SIEMENS

WinCC Release Notes 1

What's New in WinCC 2

WinCC Installation Notes 3

SIMATIC HMI

WinCC V7.2
WinCC: Installation / Release Notes

System Manual

Online help printout

07/2013
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Legal information

Warning notice system

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

⚠ DANGER

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

⚠ WARNING

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

⚠ CAUTION

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

NOTICE

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

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

Qualified Personnel

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

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WinCC Release Notes

1

1.1 Release Notes

Content

These Release Notes contain important information.

The information in these Release Notes has priority over that in the manuals and online help with regard to legal validity.

Please read these Release Notes carefully since it contains information which may prove helpful.

1.2 Notes on operation

1.2.1 Notes on operation

General information

Avoiding loads from external applications

If several programs are run simultaneously on the same computer, the computer may be exposed to high load levels. To ensure trouble-free WinCC operations do not run any other applications that can lead to a resource crunch on the PC. Therefore, close any unnecessary programs before starting WinCC. Additional information is available in the section "Working with Projects > Making Runtime Settings > Impact of External Applications on Runtime".

Use of virus scanners

The following virus scanners have been released for use with WinCC V7.2:

- Trend Micro "Office Scan" Client-Server Suite V10.6
- Symantec Endpoint Protection V12.1 (Norton Antivirus)
- McAfee VirusScan Enterprise V8.8

Fundamental principle

The use of a virus scanner should not hamper the runtime process in a plant.

Rules for local virus scanners (virus scan clients)

- Integrated firewall of the virus scanners
  In WinCC V7.2, the local Windows firewall can be programmed with SIMATIC Security Control. You may not install or activate the integrated Firewall of the virus scanners.
- Manual scan
  You are not permitted to run a manual scan in runtime. Run this scan at regular intervals on all the system PCs, for e.g. during a maintenance interval.
- Automatic scan
  During automatic scan it is enough to just scan the incoming data traffic.
- Scheduled Scan
  You are not permitted to run a scheduled scan in runtime.
- Pattern update
  Pattern update of virus scan clients (system PCs being checked for viruses) is done by the higher-level virus scan servers (the system PC that centrally manages the virus scan clients).
- Dialogs
  To avoid interfering with process mode, no dialog messages should be displayed on the virus scan clients.

- Drives
  Only the local drives are scanned to prevent overlapping scans on network drives.
- You can deactivate e-mail scan except on the WinCC engineering station that receives e-mail.

Accept all other default settings.

What does this ensure?

The incoming data traffic is checked for viruses. The effect on process mode is kept to a minimum.

Note

When using a virus scanner, make sure that the computer has sufficient system resources.

Screen savers

Using a screen saver costs processor time and can lead to a system overload. Screensavers which no longer release parts of the working memory, continuously reduce the usable working memory. The Windows "Logon screen saver" can be used.

Compatibility

Information on compatibility can be found on the Internet under FAQ-No. 21927773:

- http://www.siemens.de/automation/csi/faq (http://www.siemens.de/automation/csi/faq)

See also

http://www.siemens.de/automation/csi/faq (http://www.siemens.de/automation/csi/faq)

1.2.2 Defining Access Rights in the Operating System

Introduction

To support you in protecting your system, WinCC offers a structured user management:

- Protect your system against unauthorized access.
- Assign each user the required rights.

In order to work with WinCC, certain folders can be enabled for access via the network. For security reasons, you should only assign access rights to these folders to authorized users. You manage access rights via the Windows Standard user groups and user groups created by WinCC.

Access rights specified in WinCC

Following WinCC installation, WinCC automatically establishes the following local groups in Windows User and Group Administration:

- "SIMATIC HMI"
  All users must be members of the "SIMATIC HMI" user group. These members may create local projects, and may process, start, and access these projects remotely. Access to the WinCC database is limited to the minimum rights necessary (read/write). By default, the user who carries out the WinCC installation and the local administrator are members of this group. Additional members must be added manually by an administrator.
- "SIMATIC HMI Viewer"
  These members have read access only to configuration and runtime data in the WinCC database. This group is primarily used for accounts for Web publication services, e.g., IIS (Internet Information Services) account for operation of WinCC WebNavigator.
- Access to folder "<Installation Directory>/WinCC/aplib"
  Following installation, the directory "Installation Directory/WinCC/aplib" named "SCRIPTFCT" is unlocked for the "SIMATIC HMI" user group. This directory contains central libraries for project script functions.

User Groups and User Rights

The following overview contains the tasks of the different user groups with the access rights and instructions required to assign these access rights.

WinCC Installation

- Task: WinCC Installation
- Role: Configuration engineer, Administrator
- Authorization: Windows Administrator rights
- Procedure:
  Prior to installation, ensure that you have local administrator rights on the computer.
- Explanation:
  You need local administrator rights to install WinCC.

Preparation for operation

- Task: Access to WinCC
- Role: Configuration engineer, Administrator
- Authorization: Power user rights, Administrator rights
- Procedure:
  After installation, set up the administrative settings as administrator or power user.
- Explanation:
  Power user rights are the minimum requirements for administrative settings, e.g. the authorization of file rights or printer driver settings.
  To delete a WinCC project completely, you must have power user rights, at a minimum.

Local user rights when operating WinCC

- Task: Operator input in Runtime, configuration
- Role: WinCC user (operator, configuration engineer)
- Authorization:
  - Windows group "User"
  - User group "SIMATIC HMI"
- Procedure:
  Add the user to the "SIMATIC HMI" user group and, at a minimum, to the Windows "User" user group.
- Explanation:
  In order to operate WinCC or for remote access to a WinCC project on the client and server, the user must be a member of the "SIMATIC HMI" user group.

Access to distributed systems

- Task: Access to distributed systems
- Role: WinCC user (operator, configuration engineer)
- Authorization: Uniform user groups on all computers
- Procedure:
  Enter the WinCC users on all computers in the same group.
  Assign the same password to all the users.
- Explanation:
  For access to distributed systems, the same user groups must be created on clients and servers.

Access rights for local projects

- Task: Access to projects which were created as follows:
  - Manual copy
  - Duplicate
  - Retrieval
  - Migration
- Role: WinCC user (operator, configuration engineer)
- Authorization: SIMATIC HMI, SIMATIC HMI Viewer

- Procedure:
  Assign full access rights to the project folder for the "SIMATIC HMI" group.
  To do so, open the project following its creation once as administrator or power user.
  Alternatively, you can specify access rights in the Windows Computer Management.
  Even if you want to copy projects with the Project Duplicator you will need the appropriate authorizations. You will either have to grant access to the used folders or duplicate them as main user.
- Explanation:
  When a local project is newly created, the members of user groups "SIMATIC HMI" and "SIMATIC HMI Viewer" automatically receive the necessary access rights to the project directory.
  However, when projects are copied, logged, or migrated, the local authorizations are not transferred but must be reassigned.

Access rights to system information

- Task: Access to system information via the WinCC channel "System Info"
- Role: Operator
- Authorization: System monitor user
- Procedure:
  Into the Windows group "System monitor user", accept all users who require the following system information of the WinCC channel "System Info":
  - CPU load
  - Status of the export file
- Explanation:

Users with Windows standard user rights do not have access to certain system information.

1.2.3 Windows Operating System

General information

WinCC interface and 64-bit operating system

The public interface of WinCC offer no native 64-bit support. This primarily affects ODK, VBS and the WinCC OLEDB provider. To use the interface of WinCC under a 64-bit operating system, you must adhere to the following:

- You cannot launch VB scripts simply with a double-click. You must explicitly use the 32-bit version under "syswow64\wscript.exe".
- .NET applications that use the WinCC API must be explicitly compiles as 32-bit applications. With "x86" and not with "AnyCPU".
- C++ applications cannot be compiled as 64-bit applications.

Microsoft security updates and patches

Make sure that all current patches and security updates from Microsoft are installed on your computer.

For further information, refer to the FAQs in the SIMATIC Customer Online Support:

- SIMATIC Customer Online Support: FAQ search (http://support.automation.siemens.com/WW/llisapi.dll?query=WinCC+Microsoft&func=cslib.cssearch&content=adsearch%2Fadsearch.aspx&lang=en&siteid=csius&objaction=cssearch&searchinprim=&nodeid99=)

Preventing access to Windows in runtime

Displaying the online help in runtime

If you wish to ensure that operators have no access to the operating system level of a plant, deactivate online help in all controls. This prevents the Windows selection dialog from opening. Deactivate the "Help available during runtime" option in the "Project properties" dialog in the "Options" tab.

Displaying the Windows taskbar in runtime

You can use the computer properties to prevent the Windows taskbar from being displayed in runtime. Open the "Parameters" tab in the "Computer properties" dialog and disable all the shortcut keys in the "Disable Keys" area.

In addition, deactivate the "Keep the taskbar on top of other windows" setting in Windows.

If you disable the <CTRL+ESC> shortcut key, the following shortcut keys are also disabled in runtime:

Shortcut key	Function
<Windows key+U>	System utility program manager
Press <SHIFT> five times	Locking function
Press <SHIFT right> for eight seconds	Impact delay
<ALT left+SHIFT left+NUM>	Keyboard mouse
<ALT left+SHIFT left+PRINT>	High contrast

The functions can be configured using the Windows Control Panel. If the functions are activated in the Windows Control Panel before activating WinCC Runtime, they are no longer locked in runtime.

Do not use the "On-screen Keyboard" enabled by Windows

Use the on-screen keyboard offered by WinCC instead of the "On-Screen Keyboard" enabled by Windows to prevent the display of the Windows taskbar in runtime.

Do not specify print to file as standard printing

Do not set the print to file as standard printing procedure in the Windows operating system. This prevents the Windows dialog for saving the file from opening when printing from WinCC.

Preventing access to Windows 7/Windows Server 2008 in runtime

Disabling shortcut keys

If you would like to disable shortcut keys in Windows 7 or Windows Server 2008, you must adjust the group policies in the operating system management.

A detailed description of this can be found in the FAQ with entry ID "44027453" in the SIMATIC Customer Online Support:

- Internet: WinCC FAQ 44027453 (http://support.automation.siemens.com/WW/view/en/44027453)

Without this adjustment, it is generally not possible to disable keys in Windows 7 and Windows Server 2008. Users can then use the shortcut key <Ctrl+Alt+Del> in WinCC Runtime to perform all related actions, e.g., lock computer, change user, log off, change password, start Task Manager.

Web Client: Display of ActiveX controls in Internet Explorer

ActiveX controls are disabled in Internet Explorer by default. For this reason, the WinCC controls are not displayed correctly in Internet Explorer on a Web client.

To display the WinCC controls correctly, add the Web server as a trusted website and enable the ActiveX controls only for the "Trusted sites" zone.

To continue protecting Internet Explorer from foreign ActiveX controls, check that the restricted security settings still apply to the other zones after making the changes.

For more information, refer to the following documentation:

- WinCC/WebNavigator: "WinCC/WebNavigator Installation Notes > Installation of WebNavigator Client > Settings in Internet Explorer"
- WinCC/DataMonitor: "WinCC/DataMonitor Documentation > Configuring the DataMonitor System > Working with the DataMonitor Client > Configuring Security Settings in Internet Explorer"

Internet Explorer: Setting for WinCC without Internet connection

Disable the option "Check for publisher's certificate revocation" on the "Advanced" tab in the Internet Options if you operate WinCC on computers that do not have an Internet connection.

Internet Explorer V7.0 or higher: Display of the Online Help

If using Internet Explorer V7.0, verify that all current Microsoft updates have been installed.

Otherwise delays may occur when displaying the Online Help.

Warnings with the DCOM configuration

When the "Dcomcnfg.exe" program starts, there may be warnings about unregistered AppIDs of WinCC components. This reaction has no effect on the functional capability of the software. The warnings can be ignored.

Changing the screen settings

Changing the color palette

If you change the color palette via the Windows Control Panel, you should expect color changes and poorer legibility of the text. When creating the project, therefore, be sure use the same color palette that will be used in runtime.

Changing the resolution

In order to use a different resolution in the destination system, use the "Adapt Picture" or "Adapt Size" functions for pictures and windows. These settings can lead to blurred displays in runtime and increased system loads.

Operating system with multilanguage installation: wrong language in message boxes

In message boxes in which the user must respond with Yes/No, OK/Cancel, etc., the buttons are always labeled in English in both CS and RT. This characteristic is independent of both the operating system language set and the WinCC language.

Novell Netware clients

WinCC should not be installed on a system together with the Novell client software.

The installation of WinCC can have the effect that it is no longer possible to log on to the Novell system or the lock the keyboard during runtime.

We recommend you not use the Netware client software or use the Microsoft client for Netware.

Notes on Windows 7 and Windows Server 2008

Slow response of virtual keyboard

In Windows 7 and Windows Server 2008, the "Microsoft OSK" and "HMI TouchInputPC" virtual keyboards start very slowly. The delay is caused by the Internet certificate check with callback.

Remedy

Deactivate the Internet certificate check with callback.

You will find the following files on the product DVD under <Tools\TouchInputPC>:

- DisableCRLCheck_LocalSystem.cmd
- DisableCRLCheck_CurrentUser.cmd

Proceed as follows:

1. Run the "DisableCRLCheck_LocalSystem.cmd" file with administrator rights.
   To do so, enter the "Run as administrator" command in the shortcut menu of the file.
2. Restart the computer.

Proceed as follows if the problem persists:

1. Run the "DisableCRLCheck_CurrentUser.cmd" file with user rights.
   To do so, double-click the file.
2. Restart the computer.

Note

Reactivating "Certificate check with callback"

The certificate check with callback will be disabled for all users or throughout the computer.

To restore the initial settings, run the following files from the product DVD in the <Tools \TouchInputPC> path:

- RestoreDefaults_LocalSystem.cmd
- RestoreDefaults_CurrentUser.cmd

Information for Windows Server 2003

Error message of the Management Console with Windows Server 2003 R2

After installing Windows Server 2003 R2 (Standard Edition), the following error message can appear in the Management Console (MMC) of the operating system when selecting "Services and Applications":

- SQL Server Configuration Manager
  A fault was found in a snap-in. We recommend that you shut the MMC down and restart.
  - Report this error to Microsoft and then shut down the MMC.
  - Continue and ignore snap-in error in further proceedings.
  - Continue and ignore snap-in error independent of user or session.

You can ignore this warning. Select the option "Continue and ignore snap-in error in further proceedings" and close the dialog with "OK".

Error message during S7-DOS installation on Windows Server 2003 R2

The error message can be ignored during the S7-DOS installation. To clear the message, delete the following registry keys if they exist:

- 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

See also

SIMATIC Customer Online Support: FAQ search (http://support.automation.siemens.com/WW/llisapi.dll?query=WinCC+Microsoft&func=cslib.cssearch&content=adsearch%2Fadsearch.aspx&lang=en&siteid=csius&objaction=cssearch&searchinprim=&nodeid99=)

Internet: WinCC FAQs (http://support.automation.siemens.com/WW/view/en/10805583/133000)

Internet: WinCC FAQ 44027453 (http://support.automation.siemens.com/WW/view/en/44027453)

1.2.4 Database System

Information on DB.dll

DB.dll is an ODK component for accessing databases via C API functions. The functionality is no longer supported for use with WinCC. Do not develop new applications with the database access layer DB.dll from WinCC.

Instead, use the following functions offered by Microsoft:

- Use ADO.NET for .NET-based applications. The database interface of .NET Framework is object-oriented and designed for scalable applications. The interface is also well suited for data communication through firewalls.
- You can use OLE DB for C++ based applications. Microsoft provides templates with Visual Studio for this. They make it easier to use the OLE DB database technology with classes, which implements many commonly used OLE DB interfaces.
- You can also use ODBC C++ based applications. Microsoft provides classes for this, which facilitate programming.

You can find more detailed information and examples on the Microsoft website.

Notes on Microsoft SQL server

Error accessing the SQL master database after switching off the server while the system is running

If a server fails unexpectedly in runtime (power failure, disconnection of power plug), the WinCC installation may be corrupted as a result and the SQL server will no longer be able to access the SQL master database following a restart. Access is only possible after reinstalling the WinCC instance.

In order to reinstall the WinCC instance, both WinCC and the SQL server must be removed and installed again.

Improved access protection for the WinCC databases

For the purposes of improved access protection, the user names "WinCCAdmin" and "WinCCConnect" have been removed from the WinCC database. Access to the WinCC

database is no longer possible using these user names. Applications which use their own SQL user names with password are not affected.

The user "SA" (system administrator) of the SQL server is deactivated during installation.

Manual detachment of WinCC project databases

A system property in Microsoft SQL server can bring about changes to the NTFS authorizations when you detach the WinCC project database.

If a WinCC database remains attached after you have closed a WinCC project or if you have manually attached the WinCC database, you always need to use the CCCleaner to detach the database. The "CCCleaner" program is located in the "bin" folder of the WinCC installation directory and must be started as administrator.

1.2.5 Network Technology and UPS

Information for networks

WinCC only supports the TCP/IP network protocol on the terminal bus.

Operation on network servers

It is not permitted to operate WinCC on network servers (e.g. domain controllers, file and name utility servers, routers, software firewalls, media servers, exchange servers, etc.).

Operation on systems with Windows cluster technology

WinCC cannot be used on systems implementing Windows Cluster technology.

Use of redundant servers

When redundant pairs of servers are implemented, the master and standby server must be operated in the same IP/subnet band.

Network adapters with energy-saving mode

When using network adapters provided with energy-saving mode, the energy-saving mode must not be activated.

Operation with multiple network adapters

If WinCC is used on a PC with more than one network adapter, observe the following:

Select the IP addresses which WinCC should use for communication with other WinCC stations. In Windows Explorer, select the "Simatic Shell" directory. Click into the navigation

window of the dialog "Simatic Shell" and select "Settings..." in the shortcut menu. In the "Settings" dialog that follows, select the IP address to be used.

If problems occur with the configuration and project management despite this setting, it could be due to the assignment of the IP address by the DHCP server to the WinCC station being too slow. In this case, the network administrator must define the IP address for each network adapter on the WinCC station causing the problem.

To do this, press the Windows "Start" button and select "Settings" > "Control Panel". Open the "Network Connections" folder and then the "LAN Connection" dialog. Click "Properties" in the "General" tab. Open the "LAN Connection Properties" dialog and select the "Internet Protocol (TCP/IP)" element from the list in the "General" tab by double-clicking it. Use the "Use the following IP address" option button in the properties of Internet Protocol (TCP/IP) to define the IP addresses.

Observe the information in the following chapter: "Special features for communication with a server with multiple network adapters"

Network environment and network drives

Ensure that there are no unnecessary network drive connections.

In order to prevent delays following a restart of a distributed system, start the multi-user projects first. The reason for this is the reaction of the master browser service (responsible for displaying the network environment in the operating system) and administration of the domains and working groups.

Operation with TCP/IP protocol

If the TCP/IP protocol is installed, the IP address must be valid and must not change in runtime operation.

Observe the following here:

1. The IP address becomes invalid when the network adapter is removed or deactivated after installation of the TCP/IP protocol.
2. The IP address may not be initialized yet. This occurs, for example, when the TCP/IP protocol is installed with the IP address derived from a DHCP server. When the computer is connected to the network, the computer undergoes a basic initialization during which an IP address is transferred. This IP address then remains valid even after the computer is disconnected from the network. After the period of the lease has expired, however, it can become invalid or changed in another way.

If the computer is not connected to the network, the user must log on via a user configured locally on this computer. This user should have local power user rights for runtime operation and for the configuration.

Leading zeros in IP addresses

When multi-user mode is used with name derivation via "hosts" and "lmhosts", no preceding zeros may be entered in the "hosts" file. IP addresses with leading zeros are interpreted as OCTAL instead of DECIMAL.

Example:

- Computer_1 199.99.99.020 is interpreted as 199.99.99.16 (decimal)
- Computer_2 199.99.99.026 is interpreted as 199.99.99.22 (decimal)

The specification can also be made hexadecimal:

- 199.99.99.0x10 for Computer_1

Using WinCC in multiple domains

The correct functioning of WinCC can only be guaranteed when all the computers in a multi-user system are located in a common domain or working group. When WinCC is used in different domains or working groups, complications may arise if the access rights and/or name utility are configured incorrectly.

When the user administration is realized in a working group, all the WinCC users must be set up on all the computers in the multi-user system and have the necessary access authorization.

Use of WinCC within a domain

If problems occur accessing the Windows domains, it cannot be guaranteed that WinCC functions correctly. Therefore, in addition to a "server-stored user profile", a local user profile and local user with necessary rights for WinCC must be set up. If access problems occur with a domain logon, exit WinCC and log on again using the local user profile.

Information for using routers and firewalls

Using routers

WinCC V7 can also be used to connect WinCC clients to WinCC servers via routers.

WinCC clients without their own project cannot be used for configuration with the routers, only for WinCC Runtime. There are no restrictions for WinCC clients with their own project.

The following is required when using routers:

- WinCC must use the correct IP address of the WinCC stations.
- The WinCC stations must be capable of resolving the physical computer name (NETBIOS name) of the other computers in the WinCC project.
- The WinCC stations must be capable of reaching each other via TCP/IP and ICMP without any problems. When testing the connection using Ping, it must be possible to access the computers immediately.

Speed of the network connections

To adapt WinCC to the network speed, use the WinCC Communication Configurator. The Smart Tool is accessed via the Windows Start menu in the "SIMATIC" program group under "WinCC > Tools". You can find additional information in the Release Notes in Chapter "Notes on WinCC > "Smart Tools".

For slow network connections, we recommend:

- Restricting the quantity of data to be transferred, for example, by avoiding complicated graphics.
- Using the local pdl cache of the WinCC client.
- Using the ISDN router for a WinCC client in multi-link mode (channel bundling). Bandwidths below 128 Kbps have proved insufficient.
- Integrate only one WinCC client for each additional ISDN channel.
- The operation of WinCC via ISDN routers depends on the stability and availability of the ISDN network.
- Reserve the maximum bandwidth of the connection for WinCC.

Note

Connection via ISDN and operation using slow connections has not been approved for clients without a local project.

Connecting to an office network with a central firewall

Some network configurations can increase the load on the firewall.

You can avoid the described reaction by assigning unique IP addresses to all WinCC stations.

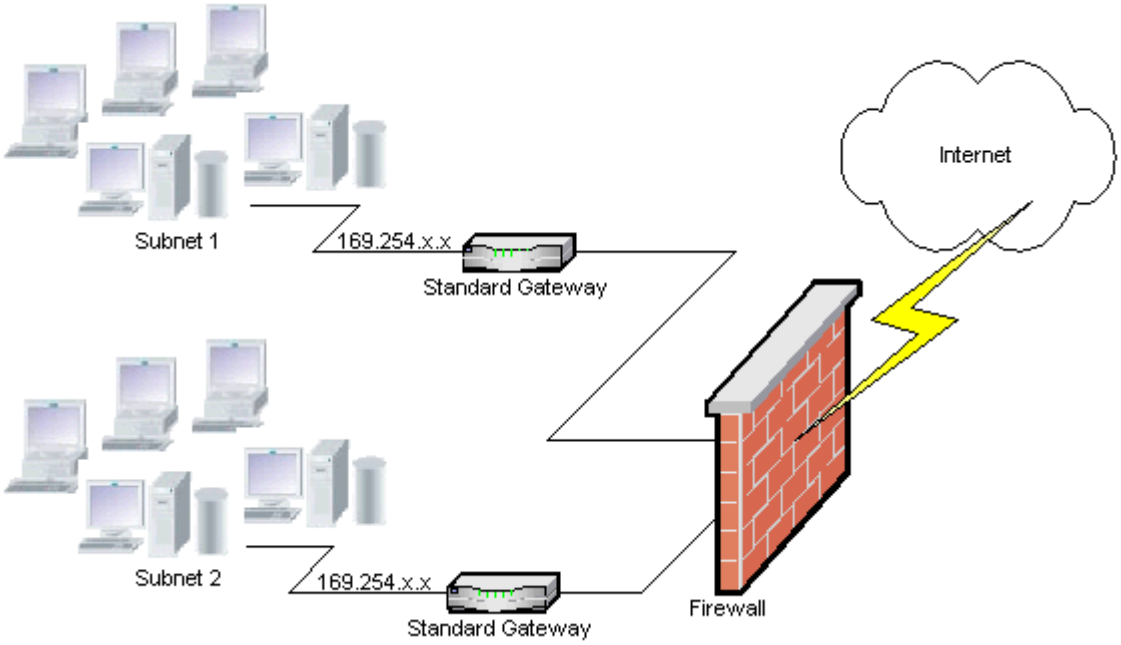
Basic system characteristics

- With a standard installation of Windows, the computer is assigned a random IP address from the DHCP server.

Requirements

The following conditions can lead to undesirable reactions when operating WinCC:

- The IP address band used in the terminal network is higher than the APIPA address band (169.254.x.x).
- IP addresses are routed via the default gateway.
- IP addresses from the APIPA band are routed to the firewall.



Cause of the increased load at the firewall

Following a system startup, each WinCC station sends its IP address once to all the other WinCC stations in the network. The WinCC stations define the WinCC station with the lowest IP address as the server that coordinates availability of the project.

If a WinCC station does not receive an address from the DHCP server and is therefore missing in the APIPA process, this station becomes the coordinating server. As a result, all the other WinCC stations attempt to access this server cyclically to publish the project.

The coordinating server, however, cannot be addressed because the IP address from the APIPA band is automatically transferred to the firewall. This also causes an increased network load at the central firewall.

Solution

This reaction can be avoided by assigning a unique IP address to each WinCC station.

Information on uninterruptible power system

Please note the following:

Prevent damaged files during power outages

If a power failure occurs while using Windows systems when the WinCC system is active, files can be corrupted or lost. Operation using the NTFS file system offers more security.

Secure continuous operation can only be guaranteed when an uninterruptible power system (UPS) is used.

Uninterruptible power system for client-server systems

If the server in a client-server system should be buffered by an UPS system, it must be capable of bridging a power failure for up to 30 minutes. This value depends on the configuration and number of computers, especially in a multi-user system. A great deal of time is required for the configuration.

1.3 Notes on WinCC

1.3.1 General information on WinCC and configurations

General information

Remote maintenance of WinCC systems

You can access WinCC systems with a Remote Desktop client via a console session. No user may be logged on locally.

The "RealVNC" Enterprise Edition V4.6.3 software is released for use for remote service access. You can find more notes on the use of "RealVNC" on the Internet on the Customer Support pages:

- Entry ID 55422236 (http://support.automation.siemens.com/WW/view/en/55422236) (http://support.automation.siemens.com/WW/view/en/55422236)

Migrating WinCC projects remotely only with UNC paths

Use only UNC paths to migrate WinCC projects remotely. Release the project path or the folder above it. Use this UNC path as project directory for the WinCC Project Migrator.

No update of the operating system with WinCC started

An update of the operating system is not permitted if WinCC is started. Start the computer again after updating the operating system.

WinCC documentation: WinCC Information System

The information in the online help are more up-to-date than the information in the printable PDF files.

Openness and system stability

WinCC enables high performance actions to be programmed on individual graphic objects and even complete functions and global action scripts independent of the individual components.

C scripting:

WinCC and Windows API functions can be called in the action scripts. In addition, the integrated script programming contains a C interpreter with a large number of standard functions complying to ANSI-C.

Please note that, due to the openness of the system, it is possible to write actions that block the system and lead to system crashes in runtime due to continuous loops, incorrectly initialized pointers, etc. Pay attention to the availability of allocated memory.

VB scripting

VBScript (VBS) enables access to tags and objects of the graphical runtime system during runtime. In addition to VBS standard functions and constants, the Windows Scripting Host and the MS Automation interface can also be used to make the Windows environment dynamic.

There is no guarantee nor WinCC support for the VBS functionality with regard to its adaptation to the Windows environment.

You can find additional information in the following sections of the WinCC Information System:

- "ANSI-C for Creating Functions and Actions"
- "VBS for Creating Procedures and Actions"
- "Process picture dynamics"

Time synchronization

Time synchronization between the servers and automation systems is essential for the correct functioning of:

- Redundancy synchronization
- Chronological messages
- Search and sorting criteria using the time code
- Operating multi-user projects in one domain

You can find additional information in the following sections of the WinCC Information System:

- "Redundant systems"
- "Chronological reporting"
- "Multi-user systems"
- "Time synchronization"

Complete download of redundant systems

Do not perform a complete download to the redundant systems in SIMATIC Manager using the "Target system / Compile and Download Objects..." function , as this can create inconsistent data on the target system.

Instead, select the "Download" option in the SIMATIC manager in the shortcut menu of the operating system.

Installation of the examples projects

The supplied example projects are located on the WinCC DVD in the directory "Samples \WinCC".

Installing OPC XML DA Server on a WinCC system

Use the WinCC Product DVD if you want to add an OPC XML DA Server installation to a WinCC system. Do not install the application by means of Windows Control Panel.

Information for multi-user systems

Clients without their own project in multi-user systems

In multi-user systems, there may be a delay in the selection of the first picture following a redundancy switchover for clients without their own project.

If you are changing the runtime language of a client without its own project in a multi-user system, you will have to close WinCC on the client and exit the WinCC project on the server. Only then will the language be altered.

A client without its own project: Operation with several Windows users

A user exits runtime in case of a client without its own project and logs off from Windows. If another main user or user without administrator rights logs on to this client and starts runtime, some WinCC components may not have the full range of functions.

Check the security settings for this user in the "Work.dcf" file. The file must be part of the SIMATIC HMI group. The SIMATIC HMI group must have the "Change" authorization for the "Work.dcf" file. You can find the hidden system file "Work.dcf" in the installation directory of Windows:

Windows 7 (depending on the installation)

- "ProgramData"
- "userdata"
- "Windows/Temp"

Windows XP

- "Windows/Temp".

Data loss after interruption of the remote desktop connection

If the remote desktop connection was interrupted, for example, because the network cable was removed from the Remote Desktop Client, the archives and the OPC server, for example, will no longer receive values from the data manager. This status will persist until the connection has been recovered, or until a timeout of 35 seconds has expired.

Remote access from a client without their own project

The server data editor is not available in the WinCC Explorer on a client without their own project.

The "Archive Configuration" entry is not available in Tag Logging and Alarm Logging.

Notes on integration into SIMATIC Manager

Symbolic data block name: Maximum of 16 characters long

If you want to transfer tags from a data block to WinCC, the symbolic name must not exceed 16 characters.

Creating a DCF file

If the DCF file cannot be read after migration, a message regarding the corrupt file is written to the migration log file. In order to create another DCF file, proceed as follows. The sequence must be adhered to in all cases:

1. Open the project in the configuration mode.
2. Remember your own symbolic computer name (server prefix) needed for later export.
3. Remember the storage location of the imported server data.
4. Remember the preferred server and the default server.
5. Delete your own and imported server data.
6. Close the project.
7. Delete the DCF file in project directory (typically ProjectName.dcf).
8. Reopen the project in the configuration mode.
9. Create your own server data, making sure to maintain the original symbolic computer name (server prefix) (see step 2).
10. Import all imported packages again (see step 3).
11. Reconfigure the preferred server and default server (see step 4).
12. Close the project.

Performance data for the message system and archive system

The performance data specifies the maximum values for the full load and surge in the message system and for the archiving system when archiving to the database.

The specified values only apply when the central archive server is used either for the central processing archiving or for message archiving.

CPU load

If data, transferred from a server to a client, cannot be processed at the same speed, the client rejects the data frames from a specified threshold value.

The following process control messages are issued in conjunction with this:

- 1000200: "WCCRT:Status"

You will find the following additional information in the comment of this message or in the log file "WinCC_Sys_<x>.log":

- 1000200,4,,<Computer name>, DataManager Runtime, RPC call took longer than 5000 msec
  (Client requires a very long time to process the data)
- 1000200,4,,<Computer name>, DataManager Runtime, Update data for Client '<client name>' lost,
  (message frames for the client are discarded on the server)

Data may be lost on the client. If the client involves a central archive server, this may cause old values to be stored in the process value archive.

Therefore, ensure that the central archive server has sufficient reserves for the CPU load.

See also

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

1.3.2 WinCC CS

General information

Do not use several WinCC editors at the same time

Do not use several WinCC editors at the same time because the editors could access the same WinCC components, for example using the "Text Distributor" and "Cross Reference" editors or the automatic update of the Cross Reference when the Graphics Designer is accessed through several interfaces at the same time.

Information on the Graphics Designer

Custom ActiveX controls (SIMATIC WinCC/ODK)

You must verify compatibility of custom ActiveX controls (SIMATIC WinCC/ODK) with the WinCC Basic System, WebNavigator Server, and WebNavigator Client. This applies to both a direct installation of ActiveX control on the computer with WinCC, Web server or Web client and the installation using a plug-in, such as on a Web client.

- With a direct installation, the ActiveX control should therefore be installed prior to WinCC Basic System, Web Server or Web Client. If the custom ActiveX controls do not function without error after this step, there is no compatibility.
- If the custom ActiveX control was packaged in a plug-in and installed via download, an upgrade of WinCC Basic System, Web Server or Web Client will also require generation of a new plug-in using this ActiveX control. When creating the plug-in, care should be taken to use compatible binaries (DLL, OCX, etc.).

Information on Global Script C Editor

Dynamic language setting for the script execution

In the Global Script C Editor, you can select "Dynamic: Project setting" as the language setting for scripts. The C script is compiled in English. The codepage of the centrally configured language is used for the strings in runtime.

You can specify the project setting in the "Project Properties" dialog in the WinCC Explorer. You can select the following from a list in the "Options" under "C scripts with "Dynamic" language setting in runtime":

- "Respective configured WinCC Runtime language". The C script is executed in the WinCC Runtime language.
- Operating system language for non-Unicode programs.
- The C script is executed with the code page setting of the operating system. Select the language from the list.

Notes on Alarm Logging

Loop in Alarm/"Open Picture" function: Picture names in different languages

If you are going to use multiple pictures with names from different code pages, it is advisable to use the picture names in the different "Open Picture" functions. You need to compile the corresponding "Open Picture" function with the correct language and assign it to the message.

New system messages in WinCC V7.2

Additional messages have been added to the existing documented new system messages in WinCC V7.2:

Number	Error Message / Description
1000301	WCCRT: Legitimization of connection has failed. The password is incorrect.
1000302	WCCRT: The PLC is protected. You must configure a password for the connection.
1000303	WCCRT: Legitimization of connection has failed. The password is blocked. Unblock locally (e.g. on display).
1003300	NRMS7PLUS: Modified configuration data for message detected.
1003301	NRMS7PLUS: Error while logging on to receive message.
1016000	IDB: Provider Initialization failed for Connection:
1016001	IDB: Consumer Initialization failed for Connection:
1016002	IDB: Provider Data transfer failed for Connection:
1016003	IDB: Consumer Data transfer failed for Connection:
1016004	IDB: Database Provider Initialization failed for Connection:
1016005	IDB: Database Consumer Initialization failed for Connection:
1016006	IDB: Database Provider Data transfer failed for Connection:
1016007	IDB: Database Consumer Data transfer failed for Connection:

Number	Error Message / Description
1016008	IDB: Dynamic Database Provider Initialization failed for Connection:
1016009	IDB: Dynamic Database Consumer Initialization failed for Connection:
1016010	IDB: Dynamic Database Provider Data transfer failed for Connection
1016011	IDB: Dynamic Database Consumer Data transfer failed for Connection:

Notes on cross reference

Windows 7 / Windows Server 2008: Security question when updating the data management

If a WinCC project contains ActiveX controls, during the updating of the data management a security notice for ActiveX controls is displayed.

Bring the dialog to the foreground if necessary in order to acknowledge the notice.

Make sure that the Graphics Designer is open during the updating of Cross Reference.

Rewiring: Tags used in object properties

If you rewire a tag that is used in several object properties of an object, note the following behavior:

The tag will be changed in all properties of this object and not just at the selected point of use.

Information on VBA

VBA updates

The user is solely responsible for the installation of updates for VBA.

The corresponding updates for VBA are made available by Microsoft on the download pages. Siemens does not supply any updates from Microsoft.

Install the updates for VBA after installing WinCC.

Notes on the channels

Name of a channel with national characters

When you enter a name with national characters in the "SIMATIC S7 Protocol Suite" channel and especially in the "Named Connections" channel unit, you must have set the corresponding code page in the language options of the operating system.

Information on ODK

ODK functions which are not available to certain users

For users with Windows standard user rights, the following ODK functions are no longer available:

- CreateDatabase
- DatabaseAttach
- DatabaseDetach

1.3.3 WinCC Runtime

Information on multi-user systems

Copying large amounts of data via the terminal bus

Copying large amounts of data on a computer connected to a terminal bus can effect communication in a multi-user system. One of the possible causes is the use of hubs with a low data throughput.

Notes on single-user projects

No access to process values by means of OPC and OLE DB

You cannot use OPC and OLE DB to access the process values of a single-user project.

Information on Tag Logging / Alarm Logging

Editing archive data already saved

Archived measured values/messages of previously saved archives cannot and should not be changed due to reasons of data security and consistency.

Information on the report system

Archiving the EMF files with a client without its own project

In multi-user systems and clients without their own project, EMF files are saved in the "Windows-Temp\PRT_OUT\<Archive>_<Date+Time>" directory of the client.

After creating an EMF file, an attempt is made to move this file to the project directory on the server. In redundant systems, the file is moved to the current master. The file is deleted on the client.

If the file cannot be moved to the server, it remains in the Windows Temp directory of the client. After the next EMF file has been created, an attempt is made to move all EMF files in the directory.

In addition, the OS controlling message "1004003" is generated if the move is unsuccessful. The process control message specifies the directory on the client where the EMF file is located. If the client is disconnected from all servers, this process control message can no longer be generated on a server. In this case, the message is located in the diagnostics file "WinCC_Sys_XX.log".

Information on OPC

SIMATIC WinCC OPC Server: Automatic assignment of DCOM rights

The DCOM rights required for operation of the OPC server are assigned automatically. The settings are performed during the installation. Depending on the WinCC operating mode, further configurations are performed.

You must not edit these settings manually.

No deinstallation of SIMATIC WinCC OPC Server when the OPC channel is used

When you use the OPC channel, you must not remove the SIMATIC WinCC OPC DA Server.

OPC tags: Time stamp for Alarm Logging and Tag Logging

If messages are triggered by OPC tags, the message time stamp is used by the OPC server, comparably to chronological reporting.

For Tag Logging the time stamp is generated by the Tag Logging server.

OPC Data Access

When running the OPC DA server on a WinCC client:
During the connection establishment of the OPC client, the WinCC server with which the OPC client exchanges data must be in runtime. If the WinCC server is deactivated, not all properties of the items will be provided.

Since the display of data types in OPC Item Manager requires a lot of time, the display should be turned off if it is not needed.

OPC XML data access

Display of newly created tags

When you create new tag folders with new tags in runtime in the WinCC project, the tag folders and the tags will not become visible on the OPC client until you have restarted WinCC Runtime on the OPC client system. Make sure that "OPCTags" are no longer open on the OPC client.

Add Tags

If you want to add tags with the OPC Item Manager, then WinCC Runtime will have to be enabled on the OPC server.

Authentication method

XML DA Web service is installed using WinCC Setup with the "Integrated Windows Authentication" authentication method. The WinCC OPC XML client supports this method. For this, the user account under which the OPC Client runs must be known to the XML server computer.

Windows XP: Protocol "Microsoft TCP/IP Version 6" must not be installed

If you use the XML DA web service under Windows XP, the "Microsoft TCP/IP Version 6" protocol must not be installed.

OPC historical data access

Return value OPC_E_MAXEXCEEDED for archive access using OPC

If the OPC client demands data from more than 2000 values during synchronous or asynchronous reading, the call is rejected with a return message OPC_E_MAXEXCEEDED. This limit serves to limit the computer load and duration of the call.

This restriction does not apply if the entire time range is read.

OPC Alarm&Event

Revision of the documentation "Read methods for archived messages"

The following contents have been changed in the documentation on "Reading archived messages" on the page "Read methods for archived messages":

- "Read" mode
  - Text added for "2. Refresh": Event packages with Refresh flag only contain historic events. The events may still be pending.
    The last Refresh package of the historical messages receives the identification "Last Refresh".
- "Advise" mode
  - The following texts after "2. Set subscription to active using SetState" are invalid: "If you deactivate the subscription, the transmission will be interrupted." and "The last package also contains an additional flag "Last Refresh"."

Avoid bounding values

Avoid using bounding values when reading historical alarms via the WinCC-OPC-A&E-server.

Otherwise, processing read access requests can take a long time, depending on the size of the archive.

Filtering messages when using format instructions in the user text block

The OPC source of a message is shown in an user text block. This is user text block 2 with the default setting.

If you use format instructions in this user text block, you need to use wild cards for the filter setting.

This ensures correct filtering when the OPC sources are generated dynamically in runtime.

1.3.4 Smart Tools

Notes on WinCC ConfigurationTool and WinCC Archive ConfigurationTool

Visual Basic for applications must be installed with Microsoft Office.

To use WinCC ConfigurationTool and WinCC Archive ConfigurationTool in Microsoft Excel, you must also install Visual Basic for Applications when you install Microsoft Office.

Information about WinCC Configuration Tool

Opening the WinCC Configuration Tool

If you are working with the WinCC Configuration Tool, the following WinCC editors must be closed:

- Tag Management (WinCC Explorer or Tag Management dialog)
- Alarm Logging
- Tag logging
- Text library

Proceed as follows to create a new project:

1. Close WinCC
2. Open Excel and the WinCC Configuration Tool
3. Create a new project folder and setup a link to the project
4. Work in the Configuration Tool
5. Close the Configuration Tool
6. Start WinCC for further processing

Limit value monitoring

The required analog alarms are created by the WinCC Configuration Tool at the same time. If the analog alarms are not visible in Alarm Logging, activate the "Limit Value Monitoring" option in the "Tools" menu under "Add Ins".

Information on WinCC Archive Configuration Tool

Entering AR_ID for "Normalization DLL Parameter" as a decimal

AR_ID of the raw data tag must be entered as a decimal in the "Normalize DLL Parameter" column. AR_ID is listed as a hexadecimal in Tag Logging.

Information on the Dynamic Wizard Editor

Opening the Dynamic Wizard Editor

The Dynamic Wizard Editor and the Graphics Designer should not be opened at the same time.

Information on tag export/import

Importing tags

The WinCC project must be closed when tags are imported using the "Tag export/import" Smart Tool.

Information on the Tag Simulator

General information

The update time for tag values is one second. Any change will only become active when you are activating the functions.

A maximum of 300 tags can be configured.

Communication Configurator

Tips for using the Communication Configurator

If you wish to specify the settings for network connections using the Communication Configurator, observe the following points.

Requirements

- Windows Explorer is closed.
- All SIMATIC applications are closed.
- CCAgent, CCEServer and CCEClient services are closed.

Closing CCAgent, CCEServer, and CCEClient

1. In the start menu of the operating system, select "Settings > Control Panel > Administrative Tools > Services".
   The "Services" dialog opens. The data window of the dialog shows the tasks "CCAgent", "CCEServer" and "CCEClient", etc.
2. In the shortcut menu of each task, select "Close".
   These services are started automatically the next time WinCC starts.

Specifying settings

In Communication Configurator, select the following settings:

- Using the slider, select the slowest transfer rate for the connection.
- The "Server Pings Client" checkbox is normally activated.
  Disable this option if you are working with a server that cannot perform active lifebeat monitoring of the clients. This is the case, for example, if the server cannot communicate with a "DialupClient" using "Ping".
  This option is not relevant on the client.

Restarting the computer

Restart the computer and check the set IP addresses in the configuration dialog of CCAgent. You can find additional information in Chapter "Special features for communication with a server with multiple network adapters".

Note

The Communication Configurator supports only the configuration of central communication. Runtime ability and performance of WinCC, however, may also be affected by other factors.

1.3.5 Process communication

Notes on the WinCC channel "SIMATIC S7-1200, S7-1500 Channel"

Communication of WinCC V7.2 with SIMATIC S7-1200 and SIMATIC S7-1500

In productive operation, communication of WinCC V7.2 with SIMATIC S7-1500 or SIMATIC S7-1200 is only released for single-user systems.

Restrictions for the channel "SIMATIC S7-1200, S7-1500 Channel"

A maximum of 16 CPUs can be connected with the WinCC systems at the same time as Softnet via one network card each.

Maximum number of WinCC systems per CPU:

- S7-12xx V2.2: 1
- S7-12xx V3: 2
- S7-1511 (64 ISO-on-TCP connections, 4 of which reserved for ES): 20
- S7-1513 (96 ISO-on-TCP connections, 4 of which reserved for ES): 30
- S7-1516 (128 ISO-on-TCP connections, 4 of which reserved for ES): 41

Note that a maximum of 200 tags per control should be configured for communication with S7-1200 PLCs. If several HMI devices access a PLC, this limit applies for all HMI devices.

A maximum of 4 HMI devices can access an S7-1200 at the same time. A maximum of 32 PLCs can be addressed by WinCC Runtime.

Information on the WinCC "SIMATIC S7 Protocol Suite" channel

Time change on an S7 automation system when using AR_SEND

Archive data transferred from the S7-AS to WinCC with AR_SEND is ignored if the time is reset on the AS, e.g. following time synchronization. The archive already contains the reset time period.

S7-300 Automation System: Released CPUs for raw data communication / Named Connections

"BSEND/BRCV" raw data communication via Named Connections is supported for the following S7-300 CPUs:

- CPU319-3 PN/DP as of V2.5
- CPU317-2 PN/DP as of V2.6
- CPU315-2 PN/DP as of V3.1

For S7-300 controllers, a firmware version V3.x or higher is recommended.

Information on the WinCC "SIMATIC S5 PROFIBUS DP" channel

PROFIBUS DP and SIMATIC Net V8.2

To use the "PROFIBUS DP" channel with SIMATIC NET V8.2, you must disable "OPC UA" property for the "DP" protocol in the communication settings of SIMATIC NET V8.2.

Information on the WinCC "SIMATIC 505 TCPIP" channel

LMode and LStatus data types

The channel has been extended by the data types LMode and LStatus.

- LMode (Loop Mode): 16-bit value (bit array) without sign; access: write and read
- LStatus (Loop Status): 16-bit value (bit array) without sign; access: Read ONLY

The offset to be specified during the addressing identifies the loop whose mode or status should be requested.

Information on SIMATIC NET "IE SOFTNET-S7 LEAN"

Licensing

During installation, the license for SIMATIC NET "IE SOFTNET-S7 LEAN" is not automatically transferred. You may transfer the license using the Automation License Manager, if necessary.

Information on communication diagnostics

Communication processor diagnostics with SIMATIC NET software

When communication diagnostics are performed in WinCC, communication processors are tested with the "PG/PC Panel" application.

WinCC V7 contains a new version of the SIMATIC NET and NCM PC software. The "Set PC Station" application included with this software provides an additional, comprehensive diagnostics option for testing the communication processors. You can find a more detailed description in the SIMATIC NET help.

1.4 Notes on WinCC Redundancy

Redundancy behavior in case of double failure

Double failures are not covered by redundancy.

A double failure occurs, for example, when the terminal bus was pulled on server 1 while server 2 was deactivated.

Delay in swapping out archives

The swapping of archives will be delayed if a redundant partner is not available or deactivated.. Swapping of archives will not start or continue until the partner is available once again and after archive synchronization.

An extended failure of the redundant partner may result in data loss, because the memory capacity of the circular buffer for Tag Logging and Alarm Logging is limited.

No reloading of messages after network failure

The reloading of messages after network failure is not permitted for redundant systems.

Configuring used standard gateway

For redundancy, it is recommended to configure a standard gateway for the correct detection of failure scenarios. The standard gateway must be properly configured on both redundancy servers for this. This can be done manually or via DHCP.

For a configured standard gateway, ensure that this gateway cannot only be reached but is also accessible using a "ping".

Use of DHCP: Starting computer only with active network connection

If you are using DHCP on the terminal bus network card, note the following in a redundant system:

The computer must obtain a valid IP address from the DHCP server during startup.

Otherwise, the redundancy status is always indicated as "fault". This status can only be reset by restarting the computer.

Message sequence report in a redundant system

If you output a message sequence report on a client, you may encounter problems during logging when switching to the redundant partner.

1.5 Notes on Process Control Options

Creating a New Project

If you create a new project manually, you must first run the OS Project Editor.

While creating an OS using PCS7 Engineering Station, the project is automatically called in the background and initialized using the default settings.

Removing unneeded "@*.PDL" pictures before migration

If the OS Project Editor has processed a WinCC project, the "@*.PDL" pictures of Basic Process Control will have been installed in the Graphics Designer. If you do not need these pictures following the migration, you not only have to remove the "*@.PDL" pictures prior to migration, but also the "PAS" files and "SSM.cfg". After the migration, the files from Basic Process Control are no longer added.

OS Project Editor: Default setting for the alarm filter at SIMATIC Logon

If you are using SIMATIC Logon, note the following when running the OS Project Editor:

The "Default user" logged on via SIMATIC Logon usually has the authorization level "No. 2 Authorization for area".

Recommendation

To enable acknowledgement to be restricted to only authorized users, before running the OS Project Editor, activate the option "acknowledgeable messages in separate list" for message filters on the "message display" tab.

Multilingualism

Online documentation in the WinCC Information System is available only in English, French and German. The WinCC ASIA version offers online documentation in the languages English and Chinese simplified (PR China).

If you work with a French, English or German version of Windows computer software and install a different language, it is possible that terms in WinCC appear in this language even if WinCC is operated with the same language as Windows.

Different buttons have English labels especially in the multi-lingual versions of Windows independent of the language setting and independent of the WinCC language. This affects dialog boxes in particular which the user must respond with Yes/No, OK/Cancel etc.

Tags with @-prefix

The project engineer my not create any tags with @ prefix. Only the WinCC PCS7 software can do this. You are not allowed to manipulate these system tags. The system tags are required so that the product works properly.

While configuring AS and OS monitoring using Lifebeat Monitoring, device names should not be identical to pictures in Picture Tree Manager or internal tags with the "@" name prefix.

Chip card reader Omnikey 3121 USB: Driver software for WinCC V7.2

The following driver software has been approved for operation of the chip card reader Omnikey 3121 USB with WinCC V7.2:

- Windows XP, Windows 7 (32-bit), Windows Server 2003 and Windows Server 2008
  - CT-API_V4_0_2_2A.exe
  - OMNIKEY3x21_V1_2_6_5.exe
- Windows 7 (64-bit) and Windows Server 2008 R2
  - CT-API_V4_0_2_2A.exe
  - OMNIKEY3x21_V1_2_6_5_x64.exe

Smart card: Disabling the Plug&Play service

If the Plug&Play service is enabled, an operating system message may occur in WinCC Runtime when scanning for drivers. This allows the access to the operating system.

Since WinCC does not require a separate smart card driver, the "Plug&Play" service for smart cards is disabled.

Area names in Alarm Logging and in the Picture Tree Manager

Area names in Alarm Logging and in Picture Tree Manager must not contain any spaces at the beginning or end.

Area names in distributed systems

With distributed systems, the area names in the projects of the various WinCC servers must be unique in order to ensure correct filtering and display of the messages according to the area.

Server project on Windows XP with clients without their own project

If a multi-user project is running on a computer with Windows XP and a switch is made to this project client without their own project, configurations are not to be made on the clients without their own project.

Clients without their own project not on Windows Server 2003

Clients without their own project must not be operated on a computer with Windows Server 2003.

Image painting time

To optimize the image painting time, set the "WinCC Classic" design in the WinCC project properties.

User authorization "No. 8 Controlling archives"

User authorization "No. 8 Controlling archives" in User Administrator is no longer used by the system.

Authorization check in WinCC ServiceMode

There are three possible scenarios for WinCC in ServiceMode that influence the Runtime behavior due to authorization check:

- No Windows user logged on.
  A user is defined as "User in service context" in WinCC User Administrator.
  The authorizations of this user in the service context will be checked in Runtime. This setting will influence the trigger authorization for the signaling device.
- No Windows user logged on.
  No user is defined as "User in service context" in WinCC User Administrator.
  The signaling device will always be activated in Runtime.
- A Windows user is logged on. Interactive user inputs are possible.
  If a user is defined in the service context does not have an effect in Runtime.
  The authorizations of the logged on WinCC user will be checked in Runtime.

What's New in WinCC

2

2.1 What is new in WinCC V7?

Introduction

The following chapters inform you in brief about the most important improvements in WinCC V7.2 as compared to WinCC V7.0.

2.2 Supported operating systems

Software requirements and supported operating systems

WinCC V7.2 requires Microsoft SQL Server 2008 R2 SP1 (32-bit). The SQL server is included on the DVD with your WinCC V7.2 package.

WinCC V7.2 runs on the following operating systems:

- WinCC client projects
  - Windows 7 SP1 (Ultimate / Professional / Enterprise, 32-bit)
  - Windows 7 SP1 (Ultimate / Professional / Enterprise, 64-bit)
  - Windows XP Professional SP3
- For WinCC single-user projects and client projects
  - Windows 7 SP1 (Ultimate / Professional / Enterprise, 32-bit)
  - Windows 7 SP1 (Ultimate / Professional / Enterprise, 64-bit)
  - Windows XP Professional SP3
  - Windows Server 2003 SP2
  - Windows Server 2003 R2 SP2
  - Windows Server 2008 SP2
  - Windows Server 2008 R2 SP1
- For WinCC Server
  - Windows XP Professional SP3
  - Windows Server 2003 SP2
  - Windows Server 2003 R2 SP2
  - Windows Server 2008 SP2
  - Windows Server 2008 R2 SP1

2.3 Expanded quantity framework: 18 redundant servers

Supported configurations

WinCC V7.2 provides access to up to 18 servers for WinCC clients in a WinCC network. You can use a maximum of 36 servers as 18 redundant server pairs.

Up to 32 clients can access one server in this configuration. You can reach quantity frameworks with up to 151 clients when you use Web clients. This configuration consists of one WinCC client and 150 Web clients.

2.4 New channel DLL: "SIMATIC S7-1200, S7-1500 Channel"

WinCC V7.2 supports communication with the SIMATIC controllers S7-1200 and S7-1500.

"SIMATIC S7-1200, S7-1500 Channel" channel

The new "SIMATIC S7-1200, S7-1500 Channel" channel is used for communication between a WinCC station and the S7-1200 or S7-1500 automation systems. Communication takes place using the TCP/IP protocol.

Supported data types

The channel supports the following data types:

- Binary tag
- Signed 8-bit value
- Unsigned 8-bit value
- Signed 16-bit value
- Unsigned 16-bit value
- Signed 32-bit value
- Unsigned 32-bit value
- Floating-point number 32-bit IEEE 754
- Floating-point number 64-bit IEEE 754
- Text tag, 8-bit character set

2.5 Configuration Studio: Simplified configuration of the tag management

New editor for tag management

WinCC V7.2 introduces the new "WinCC Configuration Studio" editor.

This table-based dialog makes it easy to create connections and tags. The complete configuration and display of data is combined with the functions of a bulk data editor.

The user interface is divided into two areas: a navigation area similar to Microsoft Outlook and a data area similar to Microsoft Excel. This means that the editor offers advantages in operation which will be familiar to you from spreadsheet programs.

Copying tags

WinCC Configuration Studio makes it possible to quickly create additional tags, tag groups and structures. To create several tags with the same settings, for example, you simply paste the copies of a configured tag. Use the standard copy and paste functions to do this:

- Shortcut menu
- Shortcut keys
- Dragging lines

WinCC immediately creates the new tags in the communication. WinCC Configuration Studio checks for incorrect settings during the input.

Search and filters

WinCC Configuration Studio offers the usual search and filter functions available in spreadsheet programs.

Use the filter list box to select the required lines in a column or enter the search text in the text filter.

For a search across all columns, a search box in the title bar and the "Search and Replace" dialog offer all familiar functions.

Importing tags

You can import data records from external applications, for example WinCC V12 tags, into the WinCC Configuration Studio. The connections contained in the data records must be available by their name in WinCC Configuration Studio. Right-click the "Tag Management" item in the tree and select the menu item "Import" from the shortcut menu.

2.6 Innovation of Graphics Designer and Global Script editors

WinCC V7.2 makes it easier to work with the Graphics Designer and the Global Script editors because the interface has been adapted to current standards.

Adapting the work environment

Dialogs and windows can be moved by dragging, docked at random and arranged as tiles in tabs.

The display of toolbars and windows is made much easier by the menu bar. Use the "Reset" function to restore the factory settings of the editor at any time.

Arrangement of toolbars

The icons in the toolbars are much more clearly structured to better support the configuration of the Graphics Designer. Icons with similar functions are now available in the same toolbar.

New functions in Graphics Designer

The Graphics Designer now also offers the following new functions:

Inserting I/O field by dragging-and-dropping tags

Graphics Designer offers a new and simple method for creating an I/O field:

To create an I/O field for a specific tag, drag the tag from tag management into the process picture using drag-and-drop. WinCC automatically creates an I/O field which is linked to the tag.

Password protection of process pictures

A process picture can be assigned a password. This measure protects your VBA scripts against unauthorized access, for example.

2.7 Simplified runtime operation: WinCC system dialogs, favorites, multitouch

WinCC V7.2 offers many new functions for easy operation in runtime: Switch language, change picture and jump to start picture using the WinCC system dialogs as well as operation by multitouch function.

Touch operation

You can use the usual touchscreen gestures with WinCC V7.2, for example:

- Change picture by swiping
- Zoom by dragging with two fingers

Multitouch operation

You have the option of configuring multi-finger operation in WinCC V7.2 to increase security in runtime. You can configure up to ten objects for simultaneous clicking to trigger an operation. You require a screen that supports multitouch if you want to use the touch function.

WinCC system dialogs

WinCC V7.2 introduces the WinCC system dialogs for runtime operation.

The operator opens the system dialogs in runtime by means of hotkeys or by swiping.

Picture change between process picture favorites

Process pictures marked as favorites in WinCC Explorer are displayed as tiles in the WinCC system dialog. You carry out a picture change in WinCC V7.2 by simply clicking on the required process picture. This means that the operator can jump between pictures for which navigation was not configured.

Calling the start picture

Operators can switch to the WinCC start picture at any time with the WinCC system dialog.

Language switch

Each created runtime language is automatically displayed by a corresponding icon in the WinCC system dialog. The operator simply clicks on the respective language icon to switch to another language.

2.8 Simplified working with multiple languages

WinCC V7.2 offers improved support of multiple languages.

Parallel WinCC installation of all languages

The switch to Unicode technology makes it possible to install all WinCC language versions on the same computer at the same time - European as well as Asian languages.

All language areas in a single WinCC project

A WinCC project can include all languages for which the computer has been configured. The available locales and fonts can be configured at the same time and used in runtime.

Simple language switch without configuration requirements

The new WinCC system dialogs support fast switching of all configured languages in runtime.

As soon as you create a new language in the Text Library, the corresponding icon is displayed in the system dialog. You do not have to configure any additional language switch in the process picture.

The operator opens the system dialogs in runtime using hotkeys or swiping gestures and can switch between created runtime language in this way at any time.

2.9 Advanced functionality for process value archiving

Adding archive values manually

WinCC V7.2 makes it possible to add additional values to the archive database or to edit archived values in runtime.

The values can be written to the archive using external interfaces, such as ODK or OPC, or via WinCC OnlineTableControl.

The added or edited values are identified as manual values in the database and in the display.

Including quality codes in compressed archives

You can specify the percentage from which the respective status of the process values is archived in the compressed tag. For example, 80% of values must have the status "Good" to be saved as "Good" in the compressed tag.

Calendar function supports configuration of cyclical timers

You can specify timers for acquisition and archiving cycles that are based on the calendar. To do so, you configure new timers by using a time series.

2.10 Expanded functionality for WinCC OnlineTableControl

Changing values manually or creating new values manually

You can change archived values and create new values in OnlineTableControl manually with the key functions "Edit" and "Create archive value". The modified values are marked with a flag and archived. You can configure operator input messages to be triggered when an archive value is changed or created.

The values in the compressed archives for the relevant time range will be recalculated, provided you have enabled recalculation in the "Tag Logging" editor.

WinCC OnlineTableControl now also offers the option of visualizing limit violations with different colors.

2.11 Expanded Functionality for WinCC/WebNavigator

Web viewer: Internet Explorer and WinCCViewerRT

Version V7.2 of the WinCC/WebNavigator option offers more convenience, functionality and security for web-based communication with WinCC.

The WinCC/WebNavigator V7.2 gives you access to process pictures with the following Web viewers:

- Internet Explorer V7
- Internet Explorer V8
- Internet Explorer V9
- WinCCViewerRT

New license grading and upgrade licenses

The WinCC/WebNavigator V7.2 expands license grading with the following new license packages:

- 1 client
- 5 clients
- 100 clients
- 150 clients

Different upgrade packages are available for this purpose:

- Upgrade from 1 to 3 clients
- Upgrade from 3 to 5 clients
- Upgrade from 50 to 100 clients
- Upgrade from 100 to 150 clients

Changing users in runtime

The Web client of WinCC/WebNavigator V7.2 makes it possible for users to log in with different user names in runtime. The WebNavigator now offers the following options to do this:

- WinCCViewerRT: Change user by means of an integrated button.
- Internet Explorer: Manual logout using the ODK function "PWRTLogout()".
- General: Logout and new login with changed user name.

Unicode support

WinCC/WebNavigator V7.2 offers even simpler handling of multilingual projects by converting WinCC V7.2 to Unicode. This means you can use the entire range of installed languages in a single project.

Password-protected process pictures

You can protect published, password-protected process pictures in WinCC Explorer with an additional password for access via WebNavigator.

Background pictures

WinCC/WebNavigator V7.2 lets you personalize the Web client by adding background pictures. In this way, you can adapt the connection side of the Web client to match your corporate identity.

Process picture series in WebNavigator Gadget

The WebNavigator Gadget is available on WebNavigator servers under Windows 7 and Windows Server 2008. In the Gadget, you can display published WinCC process pictures as jpg snapshots which are created cyclically by the WebNavigator server.

You can also display these process pictures as series with WinCC/WebNavigator V7.2.

2.12 Expanded Functionality for WinCC/DataMonitor

Introduction

Version V7.2 of the WinCC/DataMonitor option offers more convenience, functionality and security for web-based communication with WinCC.

You can use the following tools for evaluation of process data with WinCC/DataMonitor V7.2:

- Internet Explorer V7
- Internet Explorer V8
- Internet Explorer V9
- WinCCViewerRT
- Microsoft Excel 2003
- Microsoft Excel 2007
- Microsoft Excel 2010

Filter for tag selection for event-driven print jobs and Excel workbooks

With WinCC/DataMonitor V7.2, you can limit the display of available tags for the selection of tags using a filter. For example, the filter setting "N*" shows all tags that start with "N".

Display of manually entered process values

WinCC V7.2 lets you enter manual values in process value archives in runtime.

The manually entered values are identified in an additional table column in MS Excel, if necessary.

2.13 SIMATIC Process Historian: New archive server

New central archiving system

The Central Archive Server (CAS) is replaced by the SIMATIC Process Historian for long-term archiving.

SIMATIC Process Historian is a central archiving system for storing process data, such as process values and messages. To increase availability, the Process Historian can also be operated as redundant server pair and a RAID system can be used ("redundant array of independent disks").

The system ensures high-performance backup of process values and messages, even for WinCC projects with high data volume.

Based on the Microsoft SQL technology, Process Historian supports the complete backup of your process data as a redundant archive system.

2.14 SIMATIC Information Server: New reporting system

Collection, evaluation and graphical visualization of process data

The SIMATIC Information Server is a reporting system that uses the Microsoft Reporting Services and accesses historic data of a process control system. The historic data consists of process values, messages or recipe data. The Process Historian, WinCC OS (WinCC server) and PCS 7 OS can be used as data sources.

The SIMATIC Information Server enables easy evaluation of WinCC archives and Process Historian archives.

The collected data is evaluated and visualized by means of reports. Reports can have tabular or graphical contents for the evaluation.

Various report templates are available for creating reports. The report templates can be configured with two Information Server applications:

- Web application
- Office add-ins for Excel and Word

2.15 Easy migration of WinCC projects

Expanded Project Migrator

The WinCC Project Migrator automatically makes almost all changes that are necessary for the migration of WinCC projects to WinCC V7.2.

However, we recommend that you create a backup copy of the WinCC project before you start migration.

2.16 Other Innovations

What else is new in WinCC Version 7.2?

Apart from the innovated features described above, WinCC V7.2 also offers additional functions and enhancements.

The Global C Script Editor now supports Unicode

You can set the suitable code page in the C Editor toolbar. This means that the system language no longer has to be changed with the Microsoft setting "Start > Settings > Control Panel > Regional and Language Options".

You can select "Dynamic: Project setting" as the language setting for scripts. C scripts will then not only use the string transfer parameters with the given code page setting, for example, French (France), but will react dynamically to the project setting. You can specify the project setting in the "Project Properties" dialog in the WinCC Explorer.

Lower-case/upper-case letters are taken into account for user passwords

For access to WinCC projects, you can define passwords with upper-case/lower-case letters for users in the User Administrator.

Support of OPC Unified Architecture (OPC UA) functions

The WinCC OPC UA server supports the secure transfer of process values and archive data.

The WinCC OPC UA server and each OPC UA client authorize each other mutually by exchanging certificates.

"Fill direction" property for graphic objects

The fill direction can now be freely defined for objects with a closed border line, for example, from left to right instead of just from bottom to top.

WinCC Installation Notes 3

3.1 Installation Guide

Contents

This documentation contains important information on the scope of delivery, as well as on the installation and operation of WinCC.

The information contained here takes precedence over the information contained in the manual and online help.

3.2 Scope of delivery

Components supplied

WinCC V7.2 is available as a basic package, upgrade package and as a download package "OSD" (Online Software Delivery).

You will receive the following components:

Component	Basic / Upgrade / Download Package
DVD WinCC V7.2: • WinCC V7.2 • WinCC/ WebNavigator V7.2 • WinCC/ DataMonitor V7.2 • WinCC/ Connectivity Pack V7.2 • WinCC/ Connectivity Station V7.2 • Information Server V8.0 SP1 • SQL Server 2008 R2 SP1 for WinCC V7.2 • SIMATIC Logon V1.5 SP1 DVD SIMATIC NET V7.1 SP6 DVD SIMATIC NET V8.2 SP1	X
Required licenses	X
Certificate of License	X
Registration form (only valid for the PR of China)	X

[1] Refer to the software requirements in the installation notes and release notes.

Note

Print Installation Notes

The installation notes for the respective products are also provided as a PDF file.

You can find the installation notes and release notes on the WinCC DVD in the "Install_and_Release-Notes" directory.

You will need Adobe Acrobat Reader V5.0 or later. You can download Adobe Acrobat Reader free of charge at the following URL:

- http://www.adobe.com/products/acrobat

The WinCC DVD contains further PDF files for printing out the Online Help in the "InstData \PrintDocuments" directory.

Communication drivers

The following table lists the communication drivers included in the package.

Communication drivers	Additional license
OPC	No
Allen Bradley - Ethernet IP	No
Mitsubishi Ethernet	No
Modbus TCP/ IP	No
PROFIBUS DP	No
PROFIBUS FMS	No [1]
SIMATIC 505 TCPIP	No [1]
SIMATIC S5 Ethernet Layer 4	No [1]
SIMATIC S5 Profibus FDL	No
SIMATIC S5 Programmers Port AS511	No
SIMATIC S5 Serial 3964R	No
SIMATIC S7 Protocol Suite	No
SIMATIC S7-1200, S7-1500	No [2]
SIMATIC TI Ethernet Layer 4	No [1]
SIMATIC TI Serial	No
SIMOTION	No
System Info	No
WinCC OPC UA server	No [3]

[1] Licenses are included in the basic licenses (RT/RC).

[2] The licensing for SIMATIC S7-1200, S7-1500 is based on the number of connections. You can use up to two connections without an additional license.

[3] You need a Connectivity Pack license for the WinCC OPC UA server.

See also

Licenses and Licensing (Page 62)

WinCC Installation Requirements (Page 66)

3.3 Licenses and Licensing

Introduction

The WinCC software is protected and can only be used in its full measure with a valid license. Each installed software and option used requires a valid license for unrestricted operation of WinCC. You will receive a storage medium with all necessary license keys for the installation of licenses. The licenses for optional packages must be ordered separately.

Licenses which are installed for use in WinCC are transferred from the storage medium to a local drive and are unregistered on the storage medium. The cumulation of more than one license per component subject to a license is possible only for archive licenses. Other licenses cannot be cumulated.

Note

Furthermore, the licensee confirms that the software (SW) contains licensed software by Microsoft Corporation or its subsidiaries. Thereby, licensee agrees to be bound by the terms and conditions of the appended license agreement between Microsoft SQL Server and end user, and to fulfill same.

Notes On License Conditions

Please observe the enclosed license conditions, which are also displayed during the installation. You need V7.2 licenses for WinCC V7.2.

The SIMATIC WinCC software is copy-protected against unlicensed use. Additional information on licenses and license types may be found under "Licensing" in the WinCC Information System.

Installed licenses are required to enable proper operation of WinCC. If WinCC is installed without licenses, the program will switch to demo mode at start-up.

Note

It is not allowed to run WinCC in process mode without a valid license.

Demo Mode

If a license is missing for one or several components, WinCC will run in demo mode. WinCC also switches to demo mode when the maximum authorized number of process tags or archive tags is exceeded in a project.

In Demo mode, you can use the WinCC software fully for a maximum of one hour. After this period, the operation of WinCC violates the license agreements. After one hour, the WinCC Explorer and the editors will be closed. In runtime, the system will request the acquisition of a valid license. This dialog will appear every 10 minutes.

You can upgrade a WinCC demo version to the full version. To do this, proceed as follows:

- Install the required licenses.
- Install the SQL Standard Server using the WinCC DVD.

Details on demo mode may be found in WinCC Information System under "Licensing".

Microsoft SQL Server 2008 R2 SP1 for WinCC V7.2

A license is necessary to use the Microsoft SQL Server database. This license is readily available in a licensed and proper installation of WinCC.

The licensed SQL server installed with WinCC may only be used in connection with WinCC. Its use for external applications or an internal database requires an additional license.

Installation of Licenses

You may use the Automation License Manager for installation of licenses. Licenses may be installed during installation of WinCC or after the fact. You will find the Automation License Manager in the Windows start menu in the "Siemens Automation" program group. An after-the-fact installation of a license will take effect upon restart of your computer.

For the installation of licenses, the following requirements must be met:

- The storage medium containing the licenses must not be write protected.
- You can install the RC licenses on a license server for the configuration. You do not have to install the licenses on the local drive.
- Licenses may only be installed on a non-compressed drive.

Note

After uninstalling WinCC, the licenses remain installed on the system.

See also

How to Perform an Upgrade Installation (Page 95)

How to Perform an Uninstall (Page 92)

How to Install Supplementary Components Later (Page 89)

How to Install WinCC (Page 86)

3.4 Activating and testing ASIA licenses

Introduction

The license keys for WinCC Runtime and WinCC CS are supplied on the included license storage medium.

The licensed ASIA version is executable in parallel to the European version by switching to Unicode. The supplied hardware key (dongle) checks for the following conditions:

- The runtime language of the user interface (GUI)
- The languages in the text library
- The operating system

Note

It is not allowed to run WinCC in process mode without a valid license.

Productive operation in virtual environments is not approved for the WinCC ASIA version.

Installation of Licenses

You may use the Automation License Manager for installation of licenses. Licenses may be installed during installation of WinCC or after the fact.

You will find the Automation License Manager in the Windows start menu in the "Siemens Automation" program group.

An after-the-fact installation of a license will take effect upon restart of your computer.

For the installation of licenses, the following requirements must be met:

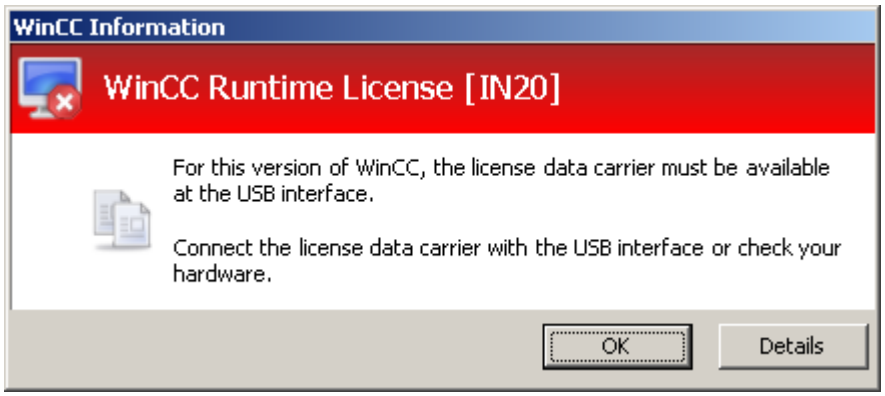
- The storage medium containing the licenses must not be write protected.
- You can install the RC licenses on a license server for the configuration. You do not have to install the licenses on the local drive.
- Licenses may only be installed on a non-compressed drive.

Note

After uninstalling WinCC, the licenses remain installed on the system.

Testing the validity of the licenses

If you start a correctly licensed WinCC version without a connected license storage medium, the following error message appears.



The same error message appears after a few minutes if you disconnect the storage medium from the computer with a correctly licensed WinCC version.

NOTICE
Do not remove the license storage medium WinCC switches to demo mode if you remove the storage medium with the licenses from the computer. The demo mode for WinCC Runtime is deactivated again shortly after you reconnect the storage medium to the computer. Restart WinCC Explorer to deactivate the demo mode of the WinCC editors. WinCC Runtime can stay active during this operation.

If this error message does not appear, a non-licensed WinCC version is installed.

No right of usage for WinCC is available in this case. Remove this WinCC version and obtain a legal, licensed version of WinCC V7.

Contact WinCC Support and provide the serial number of your software version:

- http://www.automation.siemens.com/partner/index.asp

3.5 Installation Requirements

3.5.1 WinCC Installation Requirements

Introduction

You will need special hardware and software for the installation of WinCC. The requirements are described in the chapters "Hardware Requirements for Installation" and "Software Requirements for Installation".

Note

Windows operating system: Avoid changes in system

Windows settings deviating from default can have an effect on operation of WinCC.

Observe this note particularly for the following changes:

- Change of processes and services in Control Panel.
- Changes in Windows Task Manager.
- Changes in Windows registry.
- Changes in Windows security policies.

The first check if certain conditions are met is already executed during the installation of WinCC. The following conditions are checked:

- Operating system
- User Rights
- Graphic Resolution
- Internet Explorer
- MS Message Queuing
- SQL Server
- Due Complete Restart (Cold Restart)

Error Messages

If one these conditions is not met, the WinCC installation will be aborted and an error message will be displayed. For details about the error messages displayed see the table below.

Error Message	Explanation
To execute installation properly, restart the computer	The software installed on your computer requires a restart. Before WinCC can be installed, the computer should be restarted once.
Required operating system Win XP	Upgrade the operating system to Windows XP SP3.
Required operating system Windows 7	Upgrade the operating system to Windows 7.
Required operating system Win 2003	Upgrade the operating system to Windows 2003 SP2.

Error Message	Explanation
Required operating system Win 2008	Upgrade the operating system to Windows 2008 SP2.
This application requires VGA or any higher resolution	Check the settings of the connected monitor and upgrade the graphic card, if necessary.
You do not have administrator rights. Log on as administrator.	Administrator rights are required for the installation. Please log in to Windows again as a user with administrator rights.
Setup has detected that unInstallShield is active. Please close unInstallShield and restart Setup.	Close unInstallShield. This message may also indicate that you are lacking administrator rights for this installation. In this case, log on to Windows again as user with administrator rights.
The Microsoft Message Queuing services are not installed.	Install the Microsoft Message Queuing services. To do this, you will need the Windows installation CD. You can find detailed information in the section "Installing Microsoft Message Queuing".

See also

Defining Access Rights in the Operating System (Page 76)
Licenses and Licensing (Page 62)
How to Adapt the Windows Security Policies (Page 81)
How to Install MS Message Queuing (Page 84)
Notes on Data and System Security (Page 75)
Software Requirements for the Installation (Page 70)
Hardware Requirements for the Installation (Page 67)

3.5.2 Hardware Requirements for the Installation

Introduction

Certain hardware configuration conditions must be fulfilled for installation.

Hardware Requirements

WinCC supports all common IBM/AT-compatible PC platforms.

To efficiently work with WinCC, select a system with the recommended specifications.

Note

Server requirements are also valid for single-user systems unless specified otherwise.

		Minimum	Recommended
CPU	Windows XP	Client: Intel Pentium III; 800 MHz Single-user system: Intel Pentium III; 1 GHz	Client: Intel Pentium 4; 2 GHz Single-user system: Intel Pentium 4; 2.5 GHz
	Windows 7	Client: Intel Pentium 4; 2.5 GHz Single-user system: Intel Pentium 4; 2.5 GHz	Client: Intel Pentium 4; 3 GHz / Dual Core Single-user system: Intel Pentium 4; 3.5 GHz / Dual Core
	Windows Server 2003	Single-user system: Intel Pentium III; 1 GHz Server: Intel Pentium III; 1 GHz Central archive server: Intel Pentium 4; 2.5 GHz	Single-user system: Intel Pentium 4; 3 GHz Server: Intel Pentium 4; 3 GHz Central archive server: Intel Pentium 4; 3 GHz / Dual Core
	Windows Server 2008	Single-user system: Dual Core CPU; 2 GHz Server: Dual Core CPU; 2 GHz Central archive server: Dual Core CPU; 2 GHz	Single-user system: Multi Core CPU; 2.4 GHz Server: Multi Core CPU; 2.4 GHz Central archive server: Multi Core CPU; 2.4 GHz
RAM	Windows XP	Client: 512 MB Single-user system: 1 GB	Client: ≥ 1 GB Single-user system: 2 GB
	Windows 7	Client: 1 GB Single-user system: 2 GB	Client: 2 GB Single-user system: 2 GB
	Windows Server 2003	Single-user system: 1 GB Server: 1 GB Central archive server: 2 GB	Single-user system: 2 GB Server: 2 GB Central archive server: > 2 GB
	Windows Server 2008	Single-user system: 2 GB Server: 2 GB Central archive server: > 2 GB	Single-user system: 4 GB Server: 4 GB Central archive server: > 4 GB
Free memory on hard disk - for installation of WinCC [1)] - for working with WinCC [2) 3)]		Client: 1.5 GB / Server: > 1.5 GB Client: 1.5 GB / Server: 2 GB / central archive server: 40 GB	Client: > 1.5 GB / Server: 2 GB Client: > 1.5 GB / Server: 10 GB / central archive server: 2 x 80 GB on different hard disks
Virtual memory [4)]		1.5 x RAM	1.5 x RAM
RAM for Windows printer spooler [5)]		100 MB	> 100 MB
Graphic card		16 MB	32 MB

		Minimum	Recommended
Color depth / Color quality		256	Highest (32 Bit)
Resolution		800 * 600	1024 * 768

[1] The installation requires at least 100 MB of free memory space for additional system files on the drive on which the operating system is installed. The operating system is usually installed on drive "C:".

[2] Depending on project size as well as size of archives and packages. On project activating, free memory space of at least 100 MB must be available.

[3] WinCC projects should not be stored on compressed drives or directories.

[4] Use the recommended value in the area "Total size of swap file for all drives" for "Size of swap file for a specific drive". Enter the recommended value in both the "Start size" field as well as in the "Maximum size" field.

[5] WinCC requires the Windows printer spooler to detect printer faults. Therefore, no other printer spooler may be installed.

Note

In the case of online configuration, the recommended requirements are valid as the minimum requirement.

Virtualization

The following virtualization systems are tested:

- Microsoft Hyper-V
- VM Ware ESXi 5.0

Requirement

The performance data of the virtual computers must meet the minimum requirements for WinCC clients.

Go to the following URL for additional information on virtual environments with WinCC as of V7.0 SP2:

- Internet: FAQ Virtualization (http://support.automation.siemens.com/WW/view/en/49370459)

See also

Defining Access Rights in the Operating System (Page 76)

Notes about Running the Software (Page 97)

Notes on Data and System Security (Page 75)

Software Requirements for the Installation (Page 70)

Scope of delivery (Page 60)

3.5.3 Software Requirements for the Installation

Introduction

For the installation, certain requirements concerning operating system and software configuration must be met.

Note

WinCC is enabled for operation within a domain or workgroup.

Note however that domain group policies and restrictions in the domains may prevent installation. In this case, remove the computer from the domain before installing Microsoft Message Queuing, Microsoft SQL Server and WinCC. Log on to the computer concerned locally with administrator rights. Carry out the installation. Following successful installation, the WinCC computer can be registered in the domain again. If the domain-group policies and domain restrictions do not impair the installation, the computer must not be removed from the domain during installation.

Note however that domain group policies and restrictions in the domain may also hinder operation. If these restrictions cannot be overcome, operate the WinCC computer in a work group. If necessary, contact the domain administrator.

Operating systems

Operating System Languages

WinCC is released for the following operating system languages only

- German
- English
- French
- Italian
- Spanish
- Chinese (Simplified, PR China)
- Chinese (Traditional, Taiwan)
- Japanese
- Korean
- Multilingual operating system (MUI version)

Configurations

When using more than one server, all servers must be operated with a uniform operating system: Windows Server 2003 or 2008, each with the same Standard or Enterprise Edition.

Single-user systems and clients

WinCC runs under Windows XP Professional and Windows 7.

Operating system	Configuration	Comments
Windows XP	Professional Service Pack 3	32-bit Including MUI version Note the software requirements of the delivered SIMATIC NET version.
Windows 7	Professional Service Pack 1 Enterprise Service Pack 1 Ultimate Service Pack 1	Standard installation 32-bit and 64-bit Including MUI version

You can also run single-user systems and clients in WinCC multi-user systems on the Windows Server 2003 / 2008. Clients without their own project must not be operated on a computer with Windows Server 2003.

WinCC Server

You can operate a WinCC server under Windows Server 2003 / 2008 Standard/Enterprise Edition or Windows Server 2003 / 2008 R2.

WinCC server with up to three WinCC clients

It is also possible to operate a WinCC Runtime server on the following operating systems if you are not running more than three clients:

- Windows XP
- Windows 7

WinCC ServiceMode is not released for this configuration.

Operating system	Configuration	Comments
Windows Server 2003	Standard Service Pack 2 Enterprise Service Pack 2	32-bit Including MUI version
Windows Server 2003 R2	Standard Service Pack 2	32-bit Including MUI version
Windows Server 2008	Standard Service Pack 2	32-bit
Windows Server 2008 R2	Standard Service Pack 1	64-bit Including MUI version
Windows XP	Professional Service Pack 3	32-bit, including MUI version Maximum of 3 clients. Approved for WinCC Runtime without redundancy only. WinCC ServiceMode has not been released.

Note

WinCC is not suitable for use on a Microsoft terminal server. You can use the Microsoft terminal server only in connection with the WinCC Web client. Note the installation instructions of the WinCC/WebNavigator.

Settings for Windows Server 2003

In the event of problems with the connection between a Client and the Server, check the settings for the client licensing mode on the server. If your network only has one server, you must select the setting "Per Server". The "Number of concurrent connections" must equal the number of clients. If your network has multiple servers, you must select the setting "Per Seat". For further information about licensing, please see the operating system's documentation.

Microsoft Message Queuing services

WinCC requires Microsoft Message Queuing services. You can find detailed information in the section "Installing Microsoft Message Queuing".

Microsoft SQL Server 2008

WinCC requires the 32-bit version of Microsoft SQL Server 2008 R2 Service Pack 1. SQL Server is included automatically in the WinCC installation.

The necessary connectivity components are also installed with the Microsoft SQL Server.

The corresponding user rights must have been set up for accessing the SQL Server data. Observe the notes in the section "Defining access rights in the operating system".

SQL server instance "WinCC"

During installation, a new "WinCC" SQL server instance is created with Microsoft SQL Serve containing the required settings.

This instance is always installed in English. The language in which existing SQL server instances have been installed has no effect on this. Existing instances are not affected by the Service Pack.

"WinCC" instance after removing WinCC

When WinCC is removed , the "WinCC" SQL server instance remains installed and must be removed manually for licensing reasons.

Do not change the Windows computer name

Do not change the Windows computer name after installing WinCC installation.

If you change the Windows computer name, you will need to remove and reinstall the SQL Server.

Installation under Windows 7/Windows Server 2008

The .Net Framework is supplied with Windows 7/Windows 2008 32-bit and 64-bit. However, the Framework may not be installed by default. For this reason, make sure before the WinCC installation that .Net Framework is installed. Install .Net Framework using Windows functions.

Operation with multiple network adapters

When a server is used with several network adapters, read the notes in the WinCC Information System under "Configurations > Distributed Systems > Special features of communication using a server with several network adapters".

Process communication driver

For the SIMATIC NET drivers, select the "SIMATIC NET PC Software" program during the WinCC installation.

Internet Explorer - requirements

The following versions are released for WinCC:

- Microsoft Internet Explorer V8.0 (32-bit)
- Microsoft Internet Explorer V9.0 (32-bit)

If you wish to fully use WinCC's HTML Help, you must permit the use of JavaScript under "Internet Options" in Internet Explorer.

Note

In Windows 7 and Windows Server 2008, do not disable Internet Explorer.

Adapting security policies

The operating system must permit the installation of unsigned drivers and files. Detailed information is available in the section "Adapting Security Policies under Windows".

Note

An update of the operating system is not permitted if WinCC is started. Start the computer again after updating the operating system.

Checking the "Path" environment variable

Before starting WinCC, you should check the entries in the "Path" environment variable.

A few programs insert paths containing quotation marks in the environment variable. These paths can prevent WinCC from starting or limit its functionality. The paths with quotation marks can also interfere with the software of other manufacturers.

Open the "System properties" dialog in the Control Panel. Open the "Environment variables" dialog using the "Environment variables" button on the "Advanced" tab, and display the value of the "Path" system tag.

If the "Path" system tag contains paths with quotation marks, reorder the entries so that these paths are called last.

Windows 7 and Windows Server 2008: Microsoft Internet Information Service (IIS)

If you are using the OPC-XML-DA server of WinCC, you must install the Microsoft Internet Information Service (IIS) before installation.

Under Windows Server 2008, configure the settings in the Server Manager using the role "Webserver (IIS)" in the associated role services.

Activate the following settings under Windows 7 and Windows Server 2008:

- Web management tools:
  - IIS management service
  - IIS management console
  - IIS management scripts and tools
  - Compatibility with IIS Metabasis and IIS 6 configuration
  - Compatibility with WMI for IIS 6
- WWW services > General HTTP features:
  - Standard document
  - Static content
- WWW services > Application development features:
  - .NET extendibility
  - ASP
  - ASP.NET
  - ISAPI extensions
  - ISAPI filters
- WWW services > Security:
  - Requirement filtering
  - Standard authentication
  - Windows authentication

Note

Always install Microsoft Internet Information Service (IIS) with ASP.NET and ASP

Always install ASP.NET and ASP when you install the Microsoft Internet Information Service (IIS).

See also

http://support.microsoft.com/kb/917607 (http://support.microsoft.com/kb/917607)

3.5.4 Notes on Data and System Security

Introduction

System security when using WinCC can be increased by implementing simple measures.

Preventing Access to the Operating System Layer in Runtime

If the Windows Selection dialog is opened in an activated WinCC project, access to the Windows operating system is possible using this function. A Windows Selection dialog is opened, for example, when data is imported or files are selected.

Protect the corresponding function by executing a Permission Check via the User Administrator to prevent unauthorized access to the operating system.

Preventing access to the Windows toolbar

You can use the computer properties to prevent the Windows taskbar from being displayed in Runtime. Open the "Parameters" tab in the "Computer properties" dialog and deactivate all the shortcut keys in the "Disable Keys" area.

In addition, deactivate the "Keep the taskbar on top of other windows" setting in Windows.

Disabling shortcut keys

If you disable the <Ctrl+Esc> shortcut key, the following shortcut keys are also disabled in Runtime:

Shortcut key	Function
<Windows key+U>	System utility program manager
Press <Shift> five times	Locking function
Press <Shift right> for eight seconds	Impact delay
<Alt left+Shift left+Num>	Keyboard mouse
<Alt left+Shift left+Print>	High contrast

Note

The functions can be configured using the Windows Control Panel. If the functions are activated in the Windows Control Panel before activating WinCC Runtime, they are no longer locked in runtime.

Windows 7 / Windows Server 2008: Disabling shortcut keys

If you would like to disable shortcut keys in Windows 7 or Windows Server 2008, you must adjust the group policies in the operating system management.

A detailed description of this can be found in the FAQ with entry ID "44027453" in the SIMATIC Customer Online Support:

- Internet: WinCC FAQ 44027453 (http://support.automation.siemens.com/WW/view/en/44027453)

See also

Notes about Running the Software (Page 97)

How to Adapt the Windows Security Policies (Page 81)

Defining Access Rights in the Operating System (Page 76)

How to Install WinCC (Page 86)

WinCC Installation Requirements (Page 66)

Internet: WinCC FAQs (http://support.automation.siemens.com/WW/view/en/10805583/133000)

Internet: WinCC FAQ 44027453 (http://support.automation.siemens.com/WW/view/en/44027453)

3.5.5 Access rights in the operating system

3.5.5.1 Defining Access Rights in the Operating System

Introduction

To support you in protecting your system, WinCC offers a structured user management:

- Protect your system against unauthorized access.
- Assign each user the required rights.

In order to work with WinCC, certain folders can be enabled for access via the network. For security reasons, you should only assign access rights to these folders to authorized users. You manage access rights via the Windows Standard user groups and user groups created by WinCC.

Access rights specified in WinCC

Following WinCC installation, WinCC automatically establishes the following local groups in Windows User and Group Administration:

- "SIMATIC HMI"
  All users must be members of the "SIMATIC HMI" user group. These members may create local projects, and may process, start, and access these projects remotely. Access to the WinCC database is limited to the minimum rights necessary (read/write). By default, the user who carries out the WinCC installation and the local administrator are members of this group. Additional members must be added manually by an administrator.
- "SIMATIC HMI Viewer"
  These members have read access only to configuration and runtime data in the WinCC database. This group is primarily used for accounts for Web publication services, e.g., IIS (Internet Information Services) account for operation of WinCC WebNavigator.
- Access to folder "<Installation Directory>/WinCC/aplib"
  Following installation, the directory "Installation Directory/WinCC/aplib" named "SCRIPTFCT" is unlocked for the "SIMATIC HMI" user group. This directory contains central libraries for project script functions.

User Groups and User Rights

The following overview contains the tasks of the different user groups with the access rights and instructions required to assign these access rights.

WinCC Installation

- Task: WinCC Installation
- Role: Configuration engineer, Administrator
- Authorization: Windows Administrator rights
- Procedure:
  Prior to installation, ensure that you have local administrator rights on the computer.
- Explanation:
  You need local administrator rights to install WinCC.

Preparation for operation

- Task: Access to WinCC
- Role: Configuration engineer, Administrator
- Authorization: Power user rights, Administrator rights
- Procedure:
  After installation, set up the administrative settings as administrator or power user.
- Explanation:
  Power user rights are the minimum requirements for administrative settings, e.g. the authorization of file rights or printer driver settings.
  To delete a WinCC project completely, you must have power user rights, at a minimum.

Local user rights when operating WinCC

- Task: Operator input in Runtime, configuration
- Role: WinCC user (operator, configuration engineer)
- Authorization:
  - Windows group "User"
  - User group "SIMATIC HMI"
- Procedure:
  Add the user to the "SIMATIC HMI" user group and, at a minimum, to the Windows "User" user group.
- Explanation:
  In order to operate WinCC or for remote access to a WinCC project on the client and server, the user must be a member of the "SIMATIC HMI" user group.

Access to distributed systems

- Task: Access to distributed systems
- Role: WinCC user (operator, configuration engineer)
- Authorization: Uniform user groups on all computers
- Procedure:
  Enter the WinCC users on all computers in the same group.
  Assign the same password to all the users.
- Explanation:
  For access to distributed systems, the same user groups must be created on clients and servers.

Access rights for local projects

- Task: Access to projects which were created as follows:
  - Manual copy
  - Duplicate
  - Retrieval
  - Migration
- Role: WinCC user (operator, configuration engineer)
- Authorization: SIMATIC HMI, SIMATIC HMI Viewer

- Procedure:
  Assign full access rights to the project folder for the "SIMATIC HMI" group.
  To do so, open the project following its creation once as administrator or power user.
  Alternatively, you can specify access rights in the Windows Computer Management.
  Even if you want to copy projects with the Project Duplicator you will need the appropriate authorizations. You will either have to grant access to the used folders or duplicate them as main user.
- Explanation:
  When a local project is newly created, the members of user groups "SIMATIC HMI" and "SIMATIC HMI Viewer" automatically receive the necessary access rights to the project directory.
  However, when projects are copied, logged, or migrated, the local authorizations are not transferred but must be reassigned.

Access rights to system information

- Task: Access to system information via the WinCC channel "System Info"
- Role: Operator
- Authorization: System monitor user
- Procedure:
  Into the Windows group "System monitor user", accept all users who require the following system information of the WinCC channel "System Info":
  - CPU load
  - Status of the export file
- Explanation:

Users with Windows standard user rights do not have access to certain system information.

See also

Notes on Data and System Security (Page 75)

Notes about Running the Software (Page 97)

How to Adapt the Windows Security Policies (Page 81)

How to Install WinCC (Page 86)

WinCC Installation Requirements (Page 66)

3.5.5.2 Including users in the "SIMATIC HMI" user group

Introduction

Include those local users in the "SIMATIC HMI" group whose login permits access to WinCC. You must first create local users to do so. Users of a domain may be directly included in the user group "SIMATIC HMI".

Procedure

1. Open the workstation administration under Windows.
2. Select the entry "Local Users and Groups > Users" in the navigation window .
   All local users are displayed in the data window.
3. Open the "New User" dialog via the shortcut menu.
   Create a user account with the same login for each user who is to have access to WinCC.
4. Select the entry "Local Users and Groups > Groups" in the navigation window".
   All groups are displayed in the data window.
   Select the "SIMATIC HMI" group.
5. Using the pop-up menu, open the "Add Member" dialog and include those users as members of the "SIMATIC HMI" user group.

3.5.5.3 Including domain-global user group in the "SIMATIC HMI" user group

Introduction

During operation of a domain, an additional domain-global user group may be created and included as a member of the "SIMATIC HMI" user group.

Requirements

- The domain administrator creates a domain-global user group.
- Within the domain, the domain administrator includes those users in the domain whose login permits access to WinCC.

Procedure

1. Open the workstation administration under Windows.
2. In the navigation window, select the "Local Users and Groups > Groups" entry. The data window displays all groups. Select the group "SIMATIC HMI".
3. Using the pop-up menu, open the "Add Member" dialog and include domain-global user group as members of the "SIMATIC HMI" user group.

3.5.5.4 Release existing project for "SIMATIC HMI" user group

Introduction

You must first remove the existing release of the project directory if the user group "SIMATIC HMI" has to access an existing user group. Then the project is released again while opening WinCC Explorer.

Procedure

1. Open the workstation administration under Windows.
2. In the navigation window, select the entry "Shared Folders > Shares". The data window displays all unlocked directories.
3. Select the respective project directory and remove the enable through the "Cancel Share" pop-up menu.
4. If you now open the project in WinCC, the project directory is automatically unlocked for the "SIMATIC HMI" user group, and all members of the user group are granted access to the project directory.

Note

The enable name of the directory unlocked by WinCC must not be modified.

3.5.6 How to Adapt the Windows Security Policies

Introduction

Before you install WinCC, you must check the operating system settings:

- The system must permit the installation of unsigned drivers and files.
- In the case of Windows 7/Server 2008/Server 2008 R2, the use of the Windows function "Fast User Switching" is not permitted for WinCC.

Procedure for Windows XP / Windows Server 2003

1. In the Control Panel, open "Administrative Tools".
2. Double-click "Local Security Policy".
3. In the left pane, click "Local Policies".
4. In the right pane, double-click "Security Options".
5. Check the settings of the security policies below:
   – "Devices: Unsigned driver installation behavior"

   For the policies, select either "Accept without warning" or "Warn, but permit installation".

Procedure for Windows 7 / Windows Server 2008

1. In the Windows Start menu, select "Programs > Accessories > Execute".
2. Enter "gpedit.msc" in the input box.
   The "Local Group Policy Editor" dialog box opens.

3. In the left section of the window under "Policy for local computer", select "Computer Configuration > Administrative Templates > System > Device Installation > Device Installation Restrictions".
4. Check the settings of the security policies below:
   - "Display a custom message when installation is prevented by policy (balloon text)"
   - "Display a custom message when installation is prevented by policy (balloon title)"

   "Not configured" must be set for the policy.
5. In the left section of the window under "Policy for local computer", select "Computer Configuration > Administrative Templates > System > Login".
6. Enable the option "Hide entry points for Fast User Switching".
   After you have logged off, the "Fast User Switching" function is no longer available in the Windows Start menu.

See also

Notes on Data and System Security (Page 75)

Defining Access Rights in the Operating System (Page 76)

Software Requirements for the Installation (Page 70)

WinCC Installation Requirements (Page 66)

3.6 Installing WinCC

3.6.1 Installing WinCC

Introduction

This section describes the installation of WinCC.

Install MS Message Queuing before you install WinCC.

Installation of a WinCC file server

If a WinCC server is set up which is to be used for project data archiving only, only the WinCC file server needs to be installed. You can find more information in the WinCC Information System, in the section "Configurations > Fileserver".

Note

Usage only with administrator rights

If you want to use the Fileserver, you need administrator rights.

Fileserver installation requirements

WinCC V7 and WinCC Fileserver V7 cannot be installed at the same time on one computer.

Installation of WinCC Options

The WinCC DVD contains the following options:

- WinCC/Connectivity Pack
- WinCC/DataMonitor
- WinCC/WebNavigator
- WinCC/Information Server

These options require their own licenses.

If you purchase a WinCC option at a later date, you will receive the necessary licenses on a license data carrier. An installation DVD is not supplied.

Use the WinCC DVD for installation.

See also

Upgrading WinCC (Page 94)
How to Install Supplementary Components Later (Page 89)
How to Install WinCC (Page 86)
How to Install MS Message Queuing (Page 84)
Hardware Requirements for the Installation (Page 67)

3.6.2 How to Install MS Message Queuing

Introduction

WinCC implements the Message Queuing services from Microsoft. It is a component part of the operating system. MS Message Queuing is however not included in the standard Windows installation and must be installed separately if required.

The Windows installation CD is required to complete the installation.

Note

WinCC is enabled for operation within a domain or workgroup.

Note however that domain group policies and restrictions in the domains may prevent installation. In this case, remove the computer from the domain before installing Microsoft Message Queuing, Microsoft SQL Server 2008 and WinCC. Log on to the computer concerned locally with administrator rights. Carry out the installation. Following successful installation, the WinCC computer can be registered in the domain again. If the domain-group policies and domain restrictions do not impair the installation, the computer must not be removed from the domain during installation.

Note however that domain group policies and restrictions in the domain may also hinder operation. If these restrictions cannot be overcome, operate the WinCC computer in a work group.

If necessary, contact the domain administrator.

Procedure for Windows XP

1. In the operating system Start Menu, open "Settings > Control Panel > Software".
2. Click the "Add/Remove Windows Components" button on the left menu bar. The "Windows Components Wizard" opens.
3. Select the "Message Queuing" component. The "Details" button is activated.
4. Click "Details". The "Message Queuing" dialog opens.
5. Activate the "Common" subcomponent.
6. Deselect all other subcomponents and acknowledge with "OK".

7. When the "Disk" dialog opens insert the requested Windows Installations CD-ROM. Click on the "OK" button. MS Message Queuing will be installed.
8. Close the wizard using the "Finish" button.

Procedure for Windows 7

1. In the operating system Start Menu, open "Control Panel > Programs and Functions".
2. Click the "Enable/Disable Functions" button on the left menu bar. The "Windows Function" dialog opens.
3. Select the "Microsoft Message Queue (MSMQ) Server" component.
4. Activate the "Microsoft Message Queue (MSMQ) Server Core" component.
5. Deactivate the subsidiary components.
6. Confirm with "OK".

Procedure for Windows Server 2003

1. In the operating system Start Menu, open "Settings > Control Panel > Software".
2. Click the "Add/Remove Windows Components" button on the left menu bar. The "Windows Components Wizard" opens.
3. Select the "Application server" component and then click "Next". The "Application server" dialog box opens.
4. Select the "Message Queuing" component. The "Details" button is activated.
5. Click "Details". The "Message Queuing" dialog opens.
6. Activate the "Shared Components" subcomponent.
7. Deselect all other subcomponents and acknowledge with "OK".
8. When the "Disk" dialog opens insert the requested Windows Installations CD-ROM. Click on the "OK" button. MS Message Queuing will be installed.
9. Close the wizard using the "Finish" button.

Procedure for Windows Server 2008

1. Start the Server Manager.
2. Add the "Message Queue" feature.
3. Activate the "Message Queuing" option, and under it also the "Message Queuing Services" and "Message Queuing Server" options.

See also

How to Install WinCC (Page 86)

WinCC Installation Requirements (Page 66)

3.6.3 How to Install WinCC

Introduction

This section describes how to install and run WinCC.

The components already installed are displayed during setup. The following symbols are used:

Symbol	Meaning
	Current version of program is installed.
	Program is being updated.
	Program setup conditions are not met. Click the symbol for more detailed information.
	Program can be selected.
	Program selected for installation.
	Program cannot be selected (due to dependence on other programs).
	Program selected for installation (cannot be deselected).

Scope of Installation

During the installation of WinCC, you can choose between the following variants:

- Minimum (WinCC Runtime, WinCC CS, Basic Process Control, OPC-Server, SQL-Server)
- Typical (including SmartTools)
- Complete (including WinCC ConfigurationTool, WinCC Archive Tool)
- Expert mode (user-defined setup, i.e. you can enable or disable specific components)
- Client (installation for a client, with SQL-Express)
- Fileserver (WinCC Fileserver and SQL Server)

You can also install or remove components and languages at a later time. Read the sections "How to perform a supplementary installation" and "How to perform a supplementary installation of languages" for more on this.

The required disk space depends upon the installed components. An estimated value is shown in the status bar.

Installation of WinCC Options

You can installed the desired options during the installation of WinCC itself.

The documentation for some of the options will be available only if the concerned option package is installed.

Automatic migration when opening a WinCC V6 or V7.0 project

When you open a project that was created with a version older than WinCC V7.2, the configuration data and runtime data are automatically migrated. Convert the pictures and libraries with the Project Migrator or manually via the Graphics Designer.

You can find detailed information about migration in the WinCC Information System under "First Steps > Migration".

Requirements

- You need local administrator rights to install WinCC.
  Information on user rights, which is necessary for the operation of WinCC, is located in section "Instructions for Security of Data and System."
- The Windows component "MS Message Queuing" services must have been installed.
- The security policies must be adapted under Windows.
- No manually created SQL server entity with the name "WinCC" may be installed.
- The storage medium with the licenses is still not to be connected with the installation computer.
- If you want to use the OPC-XML-DA-Server from WinCC, the Microsoft Internet Information Service (IIS) must be installed before installing the OPC-XML-DA-Server.

WinCC is released for the operating languages German, English, French, Italian and Spanish or multilingual operating systems. WinCC is also released for the operating system languages simplified Chinese (PR China), traditional Chinese (Taiwan), Japanese and Korean.

Note

An error message is output if you run WinCC Setup without having the administrator rights, or if other setup conditions are not met. For additional information pertaining to error messages, refer to "Prerequisites for the installation of WinCC".

Procedure

1. Start the WinCC product DVD.
   The DVD starts automatically if Autorun is enabled in the operating system. If the Autorun function is not activated, start the program Setup.exe on the DVD.
2. Follow the on-screen instructions.
   Read the License Agreement and the Open Source License Agreement.
3. Select the languages you want to install.
   You may install other languages at a later time.
4. Select the setup mode.

5. In Package installation , select the Program package "WinCC Installation".
   If you also want to install WinCC options, select the corresponding program packages.
   Select the scope of your installation in User-defined installation.
   The components to be installed are highlighted in Setup.
   Click on "Help" for a description of the displayed symbols. Click on "Readme" to open the Information System.
6. Read the license agreement for the Microsoft SQL Server.
7. The security settings that will be adapted for WinCC are displayed in the "System Settings" dialog prior to installation. The firewall is configured automatically. Confirm the changes to the system settings.
8. Start installation.
   You can track the status of the installation in the displayed dialog. Select "Cancel" to cancel the installation of the current component.
9. You can transfer the product License Keys after having installed the components. To do so, click on "Transfer License Key." Select "Next" if you have already transferred the license keys or want to install them at a later time.

   Note

   The license keys will not be transferred automatically. You will have to transfer missing license keys during or after installation with Automation License Manager .

10. Restart the computer to conclude the installation.

New Entries in the Windows Start Menu

WinCC setup has installed new folders in the "SIMATIC" program group.

Go to the Start menu of the operating system to open the "SIMATIC" program group:

- Windows XP / Windows Server 2003:
  Start > SIMATIC
- Windows 7 / Windows Server 2008:
  Start > All Programs > Siemens Automation > SIMATIC

In this folder, you can start WinCC Explorer ("SIMATIC > WinCC > WinCC Explorer") and open various tools for working with WinCC ("SIMATIC > WinCC > Tools").

You will find the documentation for WinCC in the WinCC Information System. Select "SIMATIC > WinCC > WinCC Information System" to run the WinCC Information System in the language you installed for WinCC. For documentation in other languages, refer to "SIMATIC > Product Information". The printout versions of the documentation are available as PDF files on the product DVD in the "InstData\PrintDocuments" directory.

Licenses can be managed using the Automation License Manager ("Programs > Siemens Automation > Automation License Manager").

You can use the the Security Controller to view the adapted security settings ("Programs > Siemens Automation > Security Controller").

You can obtain an overview of the installed SIMATIC software and components:
("SIMATIC > Product Information > Installed Software") with Windows XP / Windows Server 2003.

("Programs > Siemens Automation > Installed Software") with Windows 7/ Windows Server 2008.

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See also

Upgrading WinCC (Page 94)

Notes on Data and System Security (Page 75)

Defining Access Rights in the Operating System (Page 76)

How to Install MS Message Queuing (Page 84)

How to Adapt the Windows Security Policies (Page 81)

Notes about Running the Software (Page 97)

How to Perform an Uninstall (Page 92)

How to Install Supplementary Components Later (Page 89)

Licenses and Licensing (Page 62)

WinCC Installation Requirements (Page 66)

3.6.4 How to Install Supplementary Components Later

Introduction

Once you have installed WinCC, you can then install further components or options at a later date.

Installation of WinCC Options

The WinCC DVD contains the following WinCC Options:

- WinCC/Connectivity Pack
- WinCC/DataMonitor
- WinCC/WebNavigator
- WinCC/Information Server

These options require their own licenses.

If you purchase a WinCC option at a later date, you will receive the necessary licenses on a license data carrier. An installation DVD is not supplied.

Use the WinCC DVD for installation.

Procedure

1. Start the WinCC product DVD.
   If the Autorun function is not activated, start the program Setup.exe on the DVD.
2. Specify whether you wish to install individual components or options. The already installed components will be displayed.
3. Follow the on-screen instructions.

Installation path of SmartTools

Run the SmartTools setup from the following path on your WinCC DVD:

- "Instdata\Smarttools\Setup\Setup.exe"

See also

WinCC Installation Requirements (Page 66)
How to Install WinCC (Page 86)
How to Perform an Uninstall (Page 92)
Licenses and Licensing (Page 62)

3.6.5 How to Install Supplementary Languages

Introduction

Once you have installed WinCC, you can later install additional languages.

Procedure

1. Select the following in the Start menu of the operating system:
   "Settings > Control Panel > Add/Remove Programs" (Windows XP / Windows Server 2003)
   "Control Panel > Programs and Features" (Windows 7/ Windows Server 2008)
2. Select "SIMATIC WinCC Runtime V7.2" and click the "Change" button.
   The WinCC Setup program opens.
3. Select the desired languages.
4. When prompted, insert the WinCC product DVD in the DVD drive.
   Once the start page of the DVD is opened via Autorun function, close the window with "Exit".
5. Follow the instructions on the screen.
6. If you have installed WinCC CS, select "SIMATIC WinCC Configuration V7.2" and click the "Change" button.
   Repeat steps 3 to 5 for WinCC CS.
   Repeat this procedure for any additionally installed components and options.

3.6.6 How to upgrade a standard client

Introduction

A WinCC standard client only contains those WinCC components that are required for a client without a project of its own. This is why a WinCC standard client cannot be upgraded directly to a WinCC single-user system or WinCC client.

To upgrade, you first have to remove a WinCC standard client and install WinCC again.

Procedure

1. Remove WinCC:
   Select the following in the Start menu of the operating system:
   "Settings > Control Panel > Add/Remove Programs" (Windows XP / Windows Server 2003)
   "Control Panel > Programs and Features" (Windows 7 / Windows Server 2008)
   Select the entries beginning with "SIMATIC WinCC" and click the "Remove" button for each one.
   Follow the on-screen instructions.
2. Start the WinCC DVD.
3. Select a desired program package and components.
   Follow the on-screen instructions. You can find additional information under "How to install WinCC".

3.7 How to Perform an Uninstall

Introduction

On your computer, you can remove WinCC completely or simply remove individual components, e.g. languages or components.

Procedure

1. Select the following in the Start menu of the operating system:
   "Settings > Control Panel > Add/Remove Programs" (Windows XP / Windows Server 2003)
   "Control Panel > Programs and Features" (Windows 7 / Windows Server 2008)
   All entries of the installed WinCC components start with the prefix "SIMATIC WinCC".
2. Select the desired entry and click "Remove".
   This starts WinCC Setup.
3. Select the components or languages you want to remove.
   Remove any WinCC options that may have been installed before you remove the WinCC version.
4. Follow the on-screen instructions.

Microsoft SQL Server 2008

Following the removal of WinCC, the "WinCC" SQL server entity must also be removed. Select "Control Panel" > "Software" and then select the "Microsoft SQL Server 2008" item for removal.

The use of the Microsoft SQL Server 2008 is only permitted when you have a valid license.

Automation License Manager / MS Update

When WinCC is removed, the following programs remain installed, as they may be needed by other SIMATIC products:

- Automation License Manager
- MS Update V1.0 SP1

If, after removing WinCC, you want to install an earlier version of WinCC, you will need to remove both of these programs. Open "Control Panel" > "Add/Remove Programs" and then select the corresponding item for removal.

Removal when the WebNavigator client is installed

If you remove WinCC from a computer on which the WebNavigator client is installed, you must then reinstall the WebNavigator client.

Changing the settings in the Windows Event Viewer

When WinCC is installed, the WinCC Setup program changes the settings of the Event Viewer.

- Maximum Log Size (System Log/User Log): 1024 KB
  (default setting: 512 KB)
- Log Continuation (System Log/User Log): "Overwrite events"
  (default setting: Overwrite events that are older than 7 days)

After removing WinCC, these settings are not reset. You can adapt these settings in the Windows Event Viewer yourself.

See also

How to Perform an Upgrade Installation (Page 95)

How to Install WinCC (Page 86)

How to Install Supplementary Components Later (Page 89)

Licenses and Licensing (Page 62)

3.8 Upgrading WinCC

3.8.1 Upgrading WinCC

Introduction

You can upgrade to WinCC V7.2 by means of the upgrade installation from version WinCC V6.2.3 and higher.

Proceed as described in "Upgrading an installation" section.

Note

Restart the PC before commencing with the upgrade installation to WinCC V7.2.

Information on migrating projects

You are prompted to migrate a project of a previous version when opening it in WinCC V7.2. However, you may also use WinCC Project Migrator to migrate several WinCC projects in a single step.

You still have to make some project settings after migration.

For more information about the migration of projects see section "Migration".

Note

WinCC user must no longer be a member of the "SQLServer2005MSSQLUser $<COMPUTERNAME>$WINCC" user group

Remove the WinCC users entered in the previous versions from this group.

Notes on licensing

Upgrade the licenses of WinCC prior to V7.2 to the current version.

Licensing may be upgraded during the installation of WinCC or at a later point in time. Detailed information is available in the WinCC Information System under the topic "Licensing".

See also

How to Perform an Upgrade Installation (Page 95)

3.8.2 How to Perform an Upgrade Installation

Introduction

If you currently have WinCC V6.2.3 installed on your system, you can perform an upgrade installation.

Before beginning an upgrade installation, the transfer of existing projects must be prepared.

Note

If modified standard functions (ANSI-C) are used, make backup copies of the functions prior to the upgrade installation. During the WinCC installation process, these functions are overwritten by the standard functions supplied.

Also pay attention to the notes in the WinCC Information System under "Migration".

Make a backup copy of your project before upgrading WinCC.

Requirement

The hardware configuration on which WinCC V6.2.3 or V7.0 has been installed is also sufficient for installing an upgrade to WinCC V7.2. However, there should be no significant increase in data volume because otherwise the performance will be affected. If it is expected that the data volume will increase, upgrade the hardware in good time.

Upgrade preparation

Before performing an upgrade installation of WinCC, check the existing projects with regard to special characters used in the archive names, archive tag names, trend names, trend window names, column names and table window names. You will find a table with the permitted special characters in the section "Working with WinCC > Working with Projects > References".

It is possible that you must use Tag Logging in WinCC V6.2.3. or V7.0 to remove certain special characters from the names.

NOTICE
Transferring archives with impermissible special characters When transferring archives, if they contain impermissible special characters, the Runtime archive may be lost.

Procedure

1. Prepare existing WinCC projects for migration.
   Check the used names for impermissible special characters.
2. First remove any WinCC option you have installed.
   Then uninstall WinCC.
   If you have not installed any WinCC option, you do not have to uninstall WinCC manually. WinCC is automatically removed during the upgrade installation.
3. Install WinCC V7.2. Proceed as described in the section "How to install WinCC".
   You need the storage medium which contains the licenses for WinCC V7.2. Upgraded licenses for WinCC V6.2.3 or V7.0 will be lost.
4. Migrate your existing WinCC projects.
   Note the corresponding "First Information > Migration" chapter in the WinCC Information System.

See also

Licenses and Licensing (Page 62)

How to Install WinCC (Page 86)

How to Perform an Uninstall (Page 92)

3.9 Notes about Running the Software

Introduction

In order to operate WinCC without problems at optimum performance, please follow the Notes on Operation under Windows.

More information is available in the following sections of the WinCC Information System:

- "Release Notes > Notes on operation"
- "Working with WinCC > Working with Projects > Making Settings for Runtime > Effect of External Applications at Runtime"

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