name "OPC.Simatic.NET" because the supplied sample programs can then be used unchanged.

11. Select the newly created "Classic SIMATIC.NET AppPool" application pool and confirm with "OK".

12. In the "Physical path" box, enter the path to the directory in which the installed "SIMATIC NET PC Software" DVD makes the data accessible.
    Enter the path as follows:
    "<installation folder>\Siemens\SIMATIC.NET\opc2\binXML"
    Confirm with "OK"

13. Confirm the entries in the "Add Application" dialog with "OK".
    Reaction: The created Web service is displayed with its alias in "Default Web Site".

---

**Step 3 - Security settings for OPC XML-DA**

The Microsoft Internet Information Services (IIS) make your PC accessible from the Internet. It is therefore essential to specify suitable access permissions.

**Procedure under Windows 7 and Windows Server 2008 R2**

Follow the steps outlined below to specify the access permissions:

1. Go to your newly created Web service (Web site) in the Internet Information Services (IIS) Manager; in this example: "OPC.Simatic.NET".
   Start menu "Start" > "Control Panel" > "System and Security" > "double-click on "Internet Information Services (IIS) Manager".
   Reaction: The "Internet Information Services (IIS) Manager" dialog opens.

2. Select the entry "OPC.Simatic.NET" in the navigation area.
   <this PC> > "Sites" > "Default Web Site" > "OPC.Simatic.NET".

3. Double-click on "Authentication" in the data area.
   Reaction: The content area shows the possible settings for "Authentication".

4. Make the settings you require for anonymous access and authenticated access.

---

**Step 4 - Security settings for OPC**

Before the Internet Information Services (IIS) can access OPC data, they must be given access permissions to specific OPC services.
Procedure in Windows 7 and Windows 2008 R2

1. Close the "Communication Settings" application.
   Start menu "Start" > "All Programs" > "Siemens Automation" > "SIMATIC" > "SIMATIC NET" > "Communication Settings".

2. Go to "SIMATIC NET Configuration" > "OPC Settings" > "Security" in the tree structure and enable "Remote basic communication and OPC communication".

Note

By enabling OPC security, additional security settings necessary for OPC communication are made. These are described in the online help of the "Security" configuration dialog.

This completes installation and configuration of the software components for operating OPC XML DA.

The next steps involve checking that everything works correctly.

Step 5 - Displaying your Web site in the Internet Explorer

You can display the new Web page with the Internet Explorer:

Type in the following URL in the Internet Explorer (assuming your Web service has the name "OPC.Simatic.NET"): (http://localhost/OPC.Simatic.NET/sopcweb.asmx)

Installation was successful when the possible OPC XML DA function calls (Read, Write ...) are displayed (see figure):
Step 6 - Using the sample program for the OPC XML DA interface

Note
You will find the sample client program in the folder:
"<installationfolder>\Siemens\SIMATIC.NET\opc2\samples\xml\sync\opcxml_da_sync.exe"

Requirements
Follow the steps below before you use the sample program:

● Activate the demo mode for the S7 communication protocol as described in the "Industrial Communication for PG/PC" manual.

● After starting the sample program, enter the following address in the "Input the URL" box assuming your Web page has the name "OPC.Simatic.NET": (http://localhost/OPC.Simatic.NET/sopcweb.asmx)
5.1 Installing the SNMP service

Purpose

The SIMATIC NET SNMP OPC Server requires the SNMP service in the operating system. Full use of the SNMP OPC Server is only possible after installing this Windows component.

Introduction

Following standard installation of Windows 7, the full SNMP service is not yet available in the operating system. Without taking further steps, you can query items but cannot use SNMP traps.

Installing the SNMP service involves the following steps:

- Installing the SNMP service
- Adapting the network security settings to your own security needs

Requirement

You must be logged on as administrator or as a member of the administrators' group to be able to perform the installation.

Note

If programs already use the OPC server and the SNMP service was installed while an OPC Server was active, all programs that use the OPC Server must be closed and restarted. The OPC servers must also be shut down with "Communication Settings" > "Exit OPC Server" and then restarted.

If the computer is connected to a network, the general network settings may prevent installation of the SNMP services.

Stage 1 - Installing the SNMP service

Procedure under Windows 7

Install the SNMP service as described below:
5.1 Installing the SNMP service

1. Open the dialog for enabling and disabling Windows features in the Control Panel.
   
   Start menu "Start" > "Control Panel" > "Programs" > "Programs and Features" > "Turn Windows features on or off" link.

   Reaction: The dialog box with the tree structure of the installed Windows features opens.

2. Enable the "Simple Network Management Protocol (SNMP)" check box in the "Windows Features" list and confirm with "OK".

   Reaction: The SNMP service starts automatically whenever you restart the system.

   CAUTION
   If the SNMP service was installed on an OPC server that is already active, the OPC server must be shut down.
   Shut down the OPC server with "Communication Settings" > "Exit OPC server" to ensure that the settings are adopted. With the next request, it will start up again automatically.

Procedure under Windows Server 2008 R2

Install the SNMP service as described below:

1. Open the dialog for turning Windows features on and off in the Control Panel (Start menu "Start" > "Control Panel" > "Programs" > "Programs and Features" > "Turn Windows features on or off" link).

   Reaction: The "Server Manager" dialog box opens.

2. Select "Features" in the list box and then the "Add Features" link on the right-hand side of the page that then appears.

   Reaction: A list box opens.

3. Select the "SNMP Service" option in the list box and confirm with "Next".

   Reaction: A dialog with information appears.

4. Click the "Install" button.

   Reaction: SNMP is installed.

5. Confirm completion of the installation with "Close".

   CAUTION
   If the SNMP service was installed on an OPC server that is already active, the OPC server must be shut down.
   Close the OPC server with "Communication Settings" > "Exit OPC server" to ensure that the settings are adopted. With the next request, it will start up again automatically.
Stage 2 - Adapting the network security settings to your own security requirements

When you install the SNMP service, not only the SNMP protocol but also an SNMP agent is installed.

---

**Note**
The SNMP service starts automatically whenever you restart the system.

---

**Note**
The possibility of this being misused by unauthorized third parties cannot be excluded.

---

**NOTICE**

Adapt the network security settings and the access permissions of the SNMP agent to your own security needs. You will find more detailed information in our manual "Commissioning PC Stations".

Start menu "Start" > "Control Panel" > "System and Security" > "Administration" > "Services" entry > "Services" dialog, "SNMP Trap" entry > right-click on "Properties" > "Security" tab.

---

5.2 SNMP OPC MIB compiler and profile files

**MIB compiler of STEP 7/NCM PC**

The range of information that can be monitored by the devices with the SIMATIC NET SNMP OPC server depends on the particular device profile. With the integrated MIB compiler of STEP 7/NCM PC, existing profiles can be modified and new device profiles created for any SNMP-compliant device. It requires MIB files according to the SMIv1 standard.
### MIB files for CP 1613, CP 1623 and CP 1628

General MIB files are supplied with STEP 7 as of Version 5.4.5, NCM PC as of Version V5.4.4.

**Note**

The MIB files are available only after installing an HSP.

When you enter the required device in the plant configuration, the "device profile" parameter offers you the profiles with the name of the module, for example "CP1623_V10.txt" and they can be selected here.

The following MIB files are supported for the CP 1613:

- rfc1213.mib
- automationSystem.mib
- automationTime.mib

The following MIB files are supported for the CP 1623 and CP 1628:

- rfc1213.mib
- automationSystem.mib
- automationPS.mib
- automationTime.mib
To uninstall SIMATIC NET PC software products, follow the steps outlined below:

1. Go to "Programs and Features"
   Start menu "Start" > "Control Panel" > "Programs" > "Uninstall Program" link.

2. Select the entry "SIMATIC NET PC Software V8.2" and start to uninstall.
   Reaction: The SIMATIC NET PC software products are deleted from the hard disk.
   The license keys can be uninstalled, if you require, using the Automation License Manager or you can leave them on the hard disk.

3. If there are no further SIMATIC programs on your computer that require licenses, select the "Automation License Manager" and start to uninstall the licenses.

   Note
   Any licenses left on the computer can no longer be backed up without the Automation License Manager.

4. If you no longer want to configure SIMATIC NET modules with this computer, select "SIMATIC NCM PC V5.5 + SP2" and start the uninstall function.

   NOTICE
   After uninstalling the SIMATIC NET PC software products, any CP installed in the PC will no longer work because the device driver is also uninstalled.
   This is indicated in the device manager by a yellow exclamation point.
   You can remedy this situation by reinstalling the "SIMATIC NET PC Software" DVD.
Uninstalling the SIMATIC NET PC software products
Automated installation

7.1 Purpose and general description

Use in enterprises

Enterprises that install plants with large numbers of computers generally want to use the same installation everywhere. Automated installation provides this option. The settings are made with a control file.

Sequence

Installation only requires a few user decisions that generally need to be taken at the end of the installation.

Control file

The control file is structured like an INI file. As an ASCII file, it is also easy to read. The control file is generated during a sample run; in exceptional situations, it can be corrected manually.
7.2 Structure of the control file

Description

The control file has the name "Ra_Auto.ini" and has the following structure:

```
[BUNDLEINFO]
CreatedBy=SIMATIC NET PC Software
RaSetupVersion=

[GENERAL]
AutoReboot=True
RebootOnEnd=True
Setuplanguage=en
IdName=
IdCompany=
IdNumber=
LicenseKeyDestinationDrive=C:
TransferLicenseManagerKey=False
InstallLanguage=de;en
OnlyUpdateInstallation=False

[DIALOGS]
DialogLicenseList=False
DialogDone=True

[PRODUCTCODE1]
DestinationDrive=C:
Selected=True
DestinationPath=[ProgramFilesFolder]SIEMENS\SIMATIC.NET
```

The following parameters can be modified if necessary:

**[General] area**

General settings are made in the [General] area.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Value range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AutoReboot</td>
<td>True/false</td>
<td>Automatic restart at the end</td>
</tr>
<tr>
<td>RebootOnEnd</td>
<td>True/false</td>
<td>Display of restart prompt</td>
</tr>
<tr>
<td>Setuplanguage</td>
<td>de=German</td>
<td>Installed language</td>
</tr>
<tr>
<td></td>
<td>en=English</td>
<td></td>
</tr>
</tbody>
</table>
7.3 Generating the control file automatically

Description

The control file is generated by the setup program automatically by making a trial installation. The setup program can be controlled by a batch file.

Example of a batch file

The batch file shown here generates the control file "Ra-Auto.ini".

Under Windows 7, 32-bit

```bash
cd \sw\x86
setup.exe /record
```

In Windows 7, 64-bit and Windows Server 2008 R2

```bash
cd \sw\x64
setup.exe /record
```
Automated installation

7.3 Generating the control file automatically

The lines of the batch file example have the following significance:

<table>
<thead>
<tr>
<th>Line</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The program changes to the &quot;x86&quot; or &quot;x64&quot; folder.</td>
</tr>
<tr>
<td>2</td>
<td>The program starts the manual test installation and generates the control file &quot;Ra_Auto.ini&quot; with the &quot;/record&quot; parameter. All user actions in the dialogs are stored there. The record action stops after the &quot;component selection&quot; and closes the program.</td>
</tr>
</tbody>
</table>

Note

Automatic installation

The path for the "Ra_Auto.ini" file can be set with the following instruction:

Under Windows 7, 32-bit:

\sw\x86\setup.exe
/silent=<Dr>:<requireddirectory>\Ra_Auto.ini

In Windows 7, 64-bit and Windows Server 2008 R2:

\sw\x64\setup.exe
/silent=<Dr>:<requireddirectory>\Ra_Auto.ini

Unless a path is specified, the Windows directory is searched.

If additional questions arise or error messages are displayed during installation, a dialog opens.
8.1 Technical specifications

The "SIMATIC NET PC Software V8.2" DVD can be used with the following operating systems:

<table>
<thead>
<tr>
<th>Operating system *</th>
<th>Minimum requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 7 Professional 32-bit</td>
<td>2.4 GHz PCs with 1 GB RAM, 2 cores</td>
</tr>
<tr>
<td>Windows 7 Professional 64-bit</td>
<td>2.4 GHz PCs with 2 GB RAM, 2 cores</td>
</tr>
<tr>
<td>Windows 7 Enterprise 32-bit</td>
<td>2.4 GHz PCs with 1 GB RAM, 2 cores</td>
</tr>
<tr>
<td>Windows 7 Enterprise 64-bit</td>
<td>2.4 GHz PCs with 2 GB RAM, 2 cores</td>
</tr>
<tr>
<td>Windows 7 Ultimate 32-bit</td>
<td>2.4 GHz PCs with 1 GB RAM, 2 cores</td>
</tr>
<tr>
<td>Windows 7 Ultimate 64-bit</td>
<td>2.4 GHz PCs with 2 GB RAM, 2 cores</td>
</tr>
<tr>
<td>Windows Server 2008 R2 64-bit (Standard and Enterprise Edition)</td>
<td>2.4 GHz PCs with 2 GB RAM, 2 cores</td>
</tr>
</tbody>
</table>

*Use of VMware ESXi V5.0, see section "Installation and configuration with VMware vSphere 5.0 (Page 19)"

For more detailed information on multilanguage versions and the service packs required for the supported operating systems, please refer to the readme file on the "SIMATIC NET PC Software" DVD.

For more detailed information on the minimum requirements for the PC, also refer to the readme file on the "SIMATIC NET PC Software" DVD.
Technical data

8.1 Technical specifications
9 Further Information

9.1 Documentation guide

Readme file of the SIMATIC NET products

All the important information relating to the SIMATIC NET products and other information on configuration and operation can be found in the readme files for the overall product and for NCM PC (main directory of the product DVD).

Quick Start for SIMATIC NET products

You will find a quick start for configuration in the "Commissioning PC Stations" manual if you have installed the documentation (Start menu "Start" > "All Programs" > "Siemens Automation" > "SIMATIC" > "SIMATIC NET" > "Commissioning PC Stations").

Commissioning PC Stations

Apart from the detailed description of the program "SIMATIC NCM PC", the "Commissioning PC Stations" manual also contains overviews of all the PC engineering and configuration programs (Start menu "Start" > "All Programs" > "Siemens Automation" > "SIMATIC" > "SIMATIC NET" > "Commissioning PC Stations").

The "Commissioning PC Stations" manual is a PDF document and can be read and printed out when required with the Acrobat Reader.

"Communication Settings" configuration program

Here, you will find information relating to a variety of topics, for example procedures manuals for the project engineering and configuration of connections. ("Communication Settings" folder > "SIMATIC NET Configuration")

Manual Collection

You will find the Manual Collection on the "SIMATIC NET PC Software" DVD in the "doc" folder. The Manual Collection contains the entire SIMATIC NET product documentation.
9.2 Other documents

Supplied documents and information
Documents and information on SIMATIC NET products are available on the accompanying DVD. The most important documents are:

- The "Readme.htm" file with the latest information on each product (in the main directory of the DVD).
- Any printed leaflets accompanying a product
- Installation manual for the "SIMATIC NET PC Software" DVD:
  - as PDF file in the "doc" directory of the "SIMATIC NET PC Software" DVD.

After installation, you can open the following documents (Start menu "Start" > "All Programs" > "Siemens Automation" > "SIMATIC" > "SIMATIC“ > "..."):

- SIMATIC NET - Commissioning PC Stations
- SIMATIC NET - Industrial Communication with PG/PC
- NCM PC - Manual and Quick Start

You can also obtain information in the integrated online help systems using the F1 key.

Additional Information on the Internet
Along with a wide range of other information, you can also obtain documentation on the product from the Internet:


Other product-related Internet addresses include:

- Siemens AG, Industry Sector, SIMATIC NET
  (www.siemens.en/net)
- SIMATIC NET product catalog "IK PI"
  (http://www.automation.siemens.com/mcms/industrial-communication/en/support/catalog/Pages/catalog.aspx)

9.3 Technical support, contacts and training
You will find information on this in the file "TechnicalSupport.pdf" in the "doc" folder of the "SIMATIC NET PC Software" DVD.