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SIMATIC HMI

WinCC V8.1 WinCC Basic Options (WebNavigator, DataMonitor, WebUX)

System Manual

Printout of the online help

09/2024
A5E54073177-AA

Legal information

Warning notice system

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

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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.

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

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WinCC V8.1 Installation / Release Notes

1

1.1 WinCC Installation Notes

1.1.1 WinCC installation instructions

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.

1.1.2 Scope of delivery

Components supplied

WinCC V8.1 is available as a basic package or upgrade package and as a download package "OSD" (Online Software Delivery).

You will receive the following components:

Components [1] [2]	**Basic / Upgrade / Download Package**
WinCC V8.1 DVD: • WinCC V8.1 • WinCC/WebUX • WinCC/WebNavigator • WinCC/DataMonitor • WinCC/Connectivity Pack • WinCC/Connectivity Station • Microsoft SQL Server 2022 for WinCC V8.1 • SIMATIC Logon V2.0 [3] [4] • Automation License Manager V6.2 Update 2 • AS-OS-Engineering V10.0	X
Additional Content DVD: • SQL Server Management Studio • Visual C++ Redistributable for Visual Studio: 2005 / 2008 / 2010 / 2012 • WinCC V8.1 – Printable online help (PDF files)	X
Required licenses	X
Certificate of License	X

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

2) If you use the "SIMATIC S7-1200, S7-1500 Channel" with more than 10 connections, you need a SIMATIC NET license, e.g. "SIMATIC NET - SOFTNET-IE S7 Power Pack V19".

3) If you install SIMATIC Logon, a computer restart may be necessary.

4) Use at least SIMATIC Logon V2.0.

Note

Printing installation notes

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

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

You need at least Adobe Acrobat Reader V5.0. You can download the Adobe Acrobat Reader free of charge from the following URL:

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

Communication drivers

The communication drivers included in the package do not need an additional license:

- Allen Bradley - Ethernet IP
- Mitsubishi Ethernet

- Modbus TCPIP
- Omron Ethernet-IP
- OPC
- OPC UA WinCC Channel [1)]
- PROFIBUS DP
- SIMATIC 505 TCPIP
- SIMATIC S5 Ethernet Layer 4
- SIMATIC S5 Profibus FDL
- SIMATIC S5 Programmers Port AS511
- SIMATIC S5 Serial 3964R
- SIMATIC S7 Protocol Suite (SIMATIC S7-400)
- SIMATIC S7-1200, S7-1500 Channel
- SIMATIC TI Ethernet Layer 4
- SIMATIC TI Serial
- Simotion
- SinumerikNC (SINUMERIK, SIMATIC S7-300)
- System Info
- WinCC Unified Channel [1)]
- Alarm Channel (Alarm Logging)

1) You need a Connectivity Pack license for the WinCC OPC UA server.

2) You need a Connectivity Pack license for the "WinCC Unified Channel". In WinCC Unified, the station requires a Unified Collaboration license.

See also

Information on WinCC CS (Page 75)

http://www.adobe.com/products/acrobat (http://www.adobe.com/products/acrobat)

1.1.3 SIMATIC WinCC: Product compatibility and supported functions

To use the software with other SIMATIC products you must ensure that the product versions match and support the required functions.

- You determine the version compatibility with the compatibility tool.
- Note the additional information on the individual products and functions.

WinCC versions in distributed systems

The same WinCC version must be installed on all WinCC stations used in the WinCC system.

These include, for example:

- WinCC servers, redundant servers, archive servers, file servers
- WinCC clients with their own project, WinCC clients without their own project
- PCs on which WinCC options are installed, e.g. WebNavigator server, WebNavigator client, WinCC/Audit, WinCC/Calendar Options

Mixed configurations with different WinCC versions on servers, clients or PCs with WinCC options are not released.

Always install WinCC updates on all PCs in the WinCC system. If different update versions are installed on the clients or servers, no configuration changes are possible in the WinCC project, for example.

SIMATIC Process Historian

Check which functionality is supported by the SIMATIC Process Historian version that is used in each case.

For more information, refer to the documentation for the SIMATIC Process Historian.

Installing PH-Ready / IS-Ready

You install "PH-Ready" and "IS-Ready" from the "Process Historian / Information Server" DVD.

Compatibility tool

With the compatibility tool, Industry Online Support gives you a function you can use to put together a compatible selection of software products or to check existing configurations for compatibility.

In entry 64847781 you can access the compatibility tool and find additional information on how to use the tool:

- SiePortal: Compatibility tool for automation and drives (https://support.industry.siemens.com/cs/ww/en/view/64847781)

1.1.4 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. The licenses for optional packages must be ordered separately.

You will receive the necessary license keys for installing the licenses as follows:

- As storage medium with license keys
- Via the internet (online software delivery)

When you install a license, it is transferred to a local drive and checked out on the storage medium so that WinCC can use this license.

Note

Microsoft Corporation: License agreement

The licensee is still required to confirm that the software (SW) contains licensed software by Microsoft Corporation or its subsidiaries.

The licensee hereby agrees to be bound by the terms and conditions of the appended license agreement between Microsoft SQL Server and end user, and to fulfill the same.

Notes on license conditions

Observe the enclosed license conditions, which are also displayed during installation.

You need V8.1 licenses for WinCC V8.1.

The SIMATIC WinCC software is copy-protected against unlicensed use.

More information on licenses and license types:

- "Activating and testing ASIA licenses (Page 15)"
- WinCC Information System:
  - "Licensing > Overview of the licensing"
  - "Licensing > Basic license types and license types in WinCC"

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

Process mode only with a valid license

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

Cumulating licenses

The cumulation of more than one license per component subject to license is only possible for the following licenses or licenses for the following options:

- WinCC Archive licenses
- WinCC/DataMonitor
- WinCC/WebNavigator
- WinCC/WebUX
- WinCC/IndustrialDataBridge
- WinCC/PerformanceMonitor
- SIMATIC Information Server

Other licenses cannot be cumulated.

Demo mode

If a license is missing for one or multiple 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.

To exit WinCC demo mode, install the required licenses.

Behavior in Runtime

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.

Details on the demo mode in the WinCC Information System:

- "Licensing > WinCC in the Demo Mode"

Microsoft SQL Server 2022

A license is necessary to use the Microsoft SQL Server database. This license is readily available if WinCC is licensed and properly installed.

The SQL Server licensed with the WinCC installation may only be used in conjunction with WinCC.

Its use for other purposes requires an additional license. These may include:

- Use for internal databases
- Use in third-party applications
- Use of SQL access mechanisms that are not available via WinCC

Uninstalling

After uninstalling WinCC, you must also uninstall the "WinCC" Microsoft SQL Server instance:

Under "Control Panel" > "Software", select the "Microsoft SQL Server 2022" entry to uninstall.

Installing licenses

You can use the Automation License Manager to install licenses.

Licenses can be installed during installation of WinCC or at a later time. You can find the Automation License Manager in the Microsoft Windows Start menu in the "Siemens Automation" program group. After-the-fact installation of a license will take effect upon restart of your computer.

The following requirements must be met for installing licenses:

- 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 an uncompressed drive.

Note

Uninstalling WinCC: Licenses remain installed

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

Note

Installing licenses before WinCC starts

Install all required licenses before you start WinCC.

If one of the required licenses is missing, WinCC switches to demo mode when the program starts.

See also

Activating and testing ASIA licenses (Page 15)

1.1.5 Activating and testing ASIA licenses

Overview

The license keys for WinCC Runtime and WinCC RC (Runtime and Configuration) are provided on the supplied license storage medium "License Key USB Hardlock".

The licensed ASIA version is executable in parallel to the European version by switching to Unicode.

The "License Key USB Hardlock" (dongle) checks the following conditions:

- WinCC GUI language
- Runtime language
- The Text Library contains an Asian language.
- Asian characters are used in the WinCC project.
- Operating system settings

You can find more information about installing the license under "Licenses and licensing".

Note

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

Installed Languages

A newly created project receives all installed WinCC languages as project languages.

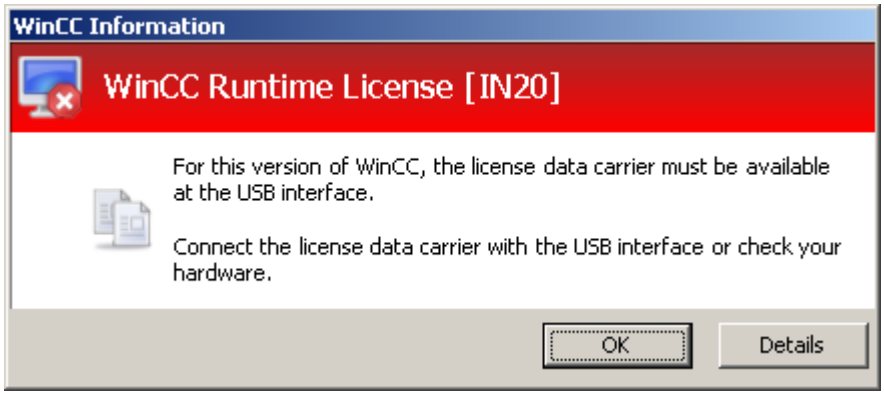
Delete configuration languages

If you do not have a license for an ASIA version and delete the Asian project languages in the text library, the WinCC project continues to run in demo mode.

To disable Demo mode, close the WinCC project. When reopened it is recognized that the WinCC project no longer requires licenses for an ASIA version.

Testing the validity of the licenses

If you start a correctly licensed WinCC version without a connected dongle, the following error message appears:



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

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. Uninstall this WinCC version and obtain a legally licensed version of WinCC V8.

If necessary, contact WinCC Support and provide the serial number of your software version:

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

You can find the serial number on the "Certificate of License" (CoL).

Working with the "License Key USB Hardlock"

Please note the following:

- Do not edit data on the "License Key USB Hardlock".
  The actions not allowed include:
  - Rename data
  - Delete data
  - Copy data to the "License Key USB Hardlock"
- Do not format the "License Key USB Hardlock".
- Do not remove the "License Key USB Hardlock" from the PC while WinCC is running.

NOTICE
Do not remove the "License Key USB Hardlock" dongle If you remove the dongle from the computer, an error message is generated and WinCC switches to Demo mode. If you re-connect the dongle to the computer, the error message disappears and Demo mode is disabled. WinCC works once again in licensed mode.

See also

Licenses and Licensing (Page 12)

http://www.automation.siemens.com/partner/index.asp (http://www.automation.siemens.com/partner/index.asp)

1.1.6 WinCC installation requirements

1.1.6.1 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

Microsoft Windows operating system: Avoid changes in system

Microsoft 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 Microsoft Windows Task Manager.
- Changes in Microsoft Windows registry.
- Changes in Microsoft 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
- 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.
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. Log in to Microsoft Windows again as a user with administrator rights.

Error Message	Explanation
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 Microsoft Windows again as a 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 Microsoft Windows installation CD.

See also

Defining Access Rights in the Operating System (Page 31)
How to Adapt the Windows Security Policies (Page 37)
Notes on Data and System Security (Page 27)
Software requirements for installing WinCC (Page 21)
Hardware requirements for installing WinCC (Page 19)
Microsoft SQL Server for WinCC (Page 25)

1.1.6.2 Hardware requirements for installing WinCC

Introduction

Certain hardware configuration conditions must be fulfilled for installation.

Hardware requirements

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

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

Note

Unless noted to the contrary, the same requirements as for servers are applicable to single-user systems.

		Minimum	Recommended
CPU	Microsoft Windows 10 / Microsoft Windows 11 (64-bit)	Dual-core CPU Client/single-user system 2.5 GHz	Multi-core CPU Client: 2.7 GHz Single-user system: 2.7 GHz
	Microsoft Windows Server 2019 / Microsoft Windows Server 2022	Dual-core CPU Client/single-user system server: 2.5 GHz	Multi-core CPU Single-user system/server: 3.5 GHz

		Minimum	Recommended
Work memory	Microsoft Windows 10 / Microsoft Windows 11 (64-bit)	Client: 2 GB Single-user system: 4 GB	8 GB
	Microsoft Windows Server 2019 / Microsoft Windows Server 2022	4 GB	16 GB
Free disc space on the hard drive - For installing WinCC - For working with WinCC [1) 2)]		Installation: • Client: 1.5 GB • Server: > 1.5 GB Working with WinCC: • Client: 1.5 GB • Server: 2 GB	Installation: • Client: > 1.5 GB • Server: 2 GB Working with WinCC: • Client: > 1.5 GB • Server: 10 GB Archive databases may require additional disc space.
Virtual work memory [3)]		The size of the swap file depends on the memory configuration of the PC. Recommended setting: • "Swap file is managed automatically"	
Color depth/ color quality		256	Highest (32-bit)
Resolution		800 * 600	1920 * 1080 (full HD)

1) Depending on project size as well as size of archives and packages.

2) WinCC projects should not be stored on compressed drives or directories.

3) Virtual work memory: Check the applicable Microsoft requirements for the Microsoft Windows edition you are using.
The recommended value in the "Size of swap file for a specific drive" area is a guide for the "Total size of swap file for all drives". Enter the recommended value in both the "Start size" field and the "Maximum size" field.
More information: "SiePortal: Settings for the virtual work memory (FAQ entry 20440472) (http://support.automation.siemens.com/WW/view/en/20440472)".

Note

In the case of online configuration, the recommended requirements constitute the minimum requirement.

Virtualization

The following virtualization systems have been tested:

- Microsoft Hyper-V 2019 / 2022
- VMware ESXi 7.0 / 8.0 Update 2

Requirement

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

You can find more information on virtualized environments with WinCC in the following FAQ:

- SiePortal: Virtualization (FAQ entry 49368181) (http://support.automation.siemens.com/WW/view/en/49368181)

See also

Defining Access Rights in the Operating System (Page 31)

Notes on Data and System Security (Page 27)

Software requirements for installing WinCC (Page 21)

1.1.6.3 Software requirements for installing WinCC

Introduction

Certain requirements concerning operating system and software configuration must be met for the installation.

Note

WinCC in a domain or workgroup

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:

Microsoft Windows Server 2019 or 2022, uniformly Standard or Datacenter edition in each case.

Single-user systems and clients

Operating system	Configuration	Comments
Microsoft Windows 10 [1)]	Pro Enterprise	Standard installation 64-bit If you are using SIMATIC NET, please refer to the information in the SIMATIC NET "Readme" file.
Microsoft Windows 10 [1)]	Enterprise LTSC (Long-Term Servicing Channel)	Standard installation 64-bit If you are using SIMATIC NET, please refer to the information in the SIMATIC NET "Readme" file.
Microsoft Windows 11 [1)]	Pro Enterprise	Standard installation 64-bit If you are using SIMATIC NET, please refer to the information in the SIMATIC NET "Readme" file.

1) The currently released build versions of Windows 10 or Windows 11 are listed in the compatibility tool.

You can also run single-user systems and clients in WinCC multi-user systems on Microsoft Windows Server 2019 / 2022.

WinCC server

Operating system	Configuration	Comments
Microsoft Windows Server 2019	Standard Datacenter	64-bit
Microsoft Windows Server 2022	Standard Datacenter	64-bit

WinCC server with up to three WinCC clients

It is also possible to operate a WinCC Runtime server on Microsoft Windows 10 or Microsoft Windows 11 if you are not running more than three clients.

WinCC ServiceMode is not released for this configuration.

Note

Only enable the terminal server for WinCC/WebNavigator

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.

Virus scanner

You can find information on the use of virus scanners as well as approved virus scanner versions in the WinCC Release Notes under "Notes on operation (Page 57)".

Microsoft Windows Patches / Updates: Compatibility with SIMATIC products

Note the latest information on compatibility of SIMATIC products with Microsoft patches and updates:

- SiePortal: FAQ 18752994 (https://support.industry.siemens.com/cs/ww/en/view/18752994)

Microsoft Windows computer name

Do not change the computer name

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

Illegal characters

The following characters are not permitted in the computer name:

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

Note the following:

- Only uppercase relevant
- The first character must be a letter.

Microsoft Message Queuing services

WinCC requires Microsoft Message Queuing services.

During the WinCC installation, the corresponding services are installed and configured.

Internet Explorer - requirements

You can find the browser requirements for WinCC options in the respective installation notes for the option.

You need Microsoft Internet Explorer to open the WinCC online help. Recommended versions:

- Microsoft Internet Explorer V11.0 (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

Do not disable Internet Explorer.

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 > System behavior in Runtime > Special features of communication using a server with several network adapters".

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

Operating system update

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.

1. To open the "System properties" dialog, search for "Advanced system settings" in the Windows search window.
2. In the "Advanced" tab, click the "Environment variables" button.
3. Display the value of the "Path" system tag.

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

Microsoft Internet Information Service (IIS)

During the WinCC installation, the Microsoft Internet Information Service (IIS) is installed for the of the following components or options:

- WinCC/DataMonitor
- WinCC/WebNavigator
- WinCC/WebUX

See also

Notes on Data and System Security (Page 27)
Defining Access Rights in the Operating System (Page 31)
Installing WinCC (Page 37)
How to Adapt the Windows Security Policies (Page 37)
Hardware requirements for installing WinCC (Page 19)
Microsoft SQL Server for WinCC (Page 25)
Notes on operation (Page 57)
SiePortal: FAQ 18752994 (https://support.industry.siemens.com/cs/ww/en/view/18752994)

1.1.6.4 Microsoft SQL Server for WinCC

WinCC requires Microsoft SQL Server 2022 in the 64-bit version:

- Microsoft SQL Server 2022 64-bit Standard Edition
- Microsoft SQL Server 2022 64-bit Express Edition

SQL Server is included automatically in the WinCC installation.

Microsoft SQL Server 2022

Licensing

Read the information on licensing Microsoft SQL Server under "Licenses and licensing".

User rights

Appropriate user rights must be set up to access the Microsoft SQL Server data. For more information, refer to the section "Specifying access rights in the operating system (Page 31)".

Encrypted connection

To increase security, use encrypted communication.

You can find information on this in the following Microsoft entries:

- Internet: "Server network configuration" (https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/server-network-configuration?view=sql-server-ver15)
- Internet: "Configure SQL Server Database Engine for encrypting connections" (https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/configure-sql-server-encryption?view=sql-server-ver15)

Regional Settings: Disable "Unicode UTF-8" beta setting

To avoid conflicts when accessing the SQL server, disable the following option in the "Regional Settings" dialog:

- "Beta: Use Unicode UTF-8 for worldwide language support"

WinCC/Connectivity Pack

When you install WinCC/Connectivity Pack, the required connectivity components are installed along with the Microsoft SQL Server.

SQL server instance "WinCC"

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

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.

Installation of Microsoft SQL Server Express

Microsoft SQL Server Express is installed in the following cases:

- Installation of "WinCC client"
- Installation of the WinCC V8 demo version

Requirement for the installation of Microsoft SQL Server Express

The Microsoft Windows user name of the user performing the installation must not contain any space characters.

SQL Server Management Studio (SSMS)

The SQL Server Management Studio is no longer part of the SQL Server installation.

If you want to install SQL Server Management Studio, use the provided "Additional Content" DVD.

SQL Server port number

You can manually configure the port number for the Microsoft SQL Server communication.

You can find more information in the following Microsoft article:

- Internet: "Configure a Server to Listen on a Specific TCP Port" (https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/configure-a-server-to-listen-on-a-specific-tcp-port?view=sql-server-ver15)

See also

Defining Access Rights in the Operating System (Page 31)

Software requirements for installing WinCC (Page 21)

Notes on Data and System Security (Page 27)

Ports and protocols (Page 86)

Internet: "Server network configuration" (https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/server-network-configuration?view=sql-server-ver15)

Access rights in the operating system (Page 31)

Internet: "Configure a Server to Listen on a Specific TCP Port" (https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/configure-a-server-to-listen-on-a-specific-tcp-port?view=sql-server-ver15)

Internet: "Configure SQL Server Database Engine for encrypting connections" (https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/configure-sql-server-encryption?view=sql-server-ver15)

1.1.6.5 Notes on Data and System Security

Introduction

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

You can find additional information in the "WinCC Release Notes > Notes on Operation > Information on the Microsoft Windows operating system (Page 59)".

You can find information on the remote access under "WinCC Release Notes > Notes on WinCC > Remote access and Remote Desktop Protocol (RDP) (Page 83)".

Information on write access for WinCC project folders can be found under "Access rights in the operating system > Defining Access Rights in the Operating System (Page 31)".

Activating WinCC remote communication

On WinCC systems, remote communication is disabled by default in the "SIMATIC Shell" dialog after the installation.

For the following scenarios, you must activate the remote communication of the PCs involved:

- Client-server communication
- Redundant system
- WinCC option "WebNavigator"
  If the WebNavigator client is not running on the same PC as the WebNavigator server, remote communication must be enabled.

To enable remote access, proceed as follows:

1. Open the communication settings using the context menu of SIMATIC Shell in Microsoft Windows Explorer.
2. Select the "Remote Communication" option.
3. Configure the encrypted communication in the network: Select the PSK key and the port.
4. Select the network adapter and, if required, the Multicast settings.

Firewall settings

To limit the incoming rule for the CCAgent or CCEServer, you can change the parameter "Remote address" from "Any" to "Local subnet".

You can edit the firewall rules in the "Windows Firewall with Advanced Security" dialog.

Preventing Access to the Operating System Layer in Runtime

If the Microsoft Windows Selection dialog is opened in an activated WinCC project, access to the Microsoft Windows operating system is possible using this function. A Microsoft Windows Selection dialog opens,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 Microsoft Windows toolbar

You can use the computer properties to prevent the Microsoft Windows taskbar from being displayed in runtime.

- Activate the "Disable keys" option under "Parameters" in the "Properties - Computer" area of the "Computer" editor.
  This disables all shortcut keys for operating system access.
- Deactivate the "Automatically hide the taskbar" setting in Microsoft Windows.

Disabling shortcut keys

If you would like to disable shortcut keys, you must adapt 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:

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

Shortcut key <Ctrl+Esc>

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

Shortcut keys	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

Microsoft Windows Control Panel

These functions can be configured using the Microsoft Windows Control Panel.

If the functions are activated in the Control Panel before activating WinCC Runtime, they are no longer locked in runtime.

Suppressing Microsoft Windows notifications and alarms in Runtime (kiosk mode)

To prevent the display of Windows notifications and Windows alarms on a PC in Runtime, follow these steps:

1. Enter "Notifications and actions" in the search field of the Windows taskbar.
   The settings for Microsoft Windows notifications and actions open.
2. Click "Notification wizard settings".
3. Enable the following settings in the notification wizard:
   - Enable the "Only alarms" option.
   - Under "Automatic rules", disable the "When I'm using an app in full-screen mode/Alarms only" option.

Disabling the Plug&Play services

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

This allows access to the operating system.

Disable the "Plug&Play" service in the Microsoft Windows Services Manager. Activate the service only if you actually need access, for example, to a chip card reader.

Microsoft Windows event display: User administration

You can also find changes in the user administration via the User Administrator or the WinCC UserAdminControl as an entry in Microsoft Windows event display.

Integrity check of the installed WinCC files

With the integrity check tool, you can determine whether the files of your WinCC installation are unchanged and correspond to the delivery state.

The hash value and file signatures are checked, for example.

You can find the "SieSoftIntCheck.exe" tool in the following path:

- <Installation path>\WinCC\SmartTools\SiemensSoftwareIntegrityCheck

Open the tool in the Microsoft Windows window "Command prompt" (CMD).

The WinCC installation files are checked and the result is written into a log file.

Parameters

To display a list of available parameters, enter the following command:

- `SieSoftIntCheck.exe -?`

You can set the following parameters, for example:

- Storage location of the log files "SieSoftIntCheck_YYYY-MM-DD-hh-mm-ss_result.csv" and "SieSoftIntCheck_YYYY-MM-DD-hh-mm-ss_logfile.txt"
- Display of the hash and signature information
- Exception of files with low priority.

Checklist for technical implementation

You can find more information on configuring your system in the following document in the "Industry Online Support":

- WinCC Systems: Checklist for Technical Implementation

See also

Information on the Microsoft Windows operating system (Page 59)

Microsoft SQL Server for WinCC (Page 25)

Ports and protocols (Page 86)

Hardware requirements for installing WinCC (Page 19)

Software requirements for installing WinCC (Page 21)

Defining Access Rights in the Operating System (Page 31)

How to Adapt the Windows Security Policies (Page 37)

How to install WinCC (Page 38)

Notes on operation (Page 57)

Remote access and Remote Desktop Protocol (RDP) (Page 83)

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

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

1.1.6.6 Access rights in the operating system

Defining Access Rights in the Operating System

Introduction

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

- 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 Microsoft 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 Microsoft Windows User and Group Administration:

- "SIMATIC HMI"
  All users must be members of the "SIMATIC HMI" user group. These members can create local projects, and can 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.
- "RTIL Tracing User"
  The user group is created during the installation of WinCC.
  Users in this user group can connect the WinCC project to WinCC Unified via the WinCC Unified channel.

WinCC folder share

With access via folder shares, the folders of a WinCC project are generally read-only.

Access to the WinCC project folders and project data from the network via Microsoft Windows is read-only.

Release project folder for write access

The "SIMATIC HMI" user group needs full access to the project folders of a server in the following cases:

- Access via scripts or open interfaces, e.g. when using WinCC/ODK
- Access via multiuser engineering
- Access of clients with own project
- Integrated projects (SIMATIC Manager)

To enable full access to the WinCC project folders, disable the following option in the "Properties - Project" area of the "Computer" editor:

- Project directory is only shared for write-protected access.

Make sure that full access is restricted to the necessary user groups or users.

You can change the option while runtime is activated.

The change is applied immediately.

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: Microsoft 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:
  - Microsoft Windows "User" group
  - "SIMATIC HMI" user group
- Procedure:
  Add the user to the "SIMATIC HMI" user group and, at a minimum, to the Microsoft 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
  - Retrieving
  - 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 Microsoft 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 "System Info" WinCC channel
- Role: Operator
- Authorization: System monitor users
- Procedure:
  Include all those users in the "System monitor users" Microsoft Windows group who require the following system information from the "System Info" WinCC channel:
  - CPU load
  - Status of the export file
- Explanation:
  Users with Microsoft Windows standard user rights do not have access to certain system information.

See also

Notes on Data and System Security (Page 27)

How to Adapt the Windows Security Policies (Page 37)

How to install WinCC (Page 38)

WinCC Installation Requirements (Page 18)

Installing WinCC (Page 37)

Software requirements for installing WinCC (Page 21)

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".

WinCC/WebNavigator: Users of the Web client

When you install the WebNavigator client on the WinCC PC, you must also include the users of the Web client in the user group "SIMATIC HMI" or "SIMATIC HMI VIEWER".

Procedure

1. Open the workstation administration under Microsoft Windows.
2. Select the "Local users and groups > Users" entry in the navigation window.
   The data window displays all local users.
3. In the context menu, select the "New User" dialog.
   Create a user account for each user who is to have access to WinCC.
4. In the navigation window, select the "Local Users and Groups > Groups" entry.
   The data window displays all groups.
   Select the group "SIMATIC HMI".
5. Using the shortcut menu, open the "Add Member" dialog and include those users as members of the "SIMATIC HMI" user group.

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.

Application example

You can find a detailed application example in the Internet under Entry ID 78346833:

- SiePortal: "Installation and operation of WinCC in a Microsoft domain environment" (https://support.industry.siemens.com/cs/ww/en/view/78346833)

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 Microsoft 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.

See also

SiePortal: "Installation and operation of WinCC in a Microsoft domain environment" (https://support.industry.siemens.com/cs/ww/en/view/78346833)

Release existing project for "SIMATIC HMI" user group

Introduction

You must first remove the existing share of the project directory if the user group "SIMATIC HMI" has to access an existing user group.

The project is then released again while opening WinCC Explorer.

Procedure

1. Open the workstation administration under Microsoft 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 share by using the "Cancel Share" context 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 shared by WinCC must not be modified.

1.1.6.7 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.

Procedure

1. To open the Microsoft Windows entry field, select the entry "Run" in the "Windows System" program group.
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.

See also

Notes on Data and System Security (Page 27)
Defining Access Rights in the Operating System (Page 31)
Software requirements for installing WinCC (Page 21)
WinCC Installation Requirements (Page 18)

1.1.7 Installing WinCC

1.1.7.1 Installing WinCC

Introduction

This section describes the installation of WinCC.

During the WinCC installation, MS Message Queuing and Microsoft Internet Information Service (IIS) are installed and configured if necessary.

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 V8 and WinCC Fileserver V8 cannot be installed at the same time on one computer.

Installation of WinCC Options

The WinCC DVD contains the following options:

- WinCC/Connectivity Pack / Connectivity Station
- WinCC/DataMonitor
- WinCC/WebNavigator
- WinCC/WebUX

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 52)

How to Install Supplementary Components Later (Page 46)

How to install WinCC (Page 38)

Hardware requirements for installing WinCC (Page 19)

WinCC Installation Requirements (Page 18)

Software requirements for installing WinCC (Page 21)

1.1.7.2 How to install WinCC

Introduction

This section describes how to install and run WinCC.

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

Icon	Meaning
	Current version of program is installed.
	Program is being updated.
	Program setup conditions are not met. Click the icon for details.
	Program can be selected.
	Program selected for installation.
	Program cannot be selected (due to program interdependencies).
	Program selected for installation (cannot be deselected).

Scope of installation

Installing WinCC options

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

For some options, the documentation only becomes available when the corresponding option package is installed.

Package installation

The following components are installed with the selected program package:

WinCC	WinCC installation The package installs the WinCC server with the following components: • WinCC Runtime • WinCC CS (incl. Basic Process Control) • SQL server • OPC server • OPC UA server • OPC UA client • SmartTools • WinCC Unified Collaboration • Automation License Manager WinCC incl. WebUX • Additionally installs WinCC/WebUX
WinCC client	WinCC client installation: When you install the "WinCC client" program package, you need an "RT client" or "RC client" client license. • WinCC Runtime • WinCC CS (incl. Basic Process Control) • SQL Express • OPC server • OPC UA server • OPC UA client • SmartTools • WinCC Unified Collaboration • Automation License Manager WinCC client incl. WebServer • Additionally installs the WebNavigator server
WebNavigator	WebNavigator server • WinCC server with the components of the program package "WinCC installation" • WebNavigator server To install further WebNavigator components, activate the component in the "Programs" view, e.g. "Web Plugin Builder" for the installation of the "WinCC Plug-In Builder". WebNavigator client • Only installs the WebNavigator client

DataMonitor	DataMonitor server If no WebNavigator server is installed yet, it is also installed with the package. • WinCC server with the components of the program package "WinCC installation" • WebNavigator server • DataMonitor server • DataMonitor client To install further DataMonitor components, activate the components in the "Programs" view, e.g. for the installation of "Excel Workbook" and "Excel Workbook Wizard". DataMonitor client • Only installs the DataMonitor client
ConnectivityPack	ConnectivityPack server • WinCC server with the components of the program package "WinCC installation" • ConnectivityPack server To install further Connectivity Pack components, activate the components in the "Programs" view, for example for the installation of the "Connectivity Station". ConnectivityPack client • ConnectivityPack client • SQL Connectivity Components

Custom installation

Select individual components for installation.

The following components are typical examples of additional installations which are not installed with program packages:

- WinCC:
  - WinCC File server (WinCC file server/SQL server)
- WebNavigator:
  - Diagnostics client
  - WinCC Remote Publisher
- Options:
  - SIMATIC Logon
  - AS-OS Engineering

Supplementary installation

You can install or uninstall components and languages at a later stage.

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

More information:

- "How to Install Supplementary Components Later (Page 46)"
- "How to Install Supplementary Languages (Page 47)".

WinCC remote communication

Remote access is disabled by default after installation.

If you use a redundant system or a client-server system, for example, enable the remote communication in the SIMATIC Shell settings.

More information:

- "Notes on Data and System Security (Page 27)"

Requirements

- Make sure that no other setup is running on the PC at the same time, for example, a Microsoft Windows update.
- You need local administrator rights to install WinCC.
  Information on the user rights required for operating WinCC:
  - "AUTOHOTSPOT"
- The computer name may only contain permissible characters.
- The security policies must be modified under Microsoft Windows.
- No manually created SQL server instance with the name "WinCC" may be installed.
- Microsoft Message Queuing is installed and configured during WinCC installation.
- The storage medium with the licenses must not yet be connected to the installation PC.
  You can transfer the licenses during WinCC installation.
  Alternatively, you can install the licenses before installing WinCC using the Automation License Manager.

WinCC is released for the following operating system languages:

- German, English, French, Italian, Spanish
- Chinese (simplified, PRC), Chinese (traditional, Taiwan), Japanese, Korean
- Multilingual operating system

Note

Unfulfilled requirements

An error message is output if you run WinCC Setup without administrator rights, or if other setup conditions are not met.

You can find more information on error messages here: "WinCC Installation Requirements (Page 18)".

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 Setup.exe program on the DVD.

   Alternatively, start the downloaded setup.
2. Follow the on-screen instructions.
   Read and confirm the License Agreement and the Open Source License Agreement.
3. Select "Install" as the setup type.
4. Select the languages you want to install.
   You can also install other languages at a later time.
5. Select the desired type of installation:
   - For Package installation, select the "WinCC installation" or "WinCC incl. WebUX" program package.
     If you also want to install WinCC options, select the corresponding program packages.
     Select "WinCC client installation" or "WinCC client incl. WebServer" if you only want to install the WinCC client.
   - If you use the user-defined installation, select the desired installation scope.

   The components to be installed are shown in the "Description" field in each case.
   If necessary, change the installation path using the "Browse" button.
6. Check the list of components to be installed in the "Programs" view.
   - If required, activate additional components.
   - Click on "Help" for a description of the displayed icons.
   - When you click on the listed components, information on the installation status of the components may be shown.
   - The content field on the right contains details on the selected component and, at the bottom, the required disc space.
   - You can open the associated documentation for some components with the "Readme" button.
   - The "Storage space" button will show you the available storage space on your PC.
7. Read and confirm the license agreement for the Microsoft SQL Server.
8. Before the installation, the security settings that are adapted for WinCC are displayed in the "System settings" dialog. The firewall is configured automatically.
   Confirm the changes to the system settings.
   Use the "Save as" button to save the list of changes as a text file "Secon.RTF" in the selected target folder.
9. Start the installation.
   You can track the status of the installation in the displayed dialog.
   Select "Cancel" to cancel the installation of the current component.

10. You can transfer the product license keys after installing 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

    Transferring licenses

    License keys are not transferred automatically.

    Transfer the missing license keys during or after installation with the Automation License Manager.

11. Restart the PC to conclude the installation.

Automatic migration

When you open a project that was created with a previous version of the currently installed WinCC version, the configuration and Runtime data is automatically migrated.

You can convert the pictures and libraries with the Project Migrator or manually via WinCC Explorer.

You can find detailed information on migration in the WinCC Information System:

- "Getting started > Migration"

Entries in the "Siemens Automation" program group

After installing WinCC, you will find new entries in the "Siemens Automation" program group.

- Starting WinCC Explorer:
  - WinCC Explorer
- Editors and tools for working with WinCC:
  - Autostart
  - Channel Diagnosis
  - Cross Reference Assistant
  - Dynamic Wizard Editor
  - Project Duplicator
  - Project Migrator
  - WinCC Certificate Manager
  - WinCC Documentation Viewer
  - WinCC TAG Simulator

- WinCC documentation:
  - Documentation > Manuals

  To open the WinCC Online Help and the installed WinCC options, select the "WinCC Information System" link in the language folder.
  Print versions of the WinCC Information System:
  - PDF files in the installation path under "WinCC > Documents"
- License management:
  - Automation License Manager
  - License Analysis
- Security Controller for displaying the customized security settings:
  - Security Controller
- Overview of the installed SIMATIC software and components:
  - Inst. Software
- Editors and tools for working with the supplied WinCC options:
  - PdlPad
  - PublishingWizard
  - Web Navigator Plug-In Builder
  - WinCC Archive Connector
  - WinCC DataMonitor Configurator Export
  - WinCC Web Configuration Center
  - WinCCViewerRT

  The entries depend on the installed options.

See also

Upgrading WinCC (Page 52)
Notes on Data and System Security (Page 27)
Defining Access Rights in the Operating System (Page 31)
How to Adapt the Windows Security Policies (Page 37)
How to Install Supplementary Components Later (Page 46)
WinCC Installation Requirements (Page 18)
Hardware requirements for installing WinCC (Page 19)
Software requirements for installing WinCC (Page 21)
Installing WinCC (Page 37)
How to Install Supplementary Languages (Page 47)

1.1.7.3 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 / Connectivity Station
- WinCC/DataMonitor
- WinCC/WebNavigator
- WinCC/WebUX

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 18)

How to install WinCC (Page 38)

Upgrading WinCC (Page 52)

How to Install Supplementary Languages (Page 47)

1.1.7.4 How to Install Supplementary Languages

Introduction

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

Procedure

1. Open the "Programs and functions" or "Programs and features" entry in the control panel.
2. Select "SIMATIC WinCC Runtime <Version>" and click the "Change" button.
   The WinCC Setup program opens.
3. Select your desired languages.
4. When prompted, insert the WinCC product DVD in the DVD drive.
   If the home page of the DVD is opened via the 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 <Version>" and click the "Change" button.
   Repeat steps 3 to 5 for WinCC CS.
   Repeat this procedure for any additionally installed components and options.

See also

How to Install Supplementary Components Later (Page 46)

How to install WinCC (Page 38)

1.1.7.5 Configure automatic installation of WinCC

The "Central installation" function

Configuring automatic installation

To install WinCC on multiple PCs, use a central installation.

Central setup storage: Note the path length

When you store the setup at a central location and launch it from a network drive, use the shortest possible folder names.

The path length of the drive name, file folder and setup files may be no longer than 255 characters.

Record function

The Record function supports multiple installation on different computers with identical options.

During setup, the Record function records the settings and creates a "Ra_Auto.ini" installation file which supports you during installation.

While in the past you had to navigate through all setup dialogs for each installation, all you have to do now is start setup with the "Ra_Auto.ini" control file.

Conditions for using the record function

- Central installation is only possible for the respective setup version that is available at the time.
  A central installation of WinCC has no effect on the subsequent installation of updates or options.
- The "Expert mode" scope of installation cannot be used for automatic installation.
  In Expert mode, the installation dialog is opened for each product even when you have saved the installation settings with the Record function.

Overview of the procedure

The following steps are required for a central installation:

1. Call the Record function and create the "Ra_Auto.ini" control file.
2. Start central installation.

WinCC/WebNavigator: Installation without user interaction

For a central installation on a web client start the setup via the following command line:

- Installation with default settings:
  `msiexec /i C:\TEMP\WebnavigatorClient.msi /quiet /log C:\temp\installWebNav.log`
- Installation with reduced user interface:
  `msiexec /i C:\TEMP\WebnavigatorClient.msi /qb /log C:\temp\installWebNav.log`

More information:

- Installing the WebNavigator client (Page 119)

Calling the Record function of the central installation

You use the Record function to create the "Ra_Auto.ini" control file which includes all information for the central installation.

Dependency on operating system

Run the central installation for each operating system version separately.

The control file can only be executed on PCs on which the same operating system version is running. During installation of WinCC, Microsoft updates are installed, for example, which depend on the installed operating system.

Scope of installation for automatic installation

The "Expert mode" scope of installation cannot be used for automatic installation.

Select one of the other available installation methods, e.g. "Standard" or "WinCC Client".

Requirement

- You need administrator rights on your PC.

Procedure

1. To open the Microsoft Windows entry field, select the entry "Run" in the "Windows System" program group.
2. Enter the following command line:
   - `<Path for the installation data>\setup.exe /record`

   Select the DVD drive or a central PC to which the installation data were copied as path for the installation files.
   Setup is started.
3. Select the desired language and click "OK".
   The "Record function" dialog is displayed.
4. Activate the Record function.
5. Select the path in which you want to create the "Ra_Auto.ini" control file and confirm with "Next".
6. Select the required components and settings for the installation.
   Once you have made the settings, the message "Recording completed" is displayed.

Result

The control file "Ra_Auto.ini" is created and saved in the selected path.

The same setup version must be used for central installation and for creation of the "Ra_Auto.ini" file.

Start central installation

For central installation on the PC of your WinCC system, start an automatic installation.

The settings of the "Ra_Auto.ini" control file are applied in the process.

Requirement

- You have created the "Ra_Auto.ini" file using the Record function.
  The file "Ra_Auto.ini" must be created with the existing setup version.
- The same operating system version is installed on the PC.

Procedure

1. If required, copy the setup to a central server or PC.
2. Copy the file "Ra_Auto.ini" to the folder "C:\Windows" on the PC to be installed.
3. Start central installation by calling automatic installation:

   – `<Path for the installation data>\setup.exe /silent`

   You may receive a message when the central installation was completed successfully.

   Note

   If an error or inconsistency occurs during installation, you will receive messages that require your acknowledgement.

4. Repeat this process for each required computer.

Alternative procedure

If the file "Ra_Auto.ini" is not located in the "C:\Windows" folder, start central installation with the following call:

- `<Path for the installation data>\setup.exe /silent=<storage path>\Ra_Auto.ini`

1.1.8 Uninstalling WinCC

Introduction

On your computer, you can remove WinCC completely or simply remove individual components. You cannot remove individual languages.

You can execute the removal via the WinCC product DVD or vial the control panel of the operating system.

Procedure: Uninstalling via the WinCC Product DVD

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 Setup.exe program on the DVD.
2. Follow the on-screen instructions.
3. Select "Remove" as the setup type.
4. Select the components that you want to remove.

Alternative procedure: Uninstalling via the Control Panel

1. Open the "Uninstall or change a program" dialog in the Microsoft Windows Control Panel.
2. Select the desired entry.
   The installed WinCC components always start with "SIMATIC WinCC".
3. Choose the "Uninstall" or "Change" option from the shortcut menu.
   Remove any WinCC options that may have been installed before you remove the WinCC version.

Microsoft SQL Server

After uninstalling WinCC, you must uninstall the Microsoft SQL Server instance "WinCC":

In the "Uninstall or change programs" dialog, select the entry "Microsoft SQL Server <Version>" to uninstall.

The use of Microsoft SQL Server is only permitted if 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 need to remove both of these programs:

Select the respective entry for removal in the "Uninstall or change a program" dialog.

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 Microsoft 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):
  1028 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 modify these settings in the Microsoft Windows Event Viewer yourself.

1.1.9 Upgrading WinCC

1.1.9.1 Upgrading WinCC

Introduction

As of version WinCC V7.4 SP1, you can upgrade to the current WinCC version V8.x by means of an upgrade installation. Make sure that the latest WinCC updates for the respective WinCC version have been installed.

Proceed as described in "Upgrading an installation" section.

Note

Restart PC before installing the update

Restart the PC before starting the update installation.

Requirements for the upgrade

If you are upgrading WinCC versions prior to V7.0 SP3, observe the operating system requirements and hardware requirements.

More information on migration of WinCC versions V4 or higher is available under the following URL (entry ID=44029132):

- SiePortal: FAQ Migration V4 > V7 (https://support.industry.siemens.com/cs/de/en/view/44029132)

Information on migrating projects

WinCC projects > WinCC V7.4 SP1

No migration is required for projects created with WinCC as of V7.4 SP1. You only have to convert the project data.

To convert the project data select the menu command "Tools > Convert Project Data" in the WinCC Explorer.

WinCC projects < WinCC V7.4 SP1

When you open a project of a previous < V7.4 SP1 version with the current WinCC version, you will be prompted to migrate the project. 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 migrating projects see the "Migration" section.

Note

WinCC user no longer needs to be a member of the "SQLServerMSSQLUser$<COMPUTER NAME>$WINCC" user group

When you migrate projects created prior to WinCC V7.2, you remove the WinCC users from this group.

In WinCC projects prior to V7.2, you will find the user group under the name "SQLServer2005MSSQLUser$<COMPUTER NAME>$WINCC".

Notes on licensing

Licenses from previous WinCC versions must be upgraded to the current version.

You can update the licensing retroactively. Detailed information is available in the WinCC Information System under the topic "Licensing".

See also

How to Perform an Upgrade Installation (Page 53)

SiePortal: FAQ Migration V4 > V7 (https://support.industry.siemens.com/cs/de/en/view/44029132)

1.1.9.2 How to Perform an Upgrade Installation

Introduction

If you currently have WinCC V7.4 SP1 or higher installed on your system, you can perform an upgrade installation. Make sure that the latest WinCC updates for the respective WinCC version have been installed.

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

Requirement

The hardware configuration of previous versions is sufficient in most cases to install an upgrade to the current WinCC version V8.x.

However, performance is reduced if the amount of data is increased too much.

If it is expected that the data volume will increase, upgrade the hardware in good time.

Note

Requirements for the upgrade

If you are upgrading WinCC versions prior to V7.0 SP3, observe the operating system requirements and hardware requirements.

More information on migration of WinCC versions V4 or higher is available under the following URL (entry ID=44029132):

- SiePortal: FAQ Migration V4 > V7 (https://support.industry.siemens.com/cs/de/en/view/44029132)

Upgrade preparation

Note

Backing up a WinCC project

Make a backup copy of your project before upgrading WinCC.

Restart PC before installing the update

Restart the PC before starting the update installation.

Additional steps and adjusting settings

Also read the notes in the WinCC Information System under "Migration".

Check the special characters

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 SP3 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.

Modified standard functions (ANSI-C)

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.

Procedure

1. Prepare existing WinCC projects for migration.
   Check the used names for impermissible special characters.
2. Install the current WinCC version.
   Proceed as described in the section "How to install WinCC".
   You will need the storage medium that contains the licenses for the current WinCC version.
   Upgraded licenses of previous WinCC versions will be lost.
3. Migrate your existing WinCC projects.
   Note the corresponding "First Information > Migration" section in the WinCC Information System.

See also

How to install WinCC (Page 38)

WinCC Installation Requirements (Page 18)

Installing WinCC (Page 37)

SiePortal: FAQ Migration V4 > V7 (https://support.industry.siemens.com/cs/de/en/view/44029132)

1.1.10 Overview: Notes on operation

Introduction

For trouble-free operation and optimal performance of WinCC, observe the notes on operation under Microsoft Windows and the notes on configuration.

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

- "Release Notes > Notes on operation (Page 57)"
  This section includes information on compatibility and on use of virus scanners.
- "Release Notes > Notes on WinCC > Remote access and Remote Desktop Protocol (RDP) (Page 83)"
  The section contains information about remote communication.
- "Working with WinCC > Working with Projects > Making Settings for Runtime > Effect of External Applications at Runtime"
  This section contains information on applications that can affect system resources.
- "Working with WinCC > Working with Projects > Making Settings for Runtime > System diagnostics with performance tags"
  The section contains information on system tags with which, for example, the time behavior during reading or writing of tags is analyzed.

- "Working with WinCC > Configuration recommendations"
  The section contains information on the high-performance configuration of process pictures and on the optimal dynamization of picture objects and controls.
- "Configurations > Multi-User Systems > Quantity structures and performance"
  The notes on configuration in this section apply to all project types.

1.2 WinCC Release Notes

1.2.1 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.

1.2.2 Notes on operation

1.2.2.1 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. More information is available in the section "Working with Projects > Making Runtime Settings > Impact of External Applications on Runtime".

System diagnostics with performance tags

You can analyze the time behavior, e.g. during reading and writing of data, with the system tags of the "Performance" tag group.

Feedback and user data statistics (telemetry)

WinCC collects and processes license information and statistical usage and diagnostic data like quantity structures or the frequency of use of specific functions in order to keep WinCC safe and up to date, to detect and diagnose problems and to implement product improvements.

The anonymized usage and diagnostic data is initially saved on your local computer in readable form where you can view it.

Storage path:

- ...\ProgramData\Siemens\Automation\TelemetryConnector\EventPersistence

The usage and diagnostic data is then also transferred to Siemens via a secure communication channel for the above-mentioned purposes.

You can deactivate this function via the project settings at any time.

Compatibility

You can find information on compatibility on the Internet in FAQ No. 64847781:

- SiePortal: FAQ 64847781 (https://support.industry.siemens.com/cs/ww/en/view/64847781)
- Compatibility tool for automation and drive technology: (https://support.industry.siemens.com/kompatool/index.html?lang=en)

Using virus scanners

The following virus scanners have been approved for use as of WinCC V8.1:

- Symantec Endpoint Protection V14.3 RU9 (Norton Antivirus)
- McAfee Endpoint Protection Suite V10.7
- Trellix Endpoint Security 10.7 (McAfee)
- Trellix Application Control 8.4 (McAfee)
- TXOne StellarProtect 3.0
- Windows Defender (version contained in the operating system)

You can find updated information on the approved virus scanners in the compatibility tool under "More products > Virus scanners".

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
  The used local Windows Firewall is configured in WinCC V8.x using 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 system PCs, for example, during a maintenance interval.
- Automatic scan
  With an automatic scan it is sufficient to scan the incoming data traffic.
- Time-controlled scan
  You are not permitted to run the time-controlled scan in Runtime.
- Pattern update
  The pattern update of virus scan clients (system PCs being checked for viruses) is done by the higher-level virus scan server (the system PC that centrally manages the virus scan clients).
- Dialogs
  To avoid interfering with the 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 email scan except on the WinCC engineering station that receives email.

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. Screen savers that do not release portions of the work memory no longer needed continually reduce the usable work memory.

The Microsoft Windows "Logon screen saver" can be used.

See also

Software requirements for installing WinCC (Page 21)

SiePortal: FAQ 64847781 (https://support.industry.siemens.com/cs/ww/en/view/64847781)

Compatibility tool for automation and drive technology: (https://support.industry.siemens.com/kompatool/index.html?lang=en)

1.2.2.2 Information on the Microsoft Windows operating system

Microsoft security updates and patches

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

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

- SiePortal: FAQ 18752994 (https://support.industry.siemens.com/cs/ww/en/view/18752994)
- SiePortal: FAQ search (https://support.industry.siemens.com/cs/products?search=microsoft&dtp=Faq&mfn=ps&o=DefaultRankingDesc&pnid=14866&lc=en-WW)

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 WinCC interfaces under a 64-bit operating system, the following applies:

- 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 compiled as 32-bit applications. With "x86" and not with "AnyCPU".
- C++ applications cannot be compiled as 64-bit applications.

Preventing access to Microsoft 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 Microsoft Windows selection dialog from opening.

For this purpose, deactivate the "Help available in Runtime" option under "Options" in the "Properties - Project" area of the "Computer" editor.

Displaying the Microsoft Windows taskbar in runtime

You can use the computer properties to prevent the Windows taskbar from being displayed in runtime:

- Activate the "Disable keys" option under "Parameters" in the "Properties - Computer" area of the "Computer" editor.
  This disables all shortcut keys for operating system access.
- Disable the "Keep the taskbar on top of other windows" setting in Microsoft Windows or enable the options for hiding the taskbar.

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

Key combination	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

These functions can be configured using the Microsoft Windows Control Panel.

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

By activating the option "Disable shortcut keys for operating system access", you are also disabling the shortcut keys for easier operation.

Do not use the "On-screen Keyboard" that can be enabled in Microsoft Windows

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

Keyboard with multimedia keys

Do not use keyboards that support additional multimedia keys (AppKeys).

If you are using a keyboard with multimedia keys for a good reason, disable the corresponding registry keys in the following paths:

- All Microsoft Windows users:
  HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Explorer\AppKey\<XX>
- Local Microsoft Windows user:
  HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\AppKey\<XX>

Disable the "REG_SZ" entries for multimedia buttons in the numbered folders.

The value of the registry entry must not be set.

NOTICE
Registry change Create a backup copy of the registry before you edit the registry. You can find more information on creating a backup copy, restoring and editing the registry in the Microsoft Knowledge Base under article no. 256986 (https://learn.microsoft.com/en-us/troubleshoot/windows-server/performance/windows-registry-advanced-users). Incorrect use of the Registry Editor can cause serious problems that affect the entire system and require reinstallation. Use the Registry Editor at your own risk.

Do not specify print to file as standard printing

Do not set print to file as standard printing procedure in the Microsoft Windows operating system.

This prevents the Windows dialog for saving the file from opening when printing from WinCC.

"Hardcopy" function

If the shortcut keys are disabled via the option "Disable shortcut keys for operating system access", the hardcopy function only prints to physically connected printers.

No printout is possible on printers with the "Print to file" function, e.g. save as PDF file. The hardcopy function is not performed for these printers.

If several printers are connected and the configured default printer enables the "Print to file" function, the next physically connected printer in the printer list is used instead of the default printer.

Suppressing Microsoft Windows notifications and alarms in Runtime

To prevent the display of Windows notifications and Windows alarms on a PC in Runtime, follow these steps:

1. Enter "Notifications and actions" in the search field of the Windows taskbar.
   The settings for Microsoft Windows notifications and actions open.
2. Click "Notification wizard settings".
3. Select the following settings in the notification wizard:
   - Select the "Alarms only" option.
   - Under "Automatic rules", disable the "When I'm using an app in full-screen mode/Alarms only" option.

WinCC WebBrowser Control: Disabling the shortcut menu

You can restrict the shortcut menu of the WinCC WebBrowser Control in runtime:

- To reduce the shortcut menu to "Forward" and "Backward" navigation, activate the object property "UseSimpleContextMenu" in the Graphics Designer.
- To suppress the shortcut menu completely, disable the Microsoft Windows Group Policy: To open the Microsoft "Group Policy Object Editor", enter "Gpedit.msc" in the search field. Disable the shortcut menu in the Group Policy "User configuration\Administrative templates\Windows components\Internet Explorer\Browser menus".

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 Microsoft 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 Internet Explorer

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 PCs that do not have an Internet connection.

See also

Notes on Data and System Security (Page 27)

SiePortal: FAQ 18752994 (https://support.industry.siemens.com/cs/ww/en/view/18752994)

SiePortal: FAQ search (https://support.industry.siemens.com/cs/products?search=microsoft&dtp=Faq&mfn=ps&o=DefaultRankingDesc&pnid=14866&lc=en-WW)

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

1.2.2.3 Information on the database system

Information on DB.dll

DB.dll is an ODK component for accessing databases via C API functions.

This functionality is no longer supported when using WinCC. Do not develop any new applications with the WinCC database access layer DB.dll.

Instead, use the following functions offered by Microsoft:

- Use ADO.NET for .NET-based applications.
  The database interface of the .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 implement 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.

To reinstall the WinCC instance, you must uninstall and reinstall both WinCC and the Microsoft SQL Server.

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 the installation.

Stability of the SQL server: Configuring the MemToLeave parameter

If the SQL server goes offline sporadically, configure the MemToLeave parameter:

1. Close WinCC.
2. Open the SQL server configuration manager.
3. Under "SQL server services" select the entry "SQL server (WinCC)".
4. To open the property dialog, select the "Properties" option from the context menu.
5. Add the following entry on the "Start parameters" tab:
   - `-g1024`
6. Start WinCC.

Manual detachment of WinCC project databases

Due to a system property in Microsoft SQL Server, the NTFS authorizations may be changed when detaching from the WinCC project databases.

If a WinCC database remains attached after you have closed a WinCC project or if you have manually attached the WinCC database, it is necessary 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.

1.2.2.4 Information on network technology and UPS

Information on 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 Microsoft Windows cluster technology

WinCC cannot be operated on systems with Microsoft 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 Microsoft 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 Microsoft 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.

Application example

You can find a detailed application example in the Internet under Entry ID 78346833:

- SiePortal: "Installation and operation of WinCC in a Microsoft domain environment" (https://support.industry.siemens.com/cs/ww/en/view/78346833)

Use of WinCC within a domain

If problems occur in accessing the Microsoft 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.

Application example

You can find a detailed application example in the Internet under Entry ID 78346833:

- SiePortal: "Installation and operation of WinCC in a Microsoft domain environment" (https://support.industry.siemens.com/cs/ww/en/view/78346833)

Operation in domains with deactivated NTLM protocol

If the NTLM protocol is deactivated for the domains, you can operate WinCC through the use of the Kerberos protocol.

Information for using routers and firewalls

Using routers

With WinCC V7/V8, it is also possible 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.
- Activate multicast forwarding to the network routers between the servers and the clients.

Speed of the network connections

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.

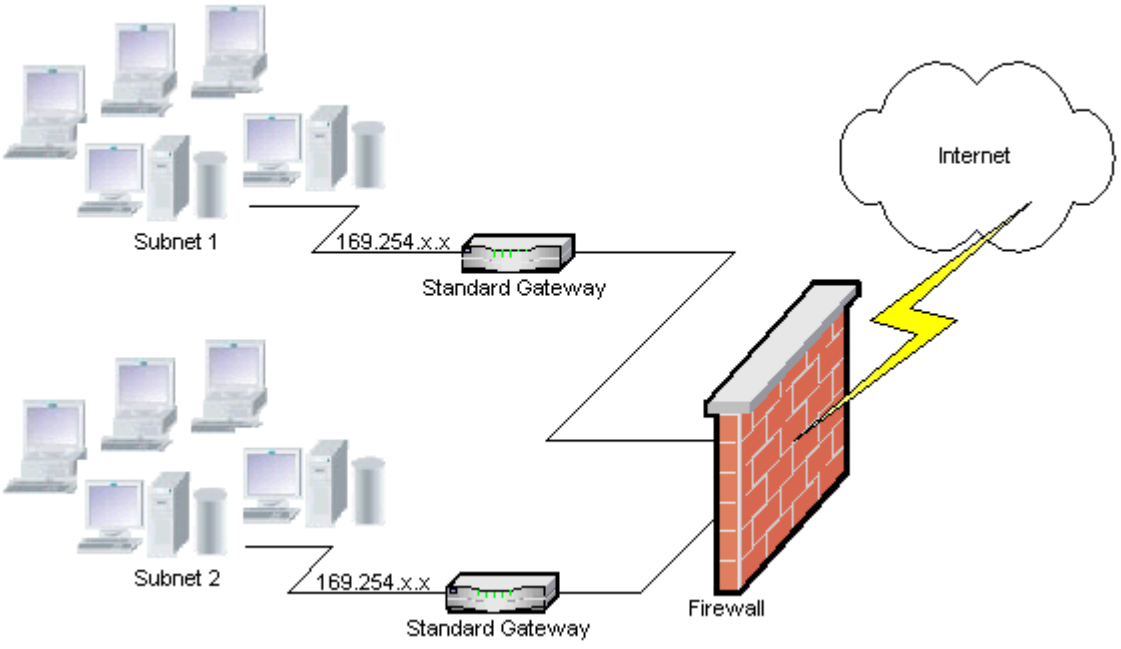
Basic system characteristics

- With a standard installation of Microsoft 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

Prevent damaged files during power outages

If a power failure occurs while using Microsoft 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.

See also

SiePortal: "Installation and operation of WinCC in a Microsoft domain environment" (https://support.industry.siemens.com/cs/ww/en/view/78346833)

1.2.3 Notes on WinCC

1.2.3.1 General information on WinCC and configurations

General information

WinCC Demo project

WinCC demo projects for WinCC V7/V8 can be downloaded from the Internet:

- SiePortal: WinCC demo projects (search) (https://support.industry.siemens.com/cs/products?search=demo&dtp=ExampleOfUse&o=DefaultRankingDesc&pnid=14867&lc=en-WW)
- SiePortal: WinCC V8.0 demo project (download, entry ID 109823232) (https://support.industry.siemens.com/cs/ww/en/view/109823232)
  Requirement: WinCC V8.0 Update 2
  The demo project was created with WinCC V8.0 Update 2. Install Update 2 or a more recent update of WinCC V8.0 from the download page:
  SiePortal: Updates for WinCC 8.0 and WinCC V8.0 ASIA (downloads, entry ID 109818723) (https://support.industry.siemens.com/cs/ww/en/view/109818723)

WinCC passwords: Migration of WinCC projects

As of version V7.2, WinCC offers improved encryption of passwords.

Note for migrated project that were created with WinCC prior to V7.2:

- You must re-enter the user name and the password for "WinCC Service Mode" operating mode.
- To increase security of WinCC through improved encryption, you have the re-enter the passwords in the User Administrator.

Make sure that the WinCC passwords meet the standard security guidelines.

Define the minimum complexity in the User Administrator, e.g. the required number of special characters.

In the User Administrator you can also configure the locking of users after multiple failed login attempts.

Migrate 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 is more up-to-date than the information in the printable PDF files.

Openness and system stability

WinCC enables high performance programming of actions on individual graphic objects up to complete functions and global action scripts that are 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 more 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 messaging
- Search and sorting criteria using the time code
- Operating multi-user projects in one domain

You can find more 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.

Information on 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.

Remote access from a client without its own project

The server data editor is not available in the WinCC Explorer on a client without its 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 defective 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.

You can find more information on DCF files on the Internet under Entry ID 109763043:

- SiePortal: "How do you delete the DCF file of your WinCC project?" (https://support.industry.siemens.com/cs/ww/en/view/109763043)

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.

Notes on internal functions

Diagnostic functions and special functions

Special key functions can be enabled via Registry Keys for the internal diagnostics of WinCC Graphics Runtime via the following path:
"HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\SIEMENS\WinCC\Graphic-Settings\GeneralHKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\SIEMENS\WinCC\Graphic-Settings\General\EnableGlobalSettings".

- <F1>: Switch between GDI+ and D2D
- <F2>: Performance test
- <F3>: Display shadow
- <F4>: Switch between default/HW/SW mode
- <F6>: Switch to "WinCC Classic" design
- <F7> – <F9>: Switch between designs 1–3
- <F10>: Show Runtime overlay

Note

For internal diagnostic purposes only

These functions may only be used by Siemens Support employees for internal diagnostic purposes.

See also

SiePortal: WinCC demo projects (search) (https://support.industry.siemens.com/cs/products?search=demo&dtp=ExampleOfUse&o=DefaultRankingDesc&pnid=14867&lc=en-WW)

SiePortal: WinCC V8.0 demo project (download, entry ID 109823232) (https://support.industry.siemens.com/cs/ww/en/view/109823232)

SiePortal: "How do you delete the DCF file of your WinCC project?" (https://support.industry.siemens.com/cs/ww/en/view/109763043)

SiePortal: Updates for WinCC 8.0 and WinCC V8.0 ASIA (downloads, entry ID 109818723) (https://support.industry.siemens.com/cs/ww/en/view/109818723)

1.2.3.2 Information on WinCC CS

General information

Using several WinCC editors

Do not use multiple WinCC editors at the same time because the editors can access the same WinCC components. For example, use of the "Text Distributor" and "Cross Reference" editors or automatic update of the Cross Reference when the Graphics Designer is being accessed simultaneously via interfaces.

If you would like to work in several WinCC editors in parallel, activate the function "Multi-User-Engineering" in the WinCC project.

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 the ActiveX control on the computer with WinCC, Web server or Web client and the installation using a plug-in, such as on the 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.).

Visual C++ Redistributable for Visual Studio

Microsoft Redistributable Packages for Visual Studio C++ 2015 are installed along with WinCC.

For example, if you are using ActiveX controls or Visual Basic projects created with versions prior to Visual Studio 2015, you must install the corresponding package.

The installation files for redistributables < Visual Studio 2015 are included in the WinCC scope of delivery:

- "Additional Content" DVD:
  "VCRedist" folder

Select the setup for the required version:

- 2005x86 / 2005x64
- 2008x86 / 2008x64
- 2010x86 / 2010x64
- 2012x86 / 2012x64

Do not change the folder "GraCS/SVGLibrary"

Do not save any process pictures or faceplate types in the project folder under "GraCS/SVGLibrary".

The folder "SVGLibrary" is only used for SVG libraries.

OLE object of the type "Adobe Acrobat Document"

You can receive error messages in connection with OLE objects of the type "Adobe Acrobat Document" under the following circumstances:

- If you are using an OLE object of the type "Adobe Acrobat Document" in a picture and you save the picture multiple times, saving is aborted with an error message.
- If you then open the respective picture, the file cannot be opened correctly due to an error.
- If you try to save a picture with an OLE object of the type "Adobe Acrobat Document" multiple times, an error message appears when the object is inserted.

If one of the error messages listed occurs, install the latest version of Adobe Acrobat Reader.

You can download the Adobe Acrobat Reader free of charge from the following URL:

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

I/O fields copied from WinCC < V7.3: No data format "Date/Time"

When you copy an I/O field created in WinCC < V7.3, the "Date/Time" data format is not available for the pasted I/O field.

Pictures with transparent areas: Using file formats with alpha channel

If you want to use a graphic for Direct2D display which contains transparent areas, use only graphic formats with an alpha channel, e.g. BMP or PNG.

Information on the logging system

Print barcode: "Code 39 Logitogo" font

The "Code 39 Logitogo" font is language-dependent.

If you are using this font in a layout, not all languages may be printed correctly.

Solution

To print barcodes, use the "Version for MS Dynamics German + English" font.

This font is language-independent. The barcodes are printed even if the computers have different language settings.

More information is available from Product Support under the entry ID 109750328:

- SiePortal: FAQ 109750328 (https://support.industry.siemens.com/cs/ww/en/view/109750328)

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.

See also

Scope of delivery (Page 9)

SiePortal: FAQ 109750328 (https://support.industry.siemens.com/cs/ww/en/view/109750328)

1.2.3.3 Information on WinCC runtime

Information on multi-user systems

Copying large amounts of data via the terminal bus

Copying larger 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.

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.

WinCC controls: CSV export of Runtime data

If the CSV file reaches a size of 128 MB during the export, the data records are transferred incompletely.

You can find additional information on the truncated data records in the following log file:

- <Installation directory>\WinCC\Diagnose\WinCC_Sys_02.log
  Parameter: ms_dwMaxClientCallbackDataSizeMaximum

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: Timestamp for Alarm Logging and Tag Logging

If messages are triggered by OPC tags, the message timestamp is used by the OPC server, comparable to chronological reporting.

For Tag Logging the timestamp is generated by the Tag Logging server.

OPC Data Access

During operation of the OPC DA server on the WinCC client:

While the connection of the OPC client is being established, 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 Historical Data Access

Return value "OPC_E_MAXEXCEEDED" for archive access

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

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.

1.2.3.4 Information on Smart tools

WinCC Configuration Studio: Replacement of SmartTools

Compared to earlier WinCC versions, the following SmartTools have been replaced by the editors in the WinCC Configuration Studio:

SmartTool	WinCC Configuration Studio
Tag Export/Import	Export/import function of the "Tag Management" and "Tag Logging" editors
WinCC ConfigurationTool	
WinCC Archive ConfigurationTool	
Tag simulator	WinCC TAG Simulator

WinCC ConfigurationTool / WinCC Archive ConfigurationTool

As of WinCC V7.3 you import and export the WinCC data via the WinCC Configuration Studio.

To import already existing files from the WinCC Configuration Tool/WinCC Archive ConfigurationTool into the WinCC Configuration Studio, use the menu command "Import" in the WinCC Configuration Studio.

In addition to the file name, select the "ConfigTool file (*.xlsx)" or "Archive Config Tool file (*.xlsx)" entry in the file selection dialog.

If you have configured the colors of message types in the WinCC Configuration Tool, the colors are not imported into the WinCC Configuration Studio from the Configuration Tool. You either need to create the message colors in the WinCC project before migrating the WinCC project to WinCC V7.3 and higher or, alternatively, manually configure the message colors later after the import in the WinCC Configuration Studio.

Tag Export/Import

To export tags from a WinCC project or import them into a WinCC project, use the WinCC Configuration Studio.

For compatibility reasons, the "Tag Export/Import" tool is still included in the "uTools" installation path.

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.

1.2.3.5 Information on process communication

Information on the WinCC "SIMATIC S7 Protocol Suite" channel

Process communication with an S7-300 via "SINUMERIK" instead of "SIMATIC S7 Protocol Suite"

As of WinCC V8.1, communication with a PLC S7-300 is configured via the "SINUMERIK" communication channel.

After migrating to WinCC V8.1, you will find S7-300-type PLCs configured in older versions under the "SINUMERIK" communication channel.

S7DOS configuration: Enabling the IPv4 protocol

If using S7DOS, you will require the IPv4 protocol as of the "S7DOS V9" version.

Therefore, leave the IPv4 protocol enabled in the Ethernet properties for the network adapter or the SIMATIC Ethernet CPs.

In this way, you ensure that the S7DOS module detection works for the TCP, RFC1006, and ISO protocols.

PROFIBUS: Number of connections

With WinCC V7/V8, up to 8 MPI connections or PROFIBUS Softnet connections, for example, CP5622, are licensed. Additional PROFIBUS Softnet licenses are not required.

With a corresponding SIMATIC NET license, you can also create more than 8 PROFIBUS connections. You need PROFIBUS Hardnet for this, for example, CP5623.

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. This is because the archive already contains the reset time period.

Information on the WinCC "WinCC-OPC-UA" channel

OPC UA: Displaying imported OPC UA tags

Tags created with a WinCC version older than V7.4 are shown as imported in the "Symbols" view of the Configuration Studio.

However, in this case "Raw data" tag types are not shown as imported. The "Access" column is disabled, although these tags have been correctly created in the Tag Management.

Reimport these tags and delete the incorrectly displayed tags in the Configuration Studio.

WinCC OPC UA server: Methods - Output parameters

When you address VB scripts using OPC UA, the output parameters of the scripts always have the data type "Variant".

The OPC UA client always receives the output value as "Variant" in the response to the call.

The client extracts the correct data type of the output value from the received variant.

Migrated projects: Updating the OpenSSL version for WinCC OPC UA

OpenSSL 3.0 is used for WinCC OPC UA as of the following WinCC versions:

- WinCC V7.5 SP2 Update 15
- WinCC V8.0 Update 3
- WinCC V8.1

If the OPC UA certificate of an HMI device was created with a WinCC version that does not yet use OpenSSL 3.0, the certificate becomes incompatible when the device is upgraded.

Recreate the certificate.

HMI device uses CA-based certificate

The OPC UA certificate of the HMI device was created using WinCC Certificate Manager.

1. Upgrade the certificate authority device and the HMI device.
2. Recreate the OPC UA certificate of the HMI device on the certificate authority device using WinCC Certificate Manager.
3. Install the certificate on the HMI device using WinCC Certificate Manager.

HMI device uses a self-signed certificate

1. Delete the certificate from the certificate storage before upgrading the HMI device:
   - OPC UA client certificate:
     C:\Program Files (x86)\Siemens\WinCC\opc\UAClient\PKI
   - OPC UA server certificate:
     C:\Program Files (x86)\Siemens\WinCC\opc\UAServer\PKI
   - If you use the WinCC/Connectivity Pack with a WinCC Connectivity Station, delete the WinCC Connectivity Station server certificate:
     C:\Program Files (x86)\Siemens\ConnectivityStation\OPC\UAServer\PKI\CA

   Delete both the DER file and the PFX file.
2. Upgrade the HMI device.
   The OPC UA server certificate on the HMI device is automatically created and installed.
3. Start Runtime and establish the connection between the OPC UA client and OPC UA server.
   The OPC UA client certificate is automatically created and installed.
4. Trust the certificate on the communication peers.

HMI device uses CA-based certificate created with a third-party tool

The OPC UA certificate of the HMI device was created with a third-party tool.

1. Migration of WinCC versions prior to V8.0:
   If needed, delete the root certificate of the third-party vendor and the OPC UA application certificate from the certificate storage before upgrading the HMI device:
   - OPC UA client certificate:
     C:\Program Files (x86)\Siemens\WinCC\opc\UAClient\PKI
   - OPC UA server certificate:
     C:\Program Files (x86)\Siemens\WinCC\opc\UAServer\PKI
   - If you use the WinCC/Connectivity Pack with a WinCC Connectivity Station, delete the WinCC Connectivity Station server certificate:
     C:\Program Files (x86)\Siemens\ConnectivityStation\OPC\UAServer\PKI\CA

   Delete both the DER file and the PFX file of the application certificate.
2. Upgrade the HMI device.
3. Upgrade the third-party tool to a version that uses OpenSSL 3.0.
4. Recreate the OPC UA certificate of the HMI device with the tool.
5. To install the certificate on the HMI device, copy it to the certificate storage on the HMI device:
   - OPC UA client certificate:
     C:\Program Files (x86)\Siemens\WinCC\opc\UAClient\PKI
   - OPC UA server certificate:
     C:\Program Files (x86)\Siemens\WinCC\opc\UAServer\PKI
   - If you use the WinCC/Connectivity Pack with a WinCC Connectivity Station, copy the certificate to the WinCC Connectivity Station:
     C:\Program Files (x86)\Siemens\ConnectivityStation\OPC\UAServer\PKI\CA

If the communication partner already trusts the root certificate of the certificate authority, it automatically also trusts the newly created OPC UA certificate of the HMI device.

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

No raw data communication with S7-1200/S7-1500 controllers

The "SIMATIC S7-1200, S7-1500 Channel" channel does not support any raw data communication via the S7 communication "BSEND/BRCV" function.

Information on the WinCC "Mitsubishi Ethernet" channel

Bit addressing with incorrect data type

Ensure that the bit addressing has the correct data type.

Incorrect addressing can result in the incorrect data type being written and as a result the adjacent bits being influenced.

The addressing of, for example a BOOL address with the data type WORD can result in the adjacent bits of the addressed bit being overwritten.

Information on the WinCC "SIMATIC S5 PROFIBUS DP" channel

PROFIBUS DP and SIMATIC Net V14

In order to use the "PROFIBUS DP" channel with SIMATIC Net V14, you must disable the "OPC UA" property for the "DP" protocol in the communication settings of SIMATIC Net V14.

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): unsigned 16-bit value (bit array); access: read and write
- LStatus (loop status): unsigned 16-bit value (bit array); access: Read ONLY

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

1.2.3.6 Remote access and Remote Desktop Protocol (RDP)

Remote access to WinCC stations

You can find current instructions for remote access in the FAQ 78463889:

- SiePortal: Remote access to WinCC stations (http://support.automation.siemens.com/WW/view/en/78463889)

For more information on remote configuration in the WinCC Information System:

- "Configurations > Distributed systems > Remote configuration"

Released scenarios

The following scenarios have been tested:

- WinCC as single-user system
- WinCC as distributed system
- WinCC in redundant mode
- WinCC/WebUX server

You can also use communication via OPC in the released scenarios.

Use of RealVNC

For instructions on how to use "RealVNC", refer to FAQ 55422236:

- SiePortal: Access via "RealVNC" to WinCC stations and PCS 7 stations (https://support.automation.siemens.com/WW/view/en/55422236)

No keyboard lock with RealVNC

With "RealVNC", the keyboard lock is not supported.

The keyboard lock is only in effect with a Remote Desktop Protocol connection.

Remote maintenance of WinCC systems via RDP

Use of the Remote Desktop Protocol (RDP) is only permitted when the WinCC server or the single-user system is running in WinCC ServiceMode.

Restrictions when using RDP

The following restrictions apply when using RDP:

- Start the WinCC project with a user which is a member of the local "SIMATIC HMI" user group. This means that all services are started when operating via the remote console. More information is available under "Configurations > WinCC ServiceMode"
- Use in integrated operation in SIMATIC Manager is not released.

NOTICE
Data loss after interruption of the remote desktop connection When the remote desktop connection is interrupted, for example, because the network cable was removed from the computer of the Remote Desktop Client, the archives and the OPC server, among others things, will no longer receive values from the data manager. This status will persist until the connection has been restored, or the timeout of approximately 35 seconds has expired.

Starting the Remote Desktop

You can access WinCC systems with a Remote Desktop client via a console session.

Access via the Remote Desktop Protocol may only be gained by means of console takeover with the same user, or initial login.

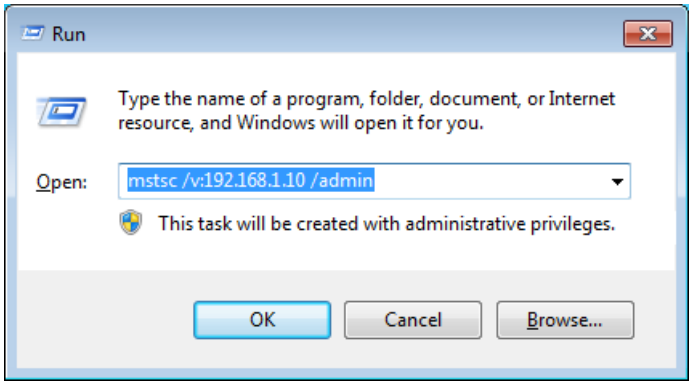
User groups and access rights

All "Remote Desktop" users must be members of the "SIMATIC HMI" user group on the target PC.

Procedure

1. To start a console session, open the "Run" dialog, for example, with <Windows button+R>.
2. Enter the following command:
   - `mstsc /v:<Server> /admin`

   Enter the computer name or the IP address as server.



   For information on more parameters, enter the following command:

   - `mstsc /?`

Migration: Migrate WinCC projects remotely only with UNC paths

To migrate WinCC projects remotely, use only UNC paths.

Release the project path or the folder above it.

Use this UNC path as project directory for the WinCC Project Migrator.

See also

Notes on Data and System Security (Page 27)

SiePortal: Remote access to WinCC stations (http://support.automation.siemens.com/WW/view/en/78463889)

SiePortal: Access via "RealVNC" to WinCC stations and PCS 7 stations (https://support.automation.siemens.com/WW/view/en/55422236)

1.2.3.7 Ports and protocols

Network settings

The following table shows network ports that are used for internal and external communication. These ports cannot be used in any other way.

The setup configures the ports for the firewall in such a way that smooth operation is ensured.

The default settings for port and protocol refer to the state after installation.

Note

Assigning TCP/IP port numbers

Accept the default port numbers without changing them.

If the port numbers are changed due to company IT administration specifications, the user is responsible for ensuring that no collisions occur.

Port assignments

The list is not complete. Depending on the installed products and the components used, additional network ports can be occupied.

Service	Port number	Transport protocol	Communication direction	Function	Description
Client-server communication					
SCS Secure Communication	8910	TCP/UDP	Inbound Outbound	Client-server communication (encrypted)	
RPC	*	UDP	Inbound Outbound	Client-server communication (CCAgent, unencrypted)	
RPC	*	UDP	Inbound Outbound	Client-server communication (CCEServer/CCEClient, unencrypted)	
HTTPS	443	TCP	Inbound Outbound	WinCC/WebUX	Secure communication with a Web server
HTTPS	4430	TCP	Inbound Outbound	WinCC/WebNavigator WinCC/DatatMonitor	Secure communication with a Web server
SQL server					
SQL	1442	TCP	Inbound Outbound	Remote access to a WinCC instance	
OPC UA					

Service	Port number	Transport protocol	Communication direction	Function	Description
OPC UA Service	4861	TCP	Inbound	OPC UA server (OPC UA server for Connectivity Station)	Primary communication via OPC UA The service is enabled and configured during installation.
OPC UA Service (WinCC)	4862	TCP	Inbound	OPC UA server (OPC UA server for WinCC)	Primary communication via OPC UA The service is enabled and configured during installation.
OPC UA Discovery	4840 52601	TCP	Inbound	OPC UA server (LocalDiscovery)	Provides information about installed OPC servers The service is installed and configured by the OPC UA server.
Additional components					
RFC 1006	102	TCP	Outbound	S7 channel	Communication with the S7 controller via Ethernet/PROFINET
DCOM	135	TCP	Inbound	OPC server	Part of the Microsoft Windows operating system Since communication via OPC (DA) is based on DCOM, the service is required to initialize OPC (DA) connections.
DCOM	*	TCP	Inbound	OPC server	Communication via OPC (DA) is based on DCOM and uses unspecified ports assigned by the system. Take this into account when using OPC (DA) and creating rules for firewalls.
NetBIOS Name Service [1]	137	UDP	Inbound	OPC server	Part of the Microsoft Windows operating system Access to this service is required, for example, for browsing.
NetBIOS [1]	138	UDP	Inbound	OPC server	Part of the Microsoft Windows operating system Access to this service is required, for example, for browsing.
NetBIOS Session Service [1]	139	TCP	Inbound	Server-client communication	
SMB [2]	445	TCP	Inbound	Server-client communication	
ALM	4410 [3]	TCP	Inbound Outbound	License service	Functionality for software licenses The service is used by the Automation License Manager as well as by all license-relevant software products.
Unified Collaboration	5678	TCP	Inbound Outbound	WinCC Unified Collaboration	

* Port is assigned automatically (dynamic port number)

1) When resolving the computer name via WINS, the "NetBIOS Name Service" and "NetBIOS Session Service" services must be enabled.

2) The Microsoft Windows File Share Protocol is used for ES/OS loading. Ensure that the "SMB" service is enabled.

3) Default port that can be changed by user configuration.

See also

Microsoft SQL Server for WinCC (Page 25)

Notes on Data and System Security (Page 27)

Creating a new default web page (Page 485)

1.2.4 Notes on WinCC Redundancy

Notes on redundant systems

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.

1.2.5 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 PCS 7 Engineering Station, the OS project editor 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.

Multiple languages

Online documentation in the WinCC Information System is available only in English, French, German and Chinese (Simplified, PR China).

If you work with a French, English or German version of Microsoft 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 Microsoft Windows.

Different buttons have English labels especially in the multi-lingual versions of Microsoft 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

Project engineers may not create any tags with @ prefix. This is reserved for the WinCC-PCS 7 software.

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 area names in Picture Tree or internal tags with the "@" name prefix.

Area names in Alarm Logging and in the Picture Tree

Area names in Alarm Logging and in Picture Tree 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.

Process picture in the plant view: Level 16 is hidden

Level 16 is always hidden when you create a new process picture in SIMATIC Manager in the plant view or with the WinCC Explorer.

Do not change this setting if you are using PCS 7 ASSET. The hidden level contains an "@RTBehaviourParams" object that is used for diagnostic purposes.

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 through the authorization check:

- No Microsoft Windows user is 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 Microsoft Windows user is 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 Microsoft 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.

Lifebeat Monitoring: Direct WinCC connection instead of OPC DA connection

Use the direct connection from WinCC to PC to configure the Lifebeat Monitoring

As of WinCC V8.1 you do not require an OPC DA connection between the WinCC stations anymore.

1.3 WinCC/Connectivity Pack Installation Notes

1.3.1 Connectivity Pack licensing

Introduction

The WinCC/Connectivity Pack enables licensed access to online and archive data of WinCC.

The Connectivity Pack includes licenses for access using:

- WinCC OPC-DA Server
- WinCC OPC HDA Server
- WinCC OPC A&E Server
- WinCC OPC UA Server
- WinCC REST communication
- "WinCC Unified Channel" WinCC channel

Starting from WinCC/Connectivity Pack V7.0, a WinCC Client Access License (WinCC/CAL) is no longer required.

1.3.2 Installation of the Connectivity Pack Server

Introduction

The installation of the Connectivity Pack server includes the following components:

- WinCC OLE DB Provider
- Microsoft SQL Server 2022 64-bit
- "Automation License Manager" for Management of WinCC Licenses
- WinCC Archive Connector
- WinCC DataConnector
- WinCC Basic Components
- Documentation
- Examples

Requirement

- Hardware requirement:
  Observe the hardware requirements of WinCC V8.1 for WinCC servers.
- Operating system:
  - Microsoft Windows 10 Pro / Enterprise / Enterprise LTSC (max. 3 clients) 64-bit
  - Microsoft Windows 11 Pro / Enterprise (max. 3 clients) 64-bit
  - Microsoft Windows Server 2019 Standard / Datacenter 64-bit
  - Microsoft Windows Server 2022 Standard / Datacenter 64-bit
- Microsoft Message Queuing is installed and configured during WinCC installation.
- For access to WinCC RT archives, WinCC V8.1 must be installed.

Note

To use more than three clients, you must install the server version.

With the workstation version, you can use max. three clients.

Procedure

1. In order to configure a computer as Connectivity Pack Server, run the Connectivity Pack Server setup on the computer.
2. Select the "ConnectivityPack-Server" entry on the WinCC Product DVD in the "Program Packages" dialog.

Licensing

For operation of the Connectivity Pack Server, the license for the WinCC Connectivity Pack option is required.

Access rights

All users of the WinCC/Connectivity Pack have to be included in the Microsoft Windows user group "SIMATIC HMI".

The user has to be a member of the user group "SIMATIC HMI" on the Connectivity Pack server for remote access of a Connectivity Pack client.

1.3.3 Installation of the Connectivity Pack Client

Introduction

The installation of the Connectivity Pack Client includes the following components:

- WinCC OLE DB Provider
- WinCC DataConnector
- SQL Connectivity Tools
- Documentation

Note

In order to install the SQL Connectivity Tools, you will need administrator rights on the computer.

Requirement

- Operating system:
  - Microsoft Windows 10 Pro / Enterprise / Enterprise LTSC 64-bit
  - Microsoft Windows 11 Pro / Enterprise 64-bit
  - Microsoft Windows Server 2019 Standard / Datacenter 64-bit
  - Microsoft Windows Server 2022 Standard / Datacenter 64-bit
- Microsoft Message Queuing is installed and configured during WinCC installation.

Procedure

1. In order to configure a computer as Connectivity Pack Client, run the Connectivity Pack Client setup on the computer.
2. Select the "ConnectivityPack-Client" entry on the WinCC Product DVD in the "Program Packages" dialog.
3. If WinCC V8.1 is already installed on the client, an additional installation of the Connectivity Pack Client is not required.

Access rights

All users of the WinCC/Connectivity Pack have to be included in the Microsoft Windows user group "SIMATIC HMI".

The user has to be a member of the user group "SIMATIC HMI" on the Connectivity Pack server for remote access of a Connectivity Pack client.

1.4 WinCC/Connectivity Pack Release Notes

1.4.1 Information on the Connectivity Pack

Content

These release notes contain important information.

The statements in these release notes take precedence over information provided in the manuals and in the online help.

Please read these release notes carefully as they contain useful information.

Exchange of data between OPC client and Connectivity Station via OPC UA

The OPC UA server on a WinCC Connectivity Station can be reached via this address:

- "opc.tcp://[HostName]:[Port]"

HostName	Placeholder for the computer name. The name is entered automatically.
Port	Port number. The default is "4864".

Limitation for use of WinCC OLEDB Provider

As of WinCC V7.2, the function "Import" via the interface "WinCC OLEDB Provider" does not run in MS Office Excel.

1.5 WinCC/DataMonitor Installation Notes

1.5.1 Requirements of installing DataMonitor

Introduction

Certain hardware and software configuration requirements must be fulfilled for installation.

Note

A DataMonitor server cannot be operated on a WinCC client without a project of its own.

Only use a DataMonitor server on a computer which is not operated in WinCC ServiceMode.

Hardware requirements

To work with WinCC/DataMonitor efficiently, select a system that meets the recommended specifications for an optimum configuration.

DataMonitor server

		Minimum	Recommended
DataMonitor server on WinCC server for more than 10 clients	CPU	Dual core CPU; 2.5 GHz	Multi core CPU; 3.5 GHz
	Work memory	4 GB	8 GB
DataMonitor server on WinCC server with WinCC project in runtime	CPU	Dual core CPU; 2.5 GHz	Multi core CPU; 3.5 GHz
	Work memory	4 GB	8 GB
DataMonitor server on WinCC server	CPU	Dual core CPU; 2.5 GHz	Multi core CPU; 3.5 GHz
	Work memory	4 GB	> 4 GB
DataMonitor server on WinCC single-user system or WinCC client with its own project	CPU	Dual core CPU; 2.5 GHz	Multi core CPU; 3.5 GHz
	Work memory	4 GB	> 4 GB

DataMonitor client

	Minimum	Recommended
CPU	Dual core CPU; 2 GHz	Multi core CPU; 3 GHz
Work memory	1 GB	2 GB

Software requirements

Certain requirements concerning operating system and software configuration must be met for the installation.

Microsoft Internet Information Service (IIS)

During the WinCC installation, the Microsoft Internet Information Service (IIS) is installed and configured.

DataMonitor server on WinCC server

Operating system	Software
Microsoft Windows Server 2019 Standard / Datacenter 64-bit Microsoft Windows Server 2022 Standard / Datacenter 64-bit	WinCC Basic System V8.1 or WinCC File Server V8.1

If you want to publish Intranet information, the following is required:

- A network-capable computer with a LAN connection
- A system that converts computer names into IP addresses. This step allows users to use "alias names" instead of IP addresses when connecting to your server.

If you want to publish information on the Internet, the following is required:

- An Internet connection and an IP address from your Internet service provider (ISP). You can only publish information in the Internet, if you have a connection to the Internet provided by the ISP.
- A network adapter that is suitable for connecting to the Internet.
- A DNS registration for your IP address. This step allows users to use "alias names" instead of IP addresses when connecting to your server.

DataMonitor server on WinCC single-user system or WinCC client with its own project

Operating system	Software
Microsoft Windows 10 Pro / Enterprise / Enterprise LTSC 64-bit (max. 3 clients) Microsoft Windows 11 Pro / Enterprise 64-bit (max. 3 clients) Microsoft Windows Server 2019 Standard / Datacenter 64-bit Microsoft Windows Server 2022 Standard / Datacenter 64-bit	WinCC Basic System V8.1 or WinCC File Server V8.1 For the components "Excel Workbook Wizard" and "Excel Workbook": • Microsoft Office 2019 32-bit version, 64-bit version [1)] • Microsoft Office 2021 32-bit version, 64-bit version [1)] • Microsoft Office 365 32-bit version, 64-bit version [1)]

1) ActiveX controls that were created with a 32-bit version are not compatible with the 64-bit version of Microsoft Office 365. You can only use the Excel add-in with the 32-bit version of Microsoft Office 365.

You also need access to the Intranet/Internet or a TCP/IP connection to the Web client.

DataMonitor client

Operating system	Software
Microsoft Windows 10 Pro / Enterprise / Enterprise LTSC 64-bit Microsoft Windows 10 Pro / Enterprise 64-bit Microsoft Windows Server 2019 Standard / Datacenter 64-bit Microsoft Windows Server 2022 Standard / Datacenter 64-bit Also other operating systems via MS Terminal Services	For the components "Excel Workbook Wizard" and "Excel Workbook": • Microsoft Office 2019 32-bit version, 64-bit version [1)] • Microsoft Office 2021 32-bit version, 64-bit version [1)] • Microsoft Office 365 32-bit version, 64-bit version [1)]

1) ActiveX controls that were created with a 32-bit version are not compatible with the 64-bit version of Microsoft Office 365. You can only use the Excel add-in with the 32-bit version of Microsoft Office 365.

You also need access to the Intranet / Internet or a TCP/IP connection to the Web server.

1.5.2 User rights for installing the DataMonitor client

Introduction

You can install the DataMonitor client as follows:

- Installation from the product DVD
  In this case, certain Microsoft Windows user rights are required, depending on the operating system.
- Installation via the Intranet/Internet
  In this case, certain Microsoft Windows user rights are required, depending on the operating system.
- Installation using the group policy-based software distribution in networks
  This can be done without any user interaction and using the Microsoft Windows user rights of the current user.

Microsoft Windows user rights required for installation and initial logon of the client

Depending on the operating system, specific minimum user rights are required to install the DataMonitor client via Intranet/Internet.

After installation, the client must log in with the following user identification for initial registration on the DataMonitor server:

- Under a user identification with Windows user rights higher or equal to those defined by the user identification that was given for the installation.

The connections must be established successfully. The subsequent logins can then be performed under a different Windows user authorization with possibly limited rights.

Minimum required user rights:

- Administrator

Installing the DataMonitor client with limited Microsoft Windows user rights

Using Microsoft Windows Installer technology (MSI), DataMonitor clients can also be installed with limited Windows user permissions, i.e. permissions other than "Power user" or "Administrator".

This procedure can be set during the installation using the group policy based software distribution in networks.

Even the add-ins and plug-ins for the DataMonitor client can be installed in this way. The minimum user permissions described above are also required to install plug-ins created with WinCC Plug-In Builder.

Using MSI technology, it is also possible to install the DataMonitor client for a configured group of users or computers.

Installation for a configured group of users or computers

The following is possible with the Microsoft Systems Management Server or a group policy on a Domain Controller:

- The installation for a group of users or computers configured by the administrator
  - To do this, the "WinCCDataMonitorClient.msi" MSI file is published on the domain controller and then released for a user group. The installation is then performed according to the configuration of the group policy based software distribution either during login of the defined users or when the computer is started.
  - When using a Microsoft Systems Management Server, the installation is configured by the administrator, triggered and executed when the relevant computer boots. Additional information on Microsoft Systems Management Server is available in the Internet on the Microsoft Homepage.

Group policy based software distribution

Software is normally installed with the access rights of the current Microsoft Windows user. When using MSI technology, the installation is performed by an operating system service with a higher level of rights. This enables installations to be performed for which the Windows user has no permission. Applications which require installations with a higher permission are referred to as "privileged installations" in MSI technology. Installation of these applications is possible when a Windows user is assigned the "Always install with elevated privileges" permission.

In order to use the group policy-based software distribution, a group policy is created on the domain controller and assigned to the distributing software or published using Active Directory.

- Assignment: The software distribution can be assigned to a user or a computer. In this case, the software to be distributed is automatically installed when the user logs in or the computer is started.
- Publication: The software distribution can be published for single users. In this case, when the user logs onto the client computer, the software to be distributed appears in a dialog and can be selected for installation.

See also

Installing DataMonitor (Page 99)

1.5.3 Installing DataMonitor

Introduction

This section describes the installation of the DataMonitor server and DataMonitor client.

Installation on the DataMonitor client depends on the DataMonitor tool used.

DataMonitor server scope of installation

A DataMonitor server is installed and set up as the web server to enable WinCC/DataMonitor to be used.

This installation allows you to access the WinCC Runtime archive using "Trends & Alarms".

Only "Webcenter" and "Trends & Alarms" are installed on a computer with WinCC file server, for example, used as a archive server, because the other components require WinCC Runtime. "Webcenter" and "Trends & Alarms" install all necessary components in the process.

Microsoft Internet Information Service (IIS)

During the WinCC installation, the Microsoft Internet Information Service (IIS) is installed and configured.

DataMonitor client installation conditions

You do not need to install the DataMonitor client if you only want to use "Webcenter" and "Trends and Alarms" on the DataMonitor client.

You can install the Excel add-ins "ExcelWorkbook Wizard" and "Excel Workbook" individually under "Reports/Download area" on the DataMonitor start page for the "Reports".

"Microsoft Excel" is needed for "Excel Workbook". The following 32-bit versions of Office are released:

- Microsoft Office 2019
- Microsoft Office 2021
- Microsoft Office 365

Depending on the operating system, specific user rights may be required for installing the DataMonitor client. For more information, refer to "User rights for installing the DataMonitor client (Page 98)".

Note

Downloading the client setup

To save the client setup on the client computer, select the "Save" option when downloading the client software from the DataMonitor server. It is recommended to save the Setup file because, in the event of a restart of the client computer being necessary, the Setup need not be downloaded again.

If the DataMonitor client has already been installed from DVD and you want to install an updated version of the client via the Intranet/Internet, you must save the client setup on the target computer.

64-bit computer as client

If the DataMonitor client is a 64-bit machine, you first need to install the required Visual C++ Redistributable, which is required for the DataMonitor client. Use the link that is displayed during installation via intranet/Internet.

The required Visual C++ Redistributable must also be available for domain environments as an "msi" package.

If the DataMonitor clients on the 64-bit computers are integrated in domain group policies, the users of the clients must install "DataMonitorClient_x64_AddOn.msi" themselves.

Excel Workbook Wizard requires Microsoft .Net Framework

In order to us Excel Workbook Wizard make sure that the .Net Framework is installed on the DataMonitor client.

Client installation on a DataMonitor server

Proceed as follows if you also wish to install the DataMonitor client or WebNavigator client on a DataMonitor server:

1. Use the Services Manager in Microsoft Windows to set the start type of the "CCArchiveConnMon" service to manual.
2. Restart the computer.
3. Install the client.
   Ensure that no WebNavigator clients or DataMonitor clients access the server during installation.
4. Switch the start type of the "CCArchiveConnMon" service back to automatic.

Requirement

- The DataMonitor server requires the Internet Information Services (IIS).
- The DataMonitor server requires the WinCC configuration data.
- You need Microsoft Windows "Administrator" rights to install the DataMonitor server.

Procedure

1. Insert the WinCC DVD into the DVD drive.
2. If the automatic execution of an autorun file is activated, after a few seconds the setup program starts automatically.
   The setup can also be started manually in case the installation is performed from a network drive or the autorun function has been disabled.
   The setup program is started.
3. To install, click the text "Install Software".
4. In the following dialog, select the component "DataMonitor Server" or "DataMonitor Client".
5. Follow the instructions of the setup program.

See also

User rights for installing the DataMonitor client (Page 98)

1.5.4 DataMonitor licensing

DataMonitor client

No license is required for the DataMonitor client on the computer.

The DataMonitor clients are licensed on the DataMonitor server. Install the license keys for the client access to the server on the DataMonitor server.

DataMonitor server

As a prerequisite for the WinCC basic system, the WinCC RT basic license is required.

Licenses are available for 1 / 3 / 10 / 30 clients that can simultaneously access the DataMonitor server. The licenses are cumulative.

A message will appear if the number of licensed clients is exceeded during a login attempt by a DataMonitor client. No further logins will be possible.

Note

The connection to the DataMonitor server is maintained if the user closes the DataMonitor start page without logging off with the "Log off" button.

The license remains allocated and is only released after approximately 20 minutes.

License count

DataMonitor distinguishes between the following function groups:

- Excel Workbooks
  A "WinCC DataMonitor" license is required on the server computer for each DataMonitor client.
- Webcenter, Trends & Alarms, Reports
  It is not the number of clients but the number of connections that is relevant for the license count for the Webcenter function group.

The following table shows the maximum number of clients or connections per license based on the function group. The values are valid only within a function group.

License	Excel Workbooks [1)]	Webcenter, Trends & Alarms, Reports [1)]
1 Client	1	3
3 Clients	3	6
10 clients	10	20
30 Clients	30	60

1) The same values apply even if you cumulate licenses.

In the following example, two licenses are installed on the DataMonitor server: "1 Client" a"3 Clients".

The following cumulative values apply depending on the selected function group:

Example: Excel Workbooks

Installed licenses	Function group	Maximum logged on users
"1 Client" + "3 Clients"	Excel Workbooks	4 users

Example: Webcenter, Trends & Alarms, Reports

Installed licenses	Function group	Maximum logged on users
"1 Client" + "3 Clients"	Webcenter, Trends & Alarms, Reports	8 users

No operation without a valid license

If no license is available, DataMonitor displays a page reporting the missing license.

Check the existing licenses. If necessary, install the required licenses.

Using DataMonitor versions prior to V7.4

DataMonitor versions up to V7.3 do not recognize licenses from DataMonitor V7.4 and higher.

Once you install the current DataMonitor licenses on a computer, a DataMonitor installation of a version prior to V7.4 is no longer licensed.

This also applies if you upgrade to the new cumulative licenses through an upgrade license. The upgraded licenses are no longer recognized by DataMonitor V7.3 or earlier versions.

The upgrade to DataMonitor V7.4 or higher cannot be reversed.

1.5.5 Setting up a secure connection over HTTPS

Introduction

You can configure the DataMonitor server in such a way that only HTTPS connections are supported.

In this way, you increase the security of your connections.

You need a digital certificate for the DataMonitor server to set up the secure connection.

Requirement

- The Microsoft Windows "Internet Information Service" component is installed.
- WinCC Web Configurator is installed.
- WinCC DataMonitor server is installed.
- A DataMonitor web page has been set up and the Web folder is created.

Creating an SSL certificate

1. Open the "Internet Information Services (IIS) Manager".
2. In the "Connections" navigation area, select the local computer.
   The home page of the local computer is displayed in the data area.
3. On the home page of the local computer, double-click "Server certificates" under "IIS".
4. Select "Create a self-signed certificate..." in the "Actions" area.
   The "Create a self-signed certificate" dialog opens.
5. Specify the name of the certificate.
6. Select the certificate store "Personal" for the certificate.
7. Confirm your entries with "OK".
   The dialog closes.
   The certificate has been created.

More information

You can find information on self-signed certificates when using different web browsers on the Internet under Entry ID 109773769:

- SiePortal: "How do you fix problems when using self-signed certificates from WebUX or WebNavigator with different web browsers?" (https://support.industry.siemens.com/cs/ww/en/view/109773769)

Setting up a secure connection

1. Open the "Internet Information Services (IIS) Manager".
2. Open the "Sites" folder in the "Connections" navigation area.
3. Select "WebNavigator".

4. Select the "Edit bindings" command in the shortcut menu.
   The "Site bindings" dialog opens.
5. Select "Add...".
   The "Add site binding" dialog opens.
6. Select the type "https".
7. Specify the required port.
8. Select the created certificate under "SSL certificate".
9. Confirm your entries with "OK".
10. Delete the binding of the type "http" in the "Site bindings" dialog.
11. Exit the configuration with "Close".
12. In the data area "Default Web Site Home", select the "SSL settings" under "IIS".
13. Activate the "Require SSL" option and select the setting for client certificates.
14. To test the connection, enter the URL and the port number in the Internet Explorer or in the WinCC Viewer RT, for example, "https://webserver:444".

See also

Configuring the firewall (Page 387)

SiePortal: "How do you fix problems when using self-signed certificates from WebUX or WebNavigator with different web browsers?" (https://support.industry.siemens.com/cs/ww/en/view/109773769)

1.6 WinCC/DataMonitor Release Notes

1.6.1 Notes about DataMonitor

Notes about DataMonitor

These release notes contain important information.

The statements in these release notes take precedence over information provided in the manuals and in the online help.

Please read these release notes carefully as they contain useful information.

Using a secure connection over HTTPS

To improve the security of your communication, configure the DataMonitor server in such a way that only HTTPS connections are supported.

You need a digital certificate for the DataMonitor server for this purpose. Also use SSL certificates on the DataMonitor clients.

You can find more detailed information under "Setting up a secure connection over HTTPS (Page 104)".

System load through large amounts of data

Note that SQL queries returning large amounts of data can affect system functionality.

Select filter criteria which limit the amount of data in a useful manner.

Opening Excel workbooks on a computer not connected to the Internet

If you want to use the DataMonitor client on a computer not connected to the Internet, you must deactivate certificate checking. To do this, follow these steps:

- Open Internet Explorer.
- Select the "Internet Options" command from the "Tools" menu.
- Click "Advanced".
- In the "Security" section, deactivate the setting "Check for publisher's certificate revocation".

Excel workbook functions and print jobs after deactivating and activating WinCC Runtime

If you deactivate WinCC Runtime and then reactivate it, you also need to restart the Web application.

Excel workbook: volume of requested data for archived values

Although you can limit the requested data volume with the "Data resolution" property, all data of the defined time period is initially used internally. This may have the result that the internal system limit is reached. Use compression archives to limit the data volume.

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/DataMonitor: "WinCC/DataMonitor Documentation > Configuring the DataMonitor System > Working with the DataMonitor Client > Configuring Security Settings in Internet Explorer"

DataMonitor server: Remote access to WinCC file server

Remove access from one DataMonitor server to a WinCC file server is possible only if the firewall is disabled on the WinCC file server.

Excel workbook: Local times on DataMonitor client and DataMonitor server

Note when requesting archive data that the local times on the server and client may differ if they have not been sufficiently synchronized, for example because automatic synchronization is not possible.

The DataMonitor client attempts to establish the current time of the DataMonitor server when archive data is requested. If it succeeds, the query will be based on the server time. For the display of data in the Excel table, the time stamp represents the server time but in the local time zone of the client.

If the query of the server time is unsuccessful, the DataMonitor client will base the time period of the query on its local time. An entry will also be made in the Microsoft Windows event display on the DataMonitor client. For the display of data in the Excel table, the time stamp represents the client time.

Excel workbook: Client on terminal server

In the case of operation on a terminal server, an Excel Workbook client will run in a session of the terminal services. A maximum of only 10 Excel workbook clients can be operated; otherwise, MS Excel will overload the computer.

Trends & Alarms: Display of archive data after copying a project

To copy a WinCC project between computers and then display the archive data of the project on the target computer in "Trends & Alarms", you will first need to copy the project using the WinCC Project Duplicator.

If you use Microsoft Windows Explorer rather than the Project Duplicator to copy the project, the runtime data will not be adapted to the target computer. The computer name of the source computer and not that of the target computer is displayed in the archive selection in "Trends and Alarms". The computer name of the target computer is displayed in the selection field only after the archive has been reset in Alarm Logging and Tag Logging.

See also

Setting up a secure connection over HTTPS (Page 104)

1.7 WinCC/WebNavigator Installation Notes

1.7.1 General information on the WebNavigator installation

Scope of delivery

You can find the following components for WinCC/WebNavigator on the WinCC DVD:

- WebNavigator server
- WebNavigator client
- WinCCViewerRT
- WebNavigator diagnostics client
- WinCC Web Publishing Wizard (PublishingWizard)
- WebNavigator Plug-In Builder
- Documentation
- Release notes

Note

WinCC/WebNavigator V8.1: Installation is only released on the basis of WinCC V8.1

You cannot install the V8.1 WebNavigator server/client on a computer with WinCC versions earlier than V8.1.

Nor can a WebNavigator server/client version older than V8.1 be installed on a computer with WinCC V8.1.

Note that mixed use of European and Asian versions of WinCC and WebNavigator is not permitted in the configuration.

1.7.2 WebNavigator installation requirements

1.7.2.1 Hardware and software requirements for WebNavigator

Introduction

This section describes the hardware and operating system requirements for WinCC/ WebNavigator.

Notes on the software requirements

Microsoft Internet Information Service (IIS)

During the WinCC installation, the Microsoft Internet Information Service (IIS) is installed and configured.

WinCC client without its own project

A WebNavigator server cannot be operated on a WinCC client without a project of its own.

WebNavigator client

Hardware

	Minimum	Recommended
CPU	Dual core CPU; 2 GHz	Multi core CPU; 3 GHz
Work memory	1 GB	2 GB

Software

Operating system	Microsoft Windows 10 Pro / Enterprise 64-bit Microsoft Windows 10 Enterprise LTSC 64-bit Microsoft Windows 11 Pro / Enterprise 64-bit Microsoft Windows Server 2019 Standard / Datacenter 64-bit Microsoft Windows Server 2022 Standard / Datacenter 64-bit Also other operating systems via MS Terminal Services Microsoft Windows Embedded Standard 7 including SP1 in combination with SIMATIC IPC 4x7D and SIMATIC IPC 4x7E
Software	Web browser, current version
Other	Access to the intranet/Internet or a TCP/ IP connection to the WebNavigator server

WebNavigator server on a WinCC single-user system

Hardware

	Minimum	Recommended
CPU	Dual core CPU; 2.5 GHz	Multi core CPU; 3.5 GHz
Work memory	2 GB	> 4 GB

Software

Operating system	Microsoft Windows 10 Pro / Enterprise 64-bit Microsoft Windows 10 Enterprise LTSC 64-bit Microsoft Windows 11 Pro / Enterprise 64-bit Microsoft Windows Server 2019 Standard / Datacenter 64-bit Microsoft Windows Server 2022 Standard / Datacenter 64-bit
Software	Web browser, current version WinCC Basic System V8.1
Other	Access to Intranet/Internet or TCP/IP connection to the WebNavigator client

WebNavigator server on WinCC server or WinCC client with its own project

Hardware

	Minimum	**Recommended**
CPU	Dual core CPU; 2.5 GHz	Multi core CPU; 3.5 GHz
Work memory	4 GB	8 GB

Software

Operating system	Microsoft Windows Server 2019 Standard / Datacenter 64-bit Microsoft Windows Server 2022 Standard / Datacenter 64-bit
Software	Web browser, current version WinCC Basic System V8.1
Other	Access to Intranet/Internet If you wish to publish on the **Intranet** , you will need a system that converts computer names into IP addresses. This step allows users to use alias names instead of IP addresses when connecting to the server. You will need DNS registration for your IP address if you wish to publish on the **Internet**. This step allows users to use alias names instead of IP addresses when connecting to the server.

WebNavigator diagnostics client

Software

Operating system	Microsoft Windows 10 Pro / Enterprise 64-bit Microsoft Windows 10 Enterprise LTSC 64-bit Microsoft Windows 11 Pro / Enterprise 64-bit Microsoft Windows Server 2019 Standard / Datacenter 64-bit Microsoft Windows Server 2022 Standard / Datacenter 64-bit
Software	Web browser, current version
Other	Access to Intranet/Internet

See also

https://support.microsoft.com/en-us/kb/3072449 (https://support.microsoft.com/en-us/kb/3072449)

1.7.2.2 Licensing WebNavigator

WebNavigator client

No license is required for the PC on which the WebNavigator client is running, as server licenses are available on the WebNavigator server.

WebNavigator server

As a prerequisite for the WinCC basic system, the WinCC RT basic license is required. No WinCC server license is required if no local WinCC clients are to be operated. Even when operating a WinCC client as a dedicated web server, you do not require a WinCC server license for the WinCC client.

Licenses are available for 1 / 3 / 10 / 30 / 100 clients. If you have upgraded a WebNavigator version prior to V7.4, there may also be licenses for 5 / 25 / 50 / 150 clients.

As of WinCC V8.1, there is also an "Unlimited" license for an unlimited number of connected clients.

The packages are version-independent and can be combined. Up to 150 clients can access the WebNavigator server simultaneously.

A message will appear if the number of licensed clients is exceeded during a login attempt by a WebNavigator client. No further logins will be possible.

WinCC/WebUX clients

If the WinCC/WebUX option is also used in the WinCC system, a WebUX client can also occupy a WebNavigator license. This reduces the number of available WebNavigator licenses.

You can find more information in the documentation for WinCC/WebUX.

Test mode

If there is no WebNavigator license or if the license has been removed, the WebNavigator server runs in Test mode.

Test mode runs for a maximum of 21 days from the date of installation. Once 21 days have expired after the installation, the WebNavigator server can only be started with an installed license.

WebNavigator diagnostics client

A "Diagnostics client" license is required on the client computer for the diagnostics client.

The diagnostics client can access on the WebNavigator server in the following cases:

- When the maximum number of simultaneous accesses has been reached on WebNavigator server.
- When no WebNavigator license is installed on the WebNavigator server.

Diagnostics client without corresponding license

If the diagnostics client is installed without the corresponding license, a message will appear about one hour after each start-up of the computer.

Install the diagnostics client license or remove the diagnostics client software.

No access via RDP

Access via Remote Desktop Protocol (RDP) is not enabled for the diagnostics client.

Note

Computer with WinCC basic system and diagnostics client

If you install a diagnostics client on a computer with the WinCC basic system, you will have to reinstall the diagnostics client after removing WinCC.

Overview of licenses for WebNavigator server and client

You can combine WebNavigator and diagnostics licenses.

Server	Client has no license [1]	Client has diagnostics client license [1]
No WinCC license No WebNavigator license	Client in test mode Unlimited number	Client in test mode Unlimited number
WinCC license No WebNavigator license	Client in test mode Unlimited number	Diagnostics client One license per diagnostics client
WebNavigator license No WinCC license	Client in test mode Unlimited number	Client in test mode Unlimited number
WebNavigator license + WinCC license	WebNavigator client Number up to maximum of the server license	Diagnostics client One license per diagnostics client
WebNavigator license + WinCC license + "Load Balancing" license	WebNavigator client Number up to maximum of the server license	Diagnostics client One license per diagnostics client
WebNavigator license + WinCC license + WinCC Redundancy license + "Load Balancing Step-Up" license	WebNavigator client Number up to maximum of the server license	Diagnostics client One license per diagnostics client

1) Note the behavior in test mode. Test mode runs for a maximum of 30 days from the date of installation.

Restarting the WebNavigator client after license modification

If the WebNavigator licenses on the WebNavigator server are modified, e.g. to a different number of clients, Internet Explorer must be restarted on each connected WebNavigator client, and the WebNavigator client must log in again. Otherwise, the WebNavigator client will switch to demo mode. This also applies to automatic reconnection of the WebNavigator client.

Using WebNavigator versions prior to V7.4

WebNavigator versions up to V7.3 do not recognize licenses from WebNavigator V7.4 and higher.

Once you install the current WebNavigator licenses on a computer, a WebNavigator installation of a version prior to V7.4 is no longer licensed.

This also applies if you upgrade to the new cumulative licenses through an upgrade license. The upgraded licenses are no longer recognized by WebNavigator V7.3 or earlier versions.

It is not possible to undo the upgrade to WebNavigator V7.4 or higher.

1.7.2.3 Requirements for the Use of Terminal Services

The WebNavigator client is released for Microsoft Windows Terminal Services.

A maximum of 150 sessions per terminal server are permitted.

Terminal server

Hardware

	Minimum	Recommended
CPU	Dual core CPU; 2 GHz	Multi core CPU; 3 GHz
Work memory	1 GB	2 GB

Note

Memory requirements

Each terminal client will increase the memory requirements and the processor load.

You must therefore ensure that the terminal server has adequate memory and processor load capacity.

Software

Operating system	Microsoft Windows Server 2019 Standard / Datacenter 64-bit Microsoft Windows Server 2022 Standard / Datacenter 64-bit It must be possible to repeatedly call and execute applications that are to be executed on the clients.
Miscellaneous:	If many users want to access the server, you will need to use a high-performance network card.

Terminal client

Minimum requirement:	Network adapter with TCP/IP Terminal client RDP 5.0 Display or monitor Pointing device

Note

Terminal Services Client Access Licenses (CALs)

As with Microsoft Windows Server CAL, there are two different CAL terminal services:

- The TS device CAL enables a device to run user-independent Windows sessions on a Microsoft Windows Server.
- The TS user CAL enables a user to run device-independent Windows sessions on a Microsoft Windows Server.

A Microsoft Windows Server Terminal Server CAL "TS CAL" is required for every user or every device.

Additional information can be found in the Microsoft documentation "https://docs.microsoft.com/en-us/troubleshoot/windows-server/ (https://docs.microsoft.com/en-us/troubleshoot/windows-server/remote/terminal-server-licensing)".

See also

https://docs.microsoft.com/en-us/troubleshoot/windows-server/remote/terminal-server-licensing (https://docs.microsoft.com/en-us/troubleshoot/windows-server/remote/terminal-server-licensing)

1.7.3 Installing a WebNavigator server

1.7.3.1 Overview: Installing the WebNavigator server

Requirements

- The software requirements for the Microsoft Windows operating system have been met.
- Local administrator rights.
- The WinCC basic system is installed.

NOTICE
WebNavigator server: Using a secure connection over HTTPS To increase the security of your communication, configure the WebNavigator server in such a way that only HTTPS connections are supported. You need a digital certificate for your WebNavigator server for this. You can find more detailed information under "Setting up a secure connection over HTTPS (Page 117)".

WinCC options previously installed

If you have already installed other WinCC options prior to the installation of WinCC/ WebNavigator, you may have to re-install these options.

See also

Installing the WebNavigator server (Page 116)

Setting up a secure connection over HTTPS (Page 117)

1.7.3.2 Installing the WebNavigator server

Requirements

- Local administrator rights
- The Internet Information Server is installed.

Procedure

1. Insert the WinCC DVD in the drive.
   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. In the "Installation Type" dialog, select "Package Installation".
3. Select the "WebNavigator Server" installation.
4. Before the installation, the security settings that are adapted for WinCC are displayed in the "System Settings" dialog.
   The firewall is configured automatically.
   Confirm the changes to the system settings.
5. Start the installation.
   You can track the status of the installation in the displayed dialog.
   Select "Cancel" to cancel the installation.

6. You can transfer the license key for the product after installation of the WebNavigator server. To do so, click on "Transfer License Key".
   Select "Next" if you have already transferred the license key or want to install it at a later time.

   Note

   License keys will not be transferred automatically.

   You will have to transfer missing license keys during or after installation with "Automation License Manager" .

7. Restart the computer when prompted to do so by setup.

Result

The WebNavigator server is installed and is displayed in the navigation window of the WinCC Explorer.

1.7.3.3 Setting up a secure connection over HTTPS

Introduction

You can configure the WebNavigator server in such a way that only HTTPS connections are supported.

In this way, you increase the security of your connections.

You need a digital certificate for the WebNavigator server to set up the secure connection.

Requirement

- The Microsoft Windows "Internet Information Service" component is installed.
- WinCC Web Configurator is installed.
- WinCC WebNavigator server is installed.
- A WebNavigator web page has been set up and the Web folder is created.

Creating an SSL certificate

1. Open the "Internet Information Services (IIS) Manager".
2. In the "Connections" navigation area, select the local computer.
   The home page of the local computer is displayed in the data area.
3. On the home page of the local computer, double-click "Server certificates" under "IIS".
4. Select "Create a self-signed certificate..." in the "Actions" area.
   The "Create a self-signed certificate" dialog opens.
5. Specify the name of the certificate.

6. Select the certificate store "Personal" for the certificate.
7. Confirm your entries with "OK".
   The dialog closes.
   The certificate has been created.

More information

You can find information on self-signed certificates when using different web browsers on the Internet under Entry ID 109773769:

- SiePortal: "How do you fix problems when using self-signed certificates from WebUX or WebNavigator with different web browsers?" (https://support.industry.siemens.com/cs/ww/en/view/109773769)

Setting up a secure connection

1. Open the "Internet Information Services (IIS) Manager".
2. Open the "Sites" folder in the "Connections" navigation area.
3. Select "WebNavigator".
4. Select the "Edit bindings" command in the shortcut menu.
   The "Site bindings" dialog opens.
5. Select "Add...".
   The "Add site binding" dialog opens.
6. Select the type "https".
7. Specify the required port.
8. Select the created certificate under "SSL certificate".
9. Confirm your entries with "OK".
10. Delete the binding of the type "http" in the "Site bindings" dialog.
11. Exit the configuration with "Close".
12. In the data area "Default Web Site Home", select the "SSL settings" under "IIS".
13. Activate the "Require SSL" option and select the setting for client certificates.
14. To test the connection, enter the URL and the port number in the Internet Explorer or in the WinCC Viewer RT, for example, "https://webserver:444".

See also

General information about WebNavigator (Page 130)

Configuring the firewall (Page 224)

SiePortal: "How do you fix problems when using self-signed certificates from WebUX or WebNavigator with different web browsers?" (https://support.industry.siemens.com/cs/ww/en/view/109773769)

1.7.4 Installing the WebNavigator client

1.7.4.1 Installing the WebNavigator client

Introduction

You can install the WebNavigator client as follows:

- Installation from the WinCC product DVD.
  In this case, certain Microsoft Windows user rights are required, depending on the operating system.
- Installation via the Intranet/Internet.
  In this case, certain Microsoft Windows user rights are required, depending on the operating system.
- Installation without user interaction:
  - Using the Microsoft Windows user rights of the current user
  - Or in networks, using group policy-based software distribution

In addition, you can also install the WebNavigator client on the WebNavigator server.

This is useful, for example, if you want to check the WinCC project locally on the server in Internet Explorer.

Remote communication

If the WebNavigator client is not running on the same computer as the WebNavigator server, enable remote communication on both computers in the "Simatic Shell" dialog.

Note

.Net controls on the WebNavigator client

If you wish to use .Net controls on the WebNavigator client, you need to install the .Net Framework 4.0 or higher on the client from the WinCC product DVD.

The .Net controls must not be copied to the Microsoft Windows "Common Files" folder. Instead, use the following path:

- <Installation directory>WinCC\WebNavigator\Client\bin

Note

Parallel installation of WinCC/WebNavigator client and WinCC Runtime Advanced

Avoid the installation of the web client on a PC on which WinCC Runtime Advanced is installed as well.

If you run both installations on the same PC, you require administrator rights in order to work with the web client. No pictures are loaded into the web browser without administrator rights.

WinCCViewerRT

The web viewer "WinCCViewerRT" is installed upon installation of the WebNavigator client.

Procedure

1. Entry and check of the settings of the client computer in Internet Explorer.
2. Installation of the WebNavigator client.

Note

If you are installing from the DVD or using software distribution based on group policy, you can directly upgrade an older version of the WebNavigator client without having to remove the older client first.

If you install the WebNavigator server on a PC after the WebNavigator client, you will have to install the client again.

Plug-in reinstallation

The plug-ins "User Archive Control", "FunctionTrend Control", "Hard Copy" and "Web Client" are already integrated in the WebNavigator client as of version V7.0 upon installation.

If a WebNavigator client as of V7.0 is connected to a WebNavigator server older than V7.0 (e.g. V6.2 SP3), you will be offered these plug-ins for installation in the download area of the Web navigation user interface.

The plug-ins are already installed. Do not reinstall these plug-ins.

Information on the setup and installation of the WebNavigator client:

- Before downloading and installing a new version on the WebNavigator client, check the languages installed on the client and connected server.
  Only the languages of the connected server will be available on the client computer following client installation by download.
- WebNavigator client setup will be interrupted with the error message "WinCC Active" if the local WinCC project is open or has been opened since the PC was last restarted.
  Restart the computer.
  Check whether WinCC has been included in the Autostart directory.
  Remove the entry if necessary and then restart the computer to execute WebNavigator client installation.
- You will need at least 70 MB of free memory space on the local hard disk to install the WebNavigator client.
  Otherwise, the MSI setup will cancel installation with a corresponding error message.
- When installing the WebNavigator client by downloading it from the Intranet/Internet, you can select to either "Open" or "Save" the setup file.
  The procedure you select upon initial installation of the WebNavigator client must also be selected for the subsequent installation of plug-ins or ActiveX controls. Otherwise, the "MSI Installer" service will output the error message "Error 1316".
- Prior to installation via download, the latest cumulative security update for Internet Explorer must be installed.
  Information on the installation of ActiveX controls: Microsoft entry KB3072449 (https://support.microsoft.com/en-us/kb/3072449).

- WebNavigator client on a 64-bit PC:
  The required Microsoft Visual C++ Redistributable must be installed on the WebNavigator client before the connection to the WebNavigator server is established. This installation is a requirement for the Web client.
  Use the link that is displayed during installation via intranet/Internet.

  Note

  Installation of Microsoft Visual C++ Redistributable in domain environments

  The required Visual C++ Redistributable must also be available for domain environments as an "msi" package:

  - If the WebNavigator client on the 64-bit computer is not upgraded to the latest version via the DVD, "Webnavigatorclient.msi" and **"**WebNavigatorClient_x64_AddOn.msi**"** can be made available to the user via the domain controller.
  - If the WebNavigator clients on the 64-bit computers are integrated in domain group policies, the users of the clients must install "WebNavigatorClient_x64_AddOn.msi" themselves.

- In the download area of the Web Navigation user interface, the Plug-Ins which can be installed are displayed.
  The same minimum user rights are required for installing these plug-ins as for installation of the WebNavigator client.
  If you select a plug-in in the Web Navigation user interface, WebNavigator client setup will start. You will have to confirm the selected plug-in again.

Upgrading the WebNavigator client from a previous version

When you connect a web client to a web server, it is tested whether the client has the same version installed as on the web server.

If an older version is present, you can upgrade the WebNavigator client when accessing the Web project.

Upgrade from WinCC V6.2 SP3

Perform a repair installation after upgrading from WinCC V6.2 SP3.

Start the WinCC/WebNavigator client installation in the Control Panel via "Uninstall or change a program" and select "Repair".

Otherwise, controls may be reinstalled during operation.

Restart the computer.

Installation of the WebNavigator client under Microsoft Windows Server

Installation of the WebNavigator client under Microsoft Windows Server with a lower user authorization than "Administrator" is not possible with the default setting of group policies.

Enable the installation of the WebNavigator client in the group policy by

- Assigning and making the software public
- Or activating the setting "Always install with elevated privileges" under "Administrative Templates / Windows Components / Windows Installer".
  You must activate "Never" for the "Deactivate Windows Installer" option.

WinCC/WebNavigator: Central installation on web clients

For an installation without user interactions on a web client start the setup via the following command line:

- Installation with default settings:
  ```
  msiexec /i C:\TEMP\WebnavigatorClient.msi /quiet /log
  C:\temp\installWebNav.log
  ```
- Installation with reduced user interface:
  ```
  msiexec /i C:\TEMP\WebnavigatorClient.msi /qb /log
  C:\temp\installWebNav.log
  ```

See also

Installing the WebNavigator Client (Page 174)

The "Central installation" function (Page 47)

https://support.microsoft.com/en-us/kb/3072449 (https://support.microsoft.com/en-us/kb/3072449)

1.7.4.2 User rights and user groups for WebNavigator clients

Microsoft Windows user rights required for installation and initial registration of the WebNavigator client

"Administrator" rights are required for installing the WebNavigator client via Intranet/Internet or using the product DVD. The initial registration of the client on the WebNavigator server must take place with the user identification used during installation and the same or higher Windows user rights. The connections must be established successfully. All subsequent logins can then be performed by users with different Windows user rights, which may be more restricted.

Microsoft Windows user groups "SIMATIC HMI" / "SIMATIC HMI VIEWER"

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

SIMATIC HMI	These members can create local projects, and can process, start, and access these projects remotely. Access to the WinCC database is limited to the minimum rights necessary (read/write).
SIMATIC HMI Viewer	These members have read access only to configuration and runtime data in the WinCC database.

In the following cases, you need to add users of the WebNavigator client to a Microsoft Windows user group:

- The WebNavigator client is installed on a PC on which WinCC is already installed: Users of the Web client must be members of the user group "SIMATIC HMI VIEWER" or "SIMATIC HMI".
- The WebNavigator client accesses the WebNavigator server as "Remote Desktop" user: Users of the Web client must be members of the user group "SIMATIC HMI VIEWER".

Installing the WebNavigator client with limited Microsoft Windows user rights

The MSI technology used allows you to install the WebNavigator client even with limited Windows user rights. This procedure can be set during the installation using the group policy based software distribution in networks.

Even the add-ins and plug-ins for the WebNavigator client can be installed. "Administrator" rights are required for the installation of plug-ins that were created with the WinCC Plug-In Builder.

Installation for a configured group of users or computers

Using the Microsoft Systems Management server or group policy on a Domain Controller, it is possible to install a group of users or computers configured by the Administrator.

- For this the MSI file "WinCCWebNavigatorClient.msi" is published at the Domain Controller and enabled for a user group. Installation is then performed either during login of the defined users or when the computer is started, depending on the configuration of the group policy-based software distribution.
- When using a Microsoft Systems Management Server, the installation is configured by the administrator, triggered and executed when the relevant computer boots.

Group policy-based software distribution

Software is normally installed with the access rights of the current Microsoft Windows user. When using MSI technology, the installation is performed by an operating system service with a higher level of rights. This enables installations for which the Windows user does not have the necessary rights. Applications which require higher rights for installation are referred to as "privileged installations" in MSI technology. Installation of these applications is possible when a Windows user is assigned the "Always install with elevated privileges" permission.

A group policy is created in the domain controller for use of group policy-based software distribution. The software to be distributed is then assigned or made public using Active Directory.

- Assignment: Software distribution can be assigned to a user or a computer. The software to be distributed is automatically installed when the user logs in or the computer is started.
- Publication: The software distribution can be published for individual users. When the user logs on to the client computer, the software to be distributed appears in a dialog and can be selected for installation.

1.7.4.3 Settings in the web browser (WebNavigator client)

Introduction

You have to adapt the web browser security settings in order to utilize the full functionality of the WebNavigator client.

The procedure depends on the browser used and is described using the example of the "Internet Explorer" browser.

Procedure

1. Click "Tools > Internet Options" in Internet Explorer.
2. Select the "Security" tab.
   Select the corresponding zone, for example, "Local Intranet" or "Internet".
3. Click "Custom Level...".
4. Enable the "Script ActiveX controls marked safe for scripting" and "Download signed ActiveX controls" options.
5. Enable "Active Scripting" under "Scripting".
6. Click "OK". Carry out the modifications in the subsequent dialog.
7. Click the "Trusted Sites" icon.
   Click the "Sites..." button to open the "Trusted sites" dialog.
8. Enter the address of the WebNavigator server in the "Add this website to the zone" field.
   Possible formats and wildcards include "*://157.54.100 - 200", "ftp://157.54.23.41", or "http://*.microsoft.com".
   Deactivate the "Require server verification (https:) for all sites in this zone" option.
   Click "Add". Click "OK".
9. Click the "Trusted Sites" icon.
   Click the "Standard level" button and then the "Custom Level" button.
   Enable "Initialize and script ActiveX controls not marked as safe". Click "OK".
10. Click on the "General" tab.
    Click in the "Settings" area on the "Temporary Internet Files" button.
    Enable the "Automatic" option under "Check for newer versions of stored pages:".
    Click "OK".
11. Close the "Internet Options" dialog by clicking "OK".

See also

Hardware and software requirements for WebNavigator (Page 109)

General information about WebNavigator (Page 130)

Notes on Internet Explorer for WebNavigator (Page 138)

1.7.4.4 Installation from the DVD (WebNavigator client)

Requirements

- For the installation and use of the WebNavigator client, the information in Settings in the web browser (WebNavigator client) (Page 124) applies.
- Depending on the operating system, specific minimum user rights are required to install the WebNavigator client; see User rights and user groups for WebNavigator clients (Page 122).

Procedure

1. Insert the WinCC DVD in the drive.
   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. In the "Installation Type" dialog, select "Package Installation".
3. Select the "WebNavigator Client" program package.
4. Before the installation, the security settings that are adapted for WinCC are displayed in the "System Settings" dialog. The firewall is configured automatically. Confirm the changes to the system settings.
5. Start the installation. You can track the status of the installation in the displayed dialog. Select "Cancel" to cancel the installation.
6. Restart the computer when prompted to do so by setup.

Result

The WebNavigator client is now installed and has been added as a function to the navigation window of the WinCC Explorer.

1.7.4.5 Installation via the Intranet/Internet (WebNavigator client)

Requirements

- For the installation and use of the WebNavigator client, the information in Settings in the web browser (WebNavigator client) (Page 124) applies.
- Depending on the operating system, specific minimum user rights are required to install the WebNavigator client; see User rights and user groups for WebNavigator clients (Page 122).
- The WebNavigator server must be installed on a computer:
  - The Internet Information Server must be configured with the WinCC Web Configurator.
  - The users must be registered in the WinCC User Administrator.
  - The WinCC project must be in runtime.

- The latest cumulative security update for Internet Explorer must be installed.
  This applies to all installed versions of Internet Explorer.
  Information on the installation of ActiveX controls: Microsoft entry KB3072449 (https://support.microsoft.com/en-us/kb/3072449).
- The required Microsoft Visual C++ Redistributable must be installed on the WebNavigator client with a 64-bit computer before the connection to the WebNavigator server is established.

Procedure

1. Enter the address of the WebNavigator server in the address bar of the Internet browser, e.g. the IP address.
   For installation in a virtual directory, the URL can be as follows:
   – "https://www.servername/WebNavigator/"
2. Type in the user name and password.
3. The first time you access the WebNavigator server, you will be prompted to install the WebNavigator client.
   If the client is a 64-bit computer, an additional link is displayed in order to install the required "Visual C++ Redistributable".
   This installation is a requirement for the Web client.
4. Click on the "WinCC WebNavigator client" link.
   Click the "Save" button in the "File download" dialog to store the client setup on the target computer.
   It is recommended to save the Setup file because, in the event of a restart of the client computer being necessary, the Setup need not be downloaded again.

   Note

   Installing Visual C++ Redistributable

   If you have installed the WebNavigator client without first installing the Visual C++ Redistributable, you can install the software later.

   Select the menu "Web Navigator and System Updates" in the "download area" of the Navigation user interface of "MainControl.asp".

   If you have already installed the WebNavigator client and wish to install a more recent version via intranet/Internet, open the client setup straight away. You do not need to save the installation file on the target computer. Remove the old installation file first if you wish to save the new one. Alternatively, you can save the new version of the file in a different directory.
5. Leave the Internet Explorer open and open Microsoft Windows Explorer.
   Navigate to the directory in which you saved the setup file.
   Start setup by double-clicking on the file.
6. Follow the instructions on the screen and enter the information and settings necessary.
   The client-side controls of the WebNavigator will be installed.
   Close the Setup dialog.

Result

Following successful installation, the WebNavigator client connects to the WinCC project currently in runtime.

Note

Virtual keyboard: .net installation

If you want to use the on-screen keyboard, you also have to install .net 4.0 or higher.

If you install the WebNavigator client from the WinCC DVD, .net 4.0 is already included.

See also

https://support.microsoft.com/en-us/kb/3072449 (https://support.microsoft.com/en-us/kb/3072449)

1.7.5 Installing the WebNavigator diagnostics client

Introduction

The software for the WebNavigator diagnostics client is installed on the client computer from the DVD.

Requirements

- To do this, you must have administrator rights.
- Access via Remote Desktop Protocol (RDP) is not enabled for the diagnostics client.

Procedure

1. Insert the WinCC DVD in the drive.
   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. In the "Installation Type" dialog, select "Custom Installation".
3. Select the "Diagnostics Client" program in the "Web Navigator" program group.
4. Before the installation, the security settings that are adapted for WinCC are displayed in the "System Settings" dialog. The firewall is configured automatically.
   Confirm the changes to the system settings.
5. Start the installation.
   You can track the status of the installation in the displayed dialog.
   Select "Cancel" to cancel the installation.
6. Restart the computer when prompted to do so by setup.

Result

The WebNavigator diagnostics client is now installed.

1.7.6 WebNavigator Demo Project

Introduction

The WinCC Demo Project can be downloaded as a self-extracting ZIP file from:

- SiePortal: WinCC demo projects (https://support.industry.siemens.com/cs/products?search=demo&dtp=ExampleOfUse&o=DefaultRankingDesc&pnid=14867&lc=en-WW)

Installation

To install the project, copy the file in a local target directory and start the decompressing process by double-clicking the file.

The following logins are already configured in the demo project:

WinCC	Logon	Password
Demo User German	winccd	winccpass
Demo User English	wincce	winccpass

See also

First Web Project (Page 157)

SiePortal: WinCC demo projects (https://support.industry.siemens.com/cs/products?search=demo&dtp=ExampleOfUse&o=DefaultRankingDesc&pnid=14867&lc=en-WW)

1.7.7 Uninstalling the WebNavigator

Introduction

You can remove the WebNavigator server and WebNavigator client in the usual way, as in Microsoft Windows.

Procedure: Uninstalling via the WinCC Product DVD

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 Setup.exe program on the DVD.
2. Follow the on-screen instructions.

3. Select "Remove" as the setup type.
4. Select the components that you want to remove.

Alternative procedure: Uninstalling via the Control Panel

1. Open the "Uninstall or change a program" dialog in the Microsoft Windows Control Panel.
2. Select the WebNavigator server or client and click "Remove".
   Follow the instructions on the screen.

Result

The WebNavigator Server or WebNavigator client has now been removed from the computer.

1.8 WinCC/WebNavigator Release Notes

1.8.1 General information about WebNavigator

Introduction

These release notes contain important information.

The statements in these release notes take precedence over information provided in the manuals and in the online help.

Read these release notes carefully as they contain useful information.

Notes on the security of the system

Cybersecurity information

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial cybersecurity concept.

Siemens' products and solutions constitute one element of such a concept.

You can find additional information about industrial cybersecurity under:

- https://www.siemens.com/cybersecurity-industry (https://www.siemens.com/cybersecurity-industry)

Security restrictions with the WebNavigator client

NOTICE
Security restrictions and response times in Internet Explorer
Please note the Internet-specific security restrictions when using the WebNavigator client.
The WebNavigator client may take significantly longer (>20 seconds) than a regular WinCC client to recognize that the WebNavigator server is down or that the communication is faulty.

Using a secure connection via HTTPS

To increase the security of your communication, configure the WebNavigator server in such a way that only HTTPS connections are supported.

You need a digital certificate for the WebNavigator server for this. Also use the SSL certificate on the WebNavigator client.

You can find more detailed information under "Setting up a secure connection via HTTPS (Page 117)".

Communication via proxy server

When communicating through a proxy server, the following applies:

- The WebNavigator client must be a member of the server domain.
- If the users registered on the WebNavigator client have no access to the proxy server, logon to the proxy server with NTLM authentication is as follows:
  1. The logon dialog for the proxy server appears.
  2. The logon dialog for the WinCC user appears.
  3. The logon dialog for the proxy server appears again.

Avoid cross-site request forgery for the WebNavigator

Cross-site request forgery is similar to the vulnerability caused by cross-site scripting (XSS, Cross Site Scripting).

The attack is triggered when an authenticated user clicks on a malicious link. However, this vulnerability also works if the user has disabled scripting in the browser.

Siemens recommends:

- Do not work with other applications or services that have anything to do with the Internet.
- Log off when you no longer need the WebNavigator.

Defense in depth

Follow the instructions on "Industrial Cybersecurity" on the Siemens website:

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

WebNavigator server: Do not configure the standard port "80"

When configuring the port in the WinCC Web Configurator, use "8080", for example, rather than the standard port "80".

General information about WebNavigator

Project Change

Following a change of projects, a sporadic inoperable period of the Internet Information Services (IIS) may occur.

The computer must then be restarted.

Terminal server: Login with user certificate

The following group policy affects the logon behavior of a user with a user certificate:

Local group policy	Setting
Computer Configuration > Windows Settings > Security Settings > Local Policies > Security Options: "System cryptography: Force strong key protection for user keys stored on the computer"	User must enter a password each time they use a key

This setting can cause the password prompt for the user certificate to be displayed in the session of another logged-on user when the terminal session is established.

Corrective measure

To prevent this Windows behavior, use the default setting "Not defined" on the system that is used as the terminal server.

This behavior occurs only when this group policy is activated.

Custom ActiveX controls (Industrial X)

Compatibility with WinCC and WebNavigator server or WebNavigator client must be ensured if custom ActiveX controls (Industrial X) are used:

- Direct installation of the ActiveX control on the computer with WinCC and WebNavigator server or client.
  You must install the ActiveX control before installing WinCC and the WebNavigator server or client.
  If the ActiveX control does not function without errors after this step, there is no compatibility.
- Installation as a plug-in via the Web Navigation user interface on the WebNavigator client.
  If the ActiveX Control is packaged in a plug-in and installed via download, an upgrade of WinCC and the WebNavigator server or client will also require the generation of a new plug-in using this ActiveX control.
  Ensure compatible binaries (DLL, OCX, etc.) are used when creating the plug-in.

Visual C++ Redistributable for Visual Studio

Microsoft Redistributable Packages for Visual Studio C++ 2015 are installed along with WinCC.

For example, if you are using ActiveX controls or Visual Basic projects created with versions prior to Visual Studio 2015, you must install the corresponding package.

The installation files for redistributables < Visual Studio 2015 are included in the WinCC scope of delivery:

- "Additional Content" DVD:
  "VCRedist" folder

Select the setup for the required version:

- 2005x86 / 2005x64
- 2008x86 / 2008x64

- 2010x86 / 2010x64
- 2012x86 / 2012x64

See also

WinCC Web Configurator (Page 215)

Settings in the web browser (WebNavigator client) (Page 124)

Setting up a secure connection over HTTPS (Page 117)

https://www.siemens.com/cybersecurity-industry (https://www.siemens.com/cybersecurity-industry)

http://www.siemens.com/industrialsecurity (http://www.siemens.com/industrialsecurity)

1.8.2 Notes on WebNavigator installation

Notes on installation

Uninstalling WinCC: WebNavigator client must be installed later

If you uninstall WinCC, you will need to post-install the WebNavigator client.

Message after installation of a plug-in

The Program Compatibility Wizard may possibly output an message during installation of a plug-in.

The plug-in is installed correctly.

Therefore, confirm this message with "The program was installed correctly."

WebNavigator client: WinCC Computer with "Basic Process Control"

The plug-in "WinCC Basic Process Control" must be installed on the WebNavigator client if the client is connected to a computer with WinCC Basic Process Control.

Without the plug-in, the functionality of WinCC Basic Process Control will not be available on the WebNavigator client. For example, the relevant ActiveX controls and the group display will not be available.

Installing the plug-in

The plug-in is located on the WebNavigator server in the folder <wincc_installationpath>"\WebNavigator\Server\Web\Install\Custom".

You can download the plug-in via the WebNavigator navigation user interface from the download area.

A description of the functions supported/not supported can be found in the WinCC Information System:

- "Options for Process Control > Overview of process control system options > Configuration in the PCS 7 environment > Web client"

Dedicated Web server with WinCC Basic Process Control

If the WebNavigator client is to be installed on a dedicated web server with WinCC Basic Process Control, the plug-in "WinCC Basic Process Control" must be installed immediately after installation of the WebNavigator client.

The download page for the plug-in is displayed. You will only be able to exit this page after installation of the plug-in for displaying the process pictures.

For more information on the supported functionalities of the WebNavigator client when connected to a PCS 7 OS, please refer to the PCS 7 documentation.

WebNavigator server: User WNUSR_DC92D7179E29

After the installation of the WinCC/WebNavigator server, the user "WNUSR_DC92D7179E29" is created during the initial configuration with the WinCC Web Configurator.

The user is only used internally. To maintain the functioning of the Web server, do not delete or modify this user.

To increase the security of the system, change the password for the user on a regular basis. To do this, use the tool "CCSetWebNavPwd.exe".

You can find more information in the documentation for WinCC/WebNavigator:

- "WinCC/WebNavigator Documentation > Configuring the WebNavigator system > Configuring the WebNavigator Server > Configuring the WebNavigator web page > WinCC Web Configurator (Page 215)"

Setting a password for the configuration

To define your own password before configuration, you can create a temporary key in the PC's registry.

You can find more information in the "Industry Support Siemens".

See also

WinCC Web Configurator (Page 215)

1.8.3 General notes on WebNavigator client

Notes on the web client

Security restrictions with the WebNavigator client

NOTICE
Security restrictions and response times in Internet Explorer
Please note the Internet-specific security restrictions when using the WebNavigator client.
The WebNavigator client may take significantly longer (>20 seconds) than a regular WinCC client to recognize that the WebNavigator server is down or that the communication is faulty.

Microsoft Windows Server operating system: Loading process pictures in WinCCViewerRT

It is possible that the web client does not display any process pictures in WinCCViewerRT on PCs with the "Microsoft Windows Server 2016 / 2019 / 2022" operating systems.

Check the settings of the web client:

1. To display the icons in the control panel, select, for example, "Small icons" in the "View by" drop-down list.
2. Click the "Internet options" entry.
   The property dialog opens.
3. Deactivate the following entry in the "Advanced" tab in the "Security" area:
   - Do not save encrypted pages to the disk
4. Close the dialog with "OK".

Changing setting via group policy

If you manage the web clients via group policies, follow these steps:

1. To open the editor for local group policies, enter "gpedit.msc" in the Microsoft Windows search field.
2. Select the following entry in the navigation area:
   - Computer configuration > Administrative templates > Windows components > Internet Explorer > Internet control system > "Advanced" Page

   To sort the list alphabetically, click the column header "Setting".
3. Double-click "Do not save encrypted pages to disk".
4. Select the "Disabled" or "Not Configured" option.
5. Close the dialog with "OK".

WebNavigator client: Firewall settings for printing from WinCC controls

To be able to print out on the client, you need to define the following Firewall settings for the profiles used:

1. Open "Control panel > System and security > Windows firewall".
2. In the navigation bar, click "Allow a program or feature through Windows Firewall".
3. In the "Allowed programs and features:" list, activate the entry "File and printer sharing" for the relevant profile.
4. Return to the Windows Firewall home page.
5. In the navigation bar, click "Turn Windows Firewall on or off".
6. If the firewall is enabled, disable the setting "Block all incoming connections, including those in the list of allowed programs".

WebNavigator client: ODK function "PWRTCheckPermissionOnPicture"

In order to use the ODK function "PWRTCheckPermissionOnPicture" on a WebNavigator client, install the plug-in "WinCC Basic Process Control" and "Advanced Process Control".

WebNavigator client: WinCC Alarm Control on a WebNavigator server in WinCC ServiceMode

Initial Situation

The WebNavigator client is connected with a WebNavigator server operated in WinCC ServiceMode.

Behavior

If you are using WinCC Alarm Control prior to WinCC V7 that is connected via a server prefix, you will not be able to open the selection dialog.

Solution

Use the WinCC AlarmControl that is offered as of WinCC V7.

WebNavigator client: Diagnostics file "WebNavReconnnect.log"

After installation of the WebNavigator client, the diagnostics file "WebNavReconnnect.log" is saved in the folder "<User>\Application Data\LocalLow\Siemens\SIMATIC.WinCC\WebNavigator\Client".

The diagnostics file will be saved into the respective user profile so that this user no longer requires administrator rights.

WebNavigator client: Control "WinCC Channel Diagnosis"

You cannot use the "WinCC Channel Diagnosis" Control on a web client without WinCC installation.

WebNavigator client: "FLAG_COMMENT_DIALOG" of the "GCreateMyOperationMsg" function

The WebNavigator client does not support the parameter "FLAG_COMMENT_DIALOG" for the "GCreateMyOperationMsg" function.

WinCC/ODK: SSMRT functions in the web client

The "SSMRT" functions of the Split Screen Manager do not work in the WebNavigator client.

Instead, use the appropriate "SSM" function.

The "SSMRTOpenTopFieldEx" ODK function is not available in the WebNavigator client.

Example

The following script checks the environment and can thus be called in the WebNavigator client and in WinCC Runtime.

```
void OnClick(char* lpszPictureName, char* lpszObjectName, char* lpszPropertyName)
{
    #pragma code("ssmrt.dll")
        #include "ssmrt.h"
    #pragma code()
    char szFullTopfieldPath[MAXFULLPATHLEN] = { 0 };
    long lBufferLen = MAXFULLPATHLEN;
    OPENTOPFIELDSTYLE MyStyle;
    CMN_ERRORA Err;
    BOOL bResult;
    DWORD dwTopfieldStyle = 0;
    long lTopfieldUsed;
    #ifndef RUN_ON_WEBNAVIGATOR
        MyStyle.bAdaptSize = TRUE;
        bResult = SSMRTOpenTopFieldEx (SSMGetScreen(lpszPictureName), "PictureA.pdl",
szFullTopfieldPath, lBufferLen, &MyStyle, &Err);
    #else
        // Declaration of _SSMOpenTopField3:
        //     BOOL _SSMOpenTopField3 (TCHAR Screen, TCHAR* PictureName, DWORD dwStyle,
TCHAR* retPictureName, DWORD dwReturnPathLen, long* plTopfieldUsed, LPCMN_ERROR Err, long
lXPos, long lYPos, BOOL bDefaultPos)
        // dwTopfieldStyle can be 0, TOP_FIELDFIXEDSIZE, TOP_ATTACHTOWORKFIELD, or
TOP_FIELDFIXEDSIZE + TOP_ATTACHTOWORKFIELD
        dwTopfieldStyle = TOP_FIELDFIXEDSIZE;
        bResult = _SSMOpenTopField3 (SSMGetScreen(lpszPictureName), "PictureA.pdl",
dwTopfieldStyle, szFullTopfieldPath, lBufferLen, &lTopfieldUsed, &Err, 0, 0, TRUE);
    #endif
}
```

1.8.4 Notes on Internet Explorer for WebNavigator

Notes on Internet Explorer

Security settings in Internet Explorer: Installation via SSL connection

If you want to download the WebNavigator from an ASP portal via an SSL connection, note that the download is not possible under certain conditions.

You can correct this with one of the following settings:

- Deactivate the "Do not save encrypted pages to disk" option in the "Advanced" tab for the Internet options of the Internet Explorer.
- Deactivate the "Internet Explorer Enhanced Security Configuration" option in the "Control Panel/Add/Remove Programs/Windows Components".

WebNavigator server: Display virtual folder in Internet Explorer

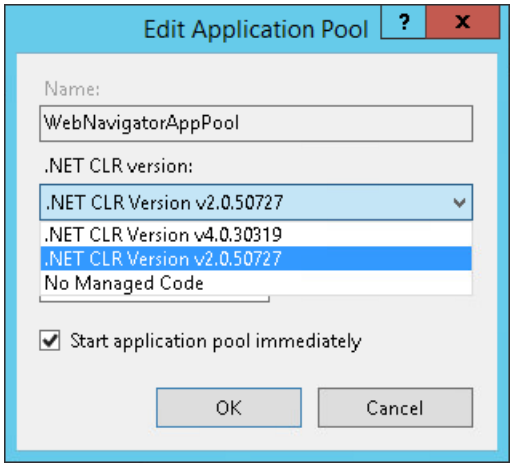
Note the following when using Internet Explorer as WebNavigator browser:

To add a virtual folder to an existing website, create this website in a subdirectory of the drive.

When the website is created in the root directory, e.g. under D:\, Internet Explorer may not show the contents of the virtual folder.

To always display the contents, change the .NET settings in the IIS:

1. Open the Internet Information Services (IIS) Manager.
2. In the navigation, click on the entry "Application pools".
3. In the shortcut menu of "WebNavigatorAppPool", select the "Basic settings" entry.
4. In the ".NET CLR version" list, select the .NET version "v2", for example:



WebNavigator 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 WebNavigator 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 the web browser (WebNavigator client) (Page 124)"

WebNavigator client: Updating pictures with faceplates

To display changed faceplates in process pictures, refresh the view of the web client in the browser, e.g. with <F5> or using the  button.

See also

Settings in the web browser (WebNavigator client) (Page 124)

1.9 WinCC/WebUX

1.9.1 WebUX licensing

The WinCC/WebUX basic package with an integrated WinCC WebUX Monitor license is included in WinCC.

WebUX client

The WebUX clients are licensed on the WebUX server.

No license is required for the WebUX client on the computer.

WebUX server

The WebUX server is installed on a WinCC system. The WinCC basic system requires at least the WinCC basic RT license.

The license keys are differentiated as described below and run in parallel on the WinCC/ WebUX server:

License [1)]	Function	Comments
WinCC WebUX Monitor	The user has only read access.	The authorization level 1002 "Web access - monitoring only" is configured for the user in the User Administrator. If the available "Monitor" licenses have been allocated, an "Operate" license can also be allocated to a WebUX client for read access.
WinCC WebUX Operate	The user has read and write access.	
WinCC/WebNavigator	The user's authorizations determine whether write access is possible in addition to read access.	

1) If a WinCC/WebNavigator license is also installed in the WinCC system, the WebNavigator license can also be allocated to a WebUX client.

To do so, the following option must be enabled in the WebNavigator dialog "WinCC Web settings":

- "Allow WebUX to use the WebNavigator licenses".

First, however, all available WebUX licenses are used.

License packages

The license packages are available with 1, 3, 10, 30 and 100 clients.

If you have upgraded from WebUX V7.3, there may also be licenses for 5 / 25 / 50 / 150 clients.

As of WinCC V8.1, there is also an "Unlimited" license for an unlimited number of connected clients.

If the number of licensed clients is exceeded during the logon attempt by a WebUX client, no further logon is permitted.

The packages are version-independent and can be combined.

WebUX demo license

With WinCC/WebUX you also receive a demo license for accessing the WebUX server.

This allows a maximum of one user without a valid WebUX license or WebNavigator license to have read access to the project.

Reserved license

A reserved WebUX license always gives the user guaranteed access to the WebUX server.

A connection remains reserved for the user. The number of freely available WebUX licenses is reduced by each configured reserved license.

Applications

Possible applications include:

- Remote operator access:
  If the connections to the WebUX server are occupied by read-only access, a connection remains reserved for operation.
- Central display:
  Central client stations are always connected, for example, to display the status of the WinCC system.

Reserving WebUX licenses

In the User Administrator, you assign one of the available licenses to a WebUX user as a reserve license.

To do this, enable the "Reserve WebUX license" option for the user. The field "WebUX Number of reserved licenses" shows how many WebUX licenses are assigned through reservation.

Reserved licenses cannot be configured for user groups, only for individual users.

If more reserved licenses are configured than those available on the WebUX server, the licenses of the first users logged on are used.

Using WebNavigator licenses

You can also use WebNavigator licenses for WebUX clients.

To enable licenses for WebUX clients, open the "WinCC Web settings" dialog in the shortcut menu of the "WebNavigator" editor in the WinCC Explorer.

In the "Runtime" tab, enable the "Allow WebUX to use the WebNavigator licenses" option.

Administering clients in runtime

To identify inactive clients and to disconnect them, if necessary, use the page "http://<servername>/status.html".

You can find further information in the documentation of the WinCC/WebNavigator option under:

- WinCC/WebNavigator documentation > Operating a WinCC project > Diagnosis of the Connections with "Status.html" (Page 257)

See also

Installation of WebUX (Page 142)

Diagnosis of the Connections with "Status.html" (Page 257)

1.9.2 Installation of WebUX

Software requirements

Certain requirements concerning operating system and software configuration must be met for the installation.

WebUX server: Operating system

Software	Configuration	Comments
Microsoft Windows 10	Pro Enterprise	Standard installation 64-bit A maximum of 9 WebUX clients can connect to the WebUX server. [1)]
Microsoft Windows 10	Enterprise LTSC (Long-Term Servicing Channel)	Standard installation 64-bit A maximum of 9 WebUX clients can connect to the WebUX server. [1)]
Microsoft Windows 11	Pro Enterprise	64-bit A maximum of 9 WebUX clients can connect to the WebUX server. [1)]
Microsoft Windows Server 2019	Standard Datacenter	64-bit
Microsoft Windows Server 2022	Standard Datacenter	64-bit

1) Only a limited number of connections is possible:

The maximum number of WebUX clients depends on the number of connections that the IIS supports on the installed Microsoft Windows version.

The number of available connections can decrease if other applications access these connections, e.g. WinCC/WebNavigator.

In the Microsoft Windows system monitor, use the "Performance Monitor" application to analyze the connection status.

Additional software requirements

	Version / setting	Relevant for	Comments
Web browser	The browser must support HTML5.	WebUX client / terminal	WebUX can be used with any browser. The display is optimized for the Chrome browser.
WinCC version	WinCC V8.1	WebUX server	The WebUX server is installed on a WinCC system.
SIMATIC Logon version (optional)	SIMATIC Logon V2.0	WebUX server	Only relevant if you are using SIMATIC Logon for central user administration.
User rights for installation	Administrator rights	WebUX server	Required rights for installing the WebUX server.
User rights for operation	Default user rights	WebUX client WebUX server	Required rights on the WebUX server and WebUX client.
Microsoft Internet Information Service (IIS)	WWW Services > Common HTTP Features or Shared HTTP Features: • Standard document • Static content WWW Services > Performance Features: • Compression of dynamic content • Compression of static content WWW Services > Application Development Features: • ASP.NET ≥ 4.5	WebUX server	During the WinCC installation, the Microsoft Internet Information Service (IIS) is installed and configured.

WebUX client (terminal)

You only need an HTML5-capable Web browser such as Chrome, Firefox or Safari on a terminal that accesses the WebUX server.

Note

Browser-dependent representation

Differences in display and behavior are possible in the different browser versions.

To display a configured character set, for example, this must also be available in the browser or on the device.

Installation of the WebUX server

You can install WinCC/WebUX during the installation of WinCC.

When you install the server WebUX at a later time, proceed as follows:

1. Start the WinCC installation DVD.
2. Select the installation type "Custom Installation".

3. In the "WinCC" group of the "Program" dialog, select the entry "WinCC WebUX".
4. Transfer the WebUX license. You can find more information under:
   – WebUX licensing (Page 140)

You can find information about configuring WebUX under:

- Configuring the WebUX website (Page 144)

Limiting the number of connections

The number of the connections between WebUX server and WebUX clients was limited to a standard limit value of 150.

If the number of WebUX client connections reaches this limit value, further connections are rejected by the WebUX server. This supports the defense against DoS attacks.

You can modify the connection limit value in the config.js file.

Configuring the limit value

1. Log into the WebUX server with administrator rights.
2. Navigate to the folder:
   – `C:\inetpub\wwwroot\Siemens\WebRH\conf\`

   This contains the file `config.js`.
3. Open the file `config.js` with a text editor.
4. Search the text line "`config.sessionLimit = 150;`".
   The default limit value is 150.
5. Change the value "`config.sessionLimit`" and save the file.
6. Open the Internet Information Services (IIS) Manager and restart the WebUX website.

See also

WebUX licensing (Page 140)

Configuring the WebUX website (Page 144)

1.9.3 Configuring the WebUX website

Configure the WebUX website on the WebUX server and the connection via HTTPS to communicate with the WebUX clients.

WinCC WebUX Configurator

After WinCC and WinCC/WebUX are installed, the WinCC WebUX Configurator opens.

To make changes later, you can find the WinCC WebUX Configurator in the "Siemens Automation" program group.

You use the WebUX Configurator to set up the standard configuration for the use of WebUX.

- Configuration of the Microsoft Internet Information Service
- Settings of the Web server
- SSL certificate for HTTPS connections
- Virtual folder

You can find more information in the documentation for WinCC/WebUX:

- WinCC Web Configurator (Page 484)
- Creating a new default web page (Page 485)
- Creating a virtual folder (Page 487)

See also

Installation of WebUX (Page 142)

1.9.4 Communication: SSL certificate for HTTPS connections

To improve the security of your communication, WebUX only supports HTTPS connections.

You need a digital SSL certificate for the WebUX server.

NOTICE
Protecting the infrastructure Setting up a Web server may enable access to your plant infrastructure. Therefore, protect the computer on which the Web server is installed. Make sure that the following rules are followed: • The computer is only accessible via secure connections. • The check mechanisms provided by software vendors are activated and cannot be bypassed under any circumstances.

Install a SSL certificate

You have the following options when setting up the WebUX website:

- Select an existing certificate
- Create self-signed certificate
- Install a certificate after setting it up

Creating a new certificate

1. Activate the "Create a new certificate" option.
2. Enter a name of your choice.

When the configuration is completed, a self-signed certificate is created. The certificate is valid for 1 year.

Additional information

You can find information on self-signed certificates when using different web browsers on the Internet under Entry ID 109773769:

- SiePortal: "How do you fix problems when using self-signed certificates from WebUX or WebNavigator with different web browsers?" (https://support.industry.siemens.com/cs/ww/en/view/109773769)

Note

Restricted authentication

The certificates that you create when you configure the WebUX website itself are not verified by an official certification body. Depending on your browser settings, a warning message is displayed when you access the website.

To better secure the server authentication, install the certificate of an official certification body.

Display of secure data sources only

For display of web pages and external files, one of the following conditions must be met:

- Call via the HTTPS connection
- Call of a trusted site

Enabling SSL in IIS

To use SSL, configure SSL access in the Internet Information Service (IIS).

Requirement

- You have administrator rights on the WebUX server.

Procedure

1. Open the "Internet Information Services (IIS) Manager".
2. Select the web page under "Sites" in the "Connections" navigation area.
3. Click "Bindings" in the "Actions" area.
   The "Site bindings" dialog opens.
4. To configure the settings, click "Add".
   The "Add site bindings" dialog opens.
5. Select the website type, IP address and the port.
   To display the fields for configuration of the SSL certificate, select the type "https".
6. Select the SSL certificate from the list or with "Select".
7. Confirm with "OK" to close the dialog.
   You can delete the other entries in the "Site bindings" dialog.
8. Exit the configuration with "Close".

9. In the data area "Default Web Site Home", select the "SSL settings" under "IIS".
10. Activate the "Require SSL" option and select the setting for client certificates.

See also

SiePortal: "How do you fix problems when using self-signed certificates from WebUX or WebNavigator with different web browsers?" (https://support.industry.siemens.com/cs/ww/en/view/109773769)

1.10 Service and Support

1.10.1 Warnings

Security information

Warning notice system

This manual contains notices you must observe to ensure your personal safety and to prevent damage to property. Notices referring to your personal safety are highlighted in the manual by a safety alert symbol; notices referring to property damage only have no safety alert symbol. The warning 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 may result if proper precautions are not taken.

NOTICE

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

Note

indicates important information about the product and its use or a specific section of the documentation to which you should pay particular attention.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A warning notice 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 information. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use

Note the following:

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

Trademarks

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

Cybersecurity information

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

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

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

For additional information on industrial cybersecurity measures that may be implemented, please visit:

- https://www.siemens.com/cybersecurity-industry (https://www.siemens.com/cybersecurity-industry)

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

To stay informed about product updates, subscribe to the Siemens Industrial Cybersecurity RSS Feed under:

- https://www.siemens.com/cert (https://www.siemens.com/cert)

Disclaimer of liability

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

Information in the online documentation is more binding than that in the manuals and PDF files.

Observe the Release Notes and Installation Notes. Information in the Release Notes and Installation Notes is more binding than that in the manuals and online help.

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Siemens Aktiengesellschaft

Division Digital Industries

SIMATIC Human Machine Interfaces

P.O. Box 4848

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See also

https://www.siemens.com/cybersecurity-industry (https://www.siemens.com/cybersecurity-industry)

https://www.siemens.com/cert (https://www.siemens.com/cert)

1.10.2 GDPR - General Data Protection Regulations

Siemens takes data privacy principles, such as the privacy by design and default principle, into account when developing its products and services.

For the SIMATIC WinCC V8.1 product, including options, this means the following:

Personal data processed by the application

This product collects and processes the following personal data:

- User names, i.e. credentials, which may directly contain or establish a reference to family names and/or first names
- Timestamps: date / time of login, logoff and access
  In the WinCC "Option for Process Control" application "Split Screen Manager", the login timestamp and user name are saved without encryption with the picture management data.
  In the WinCC/WebNavigator diagnostic page, logged in users and timestamps are saved without encryption.
- Location data (time zone)
- Computer name
- IP addresses
- MAC addresses
- Email addresses (WinCC Options)
- In case of using UMC, additional personal data can be added in the tool, e. g. telephone numbers or addresses.
  This data is not needed for the product functionality and should not be stored on the same medium.

If the user links the above mentioned data with other data, e. g. shift plans, or stores personal data on the same medium, e. g. hard disk, and thus establishes a personal reference, the user must ensure compliance with data protection regulations.

Purposes

The above data is required for the following purposes:

- Access protection and security measures (e. g. Login, IP address)
- Process synchronization and integrity (e. g. time zone information, IP addresses)
- Archiving system for traceability and verification of processes (e. g. access timestamps)
- Message system for traceability and availability (e. g. email notification)

The storage of data is appropriate and limited to what is necessary, as it is essential to identify the authorized operators and process events.

Data configuration

The customer may configure the data collected via the product as follows:

- Display data in process pictures
- Data output in form of reports, e. g. for printing or display as electronic file
- Data collection and evaluation in form of graphics, e. g. for KPI analysis

Deletion policy

The product does not provide an automatic deletion of the above data.

If necessary, these can be deleted manually if desired. To do this, please refer to the product documentation or contact customer support.

Securing of data

The above data will not be stored anonymously or pseudonymized, because the purpose of access and event identification cannot be achieved otherwise.

The above data is secured by adequate technical measures, such as:

- Encryption of log data
- Storing the process data in access-protected SQL databases
  The user must ensure the access protection as part of their process configuration.

1.10.3 Customer support

Customer Support, Technical Support

You can access the SIMATIC hotlines via the support request form on the Internet.

The SIMATIC hotline employees speak German and English. The Authorization hotline offers French, Italian or Spanish customer support in addition to German and English.

Technical support

Technical support is available around the clock from Monday to Friday.

The latest Technical Support information can be found at the following URL:

- https://support.industry.siemens.com/cs/ww/en/sc/4868 (https://support.industry.siemens.com/cs/ww/en/sc/4868)

Form for support requests:

- https://www.siemens.com/supportrequest (https://www.siemens.com/supportrequest)

Siemens Industry Service Card

The "Siemens Industry Service Card" enables an additional Technical Support, such as fast response via "Priority Call-Back". You can find more information at the following URL:

- https://support.industry.siemens.com/cs/ww/en/sc/4869 (https://support.industry.siemens.com/cs/ww/en/sc/4869)

SiePortal: The SIMATIC Online Support

Service and Support

You can find the SiePortal and an overview of the support offer under this URL:

- https://sieportal.siemens.com/ (https://sieportal.siemens.com/)
- https://support.industry.siemens.com/ (https://support.industry.siemens.com/cs/ww/en/)
- https://support.industry.siemens.com/cs/ww/en/view/93906404 (https://support.industry.siemens.com/cs/ww/en/view/93906404)

In Product Support, for example, you will find downloads of firmware updates, service packs and useful applications.

The app is available for mobile Siemens Support:

- https://support.industry.siemens.com/cs/sc/2067 (https://support.industry.siemens.com/cs/ww/en/sc/2067)

Videos and help pages are available so that you can successfully use the Support offer:

- https://support.industry.siemens.com/cs/ww/en/sc/4866 (https://support.industry.siemens.com/cs/ww/en/sc/4866)
- https://support.industry.siemens.com/cs/ww/en/sc/2063 (https://support.industry.siemens.com/cs/ww/en/sc/2063)

WinCC FAQs

WinCC Online Support with information on FAQs (Frequently Asked Questions) may also be found at the following URL:

- https://support.industry.siemens.com/cs/ww/en/ps/14866/faq (https://support.industry.siemens.com/cs/ww/en/ps/14866/faq)

Technical Forum

The Technical Forum supports exchange with other SIMATIC users. You can find the forum at the following URL:

- https://support.industry.siemens.com/tf/ (https://support.industry.siemens.com/tf/ww/en/)

Technical documentation for SIMATIC products

You can find a guide to the technical documentation provided for individual SIMATIC products and systems at the following URL:

- http://www.siemens.com/simatic-tech-doku-portal (http://www.siemens.com/simatic-tech-doku-portal)

Local partners database

To contact your local partner, search the local partners database at the following URL:

- http://w3.siemens.com/aspa_app/ (http://w3.siemens.com/aspa_app/?lang=en)

Product Information

SIMATIC WinCC

Go to the following URL for general information about WinCC:

- WinCC Landing Page:
  https://support.industry.siemens.com/cs/ww/en/view/93906404 (https://support.industry.siemens.com/cs/ww/en/view/93906404)
- SIMATIC HMI software product overview:
  http://www.siemens.com/wincc (http://www.siemens.com/wincc)

SIMATIC Products

Go to the following URL for general information about SIMATIC products:

- http://www.siemens.com/simatic (http://www.siemens.com/simatic)

See also

SiePortal - Home (https://sieportal.siemens.com/)

SiePortal: Support request (https://www.siemens.com/supportrequest)

SiePortal: Technical support (https://support.industry.siemens.com/cs/ww/en/sc/4868)

SiePortal: Siemens Industry Service Card (https://support.industry.siemens.com/cs/ww/en/sc/4869)

SiePortal: SIMATIC WinCC in Online Support / Landing Page (https://support.industry.siemens.com/cs/ww/en/view/93906404)

SiePortal: Service and Support (https://support.industry.siemens.com/cs/ww/en/)

SiePortal: Information and help for support (https://support.industry.siemens.com/cs/ww/en/sc/4866)

SiePortal: Support - How-to Videos (https://support.industry.siemens.com/cs/ww/en/sc/2063)

SiePortal: Mobile use via support app (https://support.industry.siemens.com/cs/ww/en/sc/2067)

SiePortal: WinCC FAQs (https://support.industry.siemens.com/cs/ww/en/ps/14866/faq)

SiePortal: Support Technical Forum (https://support.industry.siemens.com/tf/ww/en/)

SiePortal: Technical documentation for SIMATIC products (http://www.siemens.com/simatic-tech-doku-portal)

Internet: Contact person database (http://w3.siemens.com/aspa_app/?lang=en)

Internet: Information about WinCC (http://www.siemens.com/wincc)

Internet: SIMATIC Products (http://www.siemens.com/simatic)

1.10.4 Support request

Dear customer

In order to provide you with fast and effective support, please complete the "Support Request" form online on the Internet. Describe the problem in as much detail as possible. We would appreciate if you would provide us with all project data so that we can reproduce the error situation or shorten the turn-around time.

Before filling out the support request, check whether your configured quantity structure is within the range of tested quantity structures (see "Performance Data" section).

Support Request form

The Support Request form is available at the following URL:

- SiePortal: Support request (https://www.siemens.com/supportrequest)

When filling out the report, you will be guided through several steps.

The data required by the Technical Support are described in the FAQ 16607894:

- https://support.industry.siemens.com/cs/ww/en/view/16607894 (https://support.industry.siemens.com/cs/ww/en/view/16607894)

You can find more information on technical support at the following URL:

- https://support.industry.siemens.com/cs/ww/en/sc/2100 (https://support.industry.siemens.com/cs/ww/en/sc/2100)

Procedure

1. Open the "Support Request" form via the link and click "New request"
   Step 1 "Product search" is displayed.
2. Enter the order number or the product name in the field. Upper/lower case is not relevant. Search for parts of the product name or enter the full product name in the correct order. You can e. g. search for the following terms:
   - "WinCC Runtime V7"
   - "wincc editor"
   - "WinCC DataMonitor"
   - "wincc webnav"
   - "Connectivity"

   The found products are offered in the "Product selection" field.
   If you have any questions about licensing, activate the option "Licensing/Authorization".
3. Select the desired product and click "Next".
   Step 2 "Problem description" is displayed.
4. Fill in the form.
   Depending on the selection, suggested solutions and FAQs that were found for the selected keywords are listed.
   If you have found a suggested solution for your problem, close the form in the browser.

5. Describe your problem as exactly as possible in the "Details" field. Please also check your WinCC installation and the configuration.
   If you have any idea what has caused the error, please let us know. No detail should be omitted, even if you consider it unimportant.
   Pay particular attention to the following questions and comments:
   - Was the configuration data created with older WinCC versions?
   - How can the error be reproduced?
   - Are other programs running simultaneously with WinCC?
   - Have you activated screen savers, virus scanners, power management?
   - Search your computer for log files (WinCC\Diagnose*.log, drwatson.log, drwtsn32.log). The log files are needed for error analysis. Therefore, be sure to send the log files as well.
   - To assemble diagnostic and system information from computers and other devices, use the "SIMATIC Assessment Suite - Data Collector" (SAS-DC) diagnostics tool.
     More information is available in the Support entry 65976201 (https://support.industry.siemens.com/cs/ww/en/view/65976201).
6. To load your project directory and the log files into the Support Request, drag and drop the files into the gray field.
   To do this, compress the data, for example, as a zip file.
7. When you have entered all the information, click "Next"
   Step 3 "Check and submit" is displayed.
8. Enter your contact details and review the summary.
9. You close the support request by clicking the "Send" button.
   Your data will be transmitted to Customer Support and processed there.
   You will receive an order confirmation by email.
   Step 4 "Confirmation" is displayed.
10. To print out your data, click "Request - Show/print details".

Thank you for your cooperation. We hope that we can be of assistance in solving your problems.

Your WinCC Team

See also

SiePortal: Support request (https://www.siemens.com/supportrequest)

SiePortal: Specifications for the Technical Support (https://support.industry.siemens.com/cs/ww/en/view/16607894)

SiePortal: Support - service catalog (https://support.industry.siemens.com/cs/ww/en/sc/2100)

SiePortal: SIMATIC Assessment Suite - Data Collector (SAS-DC) (https://support.industry.siemens.com/cs/ww/en/view/65976201)

WinCC/WebNavigator 2

2.1 WinCC/WebNavigator Getting Started

2.1.1 First Web Project

Introduction

WinCC/WebNavigator provides a solution for operator control and monitoring of the automation system via the Intranet and Internet.

WinCC/WebNavigator offers you an easy and efficient way of implementing the operator control and monitoring functions of the WinCC project.

WinCC/WebNavigator components

The optional "WinCC/WebNavigator" package consists of server components that you install on the WebNavigator server.

You need the WebNavigator client components on the computer that you are using to control and monitor the process pictures that are displayed as in the WinCC basic system. For this purpose, use Internet Explorer or the "WinCCViewerRT" Web Viewer on the client.

WebNavigator Diagnostics Client

WinCC/WebNavigator also contains the "WebNavigator Diagnostics Client" component. The functionality of this Diagnostics Client is no different from that of a WebNavigator client.

The Diagnostics Client provides cost-effective and reliable access to one or several WebNavigator Servers for diagnostics purposes.

Overview

This Getting Started is based on the WinCC demo project. For this example project, WinCC, WebNavigator Server and WebNavigator Client are installed on the same computer.

Edit the WinCC project on the WebNavigator Server. Use the WebNavigator Client if you access the project with Internet Explorer or "WinCCViewerRT".

Requirement

- The WinCC basic system is installed.
- You have installed the WinCC demo project.
  - SiePortal: WinCC demo projects (https://support.industry.siemens.com/cs/products?search=demo&dtp=ExampleOfUse&o=DefaultRankingDesc&pnid=14867&lc=en-WW)

  You can find additional information in the "WinCC Installation Notes / Release Notes" in the section "WinCC/WebNavigator Installation Notes" under "WebNavigator demo project (Page 128)".
- WebNavigator Server is installed.
  You can find additional information in the "WinCC Installation Notes / Release Notes" in the section "WinCC/WebNavigator Installation Notes" under "Overview: Installing the WebNavigator Server (Page 115)"
- Check whether you need to enable remote communication.
  If the WebNavigator client is not running on the same computer as the WebNavigator server, enable remote communication on both computers in the "Simatic Shell" dialog.

Procedure

Perform the following steps for the first Web project:

- Configure the WinCC project
  - Publish the WinCC process pictures for web access
  - Administer the users for WebNavigator Client
- Configuring the WebNavigator Server
  - Configure the WebNavigator web page
  - Configure the firewall
  - Check the activated web page
- Operating the WinCC project
  - Configure the Internet Explorer settings
  - Install the WebNavigator Client and operate the WinCC project using Internet Explorer
  - Set up WinCCViewerRT and operate the WinCC project using WinCCViewerRT
- Creating a new process picture and displaying it on the WebNavigator client

See also

Creating a new process picture (Page 181)

Installing the WebNavigator Client (Page 174)

Administering the users for WebNavigator Client (Page 164)

Starting the demo project (Page 166)

WebNavigator Demo Project (Page 128)

Overview: Installing the WebNavigator server (Page 115)

SiePortal: WinCC demo projects (https://support.industry.siemens.com/cs/products?search=demo&dtp=ExampleOfUse&o=DefaultRankingDesc&pnid=14867&lc=en-WW)

2.1.2 Configuring the WinCC project

2.1.2.1 Publishing process pictures

Introduction

If you wish to display WinCC process pictures on the WebNavigator Client, you must publish them first.

For publishing, use the WinCC Web Publishing Wizard. The wizard automatically performs the necessary adjustments to project data.

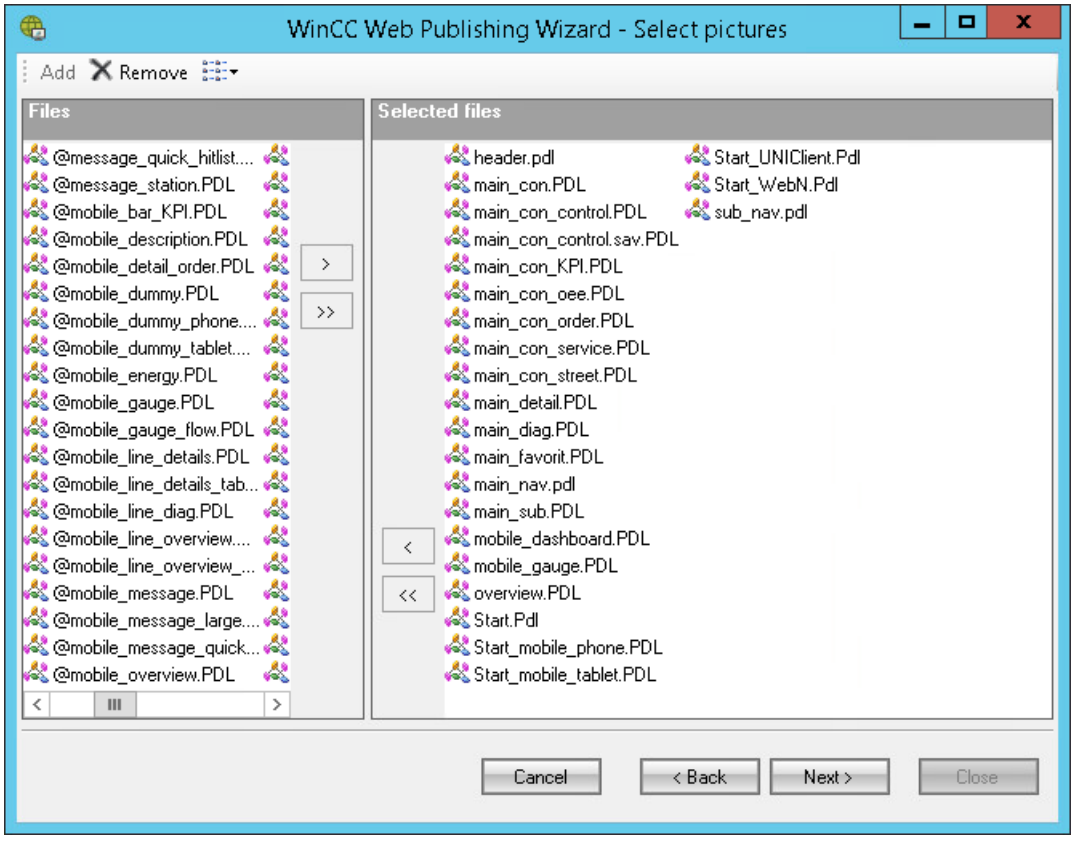
Procedure

1. Select "Web Navigator" in the navigation window of WinCC Explorer.
2. Select the "Web View Publisher" command in the shortcut menu.
   The WinCC Web Publishing Wizard is now launched.
   Click "Next".

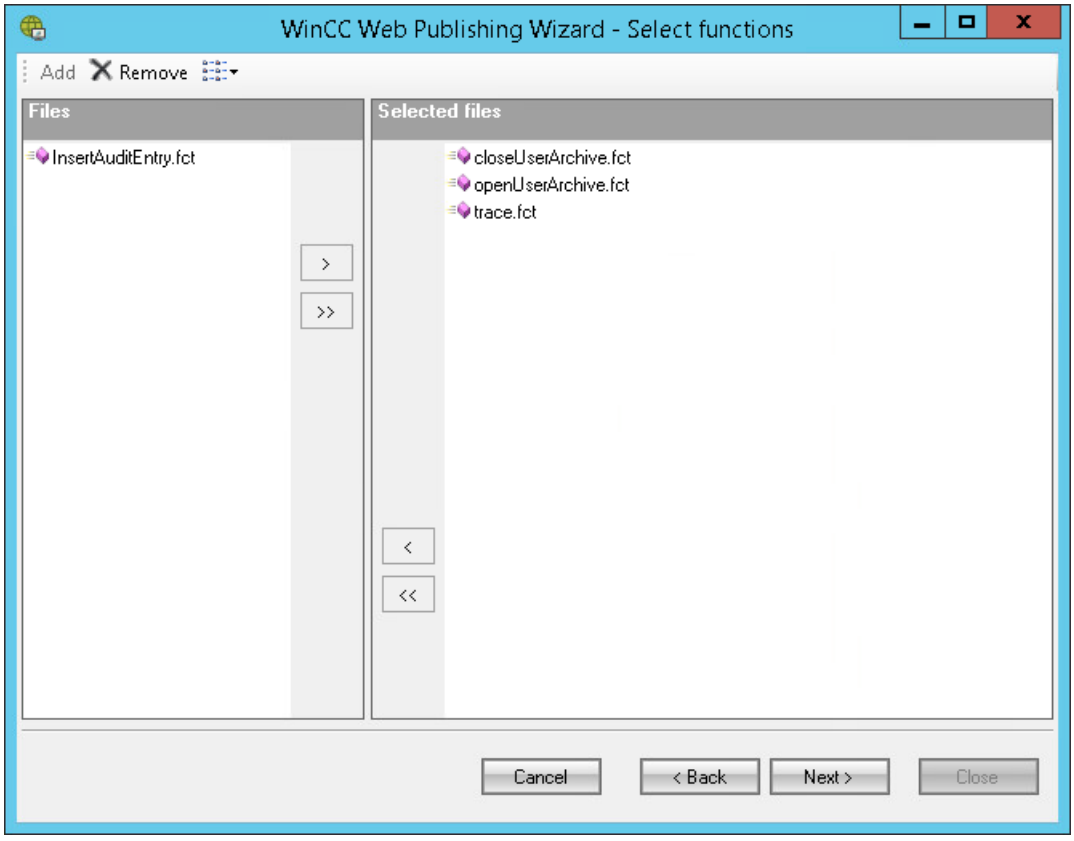
3. Select the WinCC project folder under "Path to your WinCC project".
   Select the target folder for the published pictures under "Publishing folder of the WinCC Web".
   Accept the proposed folder within the WinCC project folder.
   Click "Next".



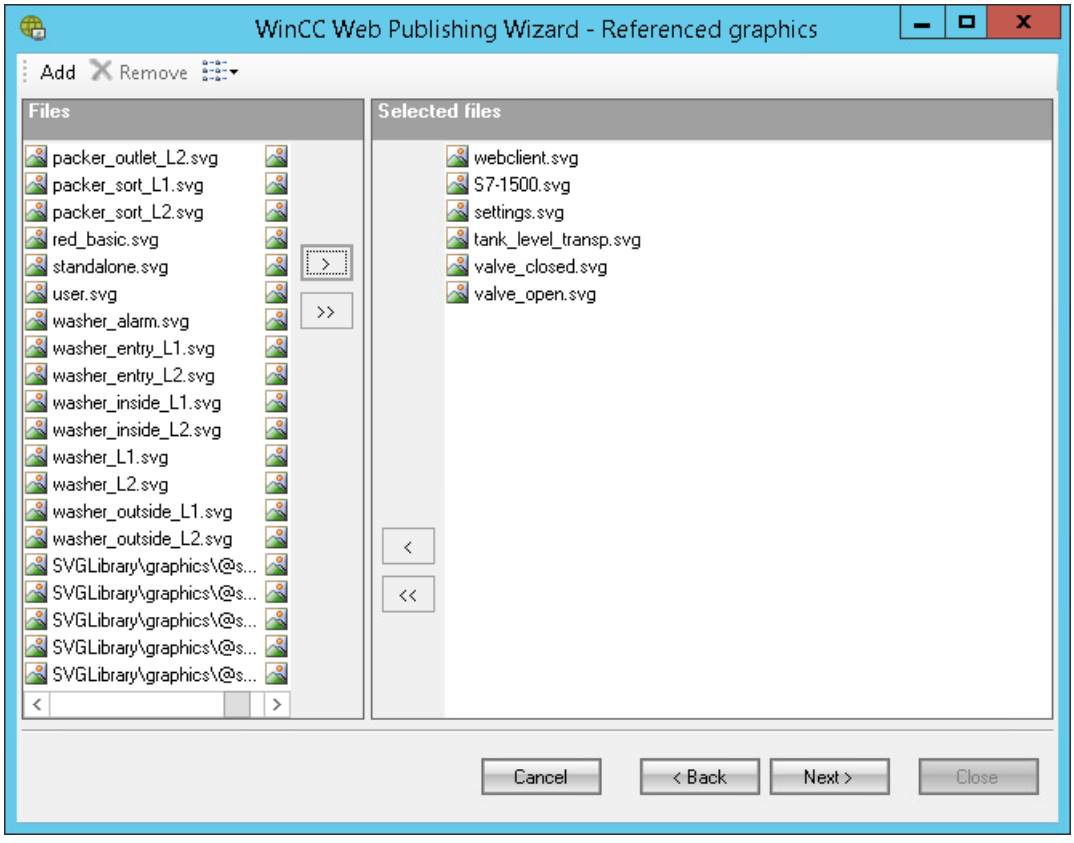
4. Move the pictures that you wish to publish to the "Selected files" list.
   Already published, unchanged pictures are grayed out and will not be published again.
   Click "Next".



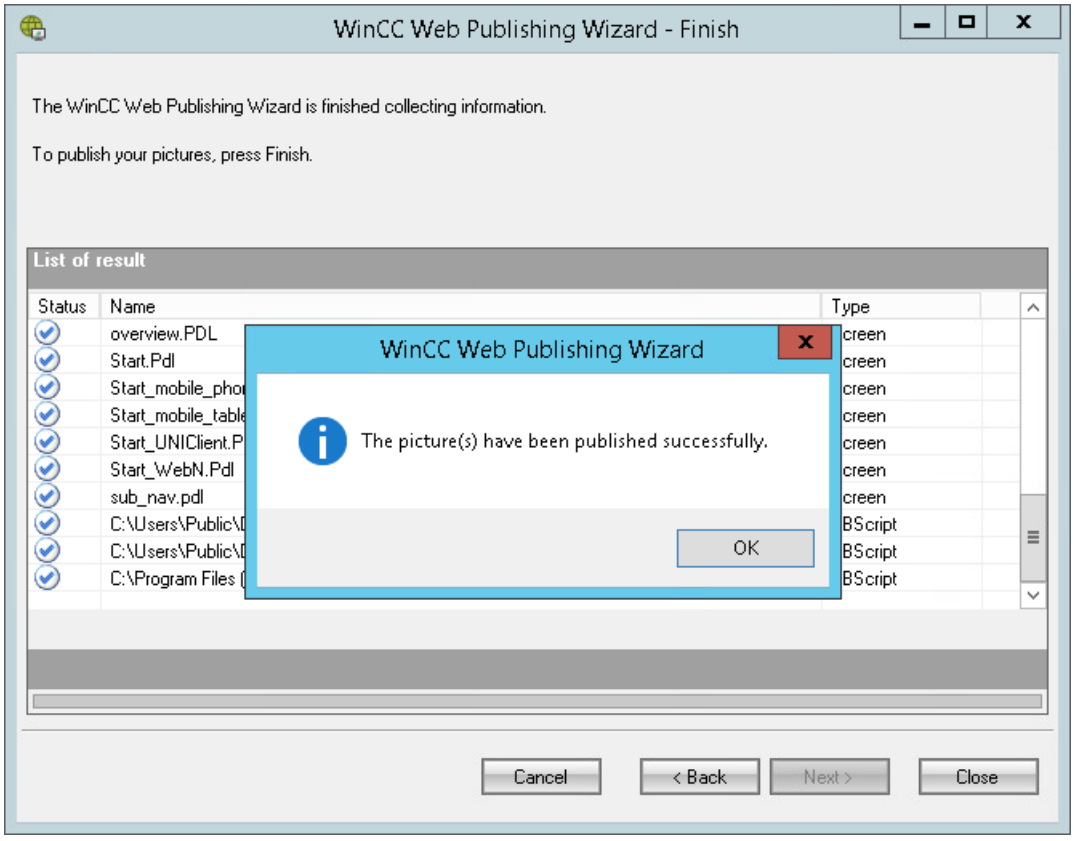
5. Move the necessary C project functions to the "Selected files" list.
   Already published, unchanged functions are grayed out and will not be published again.
   Click "Next".



6. Move the graphics used in the process pictures to the "Selected files" list.
   The referenced files are in the "GraCS" folder or in subfolders of "GraCS".
   Already published, unchanged graphics are grayed out and will not be published again.
   Click "Next".



7. To start publishing the pictures, click "Finish".
   The selected files are published.



Result

The results list displays the status of all published objects.

You can click an object to view additional object information.

You have successfully published the pictures and functions.

2.1.2.2 Administering the users for WebNavigator Client

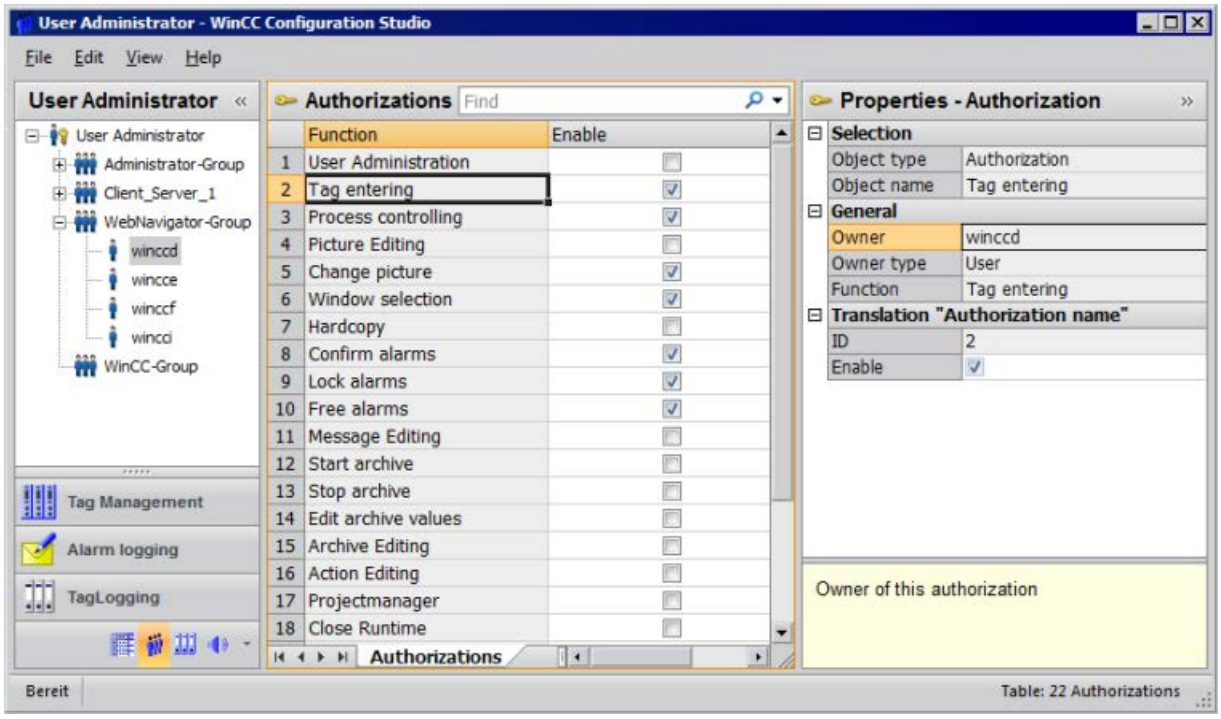
Introduction

To enable access to a WinCC project via a WebNavigator client, grant the user the required authorizations in the WinCC User Administrator.

You can assign a different start picture and a different Runtime language to each user.

Procedure

1. Right-click "User Administrator" in the navigation window of the WinCC Explorer. Select the "Open" command from the shortcut menu.



2. You can use an existing user for the Web project.
   Select the user named "winccd" who has been assigned the login "winccd" and password "winccpass", for example, or create a new user based on this template.
3. If you want to create a new user, select the "New User" command in the shortcut menu of a group in the navigation area.
   Specify the password for the new user in the "Password" column.
4. Select the user in the User Administrator table window.
5. Select the "WebNavigator" option in the "Web" area of either the table window or the Properties window.
6. Select the start picture for the user, e.g. "winccPic.pd_", in "Web start picture" via the drop-down list.
   You can only select published pictures as start pictures.
7. Select the Runtime language for the user in "Web language" via the drop-down list.
   The languages created in the Text Library are available for selection.
8. Select the user in the User Administrator navigation window.
   The authorizations are displayed in the table window.
9. Select the required user rights by clicking in the "Authorization" column of the table window.
   If system authorization "Web access - monitoring only" has been enabled, the user is only allowed to monitor the WinCC project when acting as WebNavigator client.
10. Close the User Administrator.

2.1.3 Configuring the WebNavigator Server

2.1.3.1 Starting the demo project

Introduction

You have copied the WinCC demo project to the computer.

In this step, you set up the Web project for the computer that acts as both WebNavigator server and WebNavigator client.

Procedure

1. Start the WinCC Explorer in the "Siemens Automation" program group.
2. Open the WinCC demo project.
3. Click "Start server locally" in the next dialog.
   The WinCC project can only be activated if your computer has been entered as an available server in the computer list.
4. Right-click "Computer" in the navigation window of WinCC Explorer and select "Open".
   The "Computer" editor opens in the WinCC Configuration Studio.
5. Select the computer name in the navigation area of the "Computer" editor, under "Project".
6. In the shortcut menu of the computer, select the "Use local computer name" entry.
   Restart the project to activate your changes.
7. To do this, confirm the messages with "Yes".
   The WinCC project is closed and reopened.
   Alternatively, close the project via "File > Exit". Open the demo project again.
8. Configure the WebNavigator Server: "Configuring the WebNavigator web page (Page 166)"

See also

Configuring the WebNavigator web page (Page 166)

First Web Project (Page 157)

2.1.3.2 Configuring the WebNavigator web page

Introduction

The WinCC Web Configurator is used to set up and manage the Microsoft Internet Information Service (IIS).

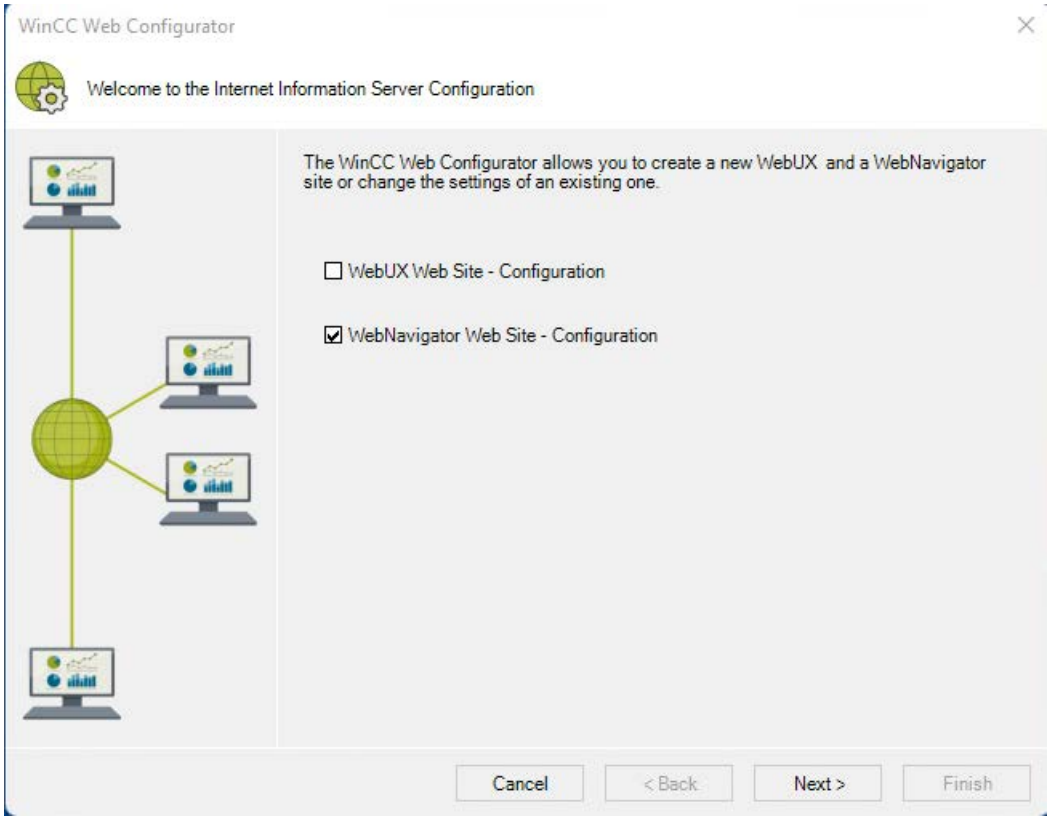
You will be creating a default web page in this step.

Requirement

- The WebNavigator server is installed.
- You have administrator rights on the PC.
- The Windows "Internet Information Service" component is installed.

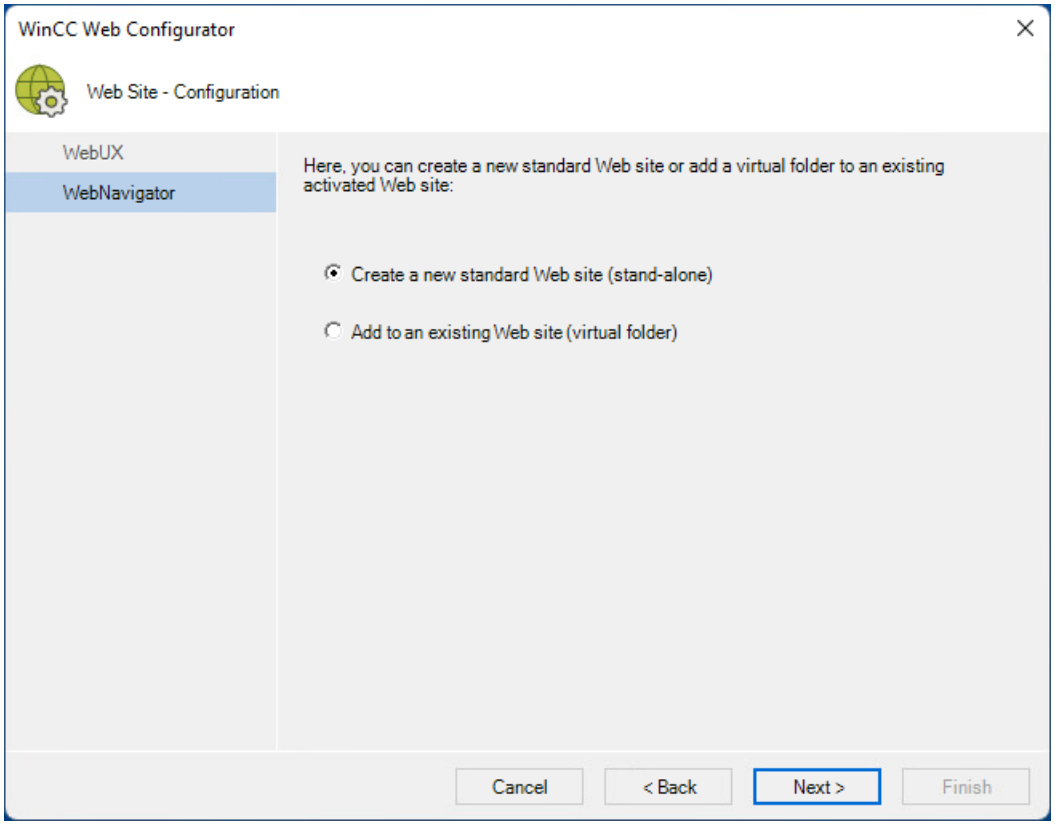
Procedure

1. Select "Web Navigator" in the navigation window of WinCC Explorer.
   Select "Web Configurator" in the shortcut menu.
   Alternatively, select the "WebConfigurator" entry in the "Siemens Automation" program group.
   The WinCC Web Configurator opens.

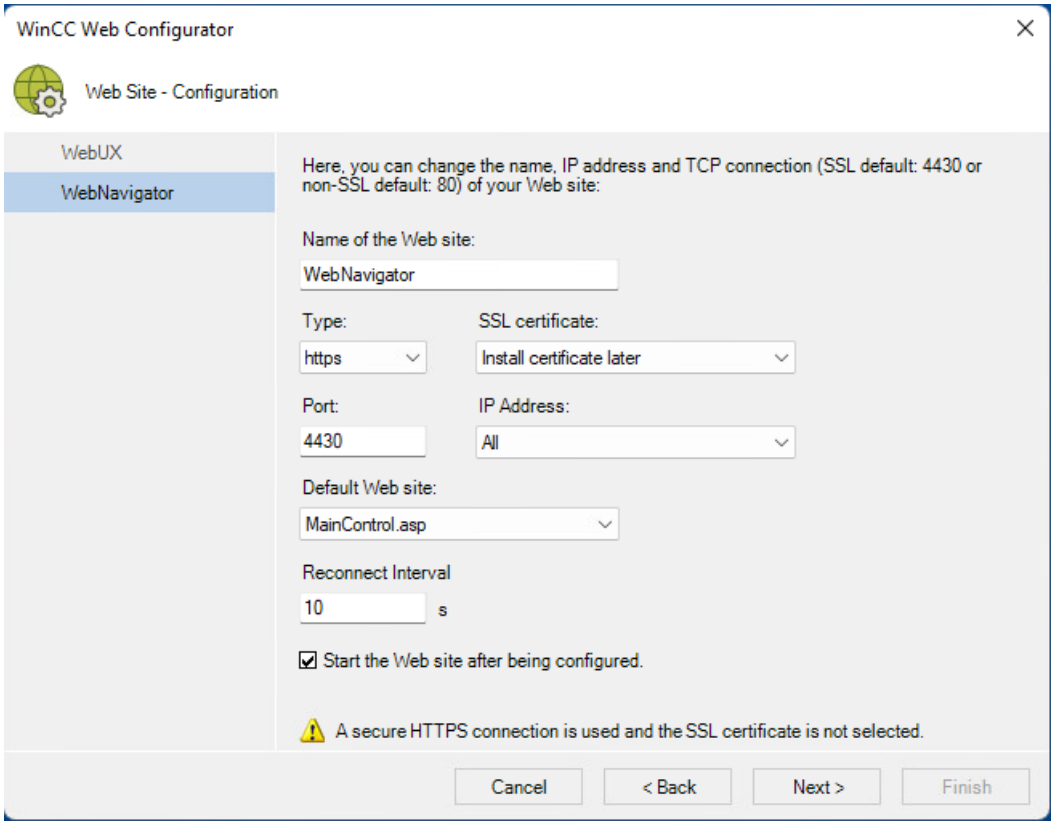


2. On the home page, activate the "WebNavigator Website - Configuration" option.
   If you also want to set the settings for the "WinCC/WebUX" option, leave the "WebUX Website - Configuration" option activated. This does not change the setup of the WebNavigator home page.
3. Click "Next" on the home page.

4. Select the "Create a new standard web page (standalone)" option and then click "Next".



5. Enter the name "WebNavigator" for the web page.



6. Select an SSL certificate from the drop-down list.
   If the drop-down list does not contain a certificate, select the "Create new certificate" option.
   Enter a name in the "New certificate" dialog and confirm with "OK".
7. Enter the number of the port used for access in the "Port" field.
   The HTTPS standard port "443" is set by default.
8. Select an "IP address".
   Use only the addresses that are available in the selection list.
   Select "All not assigned" to enable Intranet and Internet access to the computer.
9. Select "MainControl.asp" as the default web site and click "Next".
10. If you have installed a firewall, click the "Windows Firewall" button. The next steps are described under "Configuring the firewall (Page 170)".
    Click "Finish" if you have not activated a Firewall.
    The website is set up. You can display the log file via the dialog that appears.

Result

You have created the Web folder and activated the web page.

See also

Configuring the firewall (Page 170)

2.1.3.3 Configuring the firewall

Introduction

This section describes how to activate "HTTP" and "HTTPS" services using Windows Server 2016 as an example.

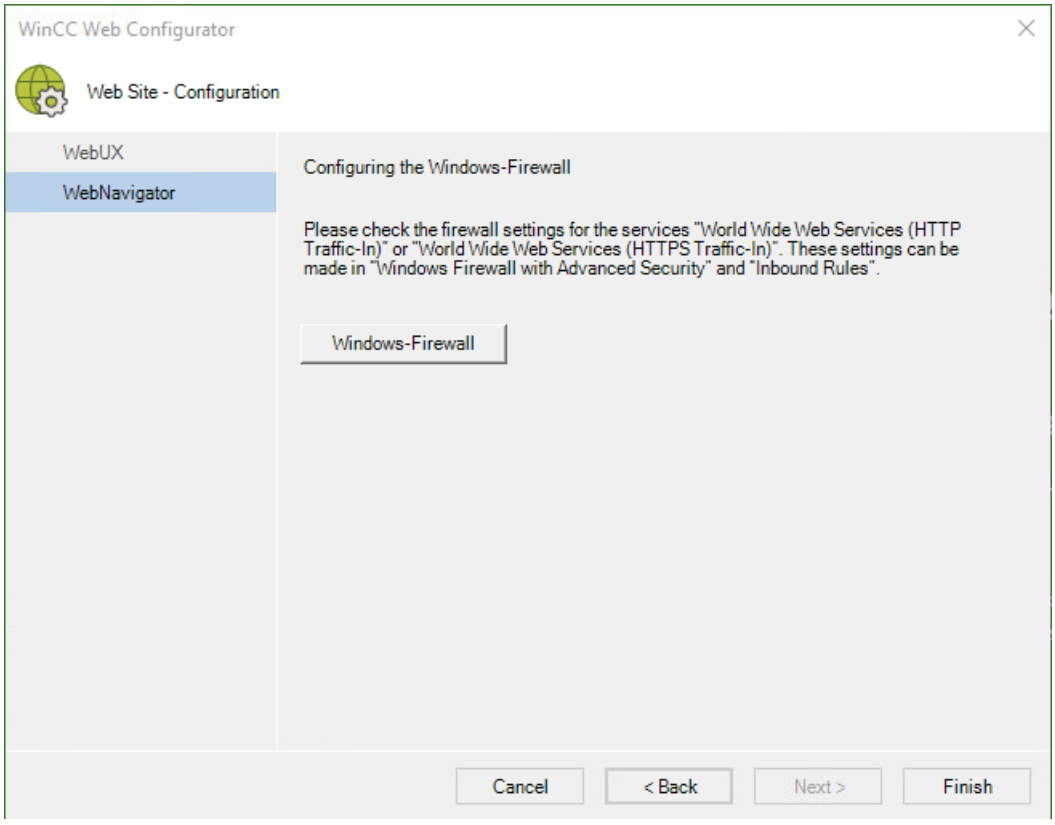
Consult your network administrator if you want to set up the Windows Firewall with advanced security or for a different port.

Requirement

- You have created a default web page with Web Configurator.
- The Firewall is activated.
- The user who is logged has Windows administrator rights.
- You have to set up the HTTPS service in IIS if you are using it for WebNavigator.
  More information: "WinCC Installation Notes / Release Notes > WinCC/DataMonitor Installation Notes > Setting up a secure connection via HTTPS (Page 117)"

Procedure for the default port

1. Change to the "Configuring the Windows Firewall" page in the "WinCC Web Configurator".



2. Click the "Windows Firewall" button.
   The "Windows Firewall" dialog opens.
3. Click "Allow apps to communicate through Windows Firewall".
4. Activate "Secure World Wide Web Services (HTTPS)".
5. Close all Windows dialogs with "OK".
6. Click "Finish" in the Web Configurator.
   The server configuration is completed.

See also

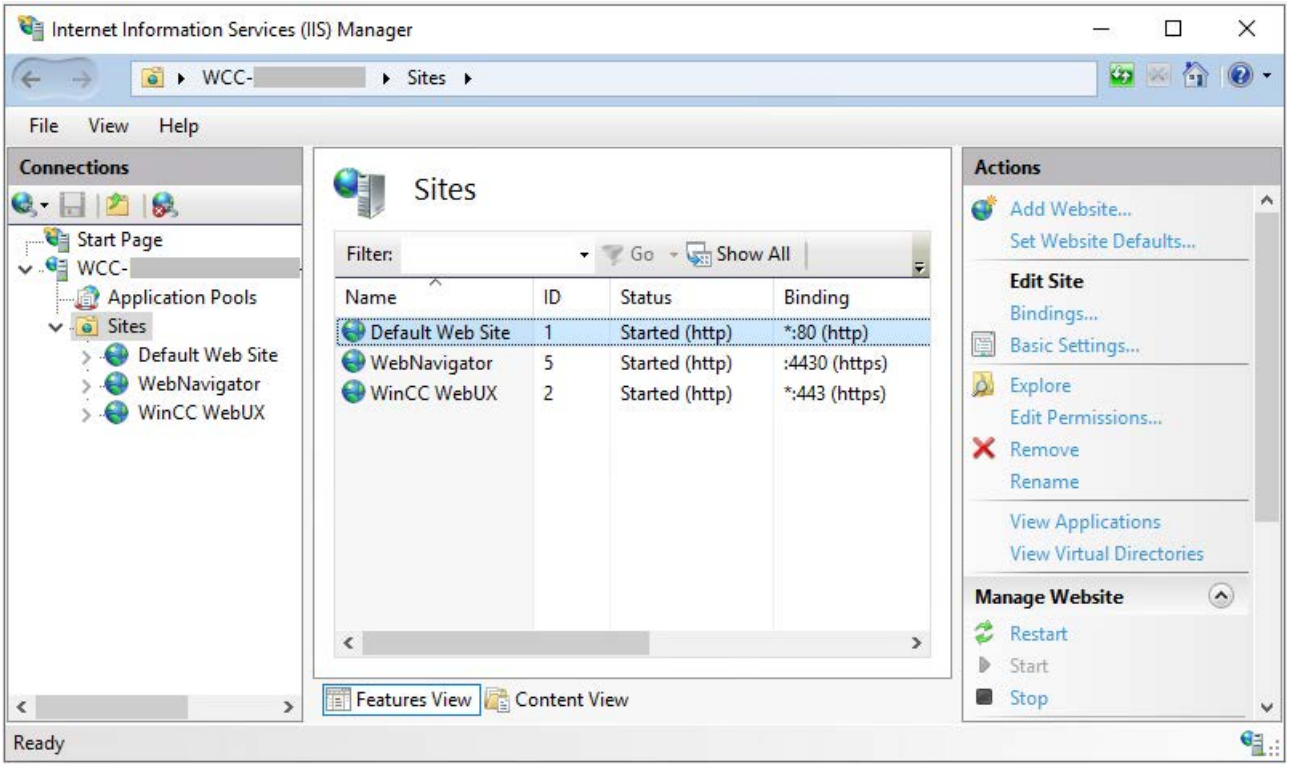
Setting up a secure connection over HTTPS (Page 117)

Configuring the WebNavigator web page (Page 166)

2.1.3.4 Checking the activated web page

Procedure

1. In the "Administrative Tools" program group, select the entry "Internet Information Services (IIS) Manager".



2. Double-click the computer name in the "Connections" field.
3. Display the entry "Default Web Site".
4. Check whether the web pages are displayed as "Started": .
5. If the status "Stopped" is displayed, start the web page: .
   In the shortcut menu of the website or in the "Actions" area under "Manage Website", select the "Start" command.
6. Close the "Internet Information Services (IIS) Manager".
   The web page is activated.

2.1.4 Operating the WinCC project

2.1.4.1 Operating the WinCC project with the web browser

Settings in the web browser (WebNavigator client)

Introduction

You have to adapt the web browser security settings in order to utilize the full functionality of the WebNavigator client.

The procedure depends on the browser used and is described using the example of the "Internet Explorer" browser.

Procedure

1. Click "Tools > Internet Options" in Internet Explorer.
2. Select the "Security" tab.
   Select the corresponding zone, for example, "Local Intranet" or "Internet".
3. Click "Custom Level...".
4. Enable the "Script ActiveX controls marked safe for scripting" and "Download signed ActiveX controls" options.
5. Enable "Active Scripting" under "Scripting".
6. Click "OK". Carry out the modifications in the subsequent dialog.
7. Click the "Trusted Sites" icon.
   Click the "Sites..." button to open the "Trusted sites" dialog.
8. Enter the address of the WebNavigator server in the "Add this website to the zone" field.
   Possible formats and wildcards include "*://157.54.100 - 200", "ftp://157.54.23.41", or "http://*.microsoft.com".
   Deactivate the "Require server verification (https:) for all sites in this zone" option.
   Click "Add". Click "OK".
9. Click the "Trusted Sites" icon.
   Click the "Standard level" button and then the "Custom Level" button.
   Enable "Initialize and script ActiveX controls not marked as safe". Click "OK".
10. Click on the "General" tab.
    Click in the "Settings" area on the "Temporary Internet Files" button.
    Enable the "Automatic" option under "Check for newer versions of stored pages:".
    Click "OK".
11. Close the "Internet Options" dialog by clicking "OK".

Installing the WebNavigator Client

Introduction

This chapter describes how to install the WebNavigator client on the WebNavigator server via intranet/Internet.

Requirement

- The WebNavigator server is installed.
- The "WinCC WebNavigator" license is installed.
- The WinCC project is in Runtime.
- The WinCC pictures are configured and published for web access.
- A user for the WebNavigator client has been created in WinCC.
- A web browser is installed.

Procedure

1. In the address bar of the web browser, enter the address of the WebNavigator server, such as the IP address or "https://www.<servername>".
2. Type in the user name and password, for example, "winccd".
   The first time you access the WebNavigator server, you are prompted to install the WebNavigator client.
   Click on the "WinCC WebNavigator client" link.
3. To store the client setup on the target computer, click the "Save" button in the "File download" dialog.
   Saving the client setup to the client computer saves you from having to download the data once again if you have to restart the client computer.
   Select the folder in which you want to save the WebNavigator client setup file.
4. Leave the web browser open and open Windows Explorer.
   Navigate to the folder in which you saved the Setup file.
5. Start the setup by double-clicking on setup.exe.
6. Follow the instructions on the screen and make the necessary entries and settings.
7. Select the "Complete" option in the "Setup type" dialog to install all components of the Client.
   Click "Next".
8. Click "Install" in the next dialog.
9. Click "Finish" in the "Install Wizard completed" dialog.

Result

On successful installation, the WebNavigator client connects to the WinCC project currently in Runtime.

The standard web page is displayed with the picture that you specified for the user in the User Administrator.

The "WinCCViewerRT" web viewer is also installed during installation of the WebNavigator client.

WinCCViewerRT is a display program that you can use as an alternative to the usual web browser in order to visualize and operate the WinCC project.

See also

Installing the WebNavigator client (Page 119)

2.1.4.2 Operating the WinCC project using WinCCViewerRT

Configuring WinCCViewerRT

Introduction

WinCCViewerRT is a program for visualizing WinCC projects.

The response of the WebNavigator server and Graphics Runtime is configured in the WinCCViewerRT settings.

Use project settings

If you enable the "Use project settings" option, the following settings are applied by the WebNavigator server:

- User Administrator:
  - Automatic logoff
- Computer properties:
  - Runtime language
  - Runtime Default Language
  - Start Picture
  - Start configuration of Menu and Toolbars
  - Hardware accelerated graphics representation (Direct2D):

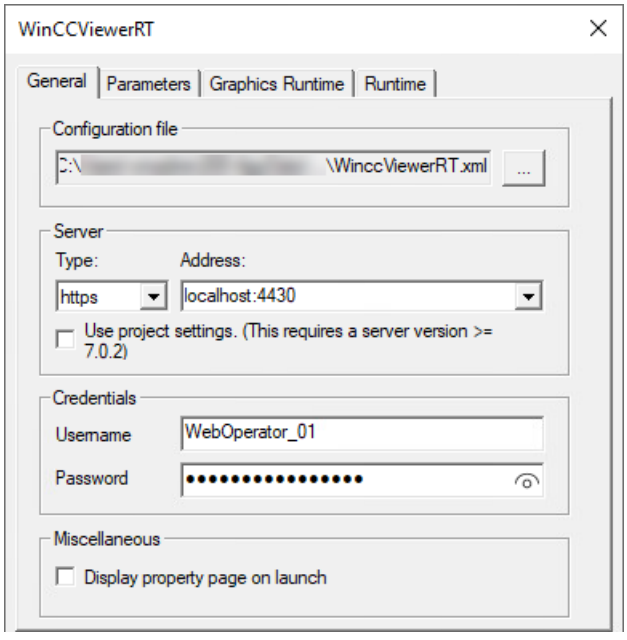
Requirement

- On the server
  - The WebNavigator server is installed.
  - A WinCC/WebNavigator license is installed.
  - The WinCC project is in Runtime.
  - The WinCC pictures are configured and published for web access.
- On the client
  - The WebNavigator client is installed.

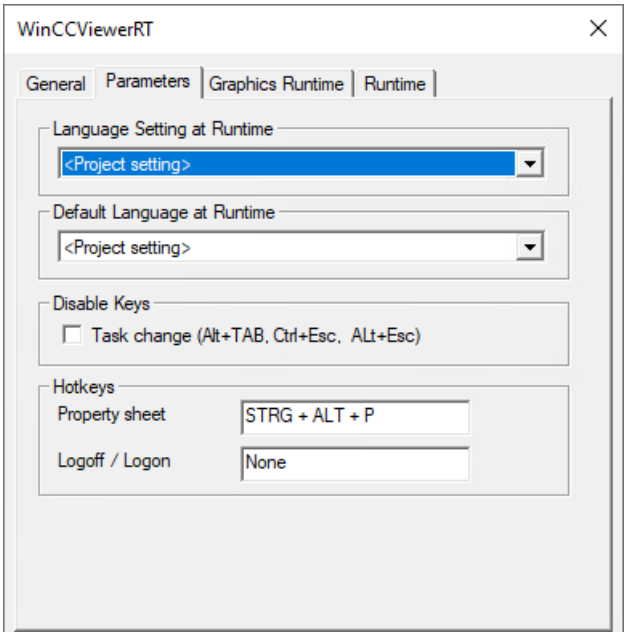
Procedure

1. In the "Siemens Automation" program group, select the entry "WinCCViewerRT". Alternatively, you can find the "WinCCViewerRT.exe" link in the installation folder under "Webnavigator\Client\bin".
   - The configuration dialog opens if you set up WinCCViewerRT for the first time.
   - WinCCViewerRT opens if WinCCViewerRT has already been set up.
     To open the configuration dialog of WinCCViewerRT, use the key combination <Ctrl+Alt+P>.
     Change the key combination on the "Parameters" tab.
2. Enter the login data in the "General" tab:
   - Server address: "https://<Server name>:<Port>" or "https://<IP address>:<Port>"
   - Use project settings: Apply settings of the WebNavigator server
   - User name and password, if you want to specify a default user for the login dialog.

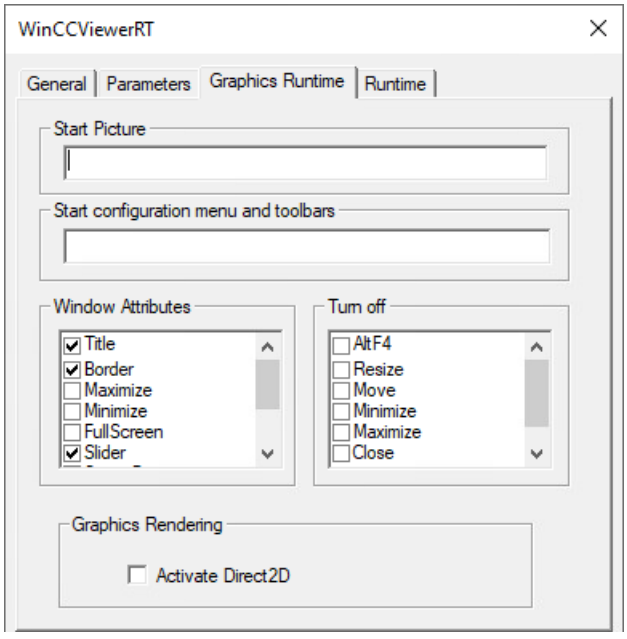
   To read in a previously saved configuration, select the corresponding configuration file.



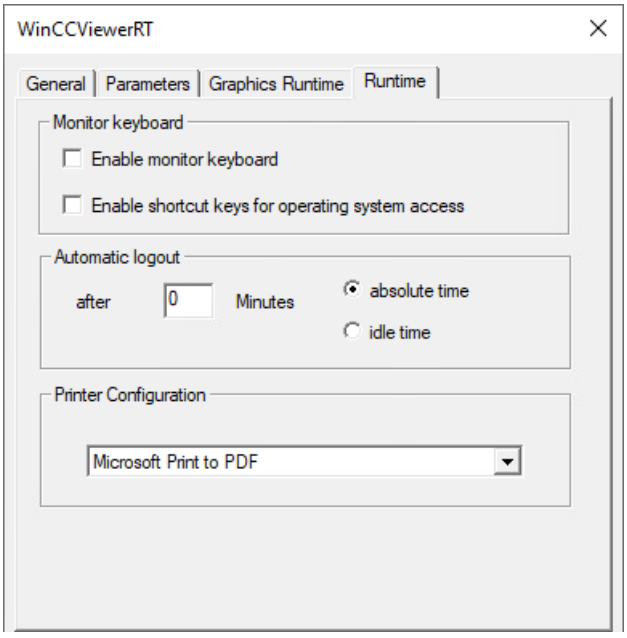
3. On the "Parameters" tab, configure the following settings:
   - Select the Runtime language and the Runtime default language.
   - If necessary, lock any key combinations that allow operators to switch to other programs.
   - If necessary, change the default key combination <Ctrl+Alt+P> that opens the configuration dialog of WinCCViewerRT.
   - Define a key combination with which a user can log off and a new user can log on. The key combination can only be used if no default user has been set in the "General" tab.



4. Configure the WinCC Runtime properties in the "Graphics Runtime" tab:
   - Start Picture
   - Configuration file for user-defined menus and toolbars
   - Window Attributes
     You define the display of the process picture in the browser with the "Full Screen" and "Adapt Picture" options.
   - Turn off: Impermissible user actions
     Activate the actions that the operator is not permitted to perform in Runtime.
   - Activation of Direct2D to accelerate graphics representation.



5. Configure additional user actions in the "Runtime" tab:
   - Activating the monitor keyboard
   - <Ctrl+Alt+Del> key combination to allow switching to the Task Manager or operating system via the monitor keyboard.
   - Auto-logoff settings
   - Specify the printer you use to print the configured print job in WinCC controls Alternatively, you can print the print job with the "RPTJobPrint" function. A preview via "RPTJobPreview" is not possible on the web client.



6. Click "OK" to close the dialog.

Result

WinCCViewerRT is configured.

The connection to the WebNavigator server is set up after you close the dialog.

The settings are saved to the "WinCCViewerRT.xml" configuration file. The configuration file settings are used at the next start of WinCCViewerRT.

WinCCViewerRT applies the user interface language from WinCC.

The configuration file is stored in the following folder based on the operating system:

- <User>\AppData\LocalLow\Siemens\SIMATIC.WinCC\WebNavigator\Client

You can rename the file, for example, to "User1.xml".

You can also start WinCCViewerRT by means of the command line with the user-specific configuration file, e.g. "WinCCViewerRT.exe User1.xml". This procedure allows for different configurations, depending on the logged-on user.

The WinCCViewerRT configuration dialog opens at the start if you rename or delete "WinCCViewerRT.xml". Configure WinCCViewerRT anew or select a different configuration file.

Note

Buttons disabled: Exit WinCCViewerRT

WinCCViewerRT can only be closed by means of script function if you disable a key combination or hide the "Close" button.

Function in the C-Script: DeactivateRTProject; function in the VBScript: HMIRuntime.Stop.

Operating the WinCC project

Requirement

- On the server
  - The WebNavigator Server is installed.
  - The "WinCC WebNavigator" license is installed.
  - Remote communication is enabled if required. [1)]
  - The WinCC pictures are configured and published for web access.
  - The user is created in WinCC.
  - The WinCC project is in Runtime.
- On the client
  - WinCCViewerRT is configured.
  - Remote communication is enabled if required. [1)]

1) If the WebNavigator client is not running on the same computer as the WebNavigator server, remote communication must be activated in the "Simatic Shell" dialog.

Procedure

1. In the "Siemens Automation" program group, select the entry "WinCCViewerRT".
2. Log on to the WebNavigator Server:
   - A login dialog is not displayed if the user name and password is preset in the "WinCCViewerRT" configuration dialog.
     You are logged on automatically with the stored login data.
   - The login dialog is displayed if a user name and password is not set in the "WinCCViewerRT" configuration dialog.
     Enter the user name and password of the WinCC user.
     Passwords are case-sensitive.
     Click "OK".

3. To change the user, use the specified key combination for "WinCCViewerRT" login/logoff.
   The previous user is logged off.
   The key combination can only be used if no default user has been set.
4. Enter the user name and password of the new WinCC user in the login dialog.
   Passwords are case-sensitive.
   Click "OK".

Result

WinCCViewerRT automatically connects to the activated WinCC project. The start picture that is configured for the user is displayed.

The user may operate or monitor the project, depending on authorizations. Users assigned system authorization No. 1002 "Web access - monitoring only" in the User Administration are only allowed to monitor the WinCC project.

The "View Only Cursor" indicates that process-related operations are not possible.



Certain operations, such as opening the properties dialog of a WinCC OnlineTrendControl, are still possible.

You can also use your own cursor icon as a "View Only Cursor", if required. For more information, refer to "Configuring Runtime settings (Page 206)".

The <F5> key triggers a reselection of WinCCViewerRT.

2.1.5 Creating a new process picture and displaying it on the client

2.1.5.1 Creating a new process picture

Introduction

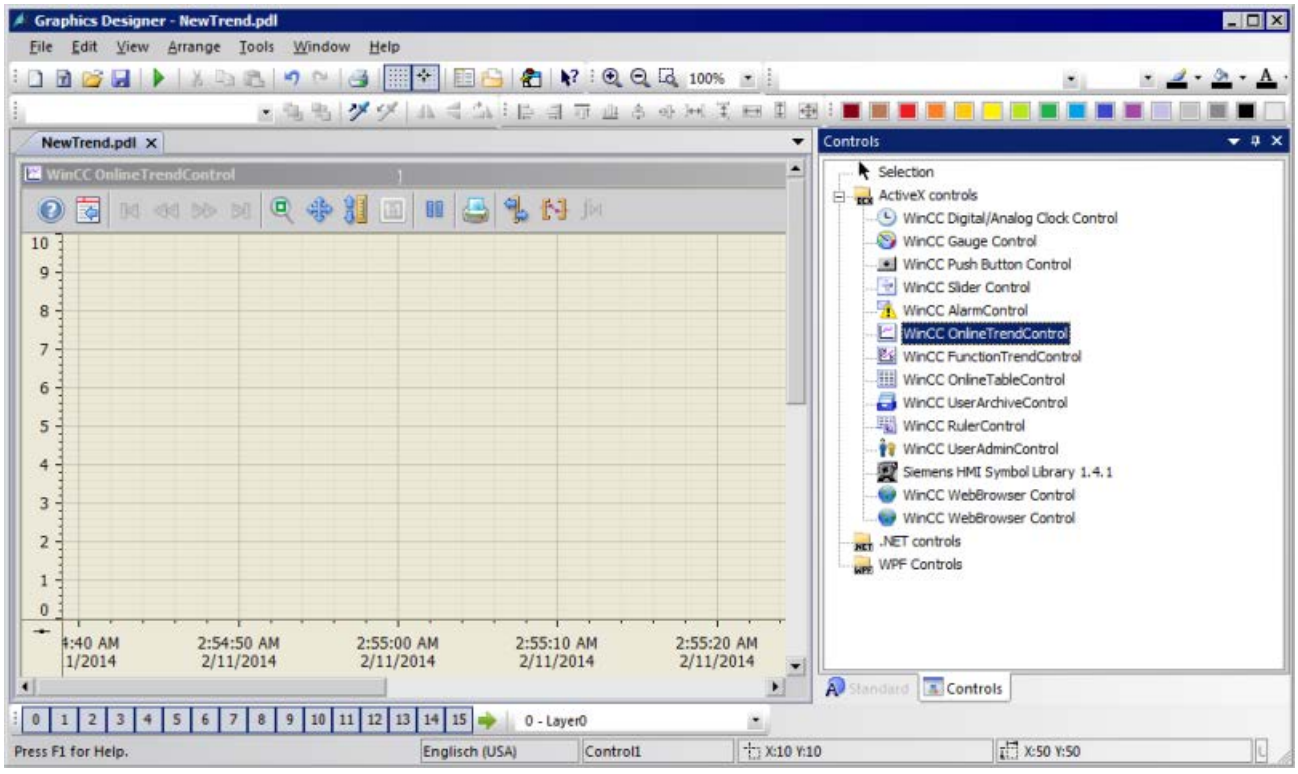
Configure a new process picture for the web project on the server. Create a trend window that displays the measured values from the archive of the WinCC demo project.

Requirement

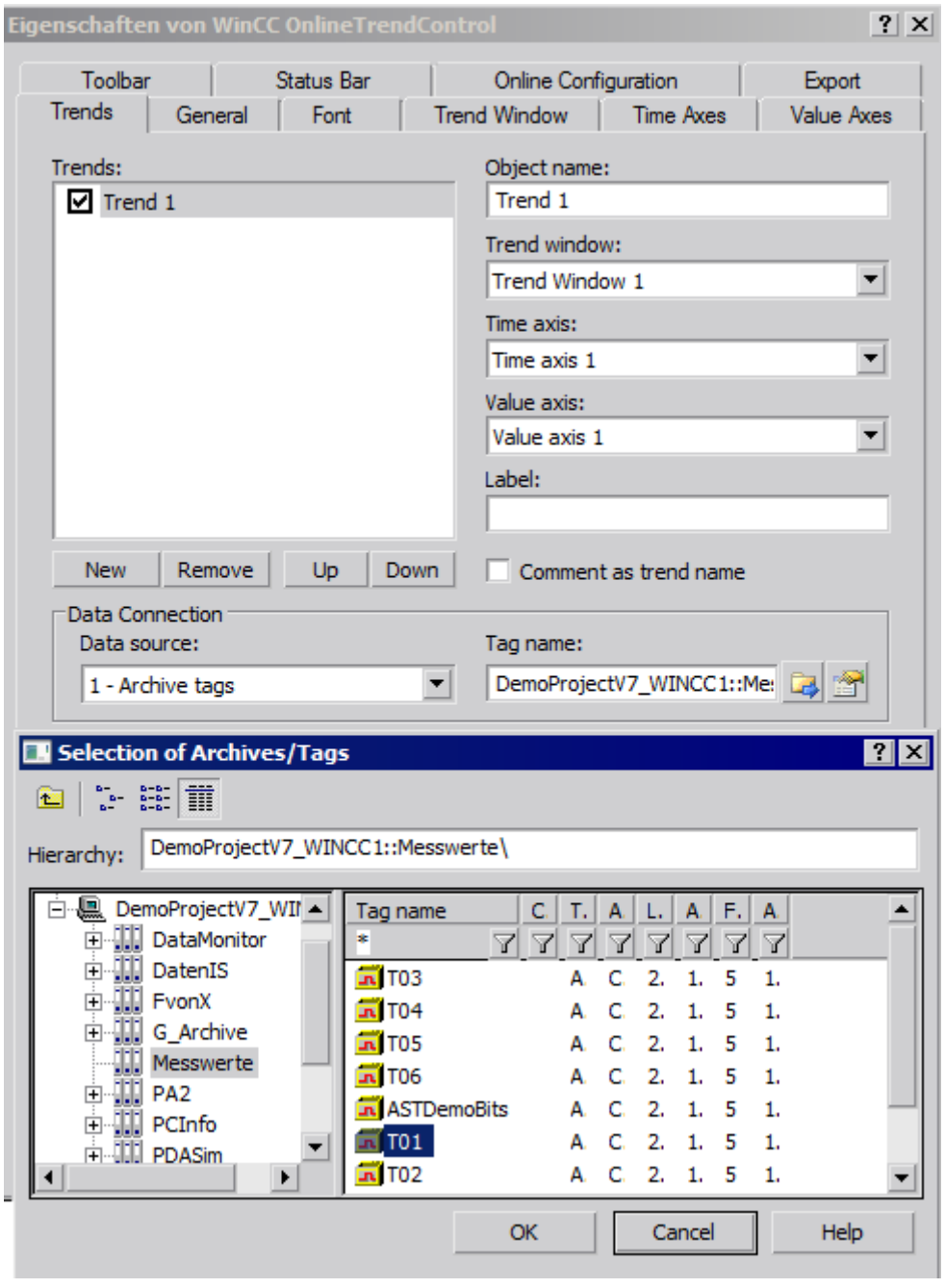
- The WinCC demo project is open.

Procedure

1. Click "Graphics Designer" in the navigation window of WinCC Explorer. Right-click in the data window and select the " New picture" menu command.
2. In the object palette of Graphics Designer, double-click "WinCC OnlineTrendControl" on the "Controls" tab. The control is inserted into the picture and the configuration dialog opens.



3. Click the "Trends" tab. Click at the tag name in the "Data connection" field. Select the "Measured values" archive and "T01" tag in the "Archive/tag selection" dialog.



4. Click "OK". The measured values from "T01" are linked to the trend.
5. If required, configure additional properties of the trend or control.
6. Save the control under the name "NewTrend.pdl" and close Graphics Designer.

Result

You have successfully created a trend window in a picture on the WebNavigator Server. In order to display the trend window on the WebNavigator Client, you must publish the picture and assign it to a user as start picture.

See also

Configuring a new process picture for the web (Page 184)

2.1.5.2 Configuring a new process picture for the web

Introduction

In order to display the trend window on the WebNavigator Client, you must publish the picture and assign it to a user as start picture.

Requirement

- The WinCC demo project is open.
- You have successfully created a trend window in a picture on the WebNavigator Server.

Procedure

1. Right-click "WebNavigator" in the navigation window of the WinCC Explorer.
   Select the "Web View Publisher" command from the shortcut menu.
2. Select the new "NewTrend.pdl" picture in the "Files" area of the "Select pictures" dialog in the WinCC Web Publishing Wizard.
   Move the file to the "Selected files" list.
3. Follow the further instructions of the Publishing Wizard.
   The picture is published after you have completed the Wizard.
4. Right-click "User Administrator" in the navigation window of WinCC Explorer and select the "Open" command from the shortcut menu.
5. Select the user with whom you wish to display the new trend window from the navigation window of the User Administrator.
6. Select the "WebNavigator" check box in the table window.
   The "Web Options" area is displayed.
7. Click "..." to select the "NewTrend.pd_" start picture.
8. Close the User Administrator.

Result

You have successfully configured the picture that contains the trend window for visualization on the WebNavigator Client.

See also

Displaying the process picture on the WebNavigator Client (Page 185)

Administering the users for WebNavigator Client (Page 164)

Publishing process pictures (Page 159)

2.1.5.3 Displaying the process picture on the WebNavigator Client

Introduction

You want to display the new process picture on the WebNavigator Client Use the "WinCCViewerRT" Web Viewer for this example.

Requirements

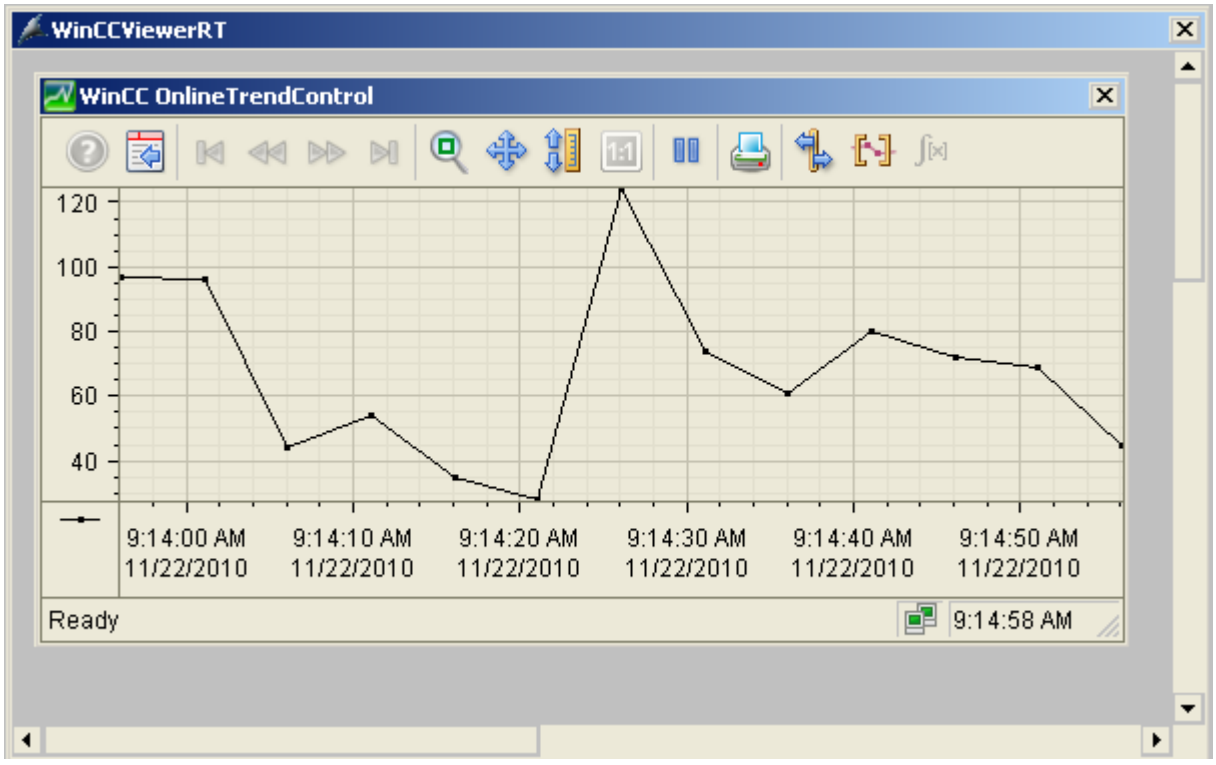
- The WebNavigator Server and the "WinCC WebNavigator" license are installed.
- The user is created in WinCC.
- A process picture is created in WinCC.
- The process picture is published and assigned to the user as start picture.
- The WinCC project is in Runtime.
- WinCCViewerRT is configured.

Procedure

1. In the "Siemens Automation" program group, select the entry "WinCCViewerRT".
2. Log on to the WebNavigator Server:
   - A login dialog is not displayed if the user name and password are set in the "WinCCViewerRT" configuration dialog. You are logged on automatically with the stored login data.
   - The login dialog is displayed if a user name and password is not set in the "WinCCViewerRT" configuration dialog.
     Enter the user name and password in the "General" tab. Click "OK".
3. You can use the preset <Ctrl+Alt+P> key combination to change the user. The "WinCCViewerRT" configuration dialog opens.
   Enter the user name and password in the "General" tab. Click "OK".

Result

The trend window is displayed in the "WinCCViewerRT" Web Viewer. The trend values are loaded from the archive.



See also

Configuring WinCCViewerRT (Page 175)

Operating the WinCC project (Page 180)

2.2 WinCC/WebNavigator Documentation

2.2.1 Function overview

Introduction

WinCC/WebNavigator provides a solution for operator control and monitoring of the automation system via the Intranet and Internet.

WinCC/WebNavigator offers you an easy and efficient way of implementing the operator control and monitoring functions of the WinCC project.

Current Internet security methods are supported. Use SSL encryption to increase Internet security.

The optional "WinCC/WebNavigator" package consists of the following components:

- WebNavigator server
- WebNavigator client
- WebNavigator diagnostics client

WebNavigator server

- All necessary WinCC pictures and functions that are displayed on the WebNavigator client are stored on the WebNavigator server.
  The WinCC Web Publishing Wizard automatically makes the required adaptations to the project data that are necessary for the Web. This ensures the best possible performance.
- The WebNavigator server requires Microsoft Internet Information Service (IIS) for communication with the WebNavigator clients.
  The IIS is set up and managed using the WinCC Web Configurator.
- The "Load Balancing" function allows you to automatically distribute the WebNavigator clients evenly to different WebNavigator servers, in accordance with the respective server license.

WebNavigator client

- The WebNavigator client is started via a web browser with activated ActiveX controls.
  You can operate and monitor a current WinCC project without the entire WinCC basic system having to be installed on the computer.
- You control access of the WebNavigator clients in the user administration.
  A different start picture and language can be selected for each user.
  You can enable scalable access to different project areas and functions for individual users by assigning user authorizations.
- The "WinCCViewerRT" Web Viewer program is used for visualization of web projects only.
  The WinCCViewerRT is an alternative to the browsers that you can use to visualize the WinCC project and is optimized for WinCC.

WebNavigator diagnostics client

The WebNavigator diagnostics client is particularly useful for the following activities:

- Remote diagnostics and operator control of multiple unmanned WinCC stations.
- Central remote maintenance using a diagnostics client to monitor several WebNavigator servers.
- For Power Users who need guaranteed server access at all times.

The functionality of this diagnostics client is no different from that of a WebNavigator client. However, the diagnostics client provides guaranteed access to the WebNavigator servers at all times. Access is independent of the number of users already logged on to the WebNavigator server.

The diagnostics client licensing provides you with a cost-effective solution for accessing multiple WebNavigator servers using one or just a few WebNavigator clients. You can combine WebNavigator and diagnostics licenses.

2.2.2 Possible applications of WinCC/WebNavigator

2.2.2.1 WebNavigator Server on the WinCC Server

Linking WebNavigator Clients and WinCC projects via Intranet/LAN

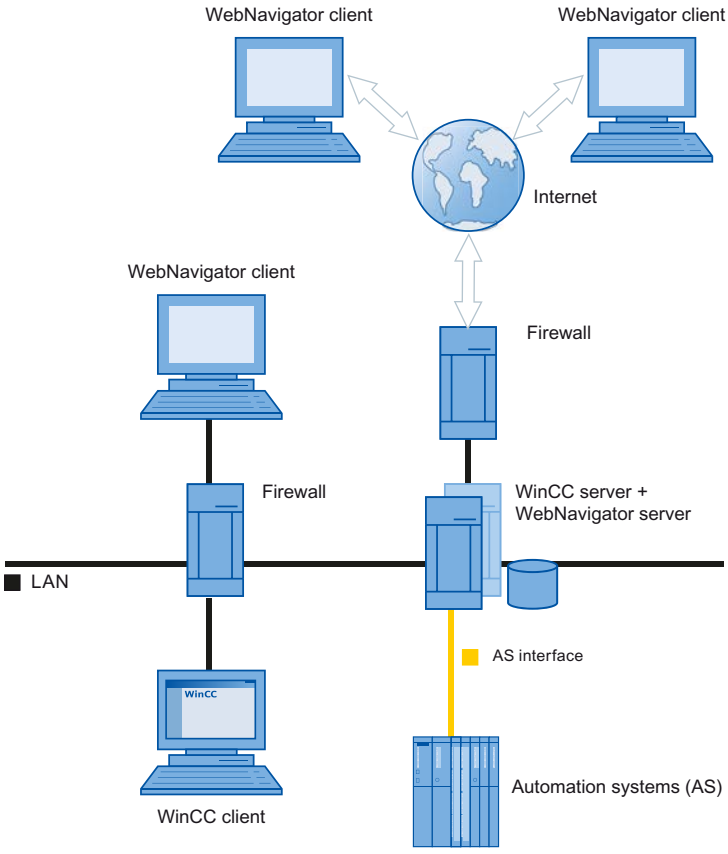
The WinCC Server and the server component of the Web Navigator are installed on the same computer. The WebNavigator Clients operate and/or monitor the current server project via Intranet/LAN in an isolated solution.

This cost-effective solution allows you to set up computer stations, for example, for the purpose of monitoring or maintenance. It is not necessary to install the complete WinCC system on these computers.

Linking the WebNavigator Clients and WinCC projects via Internet and Intranet

The WinCC Server and the server component of the Web Navigator are installed on the same computer. The WebNavigator Clients are able to operate and/or monitor the current server project via Internet and Intranet.

Two Firewalls are employed to protect against malicious attacks from the Internet. The first firewall protects the WebNavigator Server against an attack from the Internet. The second Firewall provides additional security for the Intranet.



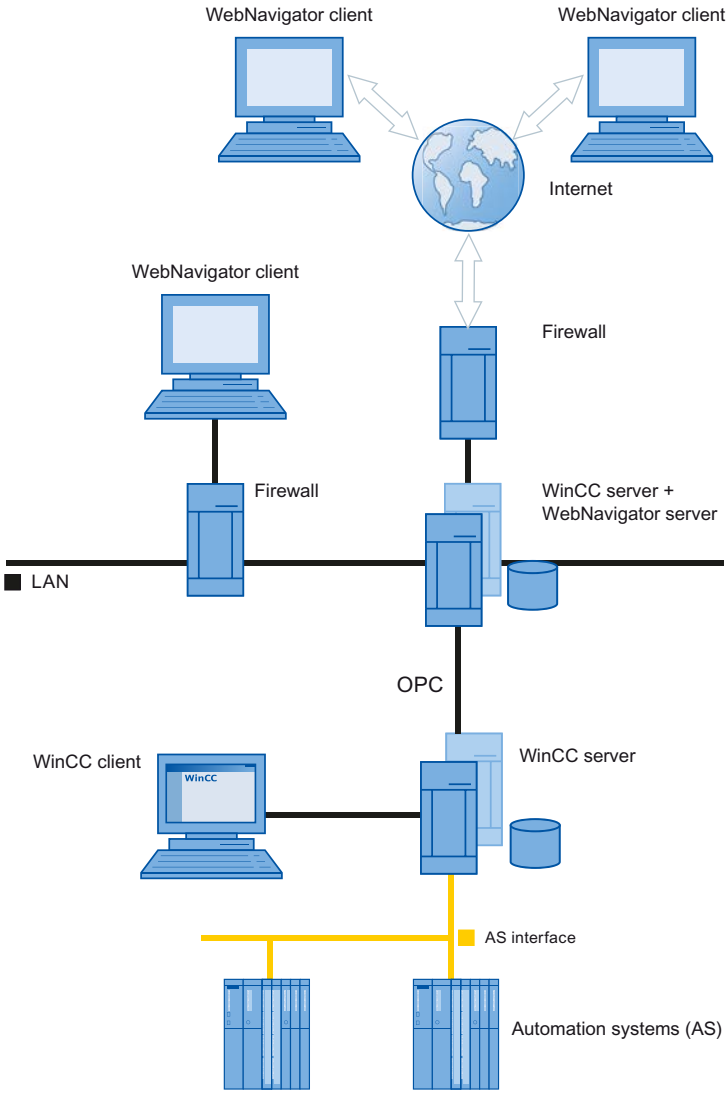
2.2.2.2 Separation of the WinCC and WebNavigator servers

Communication via a channel

A group of automation systems is assigned to the WinCC Server. The project includes all data such as programs, configuration data and miscellaneous settings. On the computer that contains the WinCC and WinCC WebNavigator servers, the WinCC project is mirrored 1:1 and not networked with the automation systems.

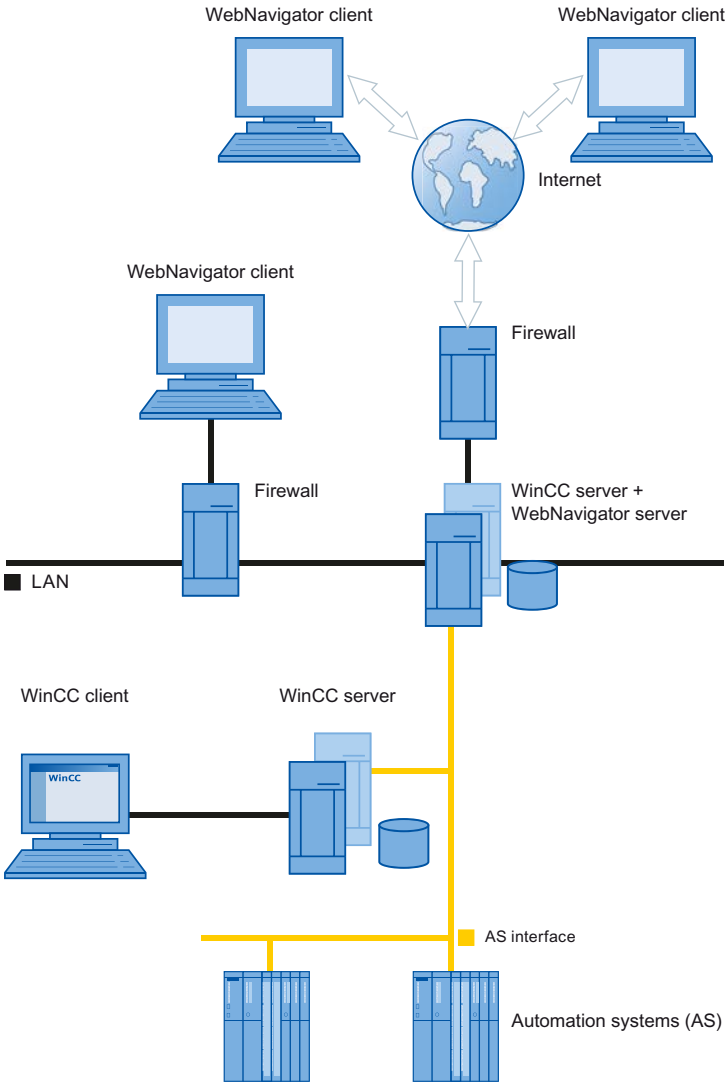
Data is synchronized via the OPC channel. For this purpose, the WinCC WebNavigator Server needs a license for the number of OPC tags.

Two firewalls are employed to protect the system against unauthorized access. The first firewall protects the WebNavigator Server against an attack from the Internet. The second firewall provides additional security for the intranet.


WebNavigator client
WebNavigator client
Internet
WebNavigator client
Firewall
Firewall
WinCC server +
WebNavigator server
LAN
OPC
WinCC client
WinCC
WinCC server
AS interface
Automation systems (AS)

Communication via the process bus

On the computer that contains the WinCC and WinCC WebNavigator servers, the WinCC project is mirrored 1:1. Data is synchronized via the process bus. Two firewalls are employed to protect the system against unauthorized access.



2.2.2.3 Dedicated Web Server

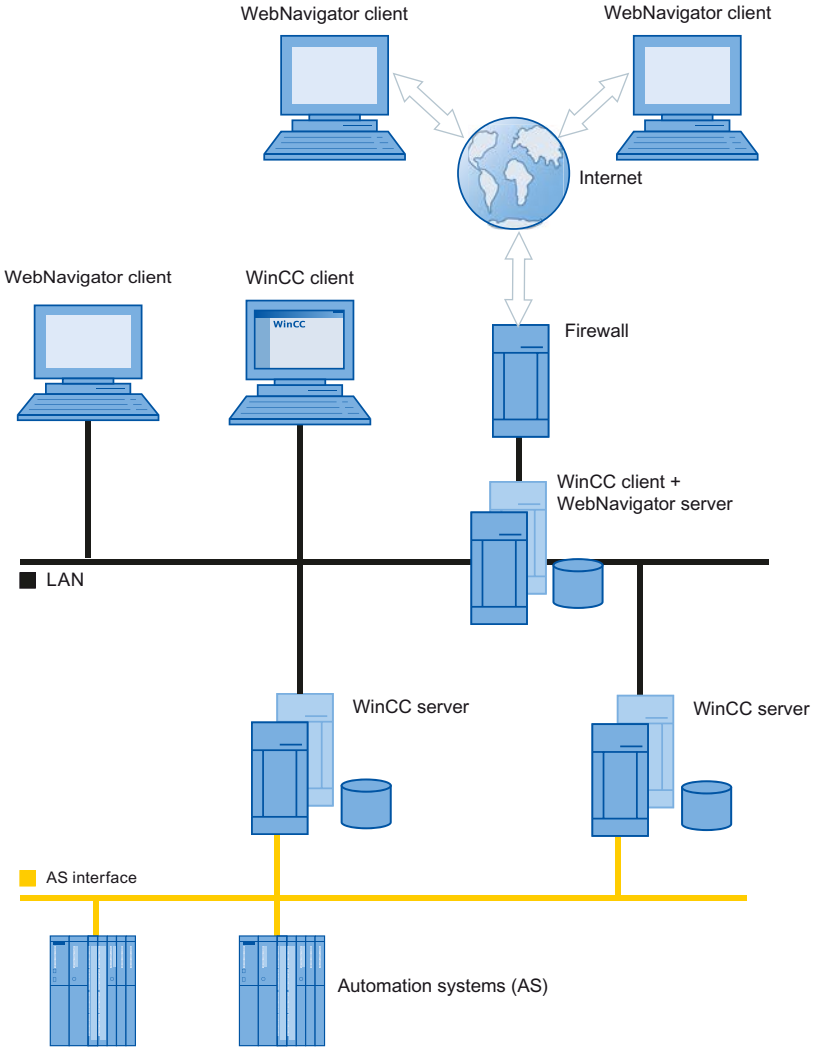
Introduction

Installation of a dedicated web server is advantageous in larger-scale systems for the central data supply to the WebNavigator Clients. The dedicated web server processes and optimizes client access and is available to the clients as a proxy of the WinCC servers.

The functionality of the dedicated web server is provided by the installation of the WebNavigator server on a WinCC client.

Advantages of using a dedicated web server

- The load can be distributed over several dedicated web servers in order to enhance the performance of the complete system.
- The physical separation of the dedicated web server and the WinCC server on different computers increases security.
- Operation of the servers on different stations also permits the separation of operational functions, for example, plant support and the IT department.
- The dedicated web server is able to provide simultaneous access to several subordinate WinCC servers. Users logged on to the dedicated web server can access several WinCC projects, without having to log on separately for each project.
- The dedicated web server supports redundancy switchover between two subordinate WinCC servers with WinCC Redundancy.



2.2.2.4 WinCCViewerRT

Overview

You run the "WinCCViewerRT.exe" application instead of Internet Explorer on the WebNavigator Client. WinCCViewerRT is installed with the WebNavigator Client.

The example of WinCCViewerRT is that you do not need the browser. You therefore protect the system against virus or Trojan attacks.

The viewer only displays the pictures that you configured for web access and published on the WebNavigator Server. The user may operate or monitor the project, depending on authorizations. Users assigned authorization 1002 "Web access - monitoring only" in WinCC are only allowed to monitor the project. The WebNavigator Client is therefore a so-called "View Only Client".

The "View Only Cursor" indicates that process-related operations are not possible. Certain operations, such as opening the properties dialog of the WinCC OnlineTrendControl, are still possible.

You can also use WinCCViewerRT as terminal services application. For more information, refer to "Configuring terminal services for WebNavigator Server".

See also

Configuring terminal services for WebNavigator (Page 264)

2.2.2.5 WebNavigator Diagnostics Client

Overview

The WebNavigator Diagnostics Client provides cost-effective access to several WebNavigator Servers.

Several Diagnostics Clients and standard clients can be used simultaneously.

Licensing

This process does not demand an additional license for WebNavigator Server. Licensing is handled on the Diagnostics Client.

The diagnostics client can always access the WebNavigator server, regardless of whether or not the maximum number of simultaneous logins to the WebNavigator server has been reached.

Diagnostics Client access to the WebNavigator Server is always guaranteed.

No access via RDP

Access via Remote Desktop Protocol (RDP) is not enabled for the diagnostics client.

Applications

Possible applications include:

- Remote maintenance:
  The Diagnostics Client is used for consecutive access to different WinCC systems for the purpose of service and maintenance.
- Central maintenance:
  The Diagnostics Client is used for simultaneous access to several servers.

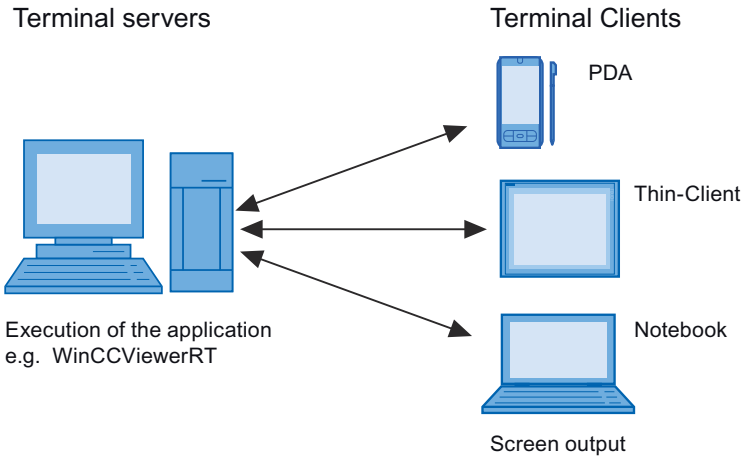
2.2.2.6 Terminal services and WebNavigator

Introduction

The terminal services of Windows server operating systems provide access to the desktop of a Windows server. The Terminal Client provides screen output while the application, for example, WinCCViewerRT, is active on the Terminal Server.

The Terminal Services only transfer the user interface of the application to the clients. Each client's keyboard inputs and mouse operations are returned back to the server.

For information on redundant system configurations with the Terminal Services, refer to the corresponding Microsoft documentation.



Advantages of the Terminal Services

- Use of robust hardware with low memory requirements for the clients, for example, without fans and hard disk in a dusty environment.
- Use of mobile clients with limited power consumption, e.g. handhelds, Palmtops, or PDAs.
- All applications are located on the server in a secure environment.
- Simple, central administration and system maintenance.
- Support of different operating systems, e.g. Windows CE, Windows 95.

2.2.3 Configuring the WebNavigator system

2.2.3.1 Overview of the configuration steps

Requirement

- The server and client are interconnected via TCP/IP.
- On the server
  - Internet Information Service is installed.
  - The WebNavigator Server is installed.
  - A license key is installed.
  - WinCC is installed.
- On the client
  - Internet Explorer is installed.
    or
  - WinCCViewerRT is installed.

Note

Remote communication

If the WebNavigator client is not running on the same computer as the WebNavigator server, check the settings in the "Simatic Shell" dialog.

Remote communication must be activated on both the Web client and the Web server.

Basic procedure

It is necessary to complete the following configurations in order to set up the WebNavigator system:

1. Configuration of the WinCC project.
   - Publish the WinCC process pictures for web access
   - Configure web settings
   - Create and administer users for access of the WebNavigator Client.
2. Configuration of the WebNavigator Server.
   - Configure the WebNavigator web page.
   - Configure the "Load Balancing" function, if necessary.
3. Consideration of the differences compared to the WinCC basic system and of restrictions.

2.2.3.2 Configuring the WinCC project

Publishing WinCC process pictures

Publishing WinCC Process Pictures

Introduction

If you wish to display WinCC process pictures on the WebNavigator Client or DataMonitor Client, you have to publish the pictures.

For publishing, use the WinCC Web Publishing Wizard. The wizard automatically performs the necessary adjustments in the project data.

You can open the WinCC Web Publishing Wizard in Windows via "PublishingWizard" or in the WinCC Explorer in the "Web Navigator" shortcut menu via "Web View Publisher".

Overview

The following types of publishing are possible:

- Publishing on the local computer.
  The current WinCC project folder is the source folder.
  The target folder is a subfolder, for example, "Projectname/WebNavigator/Pictures".
- Publishing on a dedicated web server with a server prefix.
  The source folder is the WinCC project folder on another WinCC computer that is defined by the server prefix.
  The target folder is located in the ".../WebNavigator/Pictures" subfolder of the WinCC project on the WinCC client.
  Pictures of your own project are saved with the name "<picturename>.PD_", while the pictures of other projects are saved with the name "<serverprefix>_ _<picturename>.PD_".
- Remote publishing.
  The source and target folders can be located on the same or different web servers.
  You can start the WinCC Web Publishing Wizard on the web server with the source and target folder or on a third web server.
- Remote publishing on a dedicated web server or WinCC client from a different, remote station.
  The project folder of the WinCC project must be released in Windows on the dedicated web server/WinCC client.
  You can start the WinCC Web Publishing Wizard remotely by opening the WinCC project of the web server/WinCC client on the remote computer.
  On the remote computer, you can publish the WinCC pictures from other WinCC servers to the dedicated web server.

The WinCC Web Publishing Wizard makes the following adjustments:

- Compression of the data for optimizing performance on the internet.
- Removal of project-specific data that is not required for the operation.

- Conversion of picture windows into ActiveX components.
- Conversion of scripts so that they can be run on the client.

Note

Publishing all serve and client process pictures

Always publish all the process pictures that you are using in the WinCC project:

- Publish the process pictures of the servers with the corresponding server prefix.
- Also publish the local process pictures of the clients without the server prefix.

If, for example, you are using a local process picture as the start picture of a WinCC client, select the published process picture without a server prefix on the web client.

Opening a published picture in Internet Explorer

In order to open a published picture directly, a website must already be set up.

1. In WinCC Explorer, select a published picture in the table area of the WebNavigator.
2. Select the "Copy URL to clipboard" command from the shortcut menu.
3. Paste the link from the clipboard in the address bar of Internet Explorer.

The file with the picture will open in Internet Explorer.

Publication of pictures with faulty scripts

If warnings or errors occur during publishing, the process pictures affected are marked in the output field of the WinCC Web Publishing Wizard.

Pictures with errors in the scripts are nonetheless published.

However, errors can still occur in Runtime and are reported by the WebNavigator Client.

The "PdlPad" tool can be started directly in the WinCC Web Publishing Wizard in order to check and, if necessary, correct the scripts used in the published pictures.

Publishing without project functions

Publishing without project functions can be an additional source of error.

When publishing with the WinCC Web Publishing Wizard, the selected project functions are always published.

When published without project functions, the pictures no longer contain any project functions. The project functions of the last publishing process are always available in the published pictures and, therefore, on the client.

The selection of project functions in the Publisher is independent of the pictures published in the same process.

If, for example, you modify selected project functions but not their interfaces, you need to publish all necessary project functions. In this case, you do not have to publish the picture.

Changing the process picture in the Graphics Designer

Process pictures edited in Runtime in the Graphics Designer on the WebNavigator Server must be published once again.

Only then is the changed process picture displayed on the WebNavigator Client.

You cannot republish unchanged files that have already been published. In the WinCC Web View Publishing Wizard, these files are displayed in gray.

Dedicated web server

To transfer the changes to the WebNavigator Client when using a dedicated web server, follow these steps:

1. Open the WinCC project remotely on the dedicated web server.
2. Open and save the modified picture in the Graphics Designer.
3. Publish the picture on the dedicated web server using the WinCC Web Publishing Wizard.

If you have modified a large number of pictures, you can simplify the process:

1. Call the "Convert pictures" function in the shortcut menu of the Graphics Designer.
2. Republish the changed pictures.

See also

How to publish WinCC process pictures using WinCC Web Publishing Wizard (Page 199)

Requirements for publishing pictures (Page 198)

Requirements for publishing pictures

General requirements

Naming conventions:

- The picture names may not contain double underscores, e.g. "__furnace_overview.pdl". The string before the double underscore will be interpreted as server prefix.
- The package names and/or symbolic computer names may not contain any double underscores.
- The package names and/or symbolic computer names may not end in an underscore.
- Moreover, the name cannot begin with a single underscore if you are using Basic Process Control.
  When using Picture Tree, the name string of higher-level pictures will have a "@PTN_" prefix. With the leading underscore, the picture name will then have a double underscore.

Header files:

- If two header files of the same name exist in the project path and in the installation path of WinCC, WinCC Web Publishing Wizard will use the header file from the installation path.

Microsoft .NET Framework:

- The WinCC Web Publishing Wizard requires the .Net Framework 4.0 or higher.

Republishing:

- You cannot republish unchanged files that have already been published. In the WinCC Web View Publishing Wizard, these files are displayed in gray.
  Only changed files can be published again.

Requirements for publishing on a dedicated web server

- The Web Navigator Server is installed on the WinCC client.
- The C and VB scripts of all WinCC servers to which the WinCC client has access have been copied to the WinCC client.
- The WinCC server packages that the WinCC client can access are loaded on the WinCC client.
- The standard server is configured for tags.
  Exception:
  - If you are working with Basic Process Control, you must not specify a standard server.
- If you wish to publish projects on other computers, these computers must be linked by means of network drives before you start the WinCC Web Publishing Wizard.
  This procedure enables the display of your projects in the selection dialog of the Publisher.
  You cannot enter the path directly.

Requirements for remote publishing

- Access to the target and source folders is enabled for the WinCC Web Publishing Wizard.
  WinCC creates these Microsoft Windows shares by default.
  Verify that these shares are not restricted, for example, valid for specific users only.
- If you wish to publish projects on other computers, these computers must be linked by means of network drives before you start the WinCC Web Publishing Wizard.
  This procedure enables the display of your projects in the selection dialog of the Publisher.
  You cannot enter the path directly.

See also

Publishing WinCC Process Pictures (Page 196)

How to publish WinCC process pictures using WinCC Web Publishing Wizard (Page 199)

How to publish WinCC process pictures using WinCC Web Publishing Wizard

Introduction

Use the WinCC Web Publishing Wizard to publish the process pictures that you created in Graphics Designer.

Procedure

1. Select "Web Navigator" in the navigation window of WinCC Explorer.
2. Select the "Web View Publisher" command in the shortcut menu.
   The WinCC Web Publishing Wizard is now launched.
   Click "Next".
   Alternatively, start the wizard in Windows via "PublishingWizard".
3. Under "Path to your WinCC project", select the WinCC project folder containing the pictures you want to publish.
   - The folder has the following format for publication on a dedicated web server:
     "\\<servername>\<serverprefix>_ _<projectname>"
   - If you want to publish from a remote station, select the source project containing the pictures.
     The source project is displayed by its enable name on the other WinCC Server.
     The folder has the following format:
     "\\<computer name>\<enable name>"

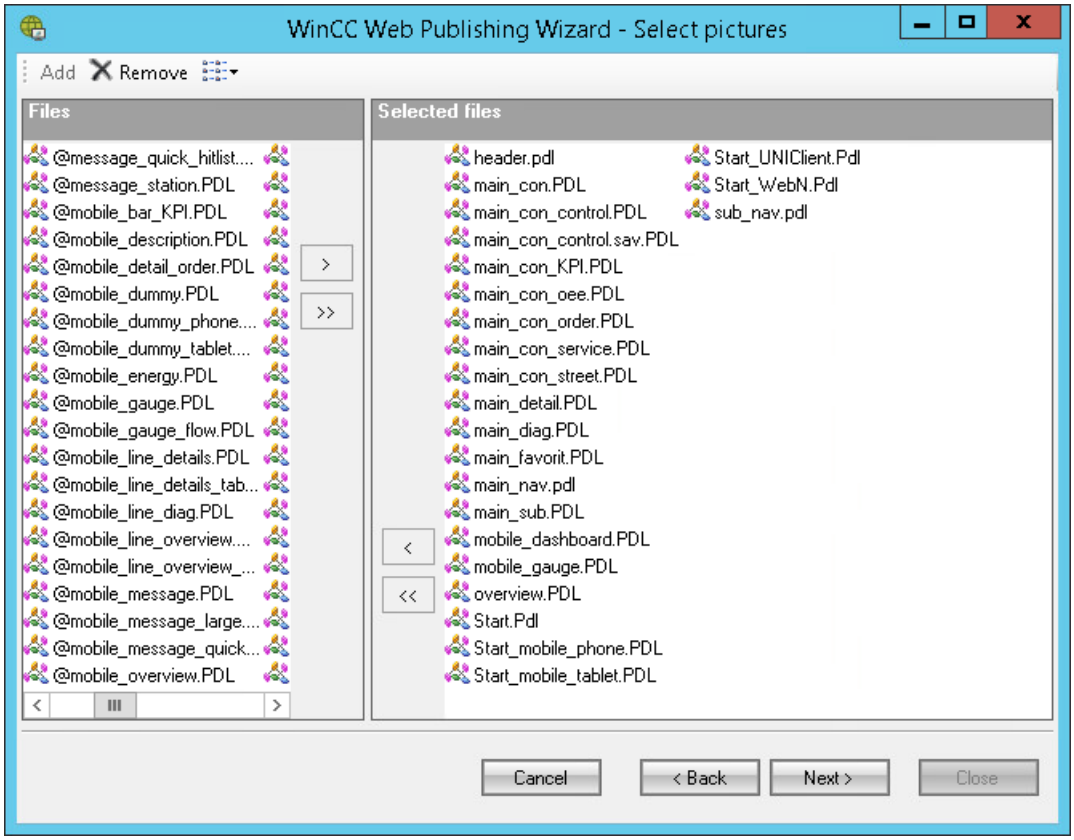
   To display hidden objects that are published automatically, activate the "Show hidden objects" option in the "Diagnostics" area.



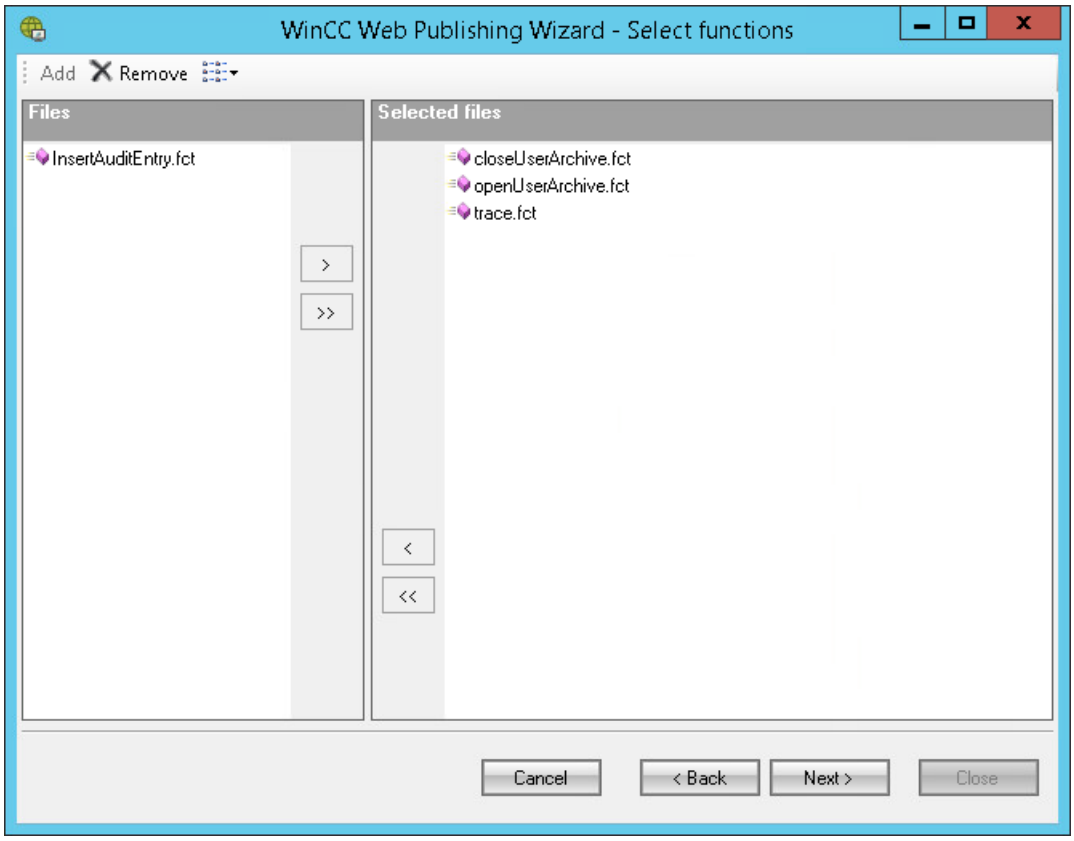
4. Activate the "Server prefix" option if you want to publish the pictures on a dedicated web server.
   Select the prefix of the WinCC Server that contains the WinCC project from the selection list.
   The list displays the prefixes of the servers whose packages are loaded on the WinCC Client.
   Deleting a prefix from the selection changes the paths displayed in the fields below.

5. Select the target folder for the published pictures under "Publishing folder of the WinCC web".
   - Accept the proposed folder within the WinCC project folder.
     Do not change the path specification unless you want to transfer pictures to a different project, for example. In this case, the prefix selection list will be expanded accordingly.
   - Verify the specified target project to which the published pictures are saved during remote publishing.
     The path definition will be updated when you select the source project.
     Should the target project be located on another WinCC server, select the corresponding project.

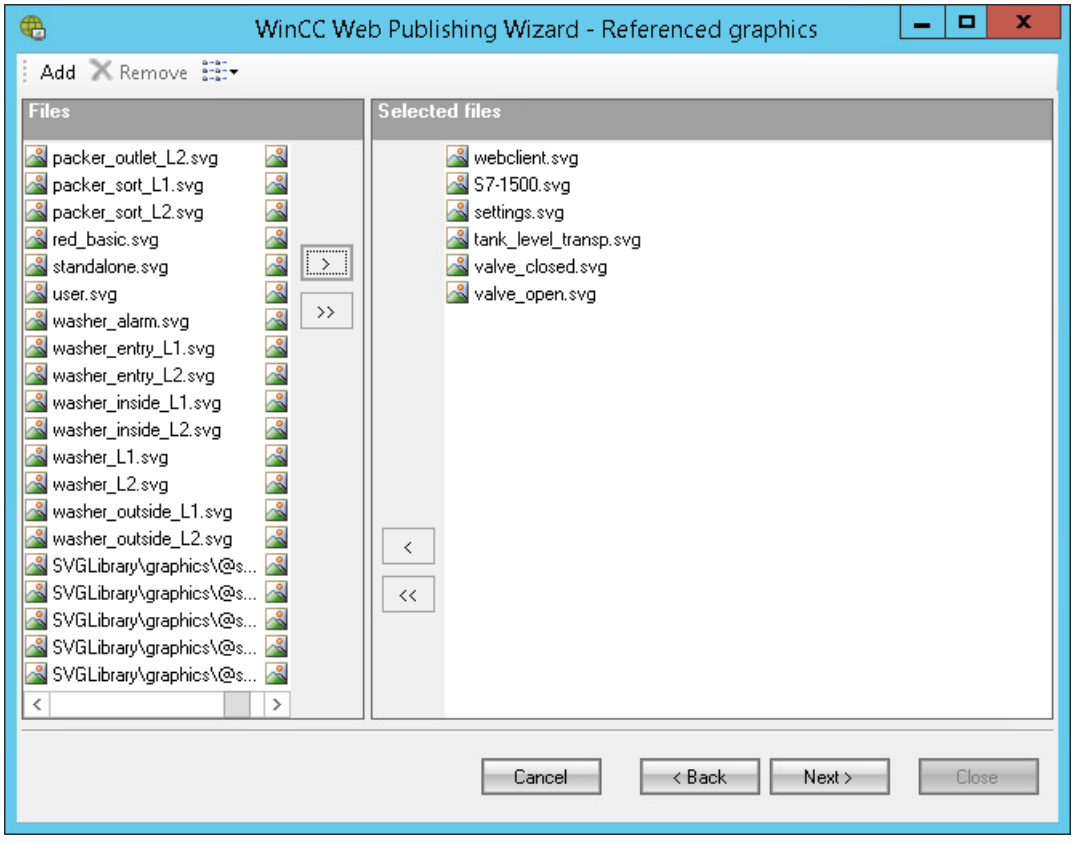
   Click "Next".
6. Move the pictures that you wish to publish to the "Selected files" list.
   Already published, unchanged pictures are grayed out and will not be published again.
   Click "Next".



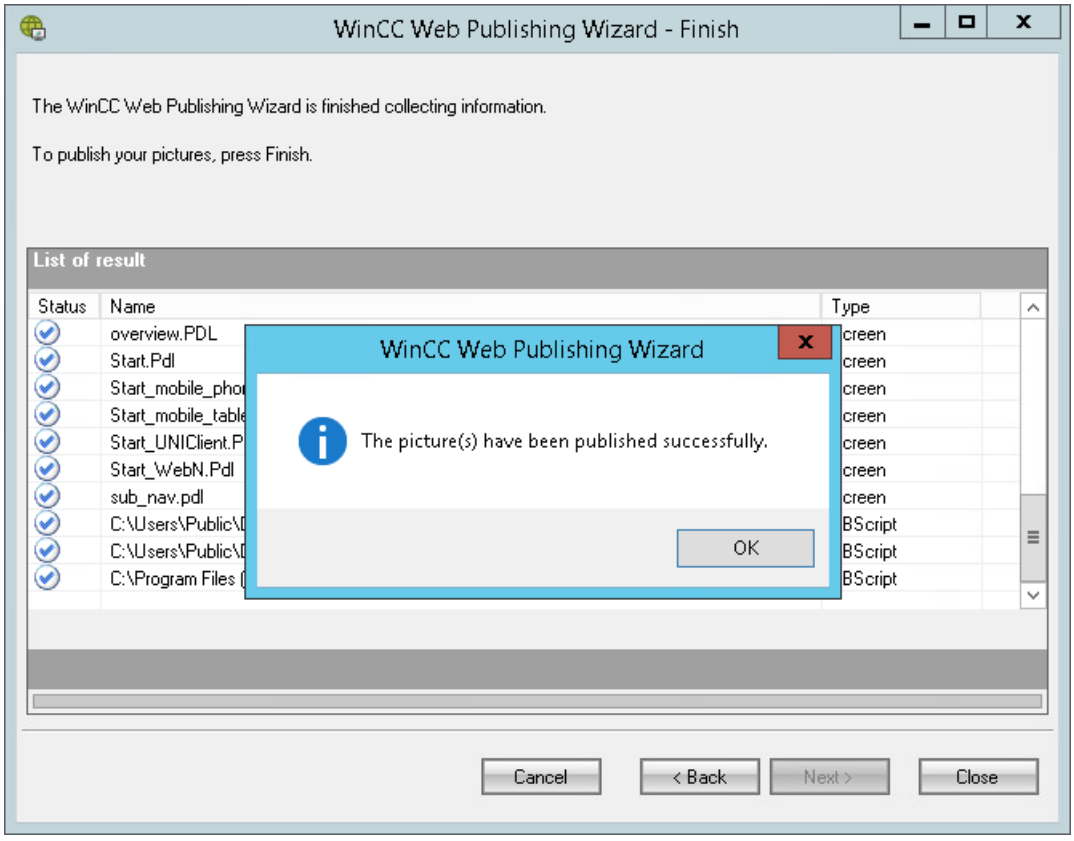
7. Move the C project functions which you use in the published pictures to the "Selected files" list.
   You cannot publish individual VB scripts.
   Already published, unchanged functions are grayed out and will not be published again.
   Click "Next".



8. Move the referenced graphics that you wish to publish to the "Selected files" list.
   The referenced files are in the "GraCS" folder or in subfolders of "GraCS".
   Already published, unchanged graphics are grayed out and will not be published again.
   Click "Next".



9. To start publishing the pictures, click "Finish".
   The selected files are published.



Result

You have successfully published the pictures and functions.

The results list displays the status of all published objects.

You can click an object to view additional object information.

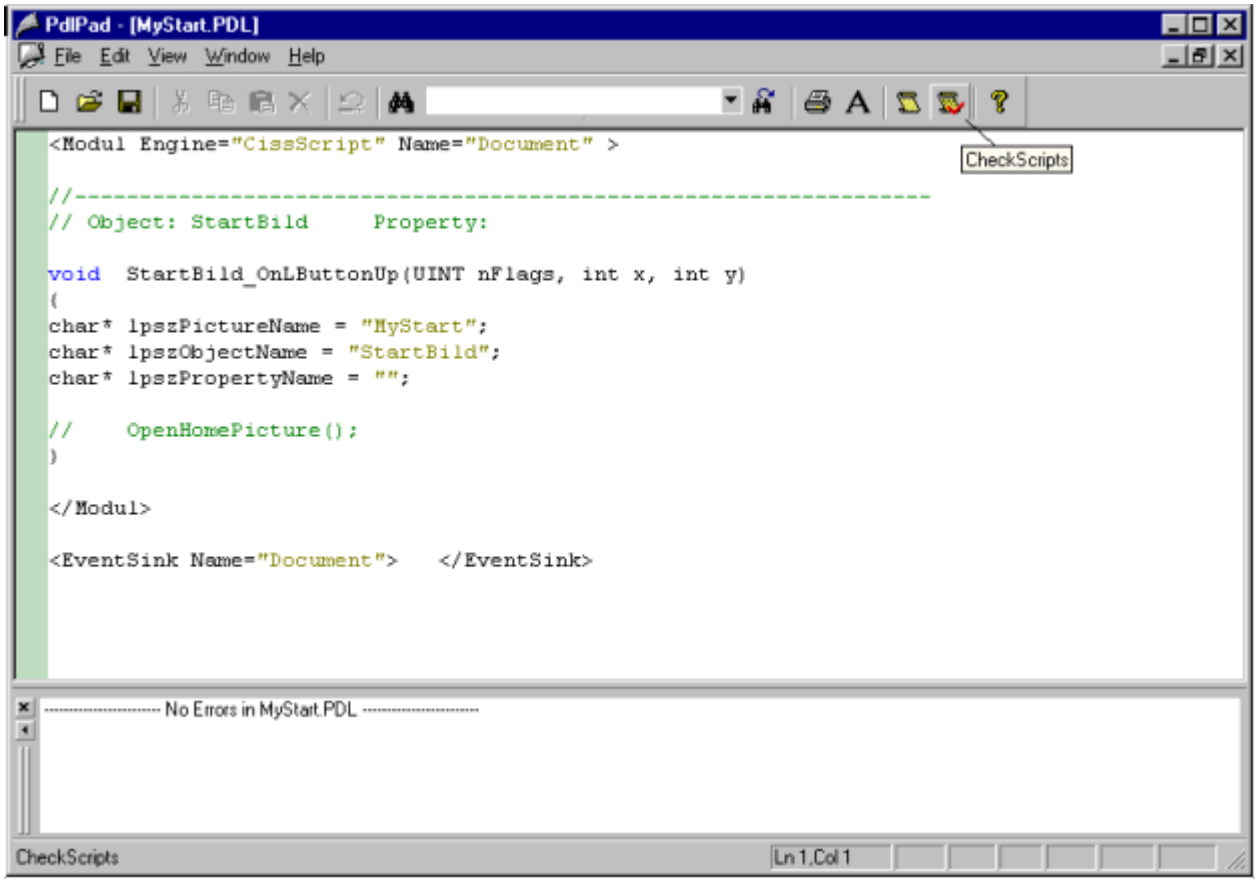
You can trace publishing using the "<projectfolder>\WebNavigator\WizardLog.txt" file.

Checking the scripts using "PdlPad"

The "WizardLog.txt" log file contains information about errors in the scripts used.

You can also find errors using the "PdlPad" debugger.

1. Open "PdlPad" by double-clicking on the affected object in the results list in the WinCC Web Publishing Wizard.
   The script of the published picture is displayed.
   Alternatively, open "PdlPad" in the "Siemens Automation" program group.



2. Click in order to check the script.
3. You can temporarily correct and save the scripts.
   These corrections are only saved to the published pictures, not in the process picture of the WinCC project.

See also

Publishing WinCC Process Pictures (Page 196)

Requirements for publishing pictures (Page 198)

Configuring web settings

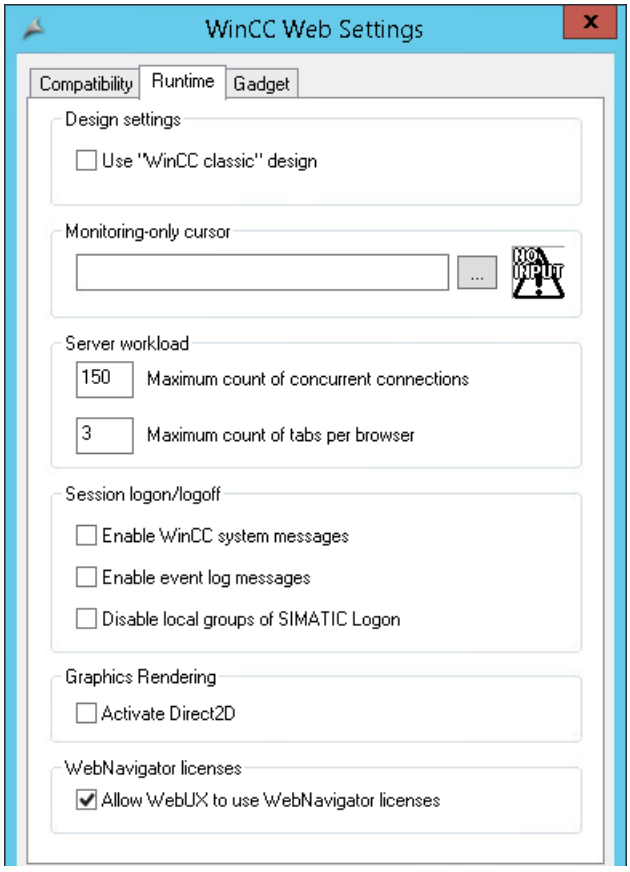
Configuring runtime settings

Introduction

You can configure the behavior in Runtime in the "WinCC web settings" dialog.

Opening the dialog

1. Select "WebNavigator" in the navigation window of WinCC Explorer.
2. Select the "Web settings" command from the shortcut menu.
3. Change to the "Runtime" tab in the "WinCC web settings" dialog.



4. Select the required settings.
5. Click "OK" to close the dialog.

Use "WinCC Classic" design

Select this option to improve the performance of the WebNavigator Client.

The original style of WinCC V6 is now used.

"Monitoring only" cursor

A default cursor shows that the user of the WebNavigator Client is not allowed to operate Runtime.

The user has been assigned system authorization no. 1002 - "Web access - monitoring only" in the WinCC User Administrator.

If you want to use your own cursor, enter its path and file name. You can also use the "..." button to navigate to the file of the selected cursor.

Server workload

Maximum number of simultaneous connections

Specify the maximum load on the WebNavigator Server:

- Specify the maximum number of connections for simultaneous access to the server. The number of configured gadgets is included in the count.

The number of simultaneous connections can exceed the number of WebNavigator licenses if, for example, several tabs are opened in the browser window.

A limitation of "50" is necessary, since the server guarantees a maximum of 50 connections in normal operation without additional loads. The value must not be less than the actual number of WebNavigator licenses.

Maximum number of tabs per browser

Specify the maximum number of tabs per browser window.

Multiple tabs in a browser window are counted as one WebNavigator license.

Session logon/logoff

Activate WinCC system messages

The system messages "No. 1012400" or "No. 1012401" are output and archived at the login/ logoff of a WebNavigator Client.

Enable event log messages

A successful session login or logoff is recorded in the Windows event viewer.

Disable local groups of SIMATIC Logon

The WebNavigator Server can only be accessed by groups in the same domain.

Hardware accelerated graphics representation

The Direct2D representation is activated for the entire project on the WebNavigator clients.

WebNavigator licenses

The "Allow WebUX to use the WebNavigator licenses" option enables a better load distribution.

When the WebUX licenses are occupied, the user can log on to the WebUX server with a WebNavigator license.

WinCC pictures as gadget

Gadgets are mini applications for the Windows Sidebar.

On a WebNavigator Client, you can display published WinCC process pictures in a gadget.

Basic procedure

1. Specify the WinCC pictures for the gadget.
2. In Runtime, the WebNavigator Server successively generates a cyclic snapshot image "pdlImage.jpg" of each picture.
   The file is saved to the "\WinCC\Webnavigator\Server\Web\image_gadget" folder.
3. The gadget accesses the file at cyclic intervals.
   In each case, the currently generated picture is displayed alternately.

Unsupported objects

The following objects are not displayed in a gadget:

- Global Script Diagnostics Window
- WinCC Media Control
- WinCC Controls from migrated projects that have been installed with versions before WinCC V7.0

Note

No operation in the gadget picture

The pictures displayed cannot contain any user interaction.

This includes, for example, calling logon dialogs or notice dialogs by means of functions.

You cannot operate the picture that is displayed in the gadget.

Update cycles

During the configuration you determine the time interval in the "Update Cycle" field, in which the server recreates the displayed pictures.

The new picture is accessed at the start of the time interval. The current process values are read from the controller.

At the end of the interval the snapshot is created and stored in "pdlImage.jpg".

NOTICE
Short update cycles place a high load on the WebNavigator system Set a sufficiently long update cycle rate when an AlarmControl is displayed or a large number of process values for trend views are updated in the gadget. If a process value has not yet been read from the controller at the time of the snapshot, the gadget displays the start value instead of the actual process value.

Example

Two process pictures are displayed with an update cycle of 10 seconds:

Time [s]	Image
10	Process_Picture_1 -> pdlImage.jpg
20	Process_Picture_2 -> pdlImage.jpg
30	Process_Picture_1 -> pdlImage.jpg
40	Process_Picture_2 -> pdlImage.jpg

Selecting the picture detail

The process picture is usually too large for the display in the Gadget.

During the configuration you determine which section of a picture is displayed in the gadget.

Ensure that the clipping has the same width and height as the gadget, or at least the same width/height ratio.

Otherwise, the picture will be distorted in the gadget or displayed with a black frame.

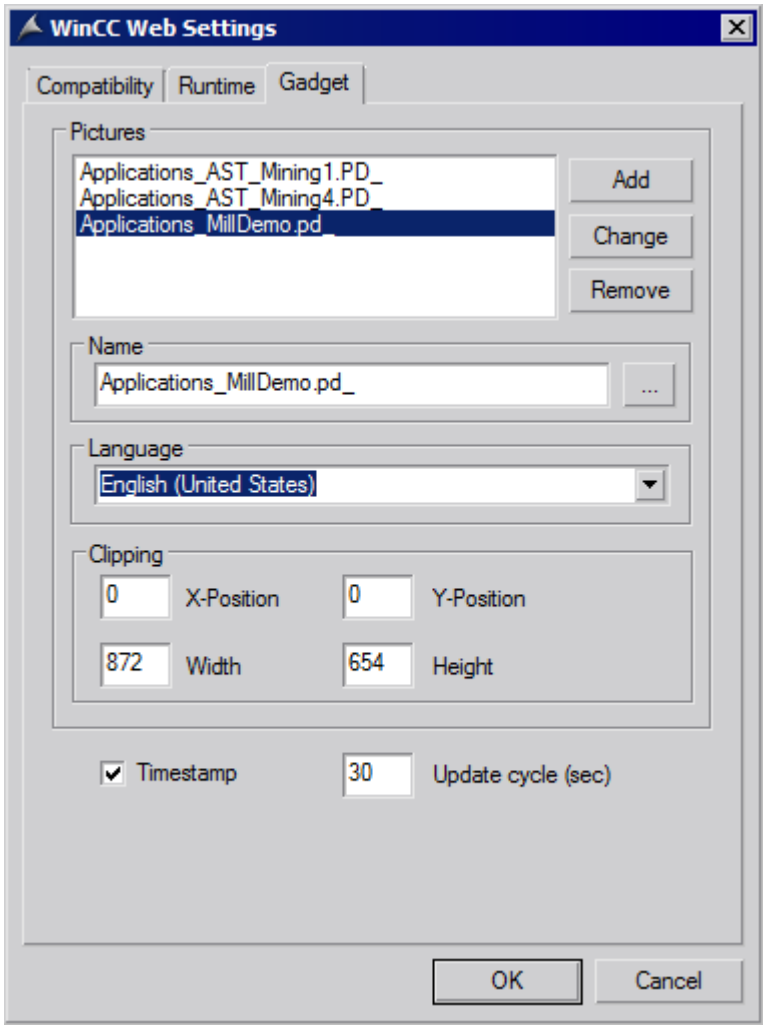
Requirement

- The Windows operating system must support the use of gadgets.
- The WebNavigator Client must be installed on the WebNavigator Server to enable configuration of the gadgets.

Configuring the gadget on the WebNavigator Server

1. Select "WebNavigator" in the navigation window of WinCC Explorer.
2. Select the "Web settings" command from the shortcut menu.

3. Change to the "Gadget" tab in the "WinCC web settings" dialog.



4. Use the "..." button to select a published picture under "Name".
5. Specify the settings for the picture:
   - Runtime language
   - Picture detail
6. Click "Add".
   The picture is inserted into the "Pictures" list.
7. If necessary, add additional images.
8. To change the language or picture detail for a picture, select the picture in the list.
   Edit the settings and click "Change".
9. In the "Update Cycle" input field, select the time interval in which the server cyclically recreates the pictures.
10. If you want to display the date and time of the picture generated in the gadget, select the option "Time stamp" option.
11. Close the dialog with "OK".

Displaying gadgets on the WebNavigator Client

A pre-configured gadget for displaying WinCC pictures is available in the installation folder at "\WinCC\Webnavigator\GADGET" on the WebNavigator Client.

To access the gadget with the WebNavigator Client, proceed as follows:

1. Double-click "WebNavigator.gadget" in the installation folder at "\WinCC\Webnavigator\GADGET".
   The gadget is installed in the Windows Sidebar.
2. Specify the update cycle in which the gadget loads a picture from the WebNavigator Server.
3. Enter the address of the WebNavigator Server.
   The Gadget establishes a connection to the WebNavigator Server.
4. If necessary, drag-and-drop the Gadget onto the desktop.

Web settings for compatibility

Working with migrated projects

The following restriction existed for C scripts in WinCC/Web Navigator prior to V6.2. Instead of the complete path and picture name, the following parameters and functions returned only the picture name on the WebNavigator Client:

- Parameter "lpszPictureName"
- Function "GetParentPicture"
- Function "GetParentPictureWindow"

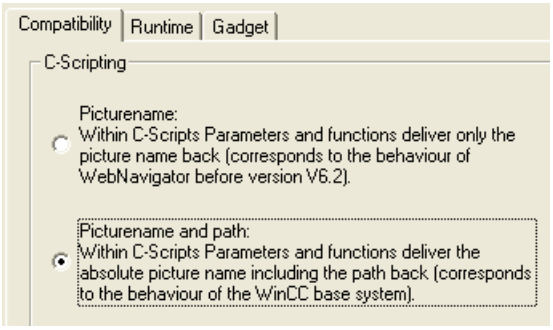
As of WinCC/WebNavigator V6.2, you can enable absolute addressing and therefore revoke this restriction for the WebNavigator Client, if required.

Select the desired response for the execution of C scripts:

- Picture name: Absolute addressing is disabled by default. The functions or parameters only return the picture name. Compatibility with older versions of WebNavigator Client and the C scripts created for these is maintained.
- Picture name and path: The absolute picture name is returned with the complete path. This response corresponds with the WinCC basic system. There is no need to modify the C-Scripts used on the WinCC basic system for execution on the WebNavigator Client.

Procedure

1. Select "WebNavigator" in the navigation window of WinCC Explorer. Select the "Web settings" command from the shortcut menu.
2. Change to the "Compatibility" tab in the "WinCC web settings" dialog.



3. Activate the desired response of the C-Scripts.
4. Close the dialog with "OK".

Administering the users for WebNavigator Client

Introduction

Assign authorizations to the user for operator control and monitoring for access to a WinCC project as WebNavigator Client.

You can select a start picture and Runtime language for each user.

Use the "Automatic Logout" function to specify the timeout for access of the WebNavigator Client to the WinCC project. The user will then be logged off automatically.

Automatic logout

The automatic logout provides the following advantages on a WebNavigator system:

- Access from the WebNavigator client to the WinCC project is subject to timeout.
  This enhances system security, particularly when using unattended clients that access the WebNavigator Server.
- The license used by the client is released again after the automatic logout.
- The current load on the WebNavigator Server is reduced after the automatic logout.

You can view the status of clients connected to a WebNavigator server on the page "http://<servername>/status.html".

Manual logout using the ODK function "PWRTLogout"

You can also log off users from the WebNavigator client with the ODK function "PWRTLogout()".

You will find a description of this function in the ODK documentation under "ODK User Administrator > Functions of the RT > Functions for logging in/out".

WinCCViewerRT / Internet Explorer: Different behavior

After the manual logoff, the WebNavigator changes to a page with the "Logon" and "Close" options.

When the "Log on" button is clicked, the browsers react differently:

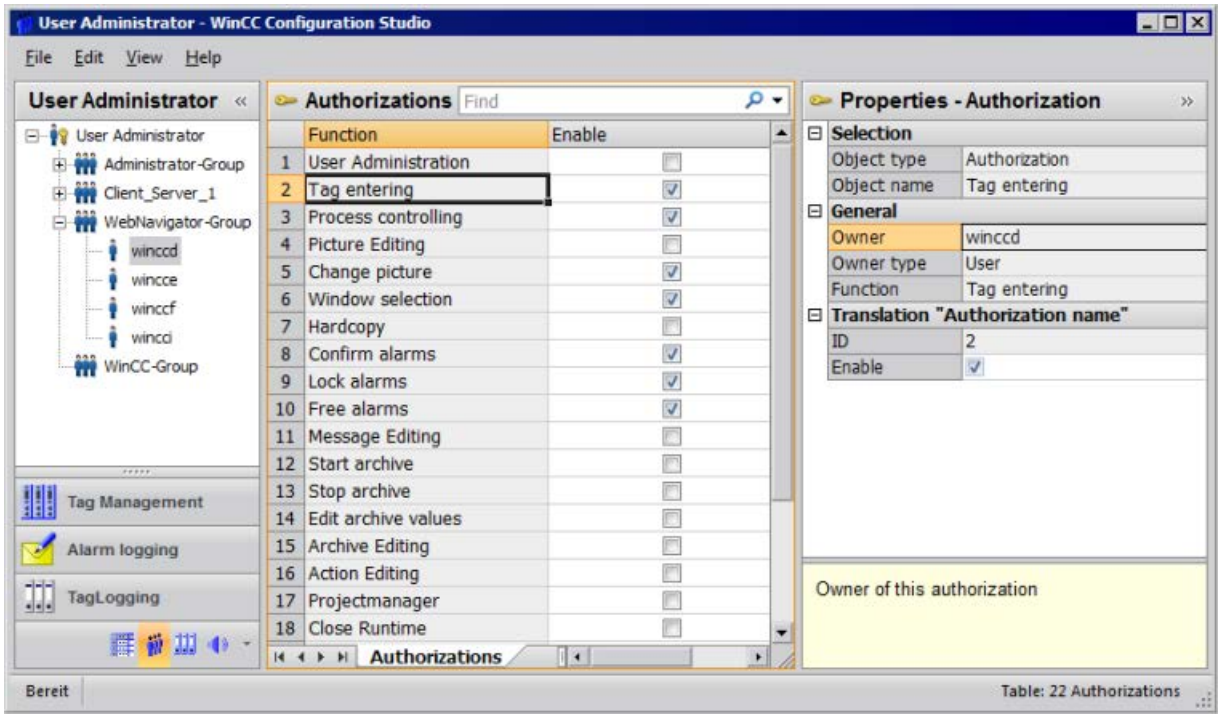
- WinCCViewerRT:
  If user name and password are configured in WinCCViewerRT, the stored user is automatically logged on.
- Internet Explorer:
  The logon dialog for entering the user name and password opens.

Requirement

- The WinCC process pictures were published using the WinCC Web Publishing Wizard.
- WinCC User Administrator is open.
- A user is created.
- System authorizations of the user are specified.
- The domain-specific authorizations are specified if the WinCC option "Basic Process Control" is used.

Procedure

1. Select the desired user in the navigation window.



2. The user's operating authorizations are displayed in the table window.
   If system authorization "Web access - monitoring only" has been enabled, the user is only allowed to monitor the WinCC project when acting as WebNavigator Client.
   If this system authorization is disabled, the other operating authorizations assigned to the user are valid. For this reason, check the settings of the other authorizations.
3. If applicable, specify the time until automatic logout in the "Logout" field in the user properties.
   To get to the properties, select the user group in the navigation window, and then select the user in the table window.
   - If "None" is entered, automatic logout is disabled.
   - The time configured for automatic logout starts at the time of logon if you select the "Absolute" option.
     The time expires independent of user actions.
   - If you select the "Inactive" option, the configured time starts with the last keyboard or mouse operation by the user.
     The user is automatically logged out after this period of inactivity.

   The "Automatic logout: disconnected from server" message is displayed after the automatic logout.
   You can refresh the page by pressing "F5" and reconnect with the WebNavigator Server.
4. In the properties of the user, activate the "WebNavigator" option.
5. Select the start picture for the user in "Web start picture" via the dropdown list.
   You can only select published pictures as start pictures.

6. Select the Runtime language for the user in "Web language" via the dropdown list.
   The languages configured in the Text Library are available for selection.
7. Close the User Administrator.

Restrictions when using SIMATIC Logon

The WebNavigator Server supports SIMATIC Logon. However, the following restrictions apply:

- If the user is a member of several user groups, a random group in which a start picture is configured will be selected.
  You cannot configure which group should be selected.
  The authorizations of all groups in which the user is a member are taken into account.
- You must add the domain prefix to the user name in the logon dialog of Internet Explorer: "<domain>\<username>".
- Password expiration during a client session has no influence on the operability of the WebNavigator Client.
- You can only change the password on the WebNavigator Server.
- The WebNavigator Client does not support the following functions when SIMATIC Logon is used on the WebNavigator Server:
  - ODK functions
  - User Administrator

See also

Diagnosis of the Connections with "Status.html" (Page 257)

2.2.3.3 Configuring the WebNavigator Server

Configuring the WebNavigator web page

WinCC Web Configurator

Introduction

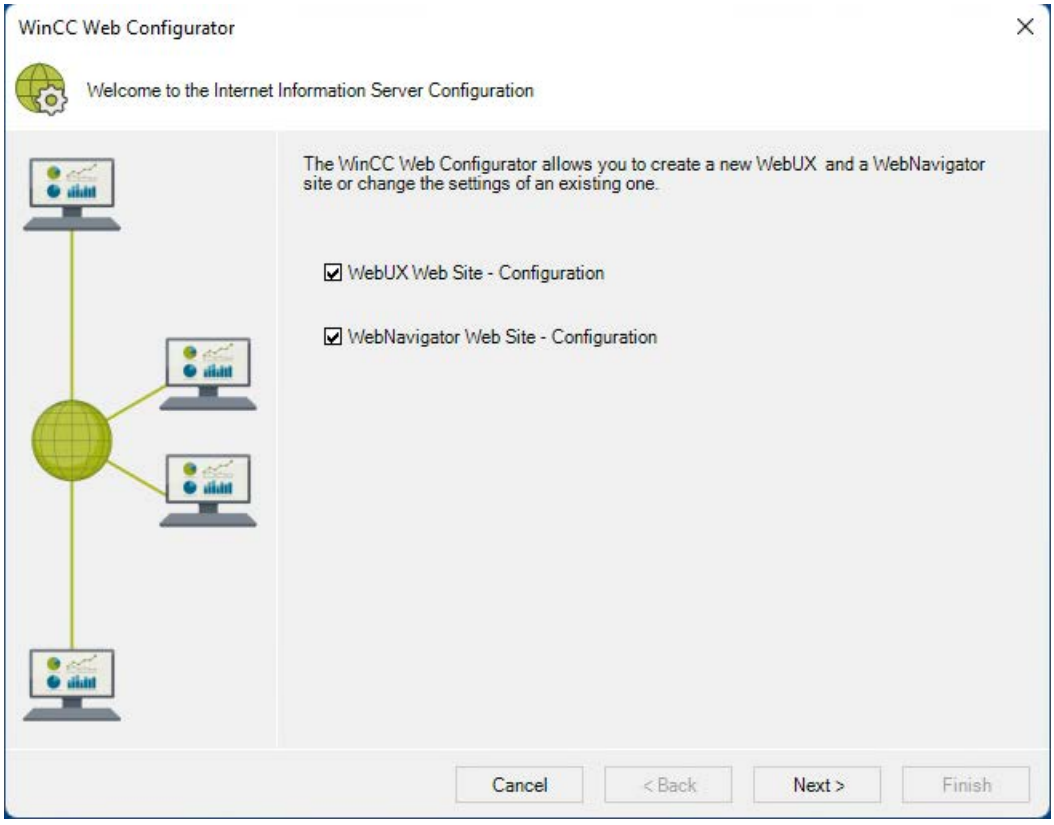
The WinCC Web Configurator is used to set up and manage the Microsoft Internet Information Service (IIS).

Requirement

- The WebNavigator server is installed.
- The Microsoft Windows component "Internet Information Service" is installed.

Starting WinCC Web Configurator

1. Select "WebNavigator" in the navigation window of WinCC Explorer.
2. Click the "Web Configurator" command in the shortcut menu.
   Alternatively, click on the "Web Configurator" link on the desktop or select the entry "WebConfigurator" in the "Siemens Automation" program group.



3. Enable the "WebNavigator Web Site - Configuration" option.

   Note

   The configuration for the WebUX web page and the WebNavigator web page can be carried out in one operation.

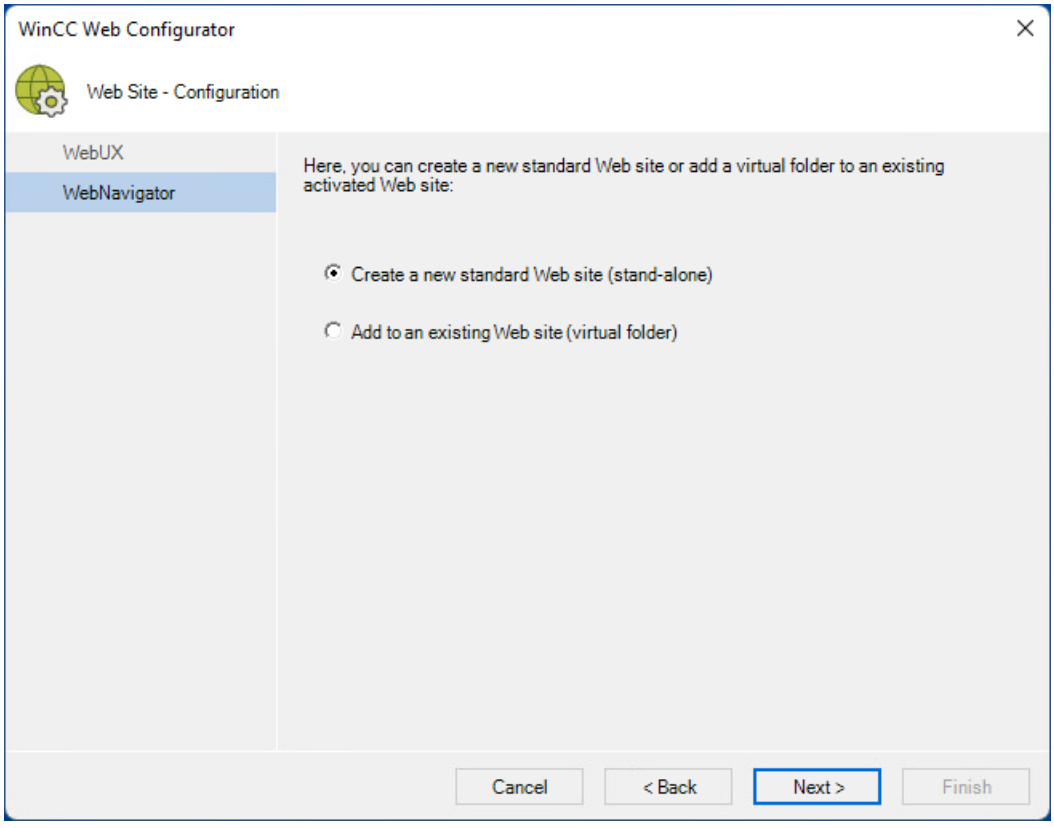
4. Click "Next".

Initial configuration using WinCC Web Configurator

On the start page, select "WebNavigator Web Site - Configuration".

During the course of initial configuration, you specify whether you wish to create a new default web page or a new virtual folder.

- If you operate only the WebNavigator web page on the server, select the "Create a new standard Web site (stand-alone)" option.
- If you want to add the WebNavigator web page as a subfolder to an existing web page, select the "Add to an existing Web site (virtual folder)" option.
  This option may be necessary if the current default web page must remain active or if the operating system only supports operation of one web page.



Note

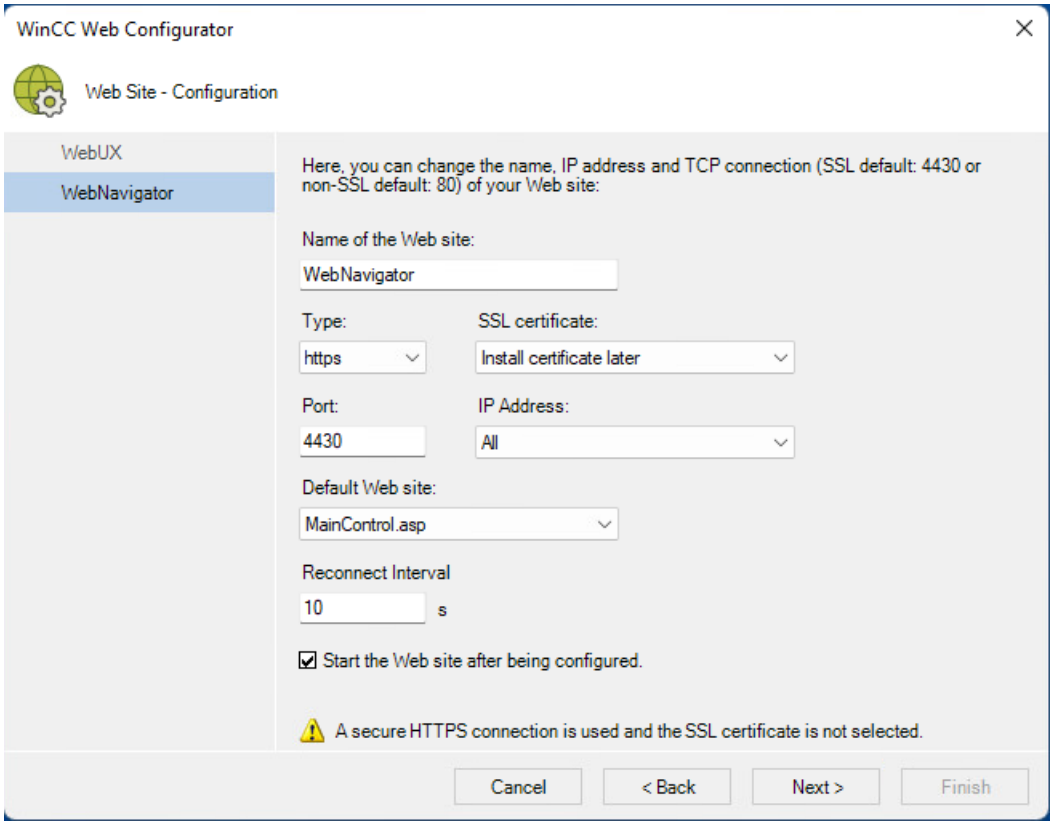
Default Web Page on a 64-Bit Operating System

If you operate the default web page on a 64-bit operating system, you must allow 32-bit applications in the "DefaultAppPool" application pool in the advanced settings of the "Default Web Site" of IIS Manager.

Managing the configuration in WinCC Web Configurator

If IIS has already been configured, edit the settings of the existing web server or the virtual folder using the Web Configurator.

The Web Configurator automatically detects whether a configuration already exists and applies the settings.



Note

Web folder was modified or deleted

If you have deleted the web folder, restart the computer before you create a new web folder with Web Configurator.

Note the following:

- If web communication fails after you have changed the web folder, the Web Configurator attempts to adjust the settings.
- If this action is unsuccessful, proceed as follows:
  1. Exit the IIS console.
  2. To delete the WebNavigator web page, enter the following command line in the Microsoft Windows "Run" window:
  "<wincc_installationpath>\WebNavigator\Server\bin\WinCCWebConfigurator.exe" deinstall="yes".
  3. Start the desired web page from the IIS console, for example, the standard web page.

Internal user "WNUSR_DC92D7179E29"

The user "WNUSR_DC92D7179E29" is created during the initial configuration of the WinCC/WebNavigator server with the WinCC Web Configurator.

The user is only used internally. To maintain the functioning of the Web server, do not delete or modify this user.

To increase the security of the system, change the password for the user on a regular basis. To do this, use the tool "CCSetWebNavPwd.exe".

Password requirements

Make sure that the passwords meet the standard security guidelines.

Minimum requirements:

- 8 characters
- 1 upper-case letter
- 1 lower-case letter
- 1 digit
- 1 special character

Requirement

- You have administrator rights on the Web server.
- The web page is configured with the WinCC Web Configurator.

Procedure: Change password

1. Open the following file in the installation path:
   – ...\WinCC\Webnavigator\Server\bin\CCSetWebNavPwd.exe

   The Microsoft Windows command prompt opens.
2. Enter the new password.
3. Confirm the password.
4. To close the window, press any key.

To call help on the tool, enter the following line in the Microsoft Windows command prompt:

- CCSetWebNavPwd.exe /?

Setting a password for the configuration

To define your own password before configuration, you can create a temporary key in the PC's registry.

Creating a new default web page

Introduction

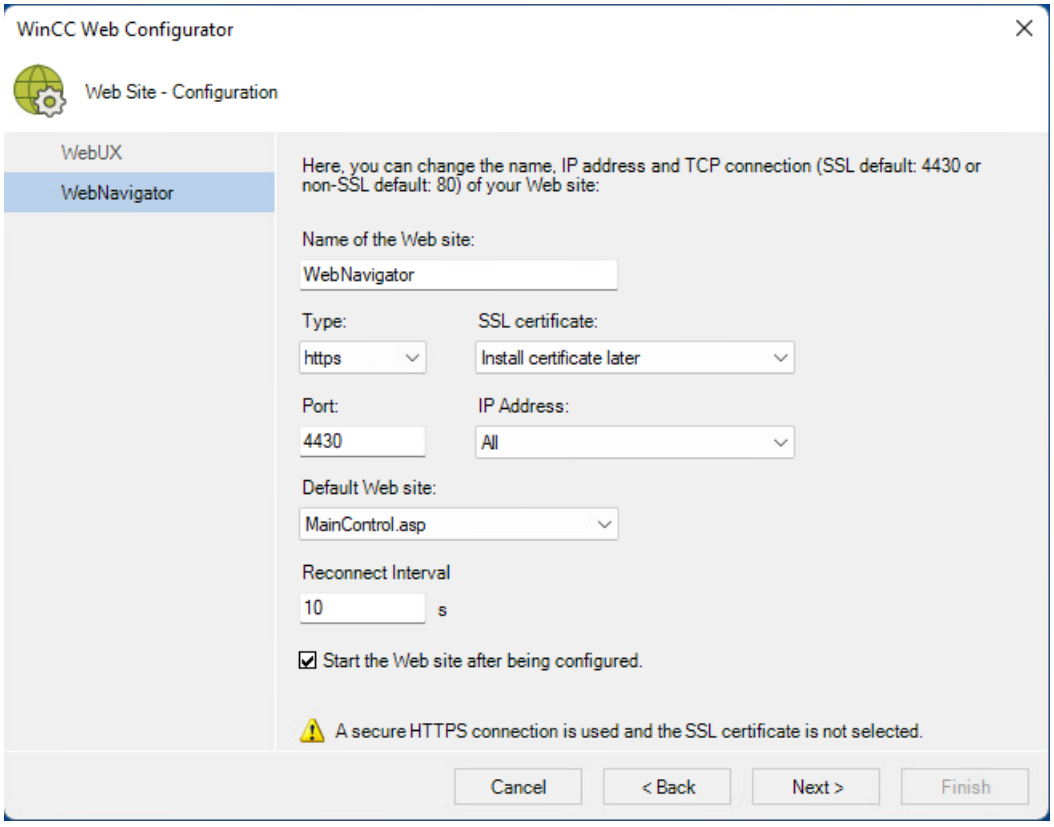
You can create the standard web page using the WinCC Web Configurator.

Requirement

- The WebNavigator server is installed.
- The Windows "Internet Information Service" component is installed.
- WinCC Web Configurator is started.

Procedure

1. Select the "Create a new standard web page (standalone)" option and then click "Next".



2. Select "Name of the web page" and enter the name.
3. Enter the number of the port used for access in the "Port" field.
   The standard SSL port "4430" is set by default.
   To increase the security of your communication, configure the WebNavigator server in such a way that only HTTPS connections are supported.
   If you select a different port number, that number has to be appended to the server name in the address bar of Internet Explorer when a WebNavigator client logs on, e.g. "https://<server name>:<port number>".
4. At "IP address", specify whether the computer is to be available on the Intranet or Internet or on both networks.
   Use only the addresses that are available in the selection list.
   If the computer is to be accessible over the intranet and Internet, select "All".
5. Select the default web page to be displayed on the WebNavigator client after selection of the web server.
   - MainControl.asp
     Opens the "Download Hub" WinCC Web Navigation interface and the start picture specified in the user administration.
     You need the Web Navigation interface to download plug-ins, for example.
   - WebClient.asp
     Opens the start picture you specified in the user administration.

6. Specify the time interval for automatic connection setup after a connection failure.
   A time setting of "0" disables the "Automatic reconnection" function.
7. Specify whether the web page is started once the configuration is completed.
8. If you have not activated a firewall, or if the firewall has already been configured, click "Finish".
   If you have installed a firewall, click "Firewall".
   - The settings for your firewall are opened, e.g. Windows "Control Panel\System and Security\Windows Defender Firewall".
   - Modify the settings to meet your requirements.
   - Click "Finish".

Result

You have created the Web folder.

The web page is activated.

You have configured the internal user "WNUSR_DC92D7179E29" To increase the security of the system, change the password for the user on a regular basis with the tool "CCSetWebNavPwd.exe".

See also

Working with the WinCC Download Hub (Page 243)

Configuring the firewall (Page 224)

Creating a virtual folder (Page 221)

Creating a virtual folder

Introduction

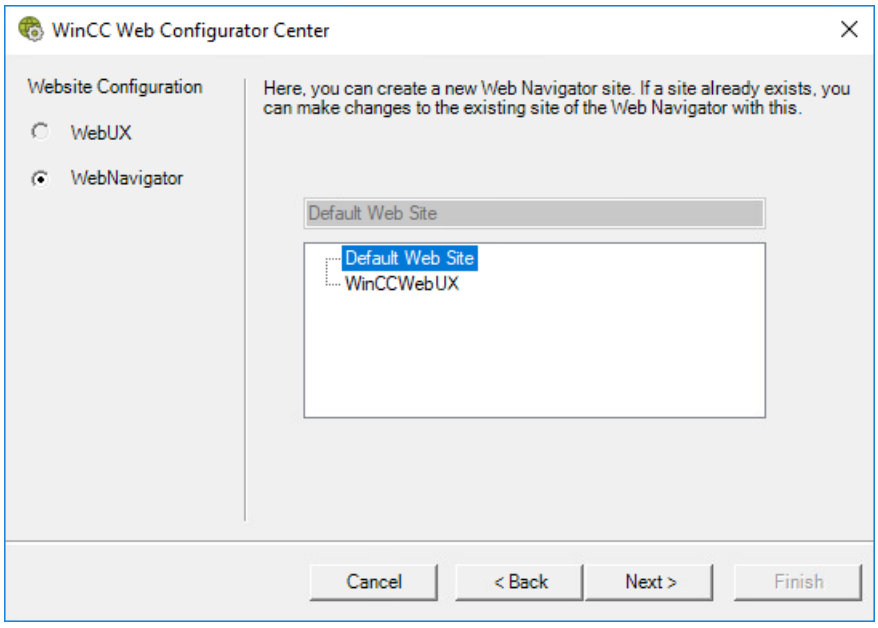
You can create a virtual folder using the WinCC Web Configurator.

Requirement

- The WebNavigator server is installed.
- The Windows "Internet Information Service" component is installed.
- WinCC Web Configurator is started.

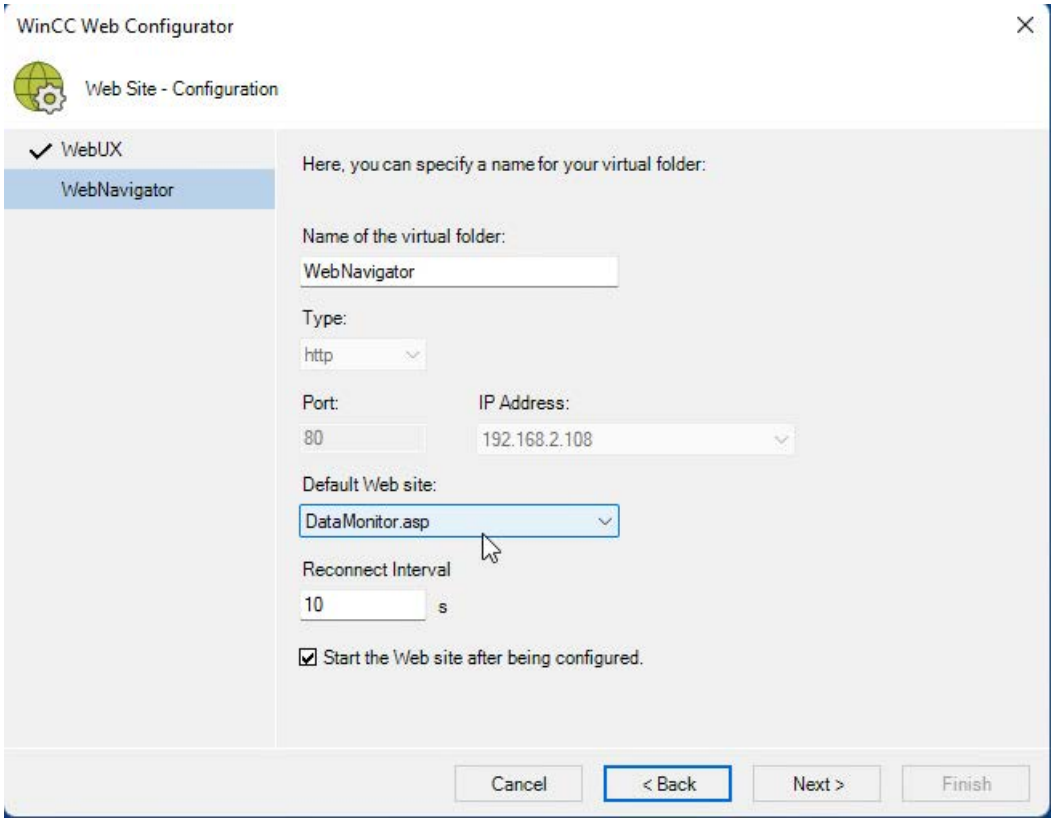
Procedure

1. Enable "Add to existing web (virtual folder)".
   Click "Next".
2. Select the active web page to which you want to add the virtual folder.



3. Click "Next".

4. Enter the name for the web page in "Name of the virtual folder".



5. Web Configurator applies the IIS settings as port number and IP address.
6. Specify the time interval for automatic connection setup after a connection failure. A time setting of "0" disables the "Automatic reconnection" function.
7. Specify whether the web page is started once the configuration is completed.
8. Click "Finish" to complete the configuration.

Result

The virtual web folder has been created.

The web page is activated.

On the WebNavigator client, add the name of the virtual web folder to the URL to enable access to the web page, e.g. "https://WebServer/WebNavigator".

No active web page

If no active web page is found, the Web Configurator terminates with a message.

Activate a web page before you restart the Web Configurator. You can find more information under "Checking the activated web page (Page 226)".

See also

Checking the activated web page (Page 226)

Creating a new default web page (Page 219)

Configuring the firewall

Introduction

This section describes how to activate "HTTP" and "HTTPS" services using Windows Server 2016 as an example.

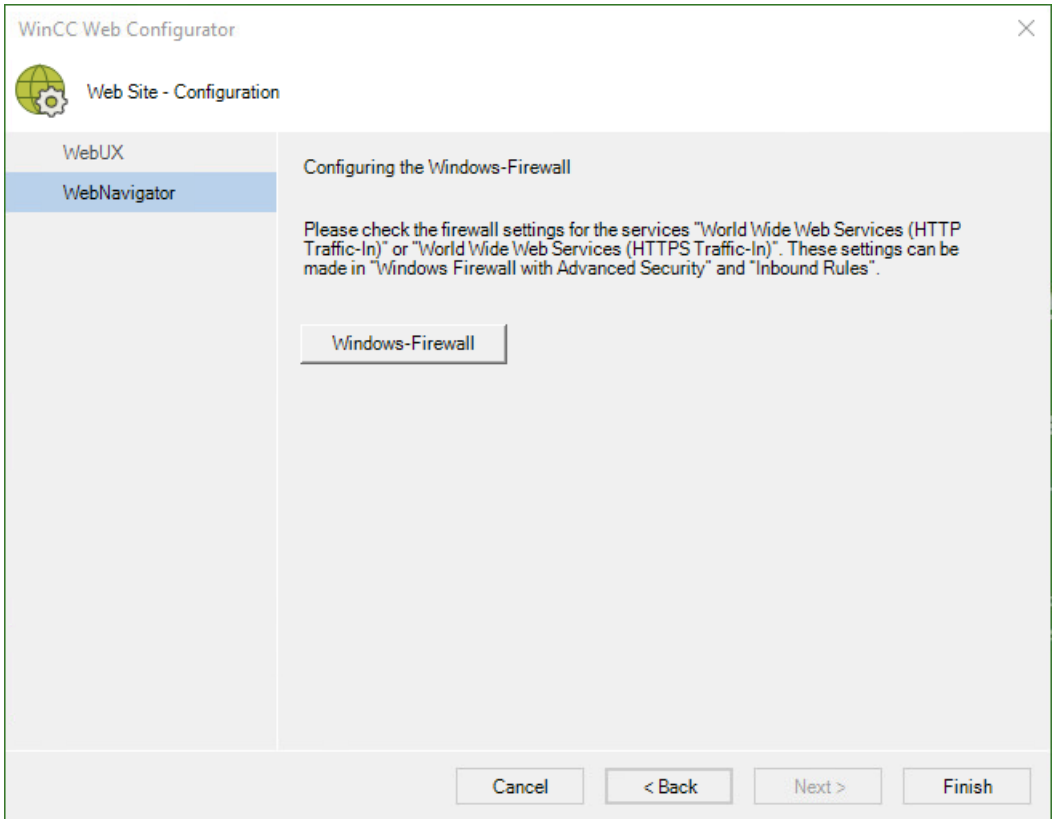
Consult your network administrator if you want to set up the Windows Firewall with advanced security or for a different port.

Requirement

- You have created a default web page with Web Configurator.
- The Firewall is activated.
- The user who is logged has Windows administrator rights.
- You have to set up the HTTPS service in IIS if you are using it for WebNavigator.
  More information: "WinCC Installation Notes / Release Notes > WinCC/DataMonitor Installation Notes > Setting up a secure connection via HTTPS (Page 117)"

Procedure for the default port

1. Change to the "Configuring the Windows Firewall" page in the "WinCC Web Configurator".



2. Click the "Windows Firewall" button.
   The "Windows Firewall" dialog opens.
3. Click "Allow apps to communicate through Windows Firewall".
4. Activate "Secure World Wide Web Services (HTTPS)".
5. Close all Windows dialogs with "OK".
6. Click "Finish" in the Web Configurator.
   The server configuration is completed.

See also

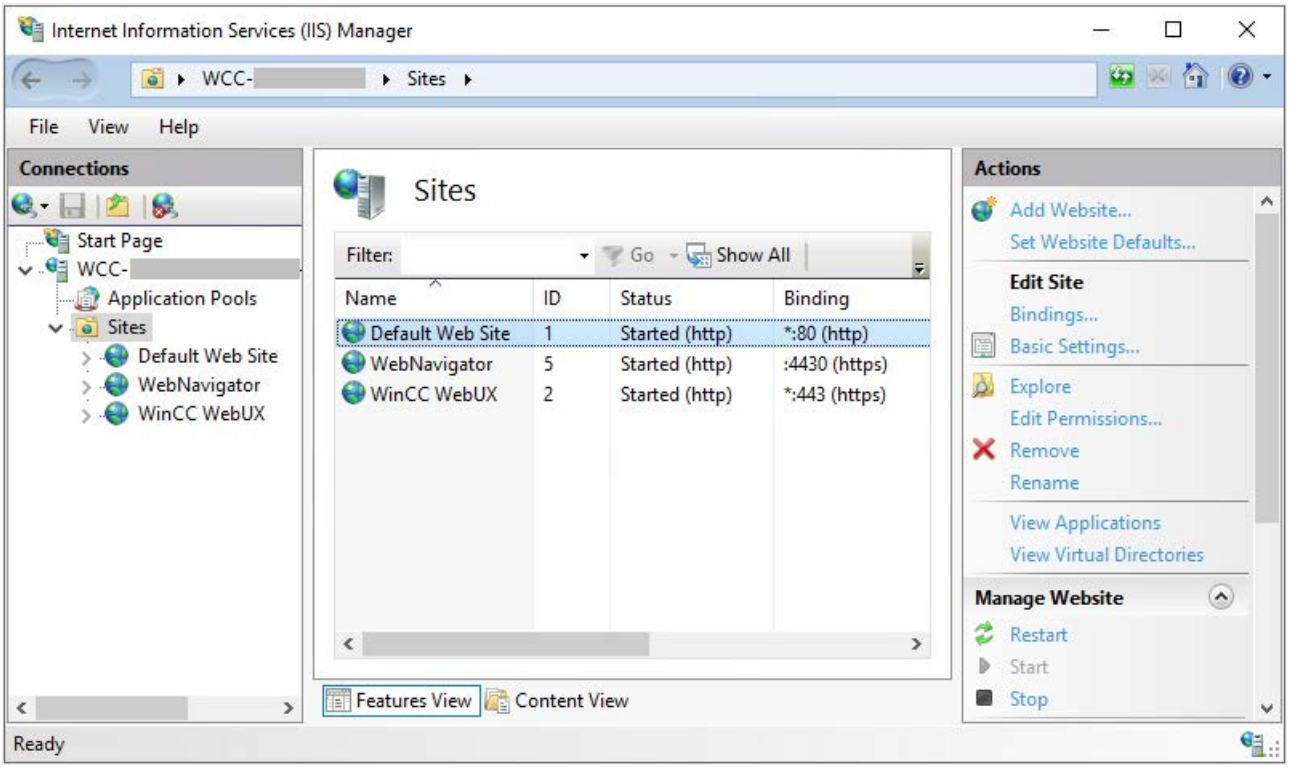
Setting up a secure connection over HTTPS (Page 117)

Creating a new default web page (Page 219)

Checking the activated web page

Procedure

1. In the "Administrative Tools" program group, select the entry "Internet Information Services (IIS) Manager".



2. Double-click the computer name in the "Connections" field.
3. Display the entry "Default Web Site".
4. Check whether the web pages are displayed as "Started": .
5. If the status "Stopped" is displayed, start the web page: .
   In the shortcut menu of the website or in the "Actions" area under "Manage Website", select the "Start" command.
6. Close the "Internet Information Services (IIS) Manager".
   The web page is activated.

Load Distribution Using the "Load Balancing" Function

Load balancing on WebNavigator Servers

Overview

The "Load balancing" function allows you to automatically distribute the WebNavigator Clients evenly to different Web Navigator servers. All WebNavigator Servers can participate in load balancing using their respective server license.

A WebNavigator Server can act either as Load Balancing Server or only as participating WebNavigator Server.

The respective WebNavigator Server is then configured as follows in the "Load Balancing Configuration" dialog:

- The WebNavigator server is only a participating WebNavigator Server.



- The WebNavigator server is a load balancing server.



A Load Balancing Server is automatically a participating WebNavigator Server, too.

Several Load Balancing Servers can be configured in a group of participating WebNavigator Servers.

Load balancing sequence

Following the login of a WebNavigator Client, the Load Balancing Server transfers the client to the participating WebNavigator Server with the lowest load.

The clients are allocated using the "LBConfig.xml" file. The file is available in the "Project folder/WebNavigator".

If the fewest clients are logged on to the Load Balancing Server, the new client remains connected to that server.

If a participating WebNavigator Server fails, the clients logged on to it remain in the Reconnect Screen until this Webserver is available again.

The address of a WebNavigator Server does not depend on whether it is activated as a Load Balancing Server.

Licensing

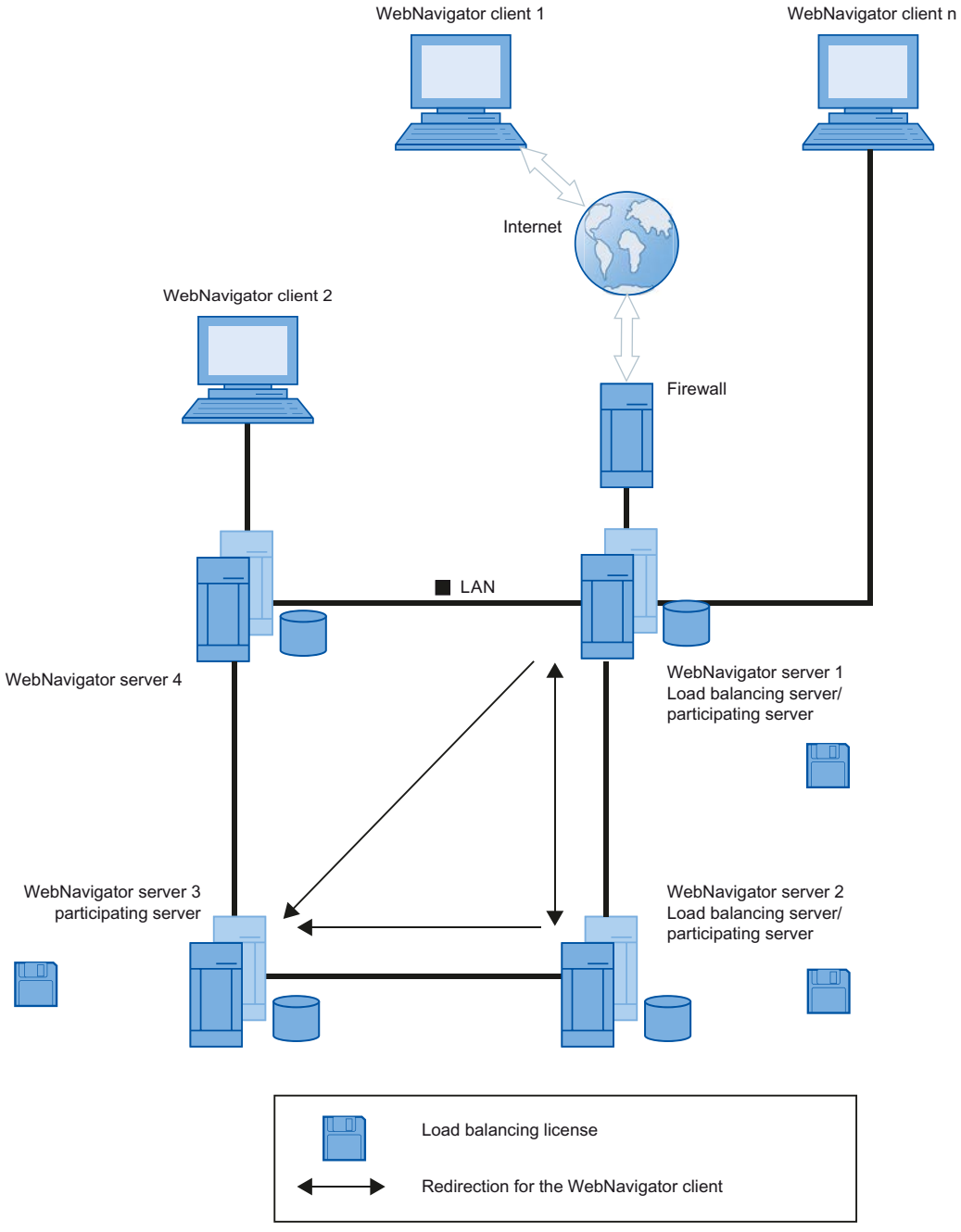
The "Load balancing" function supports a maximum of 32 interconnected WebNavigator Servers.

All participating WebNavigator Servers and Load Balancing Servers need a "Load balancing" license.

No license is necessary on the WebNavigator Clients.

When using WinCC computers with WinCC Redundancy, you can operate a Load Balancing Server or participating WebNavigator Server using the "WinCC Redundancy" and "Load Balancing Step-Up" licenses.

Example



In the figure, WebNavigator Servers 1 to 3 participate in "Load Balancing". A "Load Balancing" license is installed on the WebNavigator Servers.

WebNavigator Servers 1 and 2 are configured as Load Balancing Server.

When WebNavigator Client 1 logs on to WebNavigator Server 1 or 2, it is routed automatically to the server that is with the lowest load.

If the WebNavigator Server to which it is connected fails, Client 1 is re-routed to one of the remaining WebNavigator Servers.

WebNavigator Server 3 participates in "Load Balancing", but it is not configured as Load Balancing Server.

In the case of a high load or on the failure of Server 1 or Server 2, the WebNavigator Clients can be re-routed to Server 3. If WebNavigator Server 3 fails, the client cannot be re-routed to Server 1 or 2, irrespective of any active connection.

WebNavigator Server 4 does not participate in "Load Balancing". A logon of WebNavigator Client 2 to this server will possibly fail because load limits are exceeded on the server. On failure of WebNavigator Server 4, the client cannot be re-routed to one of the WebNavigator Servers 1 to 3, irrespective of any active connection.

Settings for the use of a proxy server

The use of a proxy server may have the effect that the target address "http://<servername>" of the participating WebNavigator Server or Load Balancing Server is replaced with "http://<servername.proxyname>".

The addressed WebNavigator Server will not be found. For this reason, you must enter the target addresses on the servers involved of all other participating servers in Internet Explorer. Enter the addresses in "Tools > Internet Options > Connections > LAN Settings > Advanced", "Exceptions" field.

See also

Configuring the "Load Balancing" Function (Page 230)

Configuring the "Load Balancing" Function

Introduction

You need a license on each participating WebNavigator Server and Load Balancing Server.

All Load Balancing Servers and participating WebNavigator Servers are included in the list of Load Balancing Servers.

The order of all listed participating servers must be identical on all Load Balancing Servers.

Set up the query interval and activate the "Load Balancing" function.

A configuration is not necessary on the WebNavigator Clients.

Note

Identical lists of participating WebNavigator Servers

The lists on the Load Balancing Servers and all participating WebNavigator Servers must be identical to ensure uniform functionality in the case of the failure of a WebNavigator Server.

Settings for a migrated project

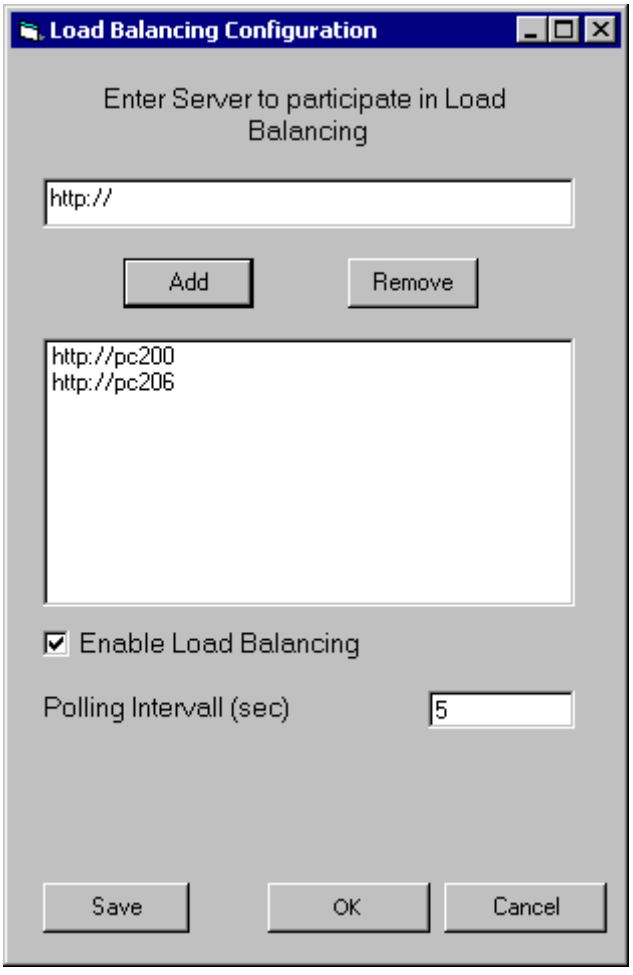
The "Load Balancing" settings are saved for each specific project. You need to save the settings once again in order to activate these for a migrated project. Start the configuration dialog and confirm the settings with "OK".

Requirement

- The WinCC basic system, WebNavigator Server and a "Load Balancing" license are installed.
- The same users are configured on all participating WebNavigator Servers and Load Balancing Servers.
- The default web page for WebNavigator must have been created as "standalone" on the WebNavigator Server.

Procedure

1. In WinCC Explorer, select the "Load Balancing" command from the "WebNavigator" shortcut menu. The "Load Balancing Configuration" dialog is opened.
2. In the top field, enter the address of a WebNavigator Server that participates in "Load Balancing". Click "Add" to include the address in the list of servers.
   Repeat the process for each WebNavigator Server that participates in "Load Balancing".
   Supplement the name of the Load Balancing Server in the list.
   You can always remove a server name from the list. Select a name from the list and click "Remove".



3. Select the "Enable Load Balancing" check box to activate the local WebNavigator Server as Load Balancing Server.
   The check box remains deactivated on the participating WebNavigator Servers.
   The list of servers is retained even when you clear the check box.
4. In the "Polling Interval" field, select the time interval for polling the other participating WebNavigator Servers. The time interval is only relevant on a Load Balancing Server.
5. Click "Save".
6. Close the dialog with "OK".
7. Repeat the procedure on all participating WebNavigator Servers and Load Balancing servers.
   The modifications take effect when WinCC Runtime is restarted.

2.2.3.4 Differences to the WinCC Basic System

Functional restrictions

Introduction

The WebNavigator has certain functional restrictions compared to the WinCC basic system.

You should therefore check your WinCC projects for these restrictions and adjust the project settings as required.

Overview

When you use functions that are not supported in a project, corresponding messages are generated in Runtime to draw your attention to the fact.

The following restrictions apply to the WebNavigator client:

- The client provides only a view of the running WinCC project.
  It is not possible to configure the WinCC Server projects.
- You can only use WinCC options and WinCC add-ons if specified explicitly in the documentation.
- Not all "Runtime API functions" are supported.
  A list of supported functions is available at "Supported functions (Page 270)".
- You can find restrictions in connection with Basic Process Control in the WinCC Information System under:
  - "Options for Process Control > Overview of process control system options > Configuring in the PCS 7 environment > Web Client".
- The message archive and message system can only be operated and monitored.
- WinCC AlarmControl: The "Triggers an action" property for a message is not supported.
  For the correct display of message blocks, the "Apply project settings" option cannot be activated.
  You can find this option on the "Message blocks" tab of the "WinCC AlarmControl" properties dialog.

- WinCC AlarmControl: When a user-defined selection is created, the "Authorizations for selection editing" selection is not supported.
- WinCC Controls before WinCC V7:
  You cannot modify the selection of archives and tags for the display of the process values. The button for selection is deactivated.
- The "Channel diagnostics" function is only supported if the WinCC basic system is also installed on the WebNavigator client.
- The hotkeys configured in WinCC are not supported.
  Operation via the tab key is supported.
- The following objects of the WinCC global library in the folder "Global Library/Operation/Operation Panels" are not supported:
  - 1_Slider
  - 2_Slider
  - 4_Slider
- National special characters in names of process pictures or referenced graphics are not supported on the Internet.
- The overlap lock in process pictures is not supported.
- The advanced zoom functions cannot be disabled.
  If you do not want to use the zoom functions, do not use a wheel mouse with the "Auto-scroll" setting on the client.
- The redundancy switch is only supported on the dedicated web server.

See also

Using the "Hardcopy" function (Page 254)

Using Scripts

Scripts running exclusively for the WebNavigator

To execute scripts for the WebNavigator only, use the pre-processor definition "RUN_ON_WEBNAVIGATOR" in ANSI-C or the "IsWebNavigator" function in VBS in the script.

Example of ANSI-C

```
void OnOpenPicture (char* lpszPictureName, char* lpszObjectName,
char* lpszPropertyName)
{
#ifdef RUN_ON_WEBNAVIGATOR
// here you enter the code that is to be executed only in the
WebNavigator
#else
// here you enter the code that is executed only in the WinCC basic
system
#endif
}
```

Example for VBS

```
If IsWebNavigator() Then
// here you enter the code that is to be executed only in the
WebNavigator
Else
// here you enter the code that is executed only in the WinCC basic
system
End If
```

Visual Basic Script

There are only slight restrictions imposed by unsupported functions when VBS is used.

A list of these functions is available at "Unsupported functions (Page 280)".

Global Script

You configure the scripts on the WinCC Server in the server project.

Global scripts cannot be executed on the WebNavigator Client. Global Scripts on the server are supported.

Dynamic Wizard

The scripts generated using the Dynamic Wizard can contain unsupported functions. These scripts cannot be executed on the WebNavigator client.

Check and correct the scripts, if necessary. Add the following condition, for example: "#ifdef RUN_ON_WEBNAVIGATOR".

Script with trigger tags

The WebNavigator queries tags at cyclic intervals of "1 second". The update cycle of trigger tag "upon change" is also one second.

This may lead to an increased communication load between the AS and WinCC Server. Take increased loads into account if communication between the AS and WinCC Server is operated at load limits.

If tag-triggered scripts request additional tags having a name that is generated using a string function, for example, unknown tags can only be read synchronously. Enter the tag names you are using in the trigger list in order to avoid extended selection times.

Script for picture selection and deselection

In contrast to the basic system, a picture is downloaded in asynchronous mode when WebNavigator is used. Account for this fact when using scripts that contain picture changes.

If a picture selection for a picture window is initiated within a script, you cannot access the objects of the new picture within the same script afterwards. The picture is not yet loaded at this time. A time delay, such as "Sleep(2000)" is of no help since the script and the web browser are waiting.

Execute the following script parts in the "OpenPicture" function. This function is triggered when the picture is loaded.

Alternatively, you can use the "WaitForDocumentReady" function. The "WaitForDocumentReady" function waits for the picture to load in the picture window. From the same script, you can then access the objects of the picture loaded in the picture window.

Other functions called in the script following a picture deselection will be executed with errors or not at all. The picture context is lost due to the picture deselection.

Synchronous script functions

Synchronous script functions impose a heavy load on the system.

You should therefore refrain from using the "SetTagxxx" function in cyclic scripts. The server will be overloaded when many clients call the "SetTagxxx" functions in a fast cycle, e.g. 1 sec or less.

Note that the following script functions and calls are transferred synchronously to the server:

- Functions that write a tag in synchronous mode and then wait for the result, e.g. "xxxWait"
- C-API calls

The frequent use of these scripting functions and calls has a negative effect on the performance of the WebNavigator Client. In the case of an Internet connection, the duration of these calls may even be in the seconds range.

Script functions that manipulate the objects in the displayed picture are of no concern since no data traffic takes place between the client and server.

Picture in picture method and cyclic scripts

Many synchronous calls in a picture may reduce performance, for example, in the following cases:

- When more than 10 windows are configured in a picture window.
- When cyclic scripts with synchronous calls, for example, "SetTagxxx", are used in the windows.

Execution of certain scripts may fail due to timeout.

The following elements are supported in a window:

- 16 windows with cyclic scripts
- 31 windows without cyclic scripts

Script output on the web client

C scripts or VBS scripts which are triggered by services such as Global Script, Alarm Logging, or Tag Logging, are independent of Graphics Runtime.

These scripts only run on the web server.

The output of these functions, such as via "printf()" or "HMIRuntime.Trace()" is not displayed in the script diagnostics window on a web client.

Function accesses included in these scripts on Graphics Runtime always address the local Graphics Runtime on the WinCC server.

See also

WaitForDocumentReady (Page 278)

Using tags

Computer-local tags

The WebNavigator Client supports computer-local tags with the following restrictions:

- When a dedicated web server is used, only the computer-local tags of that server are available on the client. The tags on the client cannot assume their own values.
- Computer-local tags of the subordinate WinCC servers cannot have their own values on the client.
- The start value of computer-local text tags can only contain characters that are allowed in tag names. If the start value of a text tag contains a colon, for example, the tag is not recognized on the client.
- Computer-local tags are not supported on the client when User Archives are used, because User Archives can only identify the local tags of the server, but not the tags of the WebNavigator Client.

Defining picture-local script tags

Do not use WinCC tags for WebNavigator if picture-specific data is stored in scripts.

The reading or writing of data in scripts always generates data traffic to the server. This places a load on the communication.

You can save picture-specific data as follows:

- Configure "hidden" graphic objects so that you can use their properties as picture-specific tags. Actions are executed at the object properties upon changes to the stored values.
- You have created the hidden "static text" object, for example. The "Text" property is used to store any texts, while the color properties are used to store any colors. The properties are read and/or written using scripts and influence the picture status without requiring a roundtrip to the server.

2.2.4 Operating the WinCC project

2.2.4.1 General properties of the WebNavigator Client

Automatic connection setup after connection interruption

If communication between the WebNavigator client and WebNavigator Server goes down, a message is output to the user on the client.

The client performs an automatic connection establishment. Upon successful connection setup, the start page of the WinCC project is selected.

Specify the time interval between attempts to set up a connection in the Web Configurator.

ICMP ping

If a firewall or proxy server is used in client/server communication, the client logon may be successful, but automatic reconnection does not work. When attempting to reconnect, the client uses "ICMP Ping", which may be blocked by the firewall or proxy server.

In this case, deactivate the use of "ICMP-Ping" by the client for reconnection.

The "Reconnect > Deactivate ICMP Ping" setting is available under "Settings > WebClient Properties" in the Web Navigation interface or via the "ClientConfig.asp" page.

For more information if automatic reconnect fails: SiePortal: FAQ 21147385 (https://support.industry.siemens.com/cs/ww/en/view/21147385)

URL: WebNavigator pages and deep links to process pictures

You can call a published process picture directly via a deep link.

Requirements

- You have created a default web page with Web Configurator.
- The WinCC process pictures were published using the WinCC Web Publishing Wizard.

Procedure

1. Click on the "WebNavigator" entry in the WinCC Explorer.
   The published process pictures are displayed.
2. Select the "Copy deep link URL to clipboard" entry in the shortcut menu of the desired process picture.
   The URL of the process picture on the web server is copied to the clipboard as deep link.
   The link depends on the configuration and contains the server name, the port and the file name, among other things.
3. Go to the address bar of the browser and enter the link.
   Apply the deep link without change.
   If you call up the process picture without being logged on, you will be prompted to log on when you open the browser.

Browser: Contents of the address bar

Character strings which cannot be interpreted and are not relevant to the user are displayed in the address bar of the browser.

For example, the "loadbalancing=no" entry may appear, but it does not represent a status indication for the servers participating in Load Balancing.

Enter characters in the address bar when logging on and check the server name and port.

"AutoComplete" entries and links in the progress bar

The entries in the address bar of the browser are displayed as a link in the progress bar or suggested as "AutoComplete" entries for subsequent inputs.

However, you cannot use these functions without verification when a WebNavigator client logs on to a WebNavigator Server with Load Balancing.

- At its initial login on a server with Load Balancing, the client is re-routed to a second server. Internet Explorer displays the address of the second server in the progress bar or as an "AutoComplete" entry.
- The link in the progress bar or the "AutoComplete" is applied without verification at the next client login.
- The client is then logged on to the second server.

WebNavigator client with several power users

Once a power user has installed a new WebNavigator client version on a computer, all other power users of this computer must upgrade to the new version.

Inconsistency of the versions employed by power users may lead to problems.

This also applies when a power user connects to a server that hosts an older version of WebNavigator.

Persistency in Runtime

The persistency data for pictures and objects is stored in each case on the WebNavigator client.

Observe the following points when working on the server with several projects that contain pictures or objects of the same name:

- If you create a persistency for a project picture in Runtime, that persistency is also applied to the picture of the same name in other projects.
- The persistency settings you defined once for a server picture on the dedicated web server is applied to the respective WebNavigator client.

Persistency for WinCC controls

In controls for WinCC V7 or later, reset the settings in the control properties in the "Online Configuration" tab.

The persistency files for controls prior to WinCC V7 are located in the folder "Documents and Settings/User/Application Data/Siemens/SIEMENS.WINCC/WebNavigator/Client" on the WebNavigator client.

You have the following options of undoing the settings in the controls in which Runtime persistency was activated:

- Resetting individual settings in the control.
- Deleting the file.

Text changes in the text library

If you change a text from the text library in Runtime, the WebNavigator client does not automatically detect this.

In order to refresh the displayed pictures, reload the picture in Internet Explorer using the "Refresh" icon or the "F5" key.

Language-dependent texts as text references

Language-dependent texts via text references are displayed on the WebNavigator client in the language currently set for the client in the "User Administrator" editor.

WinCC Slider Control

Set the "Continuous_Update" property to "No" when using the WinCC Slider Control.

If you set this property to "Yes", the slightest change to the position generates an event trigger. This setting causes a heavy communication load on the WebNavigator client.

Access of the WebNavigator client to a WinCC flexible Sm@rt Server

A WebNavigator client can call the "Change server" function using the Web Navigation interface to access a WinCC flexible Sm@rt Server.

Removing the ProTool/Pro software

The controls of the HMI Symbol Library are deregistered if you remove the ProTool/Pro software on a WebNavigator client.

Reinstall the WebNavigator client in order to recover access to the controls.

Login by means of direct input in Internet Explorer

The Microsoft Security Patches for Internet Explorer now prevent the WebNavigator client login by input of the user name and password in the address bar.

See also

Process pictures on the WebNavigator Client (Page 239)

How to use WebUX (Page 502)

2.2.4.2 Process pictures on the WebNavigator Client

Deep links to process pictures

To call a process picture via a deep link, use the URL that you retrieve in the WinCC Explorer.

You cannot use the URL in the address bar of the browser as reliable link.

More information:

- "General properties of the WebNavigator Client (Page 236)"

Picture change on dedicated web server

If a picture with a server prefix was loaded on the dedicated web server, no picture of the local WinCC project can subsequently be displayed without server prefix.

To display a picture of the local client project, use the server prefix "@local" for addressing, e.g. "@local::picture123.pdl".

When executed, the OpenPicture() function opens the higher-level picture of the executing object on the dedicated web server.

Project functions in pictures

The project functions are loaded when a project is initially selected after the start picture has been loaded.

For this reason, a delay may be generated between the initial display of the start picture and execution of operator actions. Although the picture is displayed, it cannot be operated until a delay of approximately 1 second has expired.

Picture window on the WebNavigator client

After you rename a picture in a picture window, the "Object change" event of the picture window is executed several times on the WebNavigator client.

The event is executed only once in the WinCC basic system.

This response on the client is system-related, because the asynchronous operating principle of the Internet connection may trigger multiple updates of the picture window object.

This response has no implications in terms of functionality.

WinCC web browser OCX on the WebNavigator client

- The WinCC web browser serves to display static web contents or CHM documents in process pictures.
  Contents with scripting functionality are not supported.
- If you select a link in a process picture on the WebNavigator client using the WinCC web browser, the "Back" button does not work during the initial display of the linked page.
  The function is not properly executed until the page is called a second time.
  The incorrect behavior persists after a change of the process picture.
- The "Allow ActiveX controls" check box has to be activated in the "Security" tab in the Internet options of Internet Explorer.
- You can disable the right mouse button in the WinCC web browser to prevent the WinCC client from accessing the shortcut menu. Proceed as follows:
  - Open the Microsoft local group policy editor with "Gpedit.msc".
  - Select the following path:
    "User Configuration > Administrative Template > Windows Components > Internet Explorer > Browser Menus"
  - Change the status of the "Disable shortcut menu" setting to "Enabled".

Performance when using WinCC UserArchiveControl

Changes to a user archive trigger the update of the WinCC UserArchiveControl that is displayed.

The following factors affect the performance of the process pictures with WinCC UserArchiveControls on the WebNavigator client:

- Reduce the number of WinCC UserArchiveControls that simultaneously access a user archive to the minimum.
- Do not configure more than the necessary number of cyclic changes in the user archive.

See also

General properties of the WebNavigator Client (Page 236)

2.2.4.3 Operating the WinCC project with the web browser

Operating the WinCC project with the web browser

Requirement

- On the server
  - The WebNavigator server is installed.
  - The "WinCC WebNavigator" license is installed.
  - Remote communication is enabled if required. [1)]
  - The WinCC pictures are configured and published for web access.
  - A user for the WebNavigator client was created in WinCC User Administrator.
  - A start picture was specified for the user in the User Administrator.
  - The WinCC project is in Runtime.
- On the client
  - The WebNavigator client is installed.
  - A web browser is installed.
  - Remote communication is enabled if required. [1)]

1) If the WebNavigator client is not running on the same computer as the WebNavigator server, remote communication must be activated in the "Simatic Shell" dialog.

Procedure

1. In the address bar of the web browser, enter the address "https://<servername>" of the WebNavigator server.
   Confirm your entries.
2. Type in the user name and password.
   Confirm your entries.

Note

Passwords are case-sensitive.

Result

The default web page is displayed.

The view depends on the configuration:

- With "WebClient.asp" setting for the default web page, the WebNavigator client starts with the start picture that is specified for the user.
- With "MainControl.asp" setting for the default web page, the WebNavigator client starts with the start picture that is specified for the user plus the WinCC Web navigation interface.

Internet Explorer replacement

Microsoft is replacing "Internet Explorer" with the "Microsoft Edge" browser.

This results in new requirements for the configuration of the browser when operating WinCC/WebNavigator or WinCC/DataMonitor clients (web clients).

Depending on the system configuration, you have different options for replacing Internet Explorer (IE). IE V11 can be disabled (Scenario 1) or uninstalled (Scenario 2), resulting in different behaviors.

For information on how to replace the "Internet Explorer" browser, see the following FAQ:

- SiePortal: FAQ 109792981 (https://support.industry.siemens.com/cs/ww/en/view/109792981)

See also

Administering the users for WebNavigator Client (Page 212)

Working with the WinCC Download Hub (Page 243)

Working with the WinCC Download Hub

The "Download Hub" WinCC Web Navigation Interface

If the default web page is configured as "MainControl.asp", the navigation interface "Download Hub" is displayed on the WebNavigator client next to the start screen.

Note

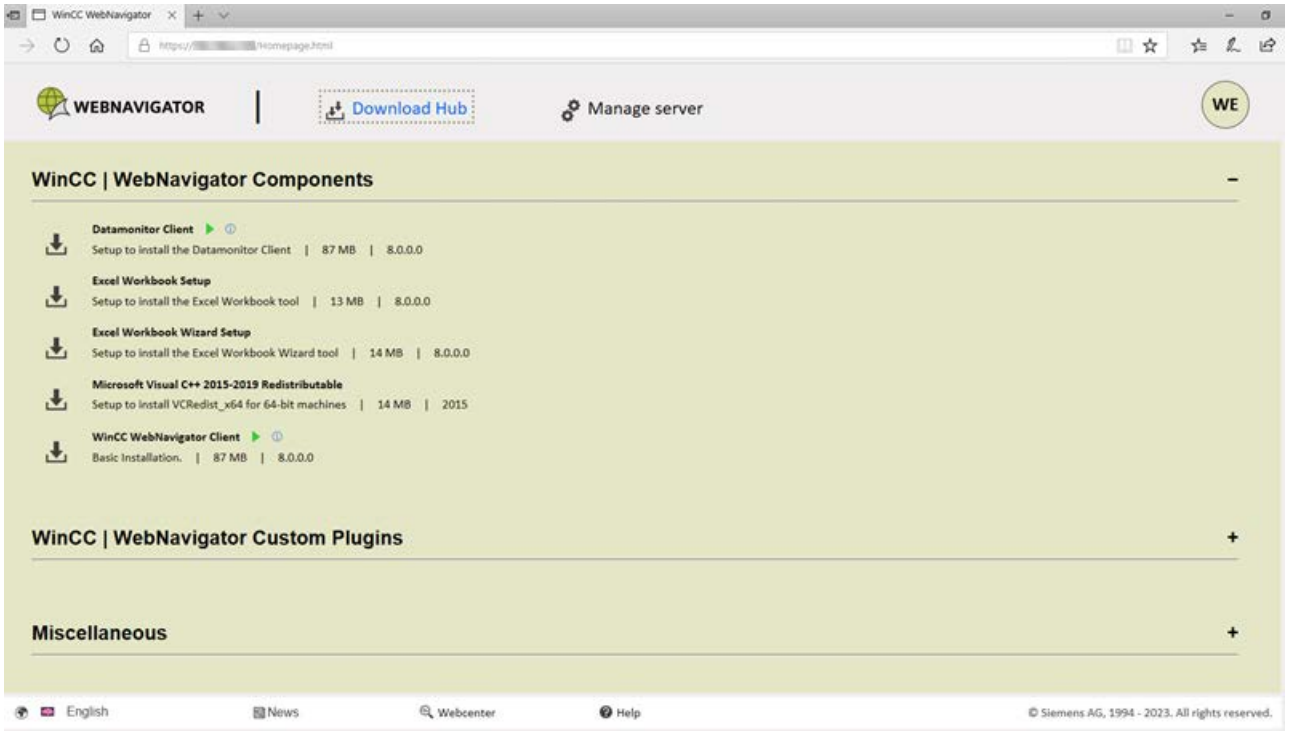
Download Hub: Logon

Use only characters of the ASCII character set in the user name to log onto the download page.

National special characters, for example umlauts, are not permitted in the user name.

"Download Hub" web page

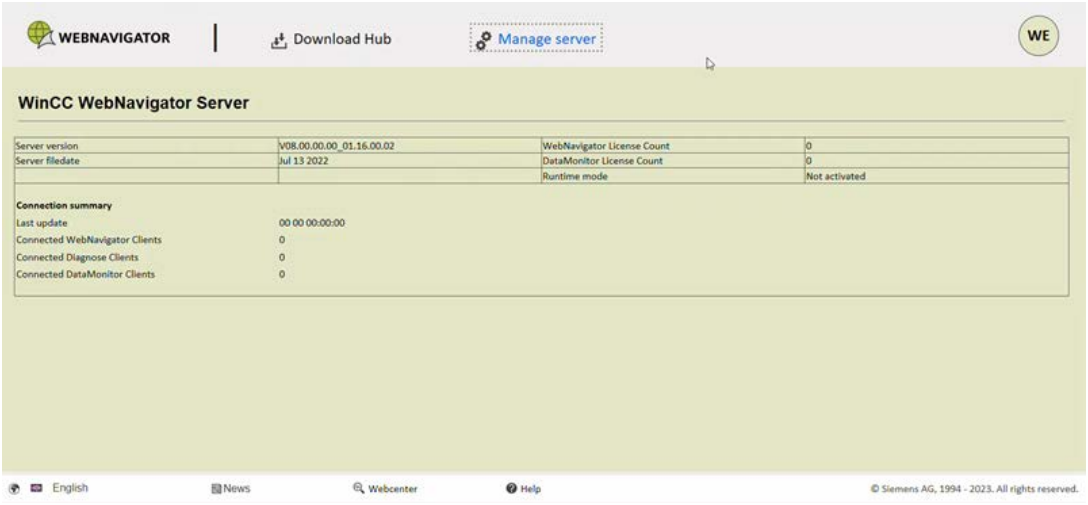
The Download Hub allows the download and installation of the web client, the WebNavigator and DataMonitor components and plug-ins. You can use this successor of the "WinCC WebNavigator interface" with any browser.



"Manage server" web page

The Download Hub also takes over some functions of the "Status.html" diagnostics page.

On the second page for server administration you get an overview of the web servers, web clients, and active licenses.



Functions

Header / Footer	
Navigation in the header	Switches between the two web pages "Download Hub" and "Manage server".
"User shortcut" icon	Contains information about the logged-in user: • User name • Information about whether the user is logged on to the web server as an administrator • "Switch user" function • "Log off" function
Language	Language change function for the WinCC Web Navigation interface Five languages are available by default. You can customize the language options in the "Menu.xml" file. The languages are stored in CSV file format in the "_languages / <language_identifier>" subfolder on the WebNavigator server. In order to add languages, reference the language files in the "mainControl.asp" file.
News	Link to the SIMATIC WinCC web page
Webcenter	Switches to the DataMonitor client
Help	Opens the WebNavigator Information System in "HTML5" format

"Download Hub" website	
WinCC/WebNavigator components	Download of the available components for WinCC/WebNavigator and WinCC/DataMonitor from the web server
WinCC/WebNavigator user-defined plug-ins	Expansions for WebNavigator and plug-ins that were created using WinCC Plug-In Builder. The plug-ins are available at "WebNavigator/Server/Web/Install/Custom" in the installation folder on the WebNavigator server
Various	Additional tools and files Can be extended by the user

"Manage server" web page	
Server version	Installed WebNavigator version
Server file date	Last web server change
Number of licenses	Number of licenses used on the server To log off inactive users, use the "Status.html" diagnostics page.
Runtime mode	Status of the server
Connection overview	Number of connected web clients

See also

Creating a new default web page (Page 219)

Operating the WinCC project with the web browser (Page 241)

Internet Explorer: Working with the WinCC Web Navigation interface (Page 245)

Diagnosis of the Connections with "Status.html" (Page 257)

Configuring WinCCViewerRT (Page 248)

Internet Explorer: Working with the WinCC Web Navigation interface

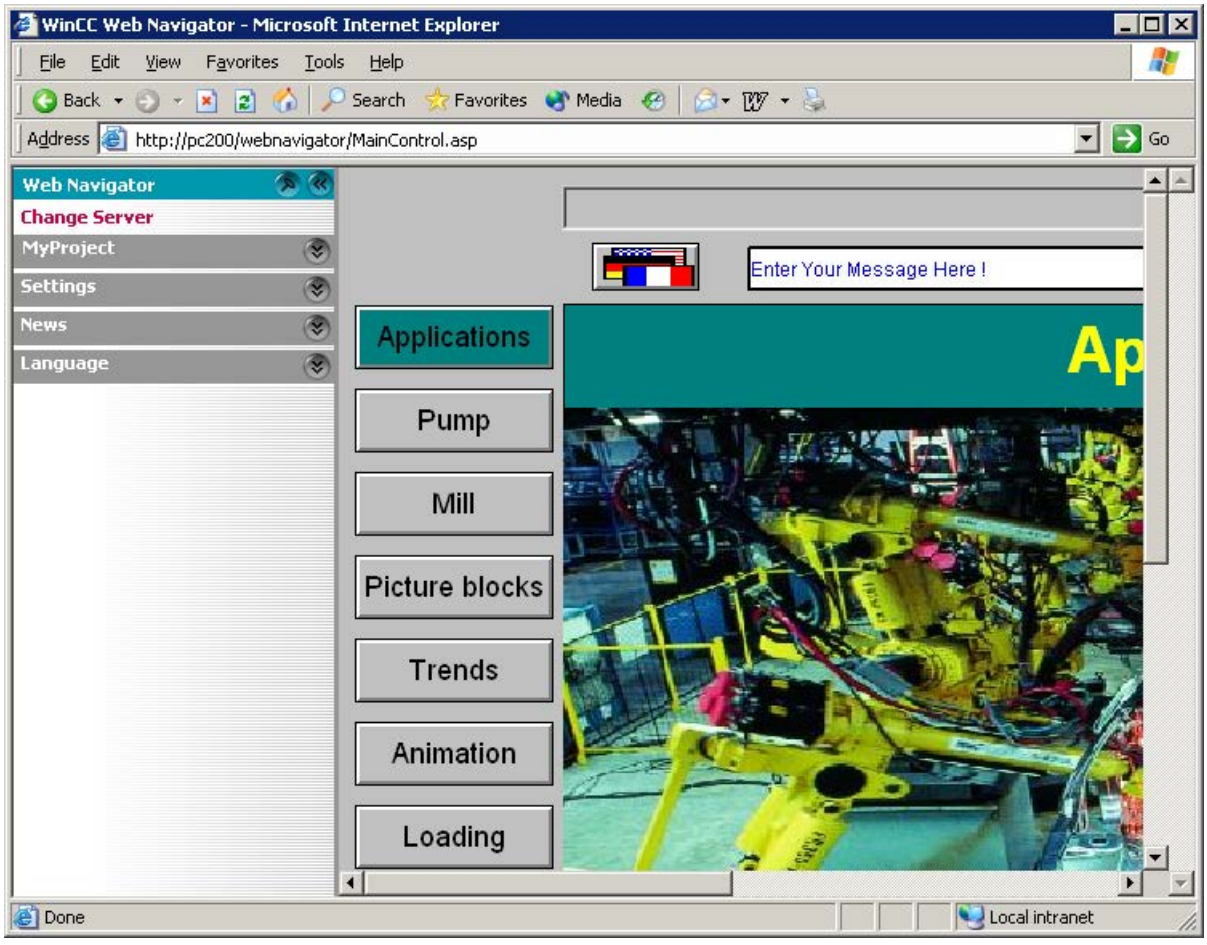
Menu of the WinCC Web Navigation interface

For working with Internet Explorer, WinCC provides essential web functions in the WinCC Web navigation interface.

For other web browsers, use the "Download Hub" navigation interface instead.

The WinCC Web navigation interface is displayed in Internet Explorer next to the start picture when "MainControl.asp" is configured as the default web page.

If the navigation bar is not displayed, move the mouse cursor over the left-hand border. To display the navigation bar permanently, click on the key icon.



The Web Navigation interface provides a compilation of different web functions in its menus:

Navigation	Contents
Change server	Changes to a different WebNavigator server
Used servers	Navigates to the WebNavigator servers used previously
<Name of the current server> (e.g. "MyProject" or "local-host")	Process pictures: • Display or picture navigation of the current WebNavigator server Diagnostics: • "Status.html" for diagnosing the WinCC project and the connection to the WebNavigator server Additional tools: • Can be expanded by the user, e.g. "DataMonitor" Download area: • Expansions for WebNavigator and plug-ins that were created using WinCC Plug-In Builder The plug-ins are available at "WebNavigator/Server/Web/Install/Custom" in the installation folder on the WebNavigator server.

Navigation	Contents
Settings	Settings for the WebNavigator client, for example, size of the process picture or activation of the screen keyboard You define the display of the process picture in the browser under "Process pictures" with the "Adapt Size" option. Under "Disable Keys", activate the actions that the operator is not permitted to perform in Runtime. Under "Printer configuration", you specify the printer you use to print the configured print job in WinCC controls. Alternatively, you can print the print job with the "RPTJobPrint" function. A preview via "RPTJobPreview" is not possible on the web client.
News	Link to the SIMATIC WinCC web page
Language	Language change function for the WinCC Web Navigation interface Five languages are available by default. You can customize the language options in the "Menu.xml" file. The languages are stored in CSV file format in the "_languages / <language_identifier>" subfolder on the WebNavigator server. In order to add languages, reference the language files in the "mainControl.asp" file.

See also

Working with the WinCC Download Hub (Page 243)

Expanding the WinCC Web Navigation interface

Introduction

The menu of the Web Navigation interface may be expanded by additional entries and functions.

Configure the expansion in an XML file. This file is saved to the "_custom_data" subfolder on the WebNavigator Server. You can give the file any name you choose, since all files with "XML" extension are processed in this folder.

Example

The following example adds the "My Private Menu" submenu to the "Server" menu. The submenu consists of three entries, namely "My Link", "Relative Link" and "Run Script".

Code	Description
<?xml version="1.0"?>	Version information
<menu hook-on="server">	The "menu hook-on" command is used to reference the name "server" that defines the "Current Server" menu on the Web Navigation interface.
<caption><lng>My Private Menu</lng></caption>	Defines an empty entry.
<command> <caption>My Link</caption> <open-url target="right">http://www.msdn.com</open-url> </command>	Defines the "My Link" entry with a direct link.

Code	Description
<command> <caption>Relative Link</caption> <open-url target="right">project.asp</open-url> </command>	Defines the "Relative Link" entry with a relative link.
<command> <caption>Run Script</caption> <run-script>alert("Hallo !")</run-script> </command>	Defines the "Run Script" entry that is used to start scripts.
</menu>	End of menu.

See also

SiePortal: FAQ 109792981 (https://support.industry.siemens.com/cs/ww/en/view/109792981)

2.2.4.4 Operating the WinCC project using WinCCViewerRT

Configuring WinCCViewerRT

Introduction

WinCCViewerRT is a program for visualizing WinCC projects.

The response of the WebNavigator server and Graphics Runtime is configured in the WinCCViewerRT settings.

Use project settings

If you enable the "Use project settings" option, the following settings are applied by the WebNavigator server:

- User Administrator:
  - Automatic logoff
- Computer properties:
  - Runtime language
  - Runtime Default Language
  - Start Picture
  - Start configuration of Menu and Toolbars
  - Hardware accelerated graphics representation (Direct2D):

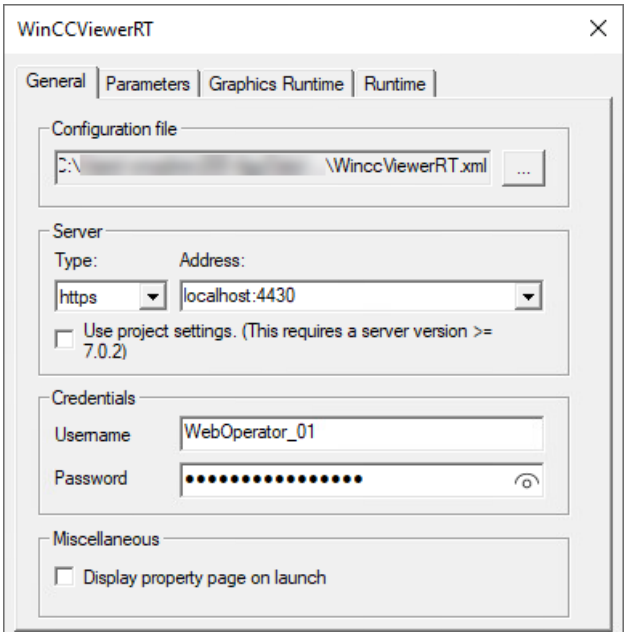
Requirement

- On the server
  - The WebNavigator server is installed.
  - A WinCC/WebNavigator license is installed.
  - The WinCC project is in Runtime.
  - The WinCC pictures are configured and published for web access.
- On the client
  - The WebNavigator client is installed.

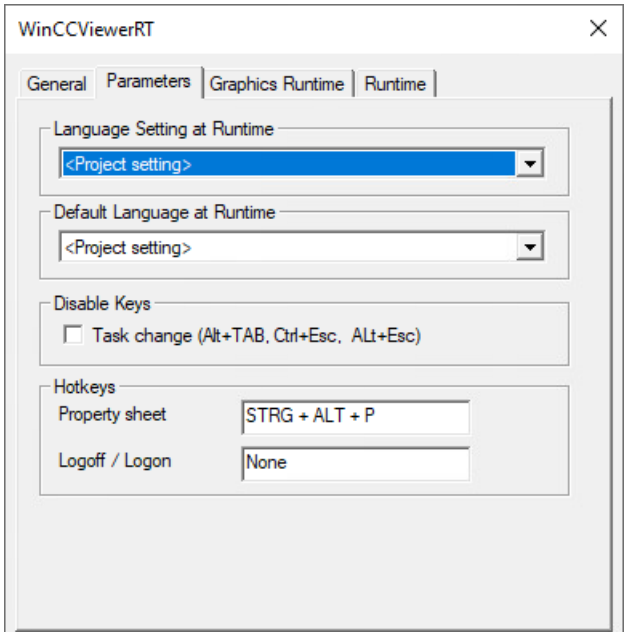
Procedure

1. In the "Siemens Automation" program group, select the entry "WinCCViewerRT". Alternatively, you can find the "WinCCViewerRT.exe" link in the installation folder under "Webnavigator\Client\bin".
   - The configuration dialog opens if you set up WinCCViewerRT for the first time.
   - WinCCViewerRT opens if WinCCViewerRT has already been set up.
     To open the configuration dialog of WinCCViewerRT, use the key combination <Ctrl+Alt+P>.
     Change the key combination on the "Parameters" tab.
2. Enter the login data in the "General" tab:
   - Server address: "https://<Server name>:<Port>" or "https://<IP address>:<Port>"
   - Use project settings: Apply settings of the WebNavigator server
   - User name and password, if you want to specify a default user for the login dialog.

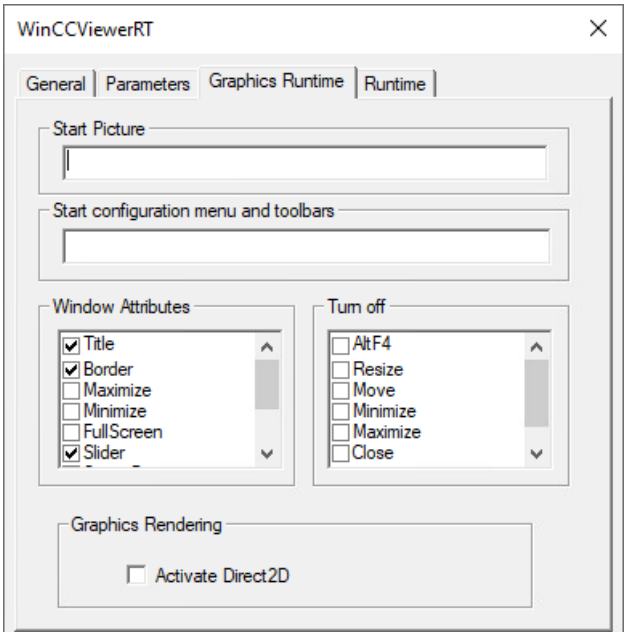
   To read in a previously saved configuration, select the corresponding configuration file.



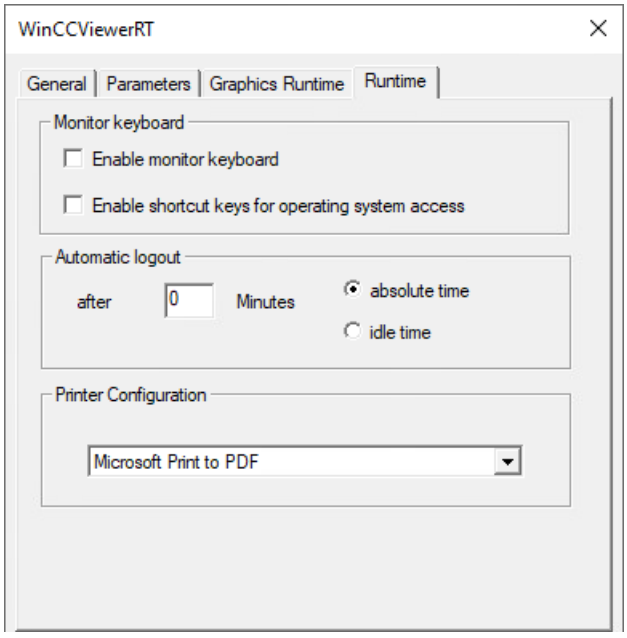
3. On the "Parameters" tab, configure the following settings:
   - Select the Runtime language and the Runtime default language.
   - If necessary, lock any key combinations that allow operators to switch to other programs.
   - If necessary, change the default key combination <Ctrl+Alt+P> that opens the configuration dialog of WinCCViewerRT.
   - Define a key combination with which a user can log off and a new user can log on. The key combination can only be used if no default user has been set in the "General" tab.



4. Configure the WinCC Runtime properties in the "Graphics Runtime" tab:
   - Start Picture
   - Configuration file for user-defined menus and toolbars
   - Window Attributes
     You define the display of the process picture in the browser with the "Full Screen" and "Adapt Picture" options.
   - Turn off: Impermissible user actions
     Activate the actions that the operator is not permitted to perform in Runtime.
   - Activation of Direct2D to accelerate graphics representation.



5. Configure additional user actions in the "Runtime" tab:
   - Activating the monitor keyboard
   - <Ctrl+Alt+Del> key combination to allow switching to the Task Manager or operating system via the monitor keyboard.
   - Auto-logoff settings
   - Specify the printer you use to print the configured print job in WinCC controls Alternatively, you can print the print job with the "RPTJobPrint" function. A preview via "RPTJobPreview" is not possible on the web client.



6. Click "OK" to close the dialog.

Result

WinCCViewerRT is configured.

The connection to the WebNavigator server is set up after you close the dialog.

The settings are saved to the "WinCCViewerRT.xml" configuration file. The configuration file settings are used at the next start of WinCCViewerRT.

WinCCViewerRT applies the user interface language from WinCC.

The configuration file is stored in the following folder based on the operating system:

- <User>\AppData\LocalLow\Siemens\SIMATIC.WinCC\WebNavigator\Client

You can rename the file, for example, to "User1.xml".

You can also start WinCCViewerRT by means of the command line with the user-specific configuration file, e.g. "WinCCViewerRT.exe User1.xml". This procedure allows for different configurations, depending on the logged-on user.

The WinCCViewerRT configuration dialog opens at the start if you rename or delete "WinCCViewerRT.xml". Configure WinCCViewerRT anew or select a different configuration file.

Note

Buttons disabled: Exit WinCCViewerRT

WinCCViewerRT can only be closed by means of script function if you disable a key combination or hide the "Close" button.

Function in the C-Script: DeactivateRTProject; function in the VBScript: HMIRuntime.Stop.

See also

Working with the WinCC Download Hub (Page 243)

Operating the WinCC project

Requirement

- On the server
  - The WebNavigator Server is installed.
  - The "WinCC WebNavigator" license is installed.
  - Remote communication is enabled if required. [1)]
  - The WinCC pictures are configured and published for web access.
  - The user is created in WinCC.
  - The WinCC project is in Runtime.
- On the client
  - WinCCViewerRT is configured.
  - Remote communication is enabled if required. [1)]

1) If the WebNavigator client is not running on the same computer as the WebNavigator server, remote communication must be activated in the "Simatic Shell" dialog.

Procedure

1. In the "Siemens Automation" program group, select the entry "WinCCViewerRT".
2. Log on to the WebNavigator Server:
   - A login dialog is not displayed if the user name and password is preset in the "WinCCViewerRT" configuration dialog.
     You are logged on automatically with the stored login data.
   - The login dialog is displayed if a user name and password is not set in the "WinCCViewerRT" configuration dialog.
     Enter the user name and password of the WinCC user.
     Passwords are case-sensitive.
     Click "OK".
3. To change the user, use the specified key combination for "WinCCViewerRT" login/logoff.
   The previous user is logged off.
   The key combination can only be used if no default user has been set.
4. Enter the user name and password of the new WinCC user in the login dialog.
   Passwords are case-sensitive.
   Click "OK".

Result

WinCCViewerRT automatically connects to the activated WinCC project. The start picture that is configured for the user is displayed.

The user may operate or monitor the project, depending on authorizations. Users assigned system authorization No. 1002 "Web access - monitoring only" in the User Administration are only allowed to monitor the WinCC project.

The "View Only Cursor" indicates that process-related operations are not possible.



Certain operations, such as opening the properties dialog of a WinCC OnlineTrendControl, are still possible.

You can also use your own cursor icon as a "View Only Cursor", if required. For more information, refer to "Configuring Runtime settings (Page 206)".

The <F5> key triggers a reselection of WinCCViewerRT.

2.2.4.5 Using the "Hardcopy" function

Introduction

On the WebNavigator client, the current view can be output to the default printer.

You can generate a screenshot using a configurable key combination or a script.

You can enter the definition of the key combination or the screen area to be printed via the command line, for example.

To print out Runtime data with a print job, use the buttons of the WinCC controls or the "RPTJobPrint" function.

Note

Limited functionality on the Web Client

You execute the "Hard Copy" function with the "Print" button of the WinCC controls toolbar on the Web Client.

When you click this button, however, a screenshot of the Web server is created.

Instead of the "Print" button use the "PrtScr.exe" application.

Note

Disabled shortcut keys

If the shortcut keys are disabled via the option "Disable shortcut keys for operating system access", the hardcopy function only prints to physically connected printers.

No printout is possible on printers with the "Print to file" function, e.g. save as PDF file. The hardcopy function is not performed for these printers.

If several printers are connected and the configured default printer enables the "Print to file" function, the next physically connected printer in the printer list is used instead of the default printer.

Starting the hardcopy application

Start the "PrtScr.exe" application on the WebNavigator client, for example, by means of the command line input or a user-defined function.

The application is stored in the following folder:

- ...\Common Files\Siemens\bin

Transfer the parameters

The parameters are transferred once only at the start.

- Separate the parameters with a space.
- Please note that this is case sensitive.

Close the application before you edit the parameters.

Edit the parameters and restart the application.

Overview: Parameters

The following parameters specify the procedure for printing a screenshot:

Parameters	Function
Without parameters	Not allowed on the WebNavigator client. Use "-infinit" as a substitute. Example: • `PrtScr.exe –infinit –hotkey="<ALT>+p"`
-end	Terminates an active instance of PrtScr.exe.
-hardcopy	Starts PrtScr.exe. Creates a screenshot of the current view. The hardcopy function then waits for the key combination for output to the printer. Use the parameter on a WebNavigator client only in combination with the "Infinite" and "Hotkey" parameters.
-nomcp	Starts PrtScr.exe. Creates a screenshot and prints the current view. PrtScr.exe is then closed.
-C= left;top;right;bottom	Starts PrtScr.exe. Creates a screenshot of the screen section that is specified in pixels and prints the current view. PrtScr.exe is then closed. "-C=" is always followed by a space. Example: • `PrtScr.exe -C= 50;50;100;100`
-l	Prints in landscape format. You can add the parameter to any parameter combination.
-infinit	Serves as parameter for starting PrtScr.exe on a system without WinCC. Always use the parameter in combination with "hotkey".

-hotkey="x"	Specifies the key combination that starts output to the printer.
	The following characters and combinations are allowed:
	• <ALT>, <SHIFT>,<CTRL> + {0-9, A-Z, 0xXX}
	Write the parameters in uppercase letters.
	Combinations of the <Alt>, <Shift>, and <Ctrl> keys are allowed but not mandatory.
	You can specify the "Virtual Key Code" with "XX" using the hexadecimal input "0xXX". For more information about "Virtual Key Codes", refer to the MSDN Library.
	Examples:
	• Key combination <Ctrl+P>:
	`-hotkey="<CTRL>+P"`
	• Print button ("Print-Screen"):
	`-hotkey="0x2C"`
	• Key combination <Alt> and "Print-Screen":
	`-hotkey="<ALT>+0x2C"`

Examples of parameter combinations

Starting the hardcopy function by means of a key combination	

`PrtScr.exe -infinit -hotkey="<ALT>+p"`
Enter the following in the command line:
`"C:\Program Files (x86)\Common Files\Siemens\Bin\PrtScr.exe" -infinit -hotkey="<ALT>+p"`
	Starts PrtScr.exe and waits for input of the <ALT+P> key combination.
	The current screen view is printed as screenshot when you hit the key combination.

`PrtScr.exe -infinit -hotkey="<ALT>+p" -C= 10;10;100;100`	Starts PrtScr.exe and waits for input of the <ALT+P> key combination. Only the screen section that is defined in pixels will be printed as screenshot when you hit the key combination.

Starting the hardcopy function by means of script	
`PrtScr.exe -nomcp`	Starts PrtScr.exe. Creates a screenshot and prints the current view. PrtScr.exe is then closed.
`PrtScr.exe -C= 10;10;100;100`	Starts PrtScr.exe. Creates a screenshot of the section that is specified in pixels and prints the current view. PrtScr.exe is then closed.

2.2.4.6 Diagnosis of the Connections with "Status.html"

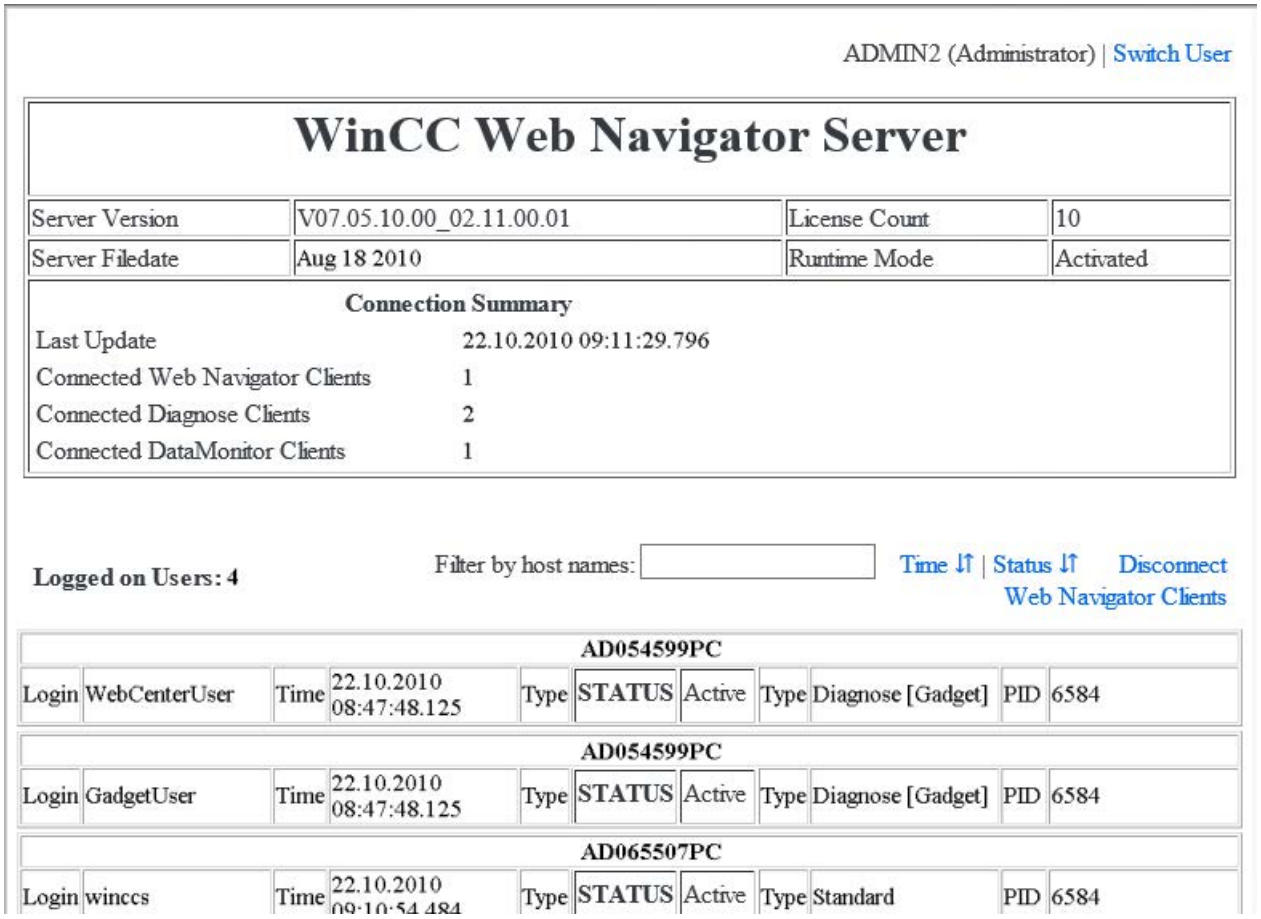
Overview

The "Status.html" page is used to diagnose the WebNavigator server and the connected clients.

The page offers an overview of the currently connected WebNavigator clients and their status.

Access to this page is restricted to the users created in the User Administrator.

Functions of this page can also be found on the "Download Hub" web navigation interface.



ADMIN2 (Administrator) | Switch User

WinCC Web Navigator Server

Server Version	V07.05.10.00_02.11.00.01	License Count	10
Server Filedate	Aug 18 2010	Runtime Mode	Activated

Connection Summary

Last Update	22.10.2010 09:11:29.796
Connected Web Navigator Clients	1
Connected Diagnose Clients	2
Connected DataMonitor Clients	1

Logged on Users: 4

Filter by host names:

Time ⇵ | Status ⇵ Disconnect Web Navigator Clients

AD054599PC										
Login	WebCenterUser	Time	22.10.2010 08:47:48.125	Type	STATUS	Active	Type	Diagnose [Gadget]	PID	6584

AD054599PC										
Login	GadgetUser	Time	22.10.2010 08:47:48.125	Type	STATUS	Active	Type	Diagnose [Gadget]	PID	6584

AD065507PC										
Login	winccs	Time	22.10.2010 09:10:54.484	Type	STATUS	Active	Type	Standard	PID	6584

Calling up Status.html

To call up the diagnostics page, enter the following address in the browser:

- The WebNavigator is configured as the default web page:
  "https://<servername>/status.html"
- The WebNavigator is configured as a virtual web page:
  "https://<servername>/<folder name>/Status.html"
- Select the "Status" command from the "Diagnostics" menu if the Navigation interface is available via "MainControl.asp".

Saving status information

To save the page, select the "Save As" function in the browser.

Select the file type *.txt.

For other file types, e.g. *.htm or *.html, the included contents are not saved.

Logging off clients from WebNavigator server

Users with the authorization level "User administration" can log off individual clients.

This means they can release WebNavigator licenses of inactive clients.

If the connection to a client was not terminated correctly, for example, this client may be inactive but it remains logged on and uses the license. To release the license, log off this client on the WebNavigator server.

Operational elements

The blue texts correspond to a clickable link.

During clicking, an additional dialog is either opened or the corresponding action is executed, e.g. sorting.

Field	Description
Switch User	Switch current user
Filter by host names	Search for computer name in the list of WebNavigator clients The list is filtered during the input. Only clients whose computer names include the entered string are displayed.
Time	Sort the list of WebNavigator clients by time the connection was established or when the client logged on.
Status	Sort the list of WebNavigator clients by status.
Disconnect WebNavigator Clients	Log off WebNavigator clients When you click the text, a check box is shown next to each WebNavigator client. Select the check box for desired clients and click on "Disconnect". This function is only available if the logged-on user has the "User administration" authorization.

Diagnostics information on the WebNavigator server

Field	Description
<Name> (Administrator) / (Non-Administrator)	User name of the current user Users with the authorization level "User administration" are displayed as "Administrator". All other users are displayed as "Non-Administrator".
Server Version	WebNavigator server version
Server Filedate	Date of the server version
License Count	Number of licenses on the WebNavigator server
Runtime Mode	Status of WinCC Runtime
Last Update	Date and time of the last display refresh
Connected WebNavigator-Clients	Number of connected WebNavigator clients
Connected Diagnose-Clients	Number of connected Diagnostics Clients

Field	Description
Connected DataMonitor-Clients	Number of connected DataMonitor clients
Connected WebUX-Clients	Number of connected WebUX clients

Diagnostics information on the connected clients

The diagnostics information starts with the name of the relevant client.

Field	Description
Logged on Users	Number of logged on users
<Computer name>	Name of the PC on which the WebNavigator client is running
Login	Login name of the current user
Time	Login time of the current user or time of the most recent automatic connection setup.
Status	Activity status of the WebNavigator clients To identify all connected clients that are inactive, sort the list by status. The time period of inactivity is displayed, e.g.: • "Inactive since 2 minute(s)"
Type	Type of client, e.g. standard, DataMonitor
PID	Process ID of the instance of WebNavigatorRT.exe on the web server communicating with the client.

See also

Administering the users for WebNavigator Client (Page 212)

Troubleshooting (Page 267)

WebUX licensing (Page 476)

Working with the WinCC Download Hub (Page 243)

2.2.5 Installation of the WinCC Plug-In Builder

2.2.5.1 Overview of the WinCC Plug-In Builder

Introduction

You use the WebNavigator Plug-In Builder to create MSI setup programs for downloading additional components to the WebNavigator-Clients, e.g., custom-created ActiveX-Controls. The Plug-Ins can be downloaded by the user, e.g., via the Web Navigator interface and can only be used in the WebNavigator environment.

No knowledge of the setup technology is required for using the Plug-In Builder. You only have to know which files are installed and registered by the setup program.

The created Plug-In setup takes the form of a self-extracting "EXE" file. The file is made available in a folder on the WebNavigator-Server for download to the clients.

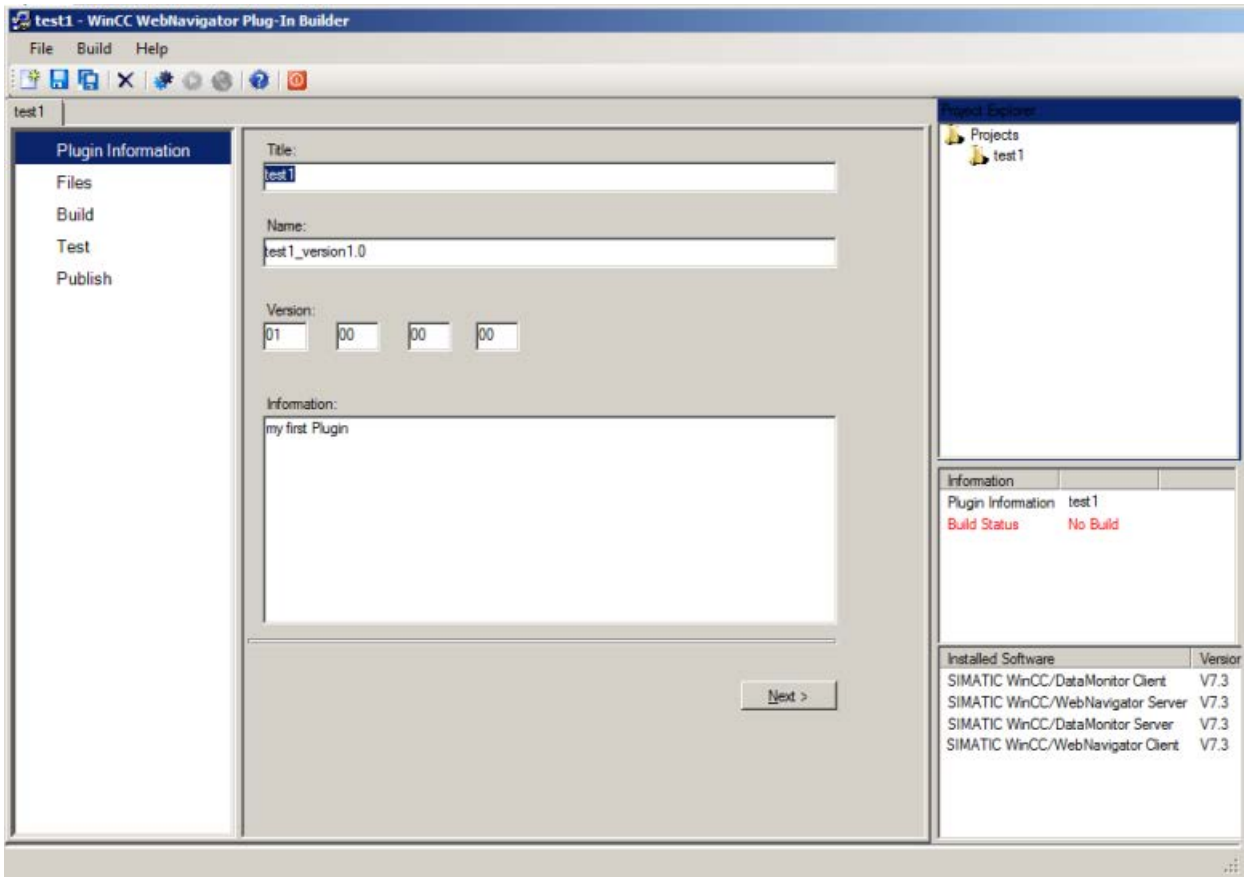
A WebNavigator Plug-In is integrated in a previously installed WebNavigator-Client and is also uninstalled again with this Client.

User interface of WinCC Plug-in Builder

You install the WebNavigator Plug-In Builder from the WinCC-DVD.

To open the Plug-In Builder, select the entry "Web Navigator Plug-In Builder" in the "Siemens Automation" program group.

The Plug-In Builder shows an overview and the status of the existing Plug-In projects. Older Plug-Ins may have to be generated again.



- The functions for creating a Plug-In are available via the navigation area, the menu commands and the toolbar.
- All open PlugIn projects are listed in the project explorer.
- In the "Information" area, you see the project status of the selected PlugIn project.
- In the "Installed Software" area, you see the WebNavigator components that are installed or still needed on the computer. The functions for testing and publishing a Plug-In are only available with certain WebNavigator components.

2.2.5.2 How to publish a plug-in

Introduction

You can publish the Plug-In on the local WebNavigator-Server. As a result, the Plug-In is available to all Clients for installation.

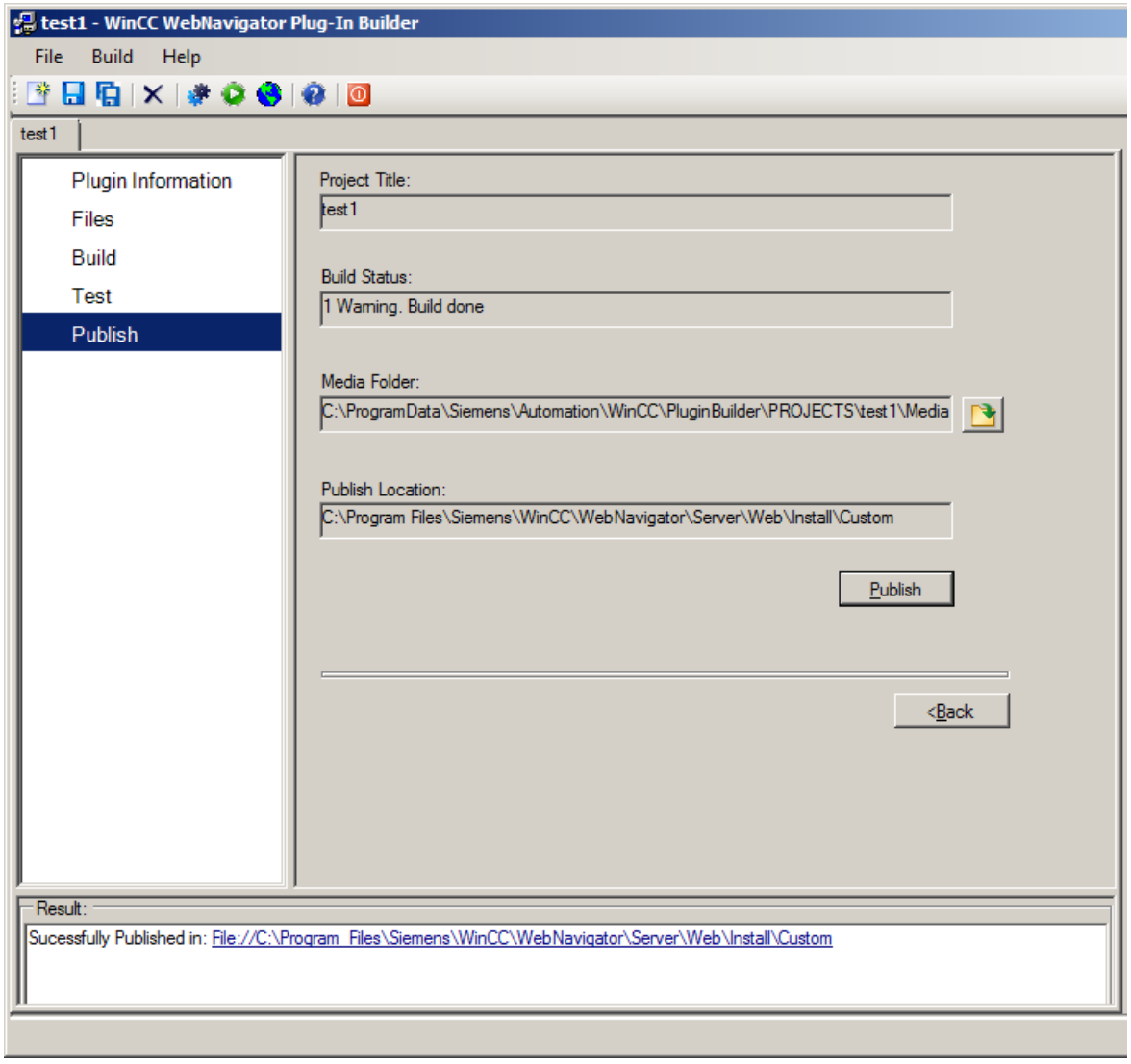
If WebNavigator-Server and Plug-In Builder are located on the same computer, you can export the Plug-In directly to the WebNavigator-Server. If the Plug-In Builder is on another computer, you must transfer the Plug-In manually to the WebNavigator-Server.

Requirement

- The Plug-In has been generated successfully.
- Publishing requires the WebNavigator-Server.

Procedure

1. In the navigation area, click "Publish", or get to this dialog from "Test" with "Next".

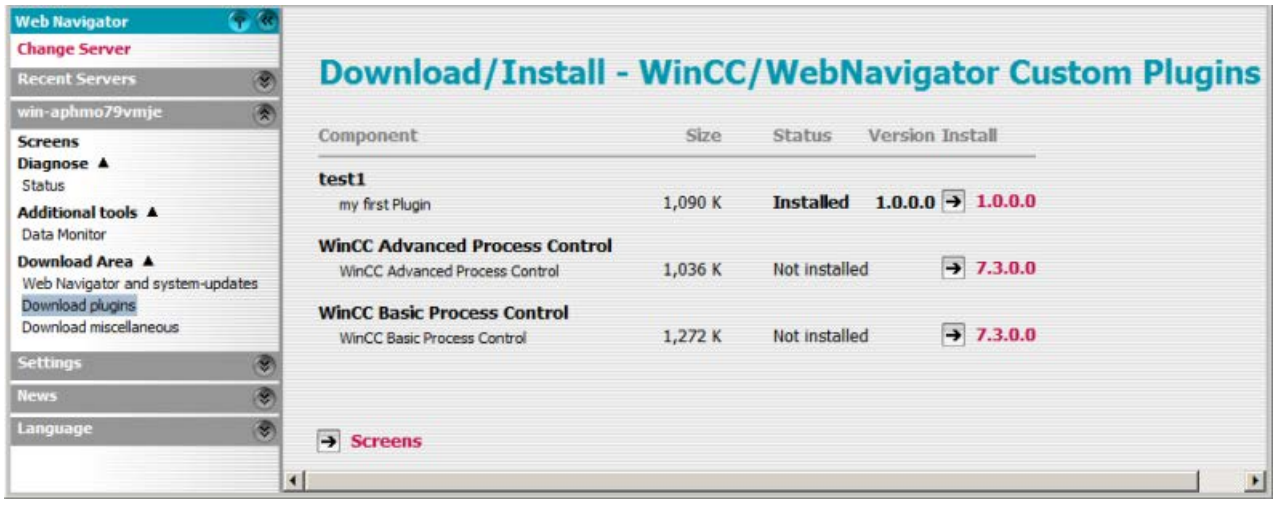


2. Click or on the"Publish" button. The created Plug-In is stored on the WebNavigator-Server in the following installation folder: "WebNavigator/Server/Web/Install/Custom".
3. You receive information on the status of the publishing in the "Publish Plugin" results window. You go directly to the storage location by clicking the link.
4. Click the menu command "File > Close" to close the project or close the Plug-In Builder with .

Installing a plug-in on the WebNavigator client

In order to install plug-ins created with the Plug-In Builder on the WebNavigator-Client, you must have Windows administrator rights. The versions of the Plug-In Builders and WebNavigator-Clients used must be identical.

You use the Web Navigator interface to install the Plug-In. In the "Download Area/Download plugins" menu, select the desired Plug-In.



2.2.6 Configuring terminal services for WebNavigator

2.2.6.1 Communication Using Terminal Services

Access from WebNavigator client and WinCC clients to the WebNavigator server

When a WebNavigator Client via the terminal service and WinCC Clients access the WebNavigator Server, the WebNavigator Client operating as Terminal Client must not open a Windows Desktop in the session.

You have the following options of preventing the WebNavigator Client from opening the Windows Desktop at the beginning of a session:

- Enter all users directly in the Terminal Service configuration.
- In the Computer Management, enter Internet Explorer as start program for individual users.

2.2.6.2 Terminal Services Setup

Introduction

The following chapters show you how to set up the terminal services with regard to the WebNavigator Client.

Requirement

- The WinCC basic system and WebNavigator Server do not run under the terminal services.
- The WinCC basic system and WebNavigator Server must be installed on the server before you activate the terminal services for the following configuration steps.

Configuration steps

1. Activate the terminal services on the Terminal Server
2. Install the application on the Terminal Server, e.g. the WebNavigator Client. Information pertaining to the installation can be found in the corresponding documentation and the Online Help.
3. On the Terminal Server, create the users for access via the terminal services.
4. Run the application on the Terminal Client.

For more information, refer to "Terminal services" in the Microsoft Online Help.

2.2.6.3 Activating terminal services on the Windows Server

Introduction

Activate the Terminal Services on the server before you install the actual applications, e.g. WebNavigator Client.

Install the application on the server using the "Add or Remove Programs" dialog in the Control Panel. This makes it possible for all users to configure the applications. If the application is installed in any other way, only the user who actually installed the application can use it.

Requirement

- Windows administrator rights
- Windows server

Procedure

1. Open the Control Panel and double-click "Software".
2. Click "Add/Remove Windows Components" in the "Software" dialog. The "Windows Components Wizard" opens.
3. Activate "Terminal Server" and "Terminal Server Licensing".
4. Click "Next". Follow the instructions.

2.2.6.4 Creating users for access to the Terminal Server

Requirement

- Terminal Server is installed.
- A Windows user is created.

Procedure

1. Open Computer Management via the Control Panel. Select "Local Users and Groups".
2. Double-click the "Users" folder.
3. Double-click the user to be granted access to the Terminal Service.
4. Click on the "Membership" tab. Click "Add". The "Select Group" dialog opens.
5. Add the "Remote Desktop Users" group. Click "OK" to close all open dialogs.
6. Check the membership of the users in other groups. If required, add the user to other groups in order to assign the necessary user authorizations.
7. Close Computer Management.

2.2.6.5 Starting the Terminal Server on the Terminal Client

Requirement

- The Terminal Service is started on the Windows Server
- On the Terminal Server, you created a user for access.

Procedure

1. On the Terminal Client, select the entry "Remote Desktop Connection" in the "Windows Accessories" program group.
   The "Remote Desktop Connection" dialog opens.
2. Enter the name of the Terminal Server.
3. Click "Connect". Log on with the user that you created for access to the Terminal Server.

Result

The connection is established. The desktop of the Terminal Server is displayed. Start an application on the Terminal Server, for example, WebNavigator Client via Internet Explorer.

2.2.7 Appendix

2.2.7.1 Troubleshooting

Communication between the WebNavigator Server and WebNavigator Client is down

If a provider (participating proxy, Firewall) has set Content Filtering for an Internet connection, WebNavigator communication is no longer possible.

With content filtering, only certain contents of HTML pages are permitted. Communication is routed via a defined port to an IP address, e.g. the address of the WinCC Server.

Corrective measure

Disable Smart Filtering of the IP address on the WebNavigator Server.

Because there is no HTML content on the WinCC server, filtering is not particularly useful in any case.

The data is transferred in encrypted form if you are using SSL technology. In this case, Smart Filtering of contents is not possible.

Connection abort

In the Internet environment, connection failures, delays, and fluctuation in communication can occur.

If communication between the WebNavigator Client and WebNavigator Server goes down, a message is output to the user on the WebNavigator Client.

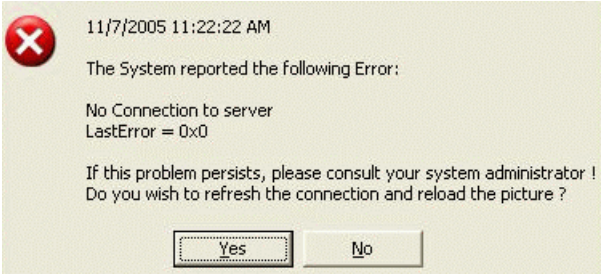
The WebNavigator Client then attempts to perform an automatic connection setup in order to restore the connection.

Corrective measure

Set the waiting times between connection attempts with the "Web Configurator".

If the value "0" is set, the WebNavigator Client does not attempt to reconnect automatically.

In this case, a message is output on the WebNavigator Client querying whether you wish to re-establish the connection.



Confirm this prompt to re-establish the connection.

No pictures are displayed.

Check that the correct web page is activated on the WebNavigator Server.

Multiple tab browsing

You need the "ControlHost.exe" process to enable multiple tab browsing in Internet Explorer.

When you append "?inplacecontrol=no" to the server name in the address bar, the WebNavigator Client is no longer hosted in the ControlHost, but instead in Internet Explorer.

This means that multiple tab browsing is no longer possible and that the "Multiple viewer instance disabled" message is output.

Demo mode

If a required license is missing on the WebNavigator Server, a message is displayed informing you of this and the WebNavigator Client runs in demo mode.

In this mode, the WebNavigator Client is fully operational for a period of 30 days.

After 30 days, the error message "Still no License on Server, Demo mode expired" is shown. The WebNavigator Client can no longer connect to the WebNavigator Server.

Security levels as of Internet Explorer 8

Protected mode is activated by default for Internet Explorer 8 in Windows 7.

While protective mode is activated, you cannot connect to the WebNavigator Server. The error message "Low integrity level is not supported:. Please deactivate protected mode" is displayed.

Disable the mode in "Tools > Internet Options > Security".

Internet Explorer on the Web client: Compatibility settings

When using Internet Explorer, you may experience display problems of the Web server on the Web client.

To display the Web server correctly on the Web client, enable the compatibility view of the Internet Explorer on the Web client.

Wrong start picture

You have edited a new picture in the Graphics Designer.

1. Start the WinCC Web Publishing Wizard in order to publish the new picture.
   You open the WinCC Web Publishing Wizard in Windows via "PublishingWizard" or in the WinCC Explorer in the "Web Navigator" shortcut menu via "Web View Publisher".
2. Select "Tools > Internet Options" in Internet Explorer to delete the temporary Internet files.
3. You can assign an individual start picture to each user in the User Administration.

No connection to WebNavigator Server possible.

The following section lists several error messages and reasons that prevent the WebNavigator Client from connecting to the WebNavigator Server:

"The WinCC Server is currently not active":

A server is not started in Runtime.

"Unknown user name or password":

This error can only occur in WinCCViewerRT.

The user or password was stored or entered incorrectly.

Internet Explorer allows you to enter the user name and password three times. The "HTTP Error 401.1" error page is then displayed.

Note

Passwords are case-sensitive.

"Maximum count of users reached":

The WinCC/WebNavigator license was exceeded on the WebNavigator Server.

"Maximum number of simultaneous client connections reached as all licenses are in use".

The available WinCC/WebNavigator licenses are allocated.

If the WinCC/WebUX option is also used in the WinCC system, a WebUX client can also occupy a WebNavigator license. This reduces the number of available WebNavigator licenses.

To identify any inactive clients and to disconnect them, use the page "http://<servername>/status.html".

"Server workload exceeds limit":

The maximum number of simultaneous connections was exceeded.

You make the setting in "WebNavigator > Web settings > Runtime" in WinCC Explorer.

The number of clients connected to a server is shown on the page "http://<servername>/status.html".

The number of simultaneous connections could exceed the number of connected clients if, for example, several tabs are opened in the browser window.

"Maximum count of tabs reached":

The maximum number of tabs per browser was exceeded.

You make the setting in "WebNavigator > Web settings > Runtime" in WinCC Explorer.

"No connection to server":

The server cannot be reached.

The precise cause of error is unknown.

For diagnostics information, refer to the page "http://<servername>/status.html".

If the WebNavigator client is not running on the same computer as the WebNavigator server, check the settings in the "Simatic Shell" dialog. Remote communication must be activated on both the Web client and the Web server.

Note

WebNavigator client on a 64-bit PC

If the WebNavigator Client is a 64-bit computer, you first have to install the required "Visual C++ Redistributable" on the computer.

You have to perform this installation before the connection is established.

You can install the software via the menu "Web Navigator and System Updates" in the "download area" of the Navigation user interface of "MainControl.asp".

If you are connecting to an older WebNavigator Server, the link is not available. Then you can install the required Visual C++ Redistributable from the Microsoft homepage.

"Failed to load http://<servername>/Pictures/For_example.PD_":

Access to the configured start picture has failed.

Check the authorizations on the WebNavigator Server. The published picture may no longer be available on the server.

See also

Checking the activated web page (Page 226)

Diagnosis of the Connections with "Status.html" (Page 257)

2.2.7.2 Functions

Supported functions

Introduction

The following list shows the functions supported by WebNavigator.

Functions not included in this list are not automatically enabled for the WebNavigator.

Functions

WaitForDocumentReady	

Get_Focus	GetTagChar
GetAssignments	GetTagCharState
GetBasePicture	GetTagCharStateWait
GetFlashPicture	GetTagCharWait

GetFontName	GetTagMultiStateWait
GetInputValueChar	GetTagMultiWait
GetLastChange	GetText
GetOutputFormat	SetTagMultiWait
GetOutputValueChar	SetTagMultiStateWait
GetPictureName	SetTagRaw
GetPropChar	SetTagRawState
GetServerName	SetTagRawStateWait

AXC_OnBtnArcLong	AXC_OnBtnMsgNext
AXC_OnBtnArcShort	AXC_OnBtnMsgPrev
AXC_OnBtnComment	AXC_OnBtnMsgWin
AXC_OnBtnEmergAckn	AXC_OnBtnScroll
AXC_OnBtnInfo	AXC_OnBtnSelect
AXC_OnBtnLock	AXC_OnBtnSinglAckn
AXC_OnBtnLoop	AXC_OnBtnVisibleAckn
AXC_OnBtnMsgFirst	AXC_SetFilter
AXC_OnBtnMsgLast	

OnBtnArcLong	OnBtnMsgLast
OnBtnArcShort	OnBtnMsgNext
OnBtnComment	OnBtnMsgPrev
OnBtnEmergAckn	OnBtnMsgWin
OnBtnHornAckn	OnBtnPrint
OnBtnInfo	OnBtnScroll
OnBtnLanguage	OnBtnSelect
OnBtnLock	OnBtnSinglAckn
OnBtnLoop	OnBtnVisibleAckn
OnBtnMsgFirst	

TLGGetTemplateParameter	TlgTableWindowPressPrevButton
TLGPressToolbarButton	TlgTableWindowPressPrevItemButton
TlgGetColumnPosition	TlgTableWindowPressStartStopButton
TlgGetNumberOfColumns	TlgTrendWindowPressFirstButton
TlgGetNumberOfRows	TlgTrendWindowPressLastButton
TlgGetNumberOfTrends	TlgTrendWindowPressLinealButton
TlgGetRowPosition	TlgTrendWindowPressNextButton
TlgGetRulerArchivNameTrend	TlgTrendWindowPressNextItemButton
TlgGetRulerTimeTrend	TlgTrendWindowPressOneToOneButton
TlgGetRulerValueTrend	TlgTrendWindowPressOpenArchiveVariableSelectionDlgBut-ton

TlgGetRulerVariableNameTrend	TlgTrendWindowPressOpenDlgButton
TlgGetTextAtPos	TlgTrendWindowPressOpenItemSelectDlgButton
TlgTableWindowPressFirstButton	TlgTrendWindowPressOpenTimeSelectDlgButton
TlgTableWindowPressLastButton	TlgTrendWindowPressPrevButton
TlgTableWindowPressNextButton	TlgTrendWindowPressPrevItemButton
TlgTableWindowPressNextItemButton	TlgTrendWindowPressStartStopButton
TlgTableWindowPressOpenArchiveVariableSelectionDlgBut-ton	TlgTrendWindowPressZoomInButton
TlgTableWindowPressOpenItemSelectDlgButton	TlgTrendWindowPressZoomOutButton
TlgTableWindowPressOpenTimeSelectDlgButton	

GetLanguage	GetParentPicture
SetLanguage	GetParentPictureWindow
GetLink	GetServerTagPrefix
SetLink	OpenPicture
GetLinkedVariable	SetPictureDeactivated
GetLocalPicture	SetPictureDown
SetMultiLink	SetPictureUp
RPTJobPrint	

_makepath	fscanf	setvbuf
_splitpath	fsetpos	sprintf
abs	ftell	srand
abort	fwrite	sscanf
asctime	getc	strcat
atexit	getchar	strcmp
atof	getenv	strcpy
atoi	gets	strchr
atol	gmtime	strcspn
bsearch	labs	strerror
calloc	ldiv	strftime
clearerr	localtime	strlen
clock	malloc	strncat
ctime	memchr	strncmp
difftime	memcmp	strncpy
div	memcpy	strpbrk
exit	memmove	strrchr
fclose	memset	strspn
feof	mktime	strstr
ferror	perror	strtod
fflush	printf	strtok
fgetc	putc	strtol

fgetpos	putchar	strtoul
fgets	puts	SysMalloc
fopen	qsort	system
fprintf	rand	time
fputc	realloc	ungetc
fputs	remove	vfprintf
freopen	rename	vprintf
fread	rewind	vsprintf
free	scanf	
fseek	setbuf	

Check	ProgramExecute

GetActualPointLeft	GetExponent	GetPicDeactTransparent
GetActualPointTop	GetExtendedOperation	GetPicDeactUseTransColor
GetAdaptBorder	GetFillColor	GetPicDownReferenced
GetAdaptPicture	GetFilling	GetPicDownTransparent
GetAdaptSize	GetFillingIndex	GetPicDownUseTransColor
GetAlarmHigh	GetFillStyle	GetPicReferenced
GetAlarmLow	GetFillStyle2	GetPicTransColor
GetAlignment	GetFlashBackColor	GetPicUpReferenced
GetAlignmentLeft	GetFlashBorderColor	GetPicUpTransparent
GetAlignmentTop	GetFlashFlashPicture	GetPicUpUseTransColor
GetAssumeOnExit	GetFlashForeColor	GetPicUseTransColor
GetAssumeOnFull	GetFlashPicReferenced	GetPictureDeactivated
GetAverage	GetFlashPicTransColor	GetPictureDown
GetAxisSection	GetFlashPicUseTransColor	GetPictureUp
GetBackBorderWidth	GetFlashRateBackColor	GetPointCount
GetBackColor	GetFlashRateBorderColor	GetPosition
GetBackColor2	GetFlashRateFlashPic	GetPressed
GetBackColor3	GetFlashRateForeColor	GetProcess
GetBackColorBottom	GetFontBold	GetPropBOOL
GetBackColorTop	GetFontItalic	GetPropDouble
GetBackFlashColorOff	GetFontSize	GetPropLong
GetBackFlashColorOn	GetFontUnderline	GetPropWord
GetBasePicReferenced	GetForeColor	GetRadius
GetBasePicTransColor	GetForeFlashColorOff	GetRadiusHeight
GetBasePicUseTransColor	GetForeFlashColorOn	GetRadiusWidth
GetBitNumber	GetGrid	GetRangeMax
GetBorderBackColor	GetGridColor	GetRangeMin
GetBorderColor	GetGridHeight	GetReferenceRotationLeft
GetBorderColorBottom	GetGridWidth	GetReferenceRotationTop

GetBorderColorTop	GetHeight	GetRightComma
GetBorderEndStyle	GetHiddenInput	GetRotationAngle
GetBorderFlashColorOff	GetHotkey	GetRoundCornerHeight
GetBorderFlashColorOn	GetHysteresis	GetRoundCornerWidth
GetBorderStyle	GetHysteresisRange	GetScaleColor
GetBorderWidth	GetIndex	GetScaleTicks
GetBoxAlignment	GetInputValueDouble	GetScaling
GetBoxCount	GetItemBorderBackColor	GetScalingType
GetBoxType	GetItemBorderColor	GetScrollBars
GetButtonColor	GetItemBorderStyle	GetSelBGColor
GetCaption	GetItemBorderWidth	GetSelTextColor
GetCheckAlarmHigh	GetLanguageSwitch	GetSizeable
GetCheckAlarmLow	GetLayer	GetSmallChange
GetCheckLimitHigh4	GetLeft	GetStartAngle
GetCheckLimitHigh5	GetLeftComma	GetToggle
GetCheckLimitLow4	GetLimitHigh4	GetToleranceHigh
GetCheckLimitLow5	GetLimitHigh5	GetToleranceLow
GetCheckToleranceHigh	GetLimitLow4	GetTop
GetCheckToleranceLow	GetLimitLow5	GetTrend
GetCheckWarningHigh	GetLimitMax	GetTrendColor
GetCheckWarningLow	GetLimitMin	GetTypeAlarmHigh
GetClearOnError	GetListType	GetTypeAlarmLow
GetClearOnNew	GetLongStrokesBold	GetTypeLimitHigh4
GetCloseButton	GetLongStrokesOnly	GetTypeLimitHigh5
GetColorAlarmHigh	GetLongStrokesSize	GetTypeLimitLow4
GetColorAlarmLow	GetLongStrokesTextEach	GetTypeLimitLow5
GetColorBottom	GetMarker	GetTypeToleranceHigh
GetColorChangeType	GetMax	GetTypeToleranceLow
GetColorLimitHigh4	GetMaximizeButton	GetTypeWarningHigh
GetColorLimitHigh5	GetMin	GetTypeWarningLow
GetColorLimitLow4	GetMoveable	GetUnselBGColor
GetColorLimitLow5	GetNumberLines	GetUnselTextColor
GetColorToleranceHigh	GetOffsetLeft	GetUpdateCycle
GetColorToleranceLow	GetOffsetTop	GetVisible
GetColorTop	GetOnTop	GetWarningHigh
GetColorWarningHigh	GetOperation	GetWarningLow
GetColorWarningLow	GetOperationMessage	GetWindowBorder
GetCursorControl	GetOperationReport	GetWindowsStyle
GetDataFormat	GetOrientation	GetWidth
GetDirection	GetOutputValueDouble	GetZeroPoint
GetEditAtOnce	GetPasswordLevel	GetZeroPointValue
GetEndAngle	GetPicDeactReferenced	GetZoom

Set_Focus	SetEditAtOnce	SetPicDownUseTransColor
SetActualPointLeft	SetEndAngle	SetPicTransColor
SetActualPointTop	SetExponent	SetPicUpTransparent
SetAlarmHigh	SetExtendedOperation	SetPicUpUseTransColor
SetAlarmLow	SetFillColor	SetPicUseTransColor
SetAlignment	SetFilling	SetPictureName
SetAlignmentLeft	SetFillingIndex	SetPointCount
SetAlignmentTop	SetFillStyle	SetPosition
SetAssumeOnExit	SetFillStyle2	SetPressed
SetAssumeOnFull	SetFlashBackColor	SetProcess
SetAverage	SetFlashBorderColor	SetPropBOOL
SetAxisSection	SetFlashFlashPicture	SetPropDateTime
SetBackBorderWidth	SetFlashForeColor	SetPropChar
SetBackColor	SetFlashPicTransColor	SetPropDouble
SetBackColor2	SetFlashPicUseTransColor	SetPropLong
SetBackColor3	SetFlashRateBackColor	SetPropWord
SetBackColorBottom	SetFlashRateBorderColor	SetRadius
SetBackColorTop	SetFlashRateFlashPic	SetRadiusHeight
SetBackFlashColorOff	SetFlashRateForeColor	SetRadiusWidth
SetBackFlashColorOn	SetFontBold	SetRangeMax
SetBasePicTransColor	SetFontItalic	SetRangeMin
SetBasePicUseTransColor	SetFontName	SetRightComma
SetBitNumber	SetFontSize	SetReferenceRotationLeft
SetBorderBackColor	SetFontUnderline	SetReferenceRotationTop
SetBorderColor	SetForeColor	SetRotationAngle
SetBorderColorBottom	SetForeFlashColorOff	SetRoundCornerHeight
SetBorderColorTop	SetForeFlashColorOn	SetRoundCornerWidth
SetBorderEndStyle	SetHeight	SetScaleColor
SetBorderFlashColorOff	SetHiddenInput	SetScaleTicks
SetBorderFlashColorOn	SetHysteresis	SetScaling
SetBorderStyle	SetHysteresisRange	SetScalingType
SetBorderWidth	SetIndex	SetSelBGColor
SetBoxAlignment	SetItemBorderBackColor	SetSelTextColor
SetBoxCount	SetItemBorderColor	SetSmallChange
SetBoxType	SetItemBorderStyle	SetStartAngle
SetButtonColor	SetItemBorderWidth	SetText
SetCheckAlarmHigh	SetLeft	SetTop
SetCheckAlarmLow	SetLeftComma	SetTrend
SetCheckLimitHigh4	SetLimitHigh4	SetTrendColor
SetCheckLimitHigh5	SetLimitHigh5	SetToleranceHigh
SetCheckLimitLow4	SetLimitLow4	SetToleranceLow
SetCheckLimitLow5	SetLimitLow5	SetToggle

SetCheckToleranceHigh	SetLimitMax	SetTypeAlarmHigh
SetCheckToleranceLow	SetLimitMin	SetTypeAlarmLow
SetCheckWarningHigh	SetLongStrokesBold	SetTypeLimitHigh4
SetCheckWarningLow	SetLongStrokesOnly	SetTypeLimitHigh5
SetClearOnError	SetLongStrokesSize	SetTypeLimitLow4
SetClearOnNew	SetMarker	SetTypeLimitLow5
SetColorAlarmHigh	SetMax	SetTypeToleranceHigh
SetColorAlarmLow	SetMin	SetTypeToleranceLow
SetColorBottom	SetNumberLines	SetTypeWarningHigh
SetColorChangeType	SetOffsetLeft	SetTypeWarningLow
SetColorLimitHigh4	SetOffsetTop	SetUnselBGColor
SetColorLimitHigh5	SetOperation	SetUnselTextColor
SetColorLimitLow4	SetOperationMessage	SetVisible
SetColorLimitLow5	SetOperationReport	SetWarningHigh
SetColorToleranceHigh	SetOrientation	SetWarningLow
SetColorToleranceLow	SetOutputValueChar	SetWindowsStyle
SetColorTop	SetOutputValueDouble	SetWidth
SetColorWarningHigh	SetPasswordLevel	SetZeroPoint
SetColorWarningLow	SetPicDeactTransparent	SetZeroPointValue
SetCursorControl	SetPicDeactUseTransColor	SetZoom
SetDirection	SetPicDownTransparent	

GetTagBit	GetTagDateTime	GetTagByteStateQCWait
GetTagByte	GetTagDoubleWait	GetTagCharStateQC
GetTagDouble	GetTagDWordWait	GetTagCharStateQCWait
GetTagDWord	GetTagFloatWait	GetTagDoubleStateQC
GetTagFloat	GetTagRawWait	GetTagDoubleStateQCWait
GetTagRaw	GetTagSByteWait	GetTagDWordStateQC
GetTagSByte	GetTagSDWordWait	GetTagDWordStateQCWait
GetTagSDWord	GetTagSWordWait	GetTagFloatStateQC
GetTagSWord	GetTagWordWait	GetTagFloatStateQCWait
GetTagWord	GetTagBitStateWait	GetTagRawStateQC
GetTagBitState	GetTagByteStateWait	GetTagRawStateQCWait
GetTagByteState	GetTagDoubleStateWait	GetTagSByteStateQC
GetTagDoubleState	GetTagDWordStateWait	GetTagSByteStateQCWait
GetTagDWordState	GetTagFloatStateWait	GetTagSDWordStateQC
GetTagFloatState	GetTagRawStateWait	GetTagSDWordStateQCWait
GetTagRawState	GetTagSByteStateWait	GetTagSWordStateQC
GetTagSByteState	GetTagSDWordStateWait	GetTagSWordStateQCWait
GetTagSDWordState	GetTagSWordStateWait	GetTagValueStateQC
GetTagSWordState	GetTagWordStateWait	GetTagValueStateQCWait
GetTagWordState	GetTagBitStateQC	GetTagWordStateQC

GetTagBitWait	GetTagBitStateQCWait	GetTagWordStateQCWait
GetTagByteWait	GetTagByteStateQC	GetTagMultiStateQCWait

SetTagBit	SetTagFloatState	SetTagSWordWait
SetTagByte	SetTagRawState	SetTagWordWait
SetTagDouble	SetTagSByteState	SetTagBitStateWait
SetTagDWord	SetTagSDWordState	SetTagByteStateWait
SetTagFloat	SetTagSWordState	SetTagDoubleStateWait
SetTagRaw	SetTagWordState	SetTagDWordStateWait
SetTagSByte	SetTagBitWait	SetTagFloatStateWait
SetTagSDWord	SetTagByteWait	SetTagRawStateWait
SetTagSWord	SetTagDoubleWait	SetTagSByteStateWait
SetTagWord	SetTagDWordWait	SetTagSDWordStateWait
SetTagBitState	SetTagFloatWait	SetTagSWordStateWait
SetTagByteState	SetTagRawWait	SetTagWordStateWait
SetTagDoubleState	SetTagSByteWait	
SetTagDWordState	SetTagSDWordWait	

Supported ODK Functions

PWRTCheckPermission

PWRTCheckAreaPermission

PWRTCheckPermissionOnArea

PWRTCheckPermissionOnPicture // Only the "permlevel" parameter is evaluated.

MSRTStartMsgService

MSRTStopMsgService

MSRTCreateMsg

MSRTCreateMsgInstanceWithComment

MSRTSetComment

PDLRTGetLink

PDLRTSetLink

PDLRTSetMultiLink

PDLRTGetPropEx // Only reading is supported.

PDLRTSetPropEx // Only setting is supported.

TXTRTConnect

TXTRTDisconnect

TXTRTGetInfoText

TXTRTGetInfoTextMC

Supported User Archive-Functions

Note

User archive functions must always start with "ua" in lower case.

Functions beginning with the uppercase letters "UA" are ODK functions. These ODK functions are not supported on the WebNavigator Client.

uaArchiveClose	uaArchiveGetName	uaArchiveSetFieldValueLong
uaArchiveDelete	uaArchiveGetSort	uaArchiveSetFieldValueString
uaArchiveExport	uaArchiveImport	uaArchiveSetFilter
uaArchiveGetCount	uaArchiveInsert	uaArchiveSetSort
uaArchiveGetFieldLength	uaArchiveMoveFirst	uaArchiveUpdate
uaArchiveGetFieldName	uaArchiveMoveLast	uaArchiveWriteTagValues
uaArchiveGetFields	uaArchiveMoveNext	uaArchiveWriteTagValuesByName
uaArchiveGetFieldType	uaArchiveMovePrevious	uaConnect
uaArchiveGetFieldValueDate	uaArchiveOpen	uaDisconnect
uaArchiveGetFieldValueFloat	uaArchiveReadTagValues	uaGetLastError
uaArchiveGetFieldValueDouble	uaArchiveReadTagValuesByName	uaGetLastHResult
uaArchiveGetFieldValueLong	uaArchiveRequery	uaQueryArchive
uaArchiveGetFieldValueString	uaArchiveSetFieldValueDate	uaQueryArchiveByName
uaArchiveGetFilter	uaArchiveSetFieldValueDouble	uaReleaseArchive
uaArchiveGetID	uaArchiveSetFieldValueFloat	

Supported MBCS Functions

_ismbcalnum	_mbscat	_mbsncmp
_ismbcalpha	_mbschr	_mbsncpy
_ismbcdigit	_mbscmp	_mbsnicmp
_ismbcgraph	_mbscpy	_mbspbrk
_ismbclower	_mbsdec	_mbsrchr
_ismbcprint	_mbsicmp	_mbsspn
_ismbcpunct	_mbsinc	_mbsstr
_ismbcspace	_mbslen	_mbstok
_ismbcupper	_mbscspn	_mbctolower
_mbclen	_mbsncat	_mbctoupper

WaitForDocumentReady

Function

The function checks whether a picture is loaded in the specified picture window.

A difference must be made in the scripts of process pictures or project functions between the runtime environment of WinCC and of the WebNavigator Client.

The following Compiler commands exist to this purpose:

- `#ifdef RUN_ON_WEBNAVIGATOR`
- `#ifndef RUN_ON_WEBNAVIGATOR`

This allows you to distinguish between WinCC and the WebNavigator Client in your configuration as follows:

- Script delay with "`WaitForDocumentReady`"
- Differing picture addressing
- Different function names for control system functions
- Functions that are not supported on the WebNavigator Client

Syntax in ANSI-C

```
int WaitForDocumentReady(LPCSTR lpszPictureWindow)
```

Parameters

lpszPictureWindow

Pointer to the name of the picture window that is opened in the WebNavigator client.

The following addressing syntax is possible:

Picture window "xxx" in the current picture	`./xxx`
Picture window "yyy" in the child picture "xxx"	`./xxx/yyy`
Picture window "xxx" in the parent picture	`../xxx`
Picture window "xxx" in the parent picture of the parent picture	`../../xxx`
Absolute path compatible with WinCC	`xxx.yyy:`

Note

Addressing via absolute path

Add a colon at the end of the path for addressing the picture window via an absolute path.

After the colon, you can optionally refer to a specific picture in the picture window.

Example:

- `WaitForDocumentReady("Start.PictureWindow1:Picture1")`

Return value

	Value	Explanation
TRUE	0	The picture window has been found and the status checked.
FALSE	-1	The picture window has not been found.

Example of ANSI-C

```
#ifdef RUN_ON_WEBNAVIGATOR
SetPropChar("../", "View", "PictureName", szViewName);
WaitForDocumentReady("../View");
#else
SetPropChar(lpszParent, "View", "PictureName", szViewName);
#endif
```

Note

Syntax check

The syntax of the code section for WinCC/WebNavigator is not checked during compilation of the WinCC script. Instead, it is only checked when the pictures are published.

Syntax in VBS

```
Expression.WaitForDocumentReady()
```

Example for VBS

```
If IsWebNavigator() Then
WaitForDocumentReady(PictureName) 'Byref
End If
```

Unsupported Functions

The following list is only an extract of the unsupported functions. The list contains the functions that are explicitly stated as being unsupported.

Functions

GetHWDiag	OnDeactivateExecute	ReportJob
GetHWDiagLevel	OnErrorExecute	RPTJobPreview
GetKopFupAwl	OnTime	RptShowError
GetKopFupAwlLevel	OpenPrevPicture	

VBScript functions

- HMIRuntime.Stop: Terminates Internet Explorer and WinCCViewerRT, but not WinCC Runtime.
- AlarmLogs Object
- DataLogs Object
- Logging Object
- Project Object

Functions That Are not Required:

- DeactivateRTProject: Terminates Internet Explorer and WinCCViewerRT, but not WinCC Runtime.
- ExitWinCC
- FillDiagnoseInTags
- InquireLanguage
- TraceText
- TraceTime

Other Functions

These functions are included in the functional scope in order to ensure error-free compilation on the WebNavigator Client. The functions are not supported by the WebNavigator Client.

AXC_OnBtnHornAckn	GetCursorMode	GmsgFunction
AXC_OnBtnPrint	SetCursorMode	MSRTMsgWinCommand
AXC_OnBtnProtocol		TlgTableWindowPressHelpButton

WinCC/DataMonitor

3

3.1 WinCC/DataMonitor Getting Started

3.1.1 DataMonitor

Overview

You can display and evaluate current process states and historical data with WinCC/DataMonitor via the Intranet/Internet.

WinCC/DataMonitor consists of a server component and a client component. The DataMonitor server makes functions available to the DataMonitor client for analysis and display of data. Access rights control access to the functions.

- "WinCCViewerRT":
  Program for monitoring of WinCC projects. The DataMonitor client is a so-called "View Only Client".
- "Excel Workbook":
  Display of process values and archive values in an Excel table for evaluation and display via the web or as a print template for reports
- "Reports":
  Creating reports from WinCC print jobs or from published Excel workbooks. This also allows for statistics and analyses of certain process data or historical data. The reports are created in PDF format and forwarded as e-mail if necessary.
- "Webcenter":
  Central information portal for access to WinCC data via user-specific views. Clearly structured Webcenter pages with individual user rights for reading, writing and creating Webcenter pages.
- "Trends & Alarms":
  For display and analysis of archived process values and alarms. The data is displayed in tables and diagrams on predefined Webcenter pages.

Quantity Structure

WinCC/DataMonitor allows the simultaneous operation of up to 50 clients per server.

Using terminal services

A configuration with 50 DataMonitor clients per terminal services server has been tested as a typical scenario.

3.1.2 Preparations

Introduction

For the Getting Started, you will implement a WinCC single user system, on which the DataMonitor server will be installed. To access the data and display them with the DataMonitor client, the client is started on the DataMonitor server.

Requirement

Please follow the Installation Notes of WinCC and WinCC/DataMonitor.

- Internet Information Service is installed.
- WinCC is installed and has been started.
- The DataMonitor server is installed.
- The DataMonitor client is installed.
- A WinCC/DataMonitor license is installed.
- Internet Explorer is installed.

Configuration steps

You have to complete the following configuration steps to set up the DataMonitor system.

1. Configure the DataMonitor system.
   - Define Windows user and access rights in Windows.
   - Define WinCC user and access rights in "WinCC User Administrator" for WinCCViewerRT and "Excel Workbook".
   - Set up the web page and firewall.
   - Publish WinCC pictures.
2. Start the WinCC Runtime.
3. Set up the DataMonitor client.
   - Configure the security settings of the Internet Explorer.
4. Use the DataMonitor client.
   - Start the Internet Explorer and enter the address of the DataMonitor server.
   - Log on to the DataMonitor server and access the DataMonitor functions.
5. Monitor the WinCC project with the WinCCViewerRT.
   - Set up WinCCViewerRT.
   - Display pictures.

3.1.3 Configuring the DataMonitor system

3.1.3.1 Defining users in Windows

User groups in Windows

Overview

The following user groups are created automatically in Windows when the DataMonitor server is installed.

SIMATIC Report Administrators

Membership of the user group "SIMATIC Report Administrators" is required for extended rights, especially for configuration purposes. At least one user must be created and assigned to the "SIMATIC Report Administrators" user group.

- You can also do the following as "SIMATIC Report Administrators" in the "Webcenter":
  - Configuring connections
  - Creating templates for Webcenter pages
  - Creating and configuring public and private Webcenter pages
- You can also do the following as "SIMATIC Report Administrators" in "Reports":
  - Configuring reports based on WinCC print jobs or Excel workbooks.

SIMATIC Report Users

Membership of the user group "SIMATIC Report Users" or of your own user group is required for the "Webcenter", "Trends & Alarms" and "Reports".

- You can also do the following as "SIMATIC Report Users" in the "Webcenter":
  - Setting up and configuring Webcenter pages. The Webcenter pages are stored in different directories.
  - Opening public pages
- You can also do the following as "SIMATIC Report Users" in "Reports":
  - Opening reports based on WinCC print jobs or Excel workbooks.

Defining Users and Access Rights in Windows

Introduction

When using DataMonitor, users need different authentications.

- All users must be members of the "SIMATIC HMI" user group.
- For access to the WinCC database via DataMonitor, you need a Windows user with password who is a member of the "SIMATIC HMI VIEWER" user group.

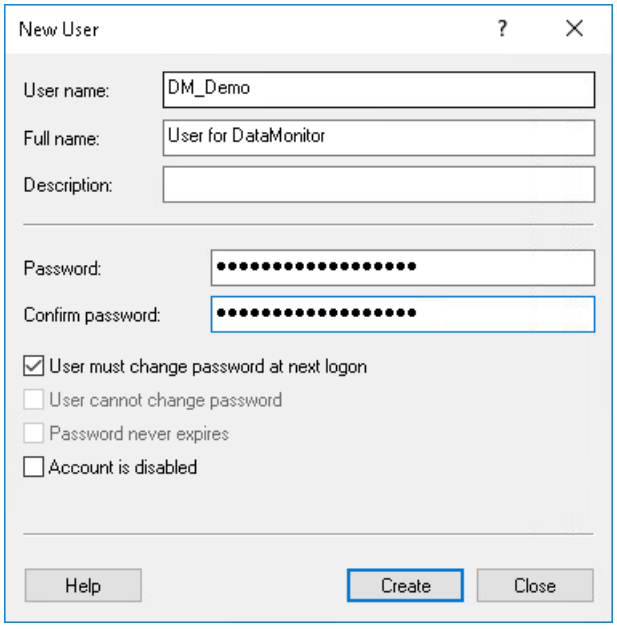
This means you must create users with the matching user rights.

Requirement

- WinCC is installed.
- The DataMonitor server is installed.

Procedure

1. Open the Windows Computer Management.
2. Under "System Tools" navigate to "Local Users and Groups > User".
   In the shortcut menu select the entry "New user".



3. Enter a name such as "DM_Demo" in the "New User" dialog box in the "User name" field.
   Enter a name such as "User for DataMonitor" in the "Full name" field.
   Type the desired password into the "Password" field and then repeat it in the "Confirm password" field.
   Create the user with "Create".
   Close the "New user" dialog.

4. In the table window, click on the newly created user.
   Select the "Properties" command in the shortcut menu.
5. Click "Add" in the "Member of" tab.
6. In the "Select Groups" dialog, click the "Advanced" and then "Find now" button.
7. In the opened list, select the following entries:
   - SIMATIC Report Administrators
   - SIMATIC HMI
   - SIMATIC HMI VIEWER
8. Click "OK" twice to close the dialog.
   In the properties of the user, the groups are added to the list.
9. Click "OK" and close the Computer Management.

Result

The user "DM_Demo" with membership of the user groups "SIMATIC Report Administrators", "SIMATIC HMI" and "SIMATIC HMI VIEWER" has been set up.

The user can now create directories in the Webcenter and make connections to WinCC databases.

Note

Login for remote access

If a user wants to access remote computers via the DataMonitor server, the Windows user must be set up on the DataMonitor server as well as the remote servers with the same password.

3.1.3.2 Administering users for DataMonitor

Introduction

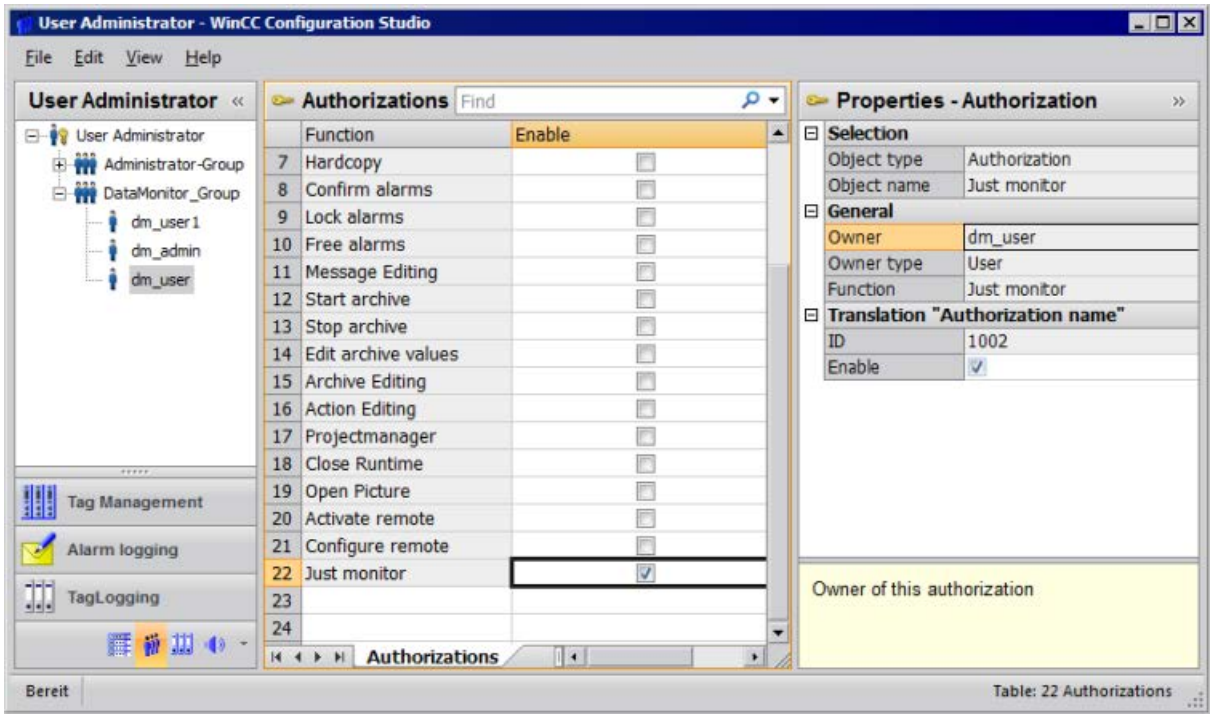
For the use of certain functions on the DataMonitor client, users need authentication as DataMonitor user as well as authentication as WinCC user. Use one WinCC user for "WinCCViewerRT" and "Excel Workbook".

If you are working as DataMonitor user and WinCC user at the DataMonitor client you have to log on twice. You have two alternatives to only log on once:

- The DataMonitor user and the WinCC user have identical names and passwords.
  The user must be configured in Windows and in WinCC and added to the "SIMATIC HMI" and "SIMATIC HMI VIEWER" user groups.
- SIMATIC logon allows the central administration of users.
  In order to use SIMATIC logon in connection with DataMonitor, DataMonitor users must also be added to the user group "SIMATIC HMI VIEWER".

Procedure

1. Select the entry "User Administrator" in the navigation window of WinCC Explorer. Select the "Open" command from the shortcut menu. The editor "User Administrator" is opened.



2. In the navigation window, select a user or create a new user.
3. Select a user group and then open the shortcut menu. Select the entry "New User". The name of the user can be changed directly with the <F2> function key or the shortcut menu command "Rename". The user must be selected beforehand for this purpose.
4. Enter a name and a password with at least six characters for "Login".
   Click "OK".
5. Select the newly created user in the table window. The properties of the user are displayed.
6. Activate the option "WebNavigator". Select a start picture from the dropdown list next to "Web start picture".
7. Check the selected language and change this setting if desired via the dropdown list next to "Web language". You can only select a new language from the dropdown list if one of the two options "WebNavigator" or "PureWebClient" is activated. The languages created in the Text Library are available for selection.
8. The user needs at least the authorization "Web Access - monitoring only".
   In the row in the table window, activate the corresponding authorization in the "Enable" column.
9. Close the User Administrator.

3.1.3.3 Configuring the DataMonitor web page

Introduction

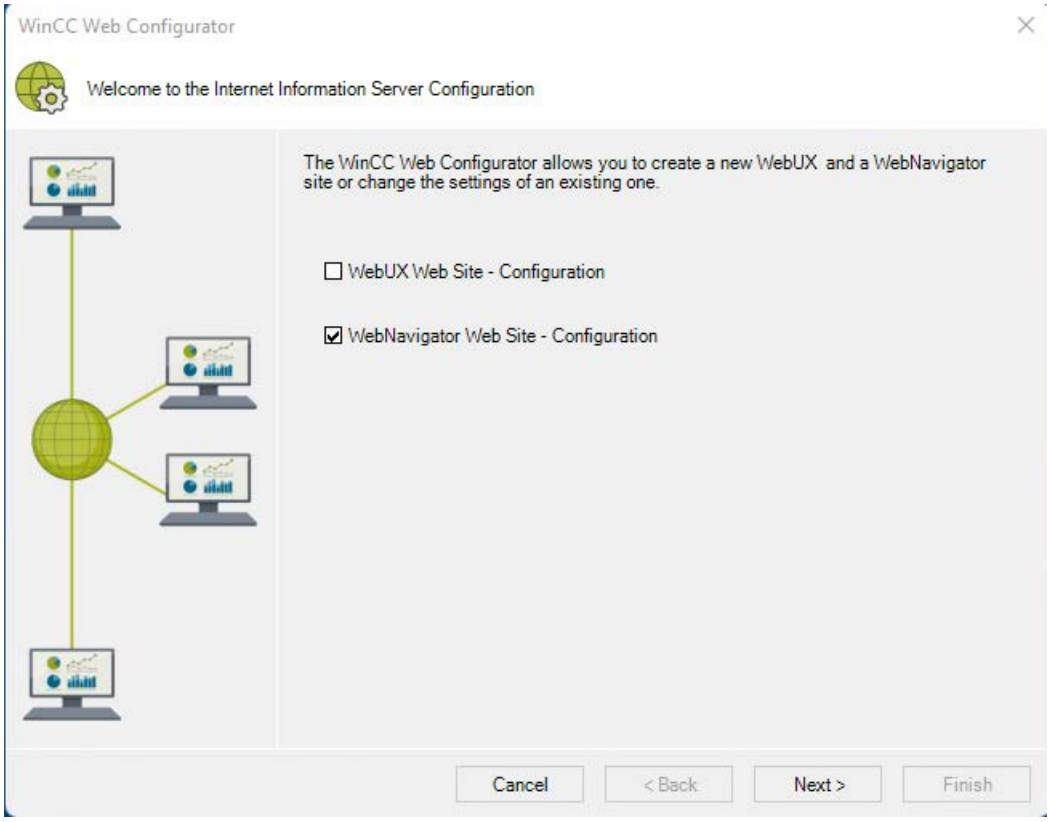
You create the DataMonitor web page with the WinCC Web Configurator.

Requirement

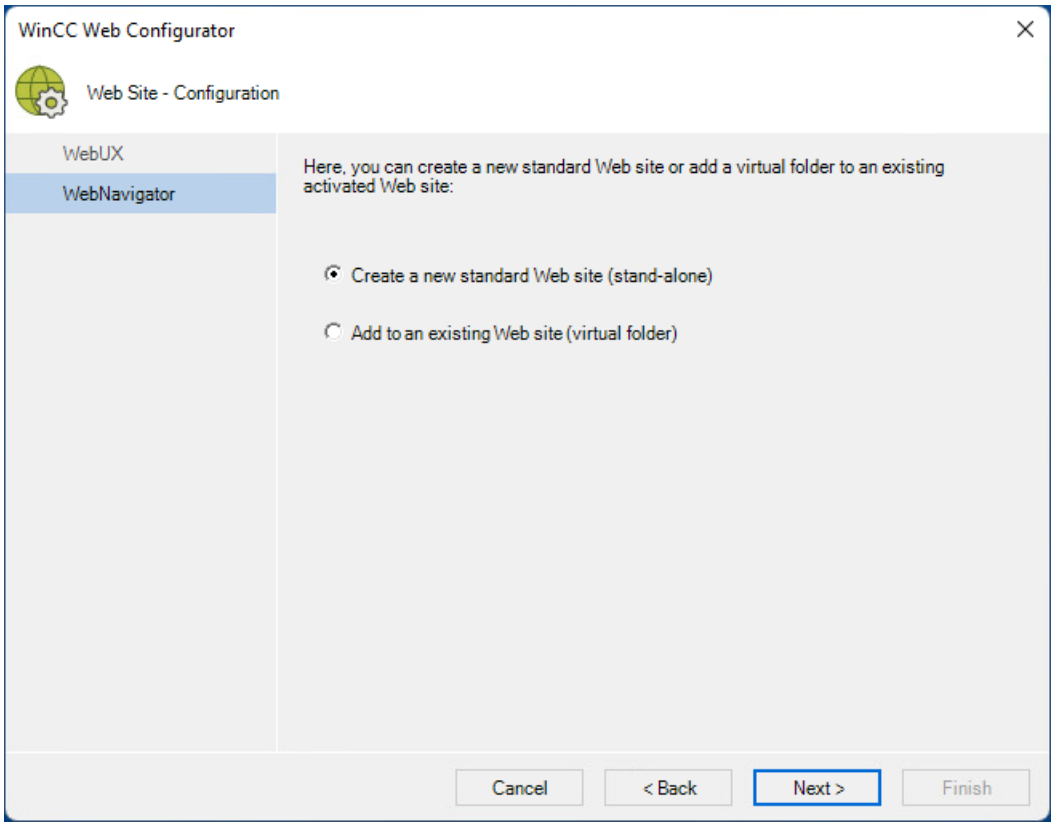
- The DataMonitor server is installed.
- The Windows "Internet Information Service" component is installed.

Procedure

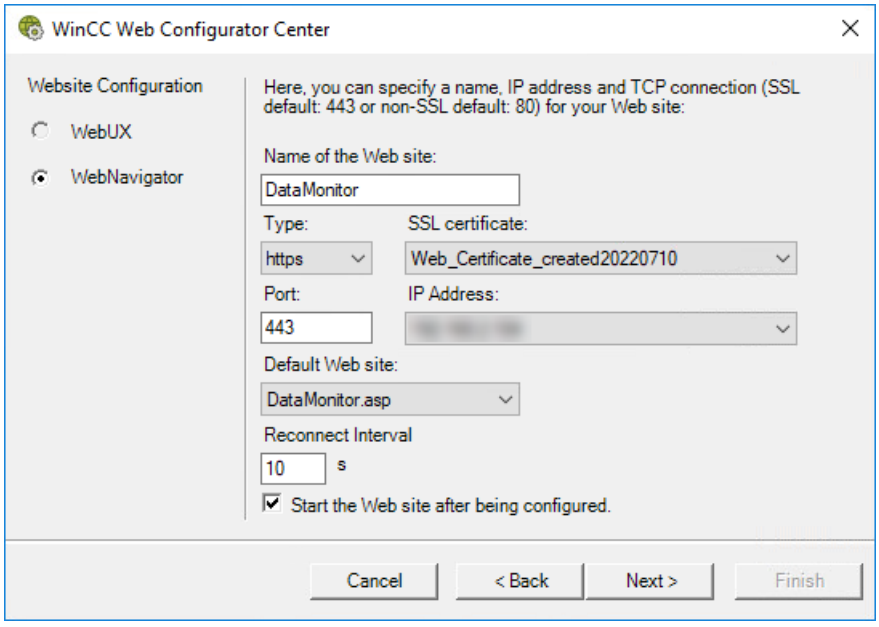
1. Select "Web Navigator" in the navigation window of WinCC Explorer.
   Select "Web Configurator" in the shortcut menu.
   Alternatively, select the "WebConfigurator" entry in the "Siemens Automation" program group.
   The WinCC Web Configurator opens.
2. On the home page, activate the "WebNavigator Website - Configuration" option.



3. The Web Configurator detects whether a configuration already exists.
   - No configuration found:
     Activate "Create a new standard website (Standalone)".
     Click "Next".
   - Configuration found:
     Click "Next" and check the configuration.



4. Select "Name of the web page" and enter the name.



5. Select an SSL certificate from the drop-down list.
   If the drop-down list does not contain a certificate, select the "Create new certificate" option.
   Enter a name in the "New certificate" dialog and confirm with "OK".
6. Enter the number of the port used for access in the "Port" field.
   The HTTPS standard port "443" is set by default.
7. At "IP address", specify whether the computer is to be available on the intranet or Internet or on both networks.
   Use only the addresses that are available in the selection list.
   Select "All not assigned" to enable intranet and Internet access to the computer.
8. Select "DataMonitor.asp" as the default web page.
9. Specify the time interval after which the DataMonitor client starts to reestablish a connection automatically in case of a connection error.
   A time setting of "0 s" disables the "Automatic reconnection" function.
10. Specify whether the web page is started once the configuration is completed.
11. Click "Next" if you have installed a firewall. The next steps are described under "Configuring the firewall (Page 292)".
    Click "Finish" if you have not activated a firewall.

Result

You have created the Web folder and activated the web page.

When you have activated the firewall, use the Web Configurator to configure its settings.

See also

Configuring the firewall (Page 292)

3.1.3.4 Configuring the firewall

Introduction

This section describes how to activate "HTTP" and "HTTPS" services using Windows Server 2016 as an example.

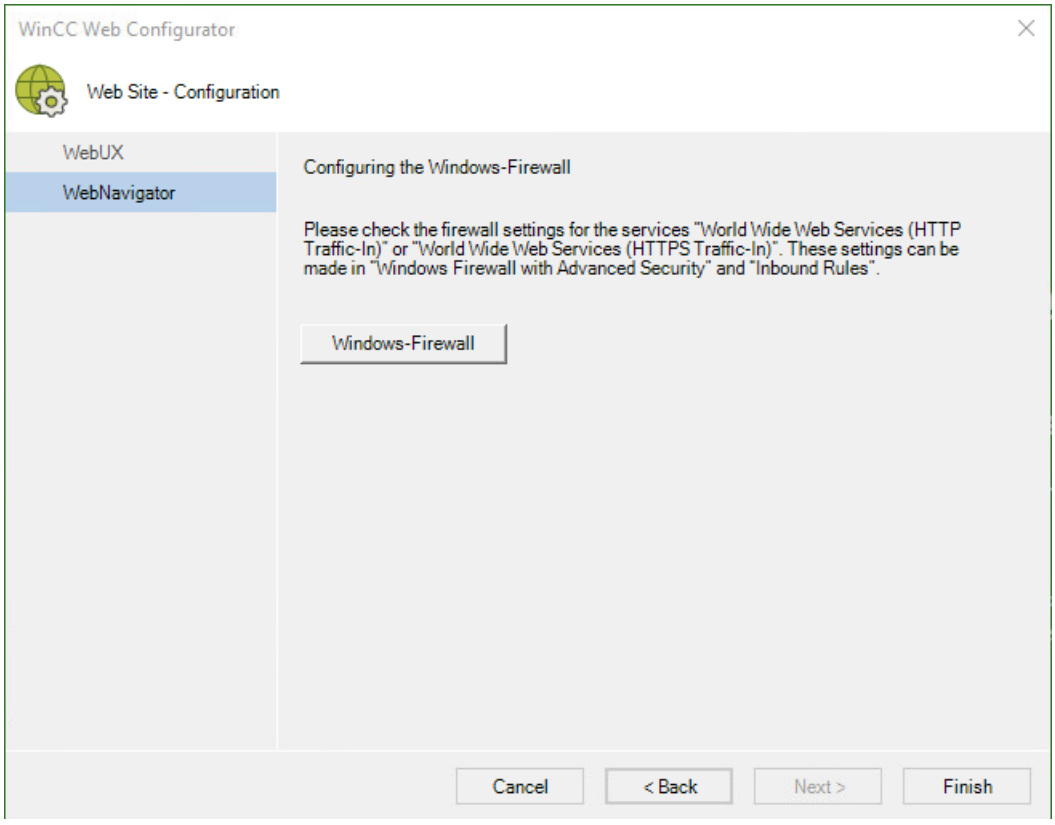
Consult your network administrator if you want to set up the Windows Firewall with advanced security or for a different port.

Requirement

- You have created a default web page with Web Configurator.
- The Firewall is activated.
- The user who is logged has Windows administrator rights.
- You have to set up the HTTPS service in IIS if you are using it for WebNavigator.
  More information: "WinCC Installation Notes / Release Notes > WinCC/DataMonitor Installation Notes > Setting up a secure connection via HTTPS (Page 104)"

Procedure for the default port

1. Change to the "Configuring the Windows Firewall" page in the "WinCC Web Configurator".



2. Click the "Windows Firewall" button.
   The "Windows Firewall" dialog opens.
3. Click "Allow apps to communicate through Windows Firewall".
4. Activate "Secure World Wide Web Services (HTTPS)".
5. Close all Windows dialogs with "OK".
6. Click "Finish" in the Web Configurator.
   The server configuration is completed.

See also

Setting up a secure connection over HTTPS (Page 104)

Configuring the DataMonitor web page (Page 289)

3.1.3.5 How to publish WinCC process pictures using WinCC Web Publishing Wizard

Introduction

Use the WinCC Web Publishing Wizard to publish the process pictures that you created in Graphics Designer.

Procedure

1. Select "Web Navigator" in the navigation window of WinCC Explorer.
2. Select the "Web View Publisher" command in the shortcut menu.
   The WinCC Web Publishing Wizard is now launched.
   Click "Next".
   Alternatively, start the wizard in Windows via "PublishingWizard".

3. Under "Path to your WinCC project", select the WinCC project folder containing the pictures you want to publish.
   - The folder has the following format for publication on a dedicated web server: "\\<servername>\<serverprefix>_ _<projectname>"
   - If you want to publish from a remote station, select the source project containing the pictures.
     The source project is displayed by its enable name on the other WinCC Server.
     The folder has the following format:
     "\\<computer name>\<enable name>"

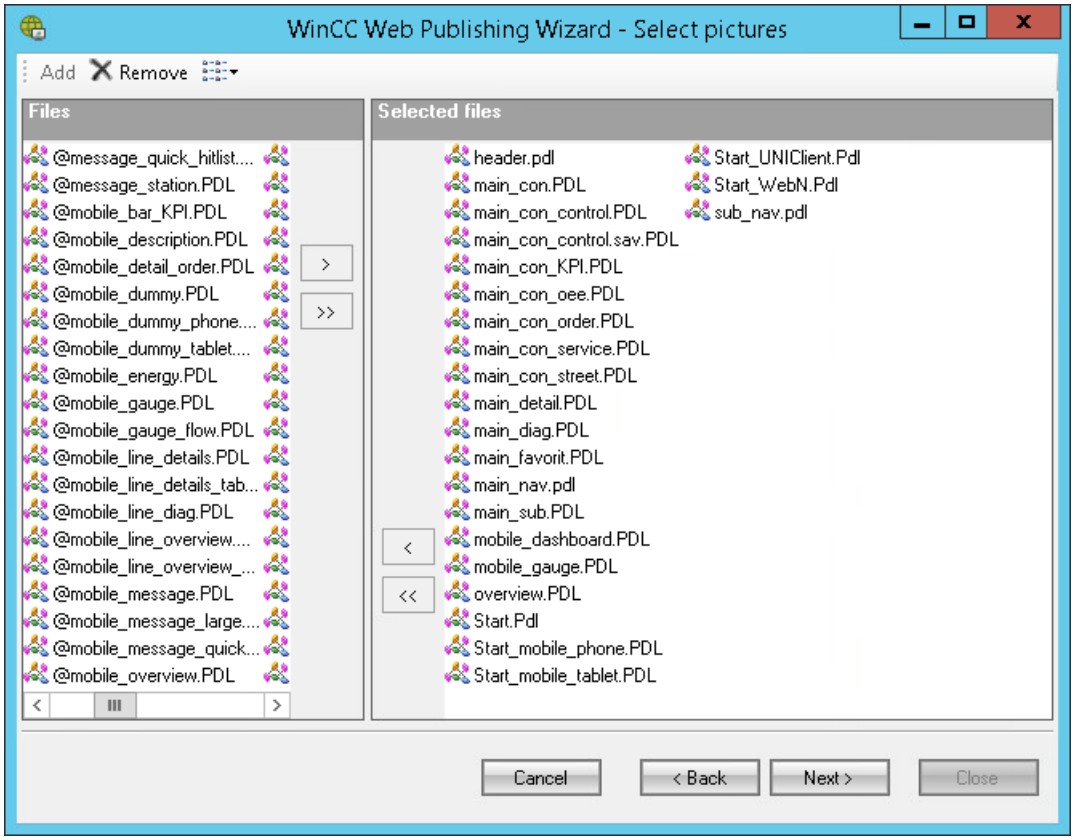
   To display hidden objects that are published automatically, activate the "Show hidden objects" option in the "Diagnostics" area.



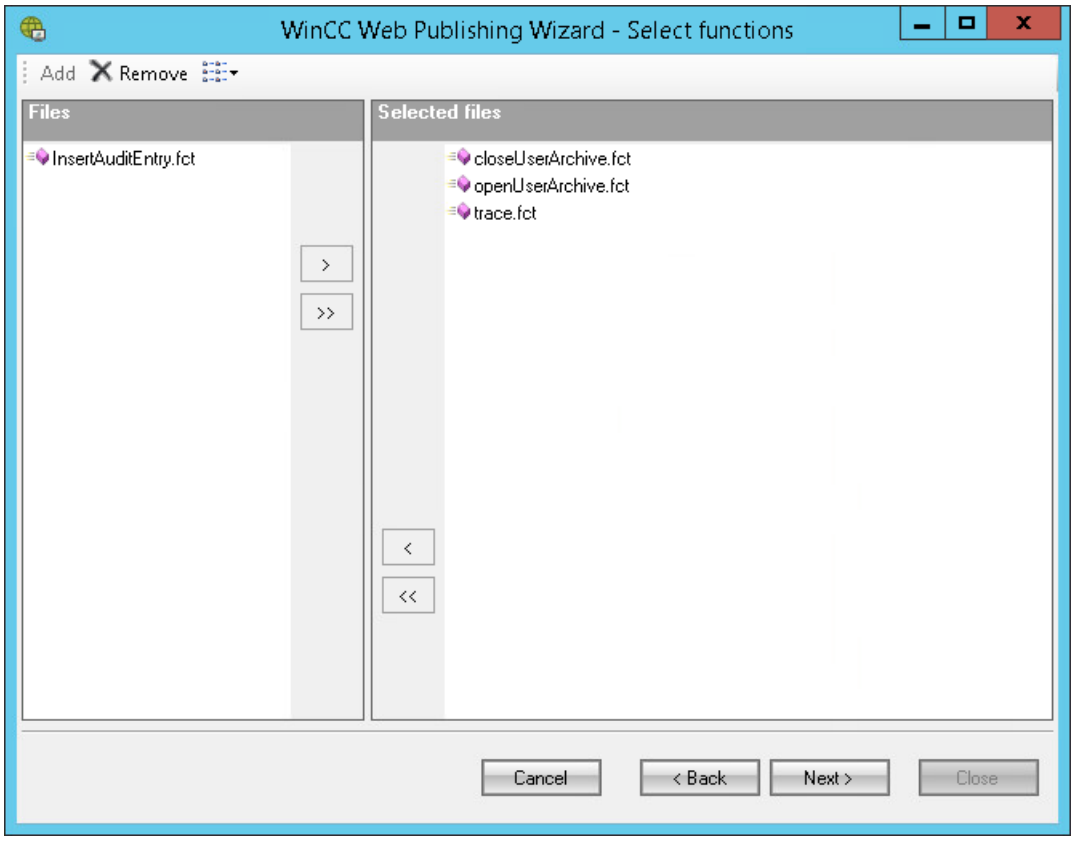
4. Activate the "Server prefix" option if you want to publish the pictures on a dedicated web server.
   Select the prefix of the WinCC Server that contains the WinCC project from the selection list. The list displays the prefixes of the servers whose packages are loaded on the WinCC Client. Deleting a prefix from the selection changes the paths displayed in the fields below.

5. Select the target folder for the published pictures under "Publishing folder of the WinCC web".
   - Accept the proposed folder within the WinCC project folder.
     Do not change the path specification unless you want to transfer pictures to a different project, for example. In this case, the prefix selection list will be expanded accordingly.
   - Verify the specified target project to which the published pictures are saved during remote publishing.
     The path definition will be updated when you select the source project.
     Should the target project be located on another WinCC server, select the corresponding project.

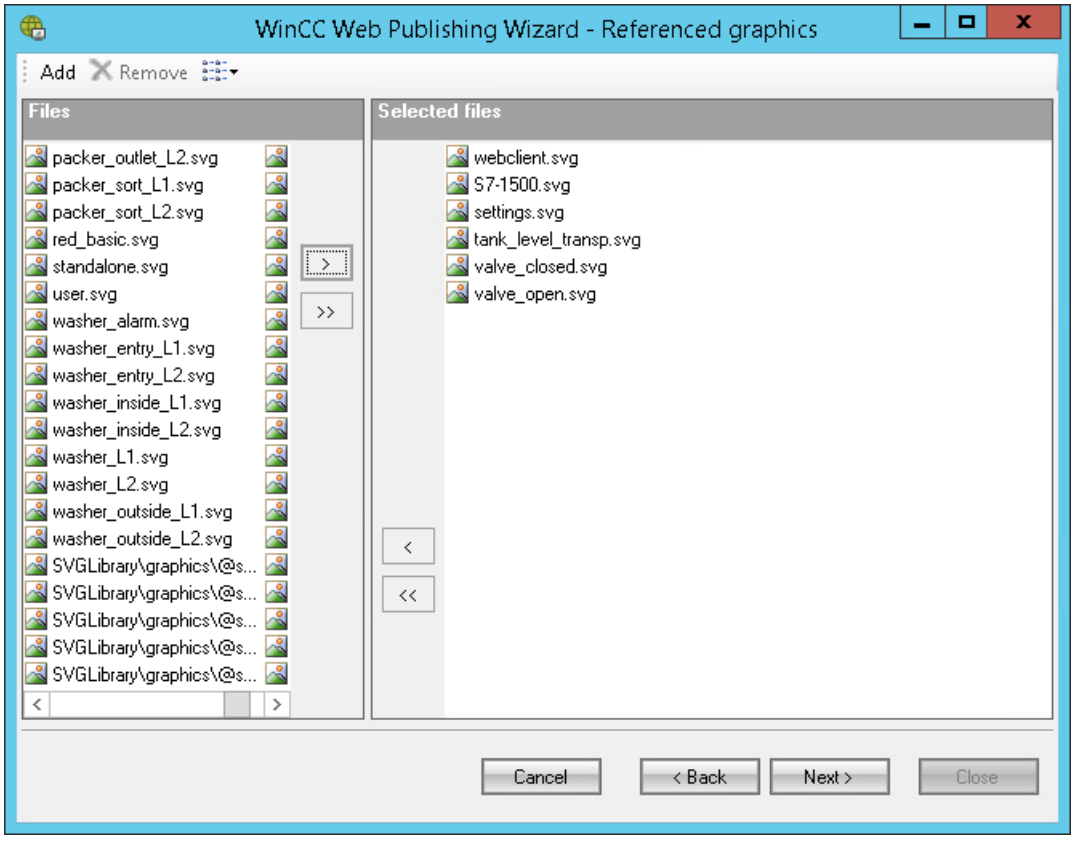
   Click "Next".
6. Move the pictures that you wish to publish to the "Selected files" list.
   Already published, unchanged pictures are grayed out and will not be published again.
   Click "Next".



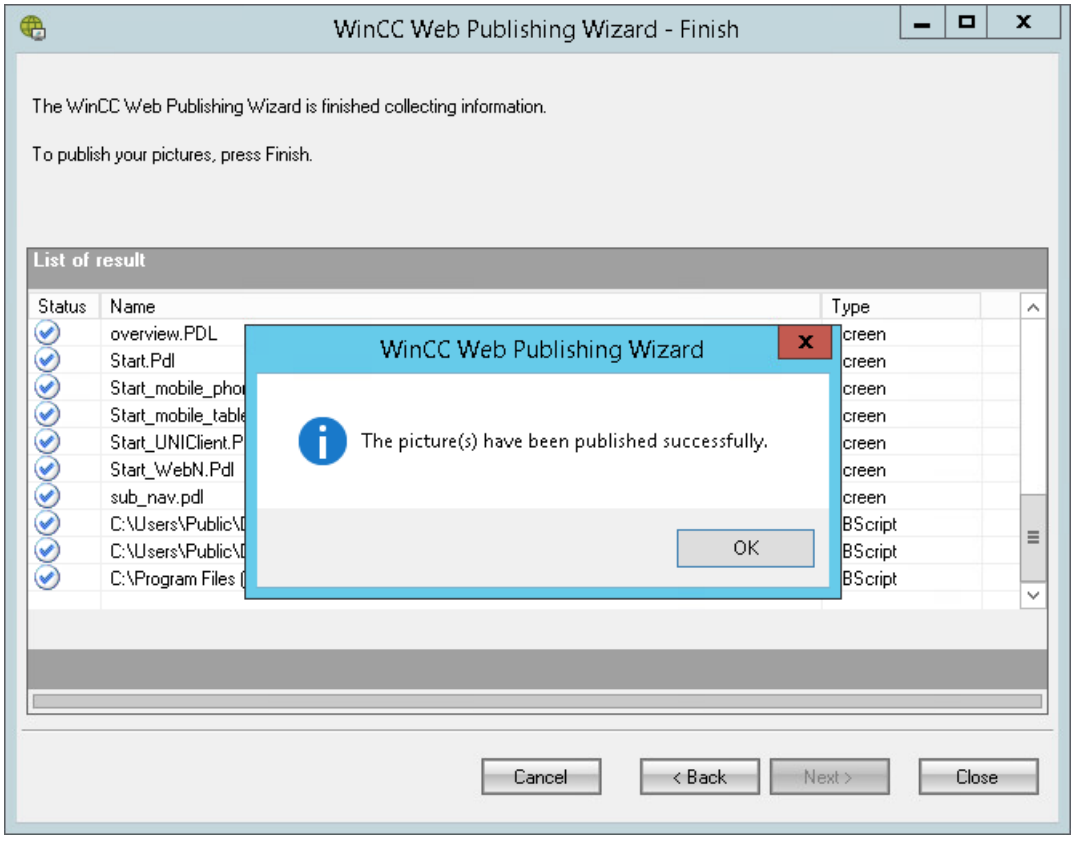
7. Move the C project functions which you use in the published pictures to the "Selected files" list.
   You cannot publish individual VB scripts.
   Already published, unchanged functions are grayed out and will not be published again.
   Click "Next".



8. Move the referenced graphics that you wish to publish to the "Selected files" list.
   The referenced files are in the "GraCS" folder or in subfolders of "GraCS".
   Already published, unchanged graphics are grayed out and will not be published again.
   Click "Next".



9. To start publishing the pictures, click "Finish".
   The selected files are published.



Result

You have successfully published the pictures and functions.

The results list displays the status of all published objects.

You can click an object to view additional object information.

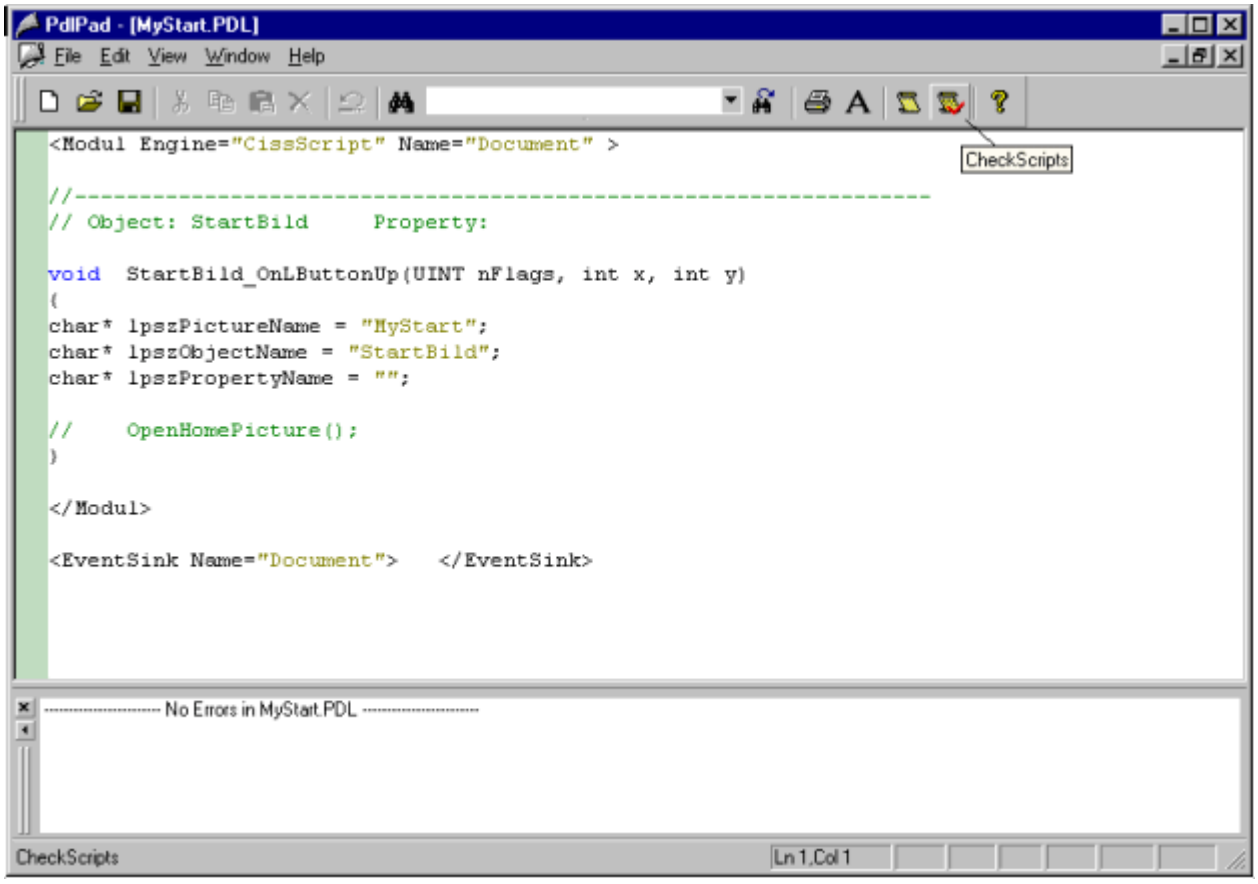
You can trace publishing using the "<projectfolder>\WebNavigator\WizardLog.txt" file.

Checking the scripts using "PdlPad"

The "WizardLog.txt" log file contains information about errors in the scripts used.

You can also find errors using the "PdlPad" debugger.

1. Open "PdlPad" by double-clicking on the affected object in the results list in the WinCC Web Publishing Wizard.
   The script of the published picture is displayed.
   Alternatively, open "PdlPad" in the "Siemens Automation" program group.



2. Click  in order to check the script.
3. You can temporarily correct and save the scripts.
   These corrections are only saved to the published pictures, not in the process picture of the WinCC project.

3.1.4 Working with the DataMonitor client

3.1.4.1 Configuring security settings in Internet Explorer

Introduction

For full functionality on the DataMonitor client, adapt the security settings in the Internet Explorer.

Requirement

- Internet Explorer is installed.

Procedure

1. Click "Tools > "Internet Options" in the Internet Explorer.
   This will open the "Internet Options" dialog.
2. Select the "Security" tab.
3. Select the "Trusted Sites" icon and click the "Sites" button.
   The "Trusted Sites" dialog opens.
4. Enter the address of the DataMonitor server in the "Add this website to the zone" field.
   Possible formats and wildcards include "*://157.54.100 - 200", "ftp://157.54.23.41", or "http://*.microsoft.com".
5. Deactivate the "Require server verification (https:) for all sites in this zone" check box.
   Click "Add".
   Confirm the entry by clicking "OK".
6. Select the "Trusted Sites" icon.
7. Click "Default Level".
   Click "Adapt Level" in the next dialog.
   The "Security settings" dialog box is opened.
   - Activate the "Activate" option under "Initialize and script ActiveX controls not marked as safe".
   - Confirm the entry by clicking "OK".
8. Close the "Internet Options" dialog by clicking "OK".

Result

The necessary settings in the Internet Explorer of the DataMonitor client are configured.

User authentication: Activated setting "Automatic logon with current user name and password" in Internet Explorer

If the setting "Automatic logon with current user name and password" is activated in Internet Explorer in "Tools > Internet Options > "Security" tab > "Adapt Level" button > entry "User Authentication" > Logon", this can lead to unexpected behavior under the following requirements.

Requirement

- The "Automatic logon with current user name and password" The setting is activated in Internet Explorer.
- The user logs onto the DataMonitor client as a WinCC user who is not configured in the user groups on the DataMonitor server.
- The user is logged onto the computer with a Windows logon that is set up as a user name on the DataMonitor server.

Behavior

1. The DataMonitor server does not recognize the WinCC user name the user has used to log onto the DataMonitor client and therefore rejects it. The user cannot see this behavior.
2. Internet Explorer automatically starts a new logon using the current Windows logon as user name.
3. The DataMonitor server recognizes the Windows logon as DataMonitor user name and accepts the logon for this user.
4. The user is logged on but not with the DataMonitor user name the user has entered. The current DataMonitor user is not displayed.

Recommendation

Disable the "Automatic logon with current user name and password" setting.

Use the setting only when there is a clear distinction between Windows logon and DataMonitor user name.

3.1.4.2 DataMonitor start page on the DataMonitor client

Overview

You start the DataMonitor client on a standalone computer or on a DataMonitor server. The start page of the DataMonitor summarizes the functions of the DataMonitor:

- "Reports":
  Creation and output of analysis results and process data in print jobs and published Excel workbooks.
- "Webcenter":
  Creation of Webcenter pages for the display of archived data.
- "Trends & Alarms":
  Display of alarms and process values from archives in tables and diagrams.
- "Administration"
  Configuration of connections and management of users, archives and pictures.

Requirement

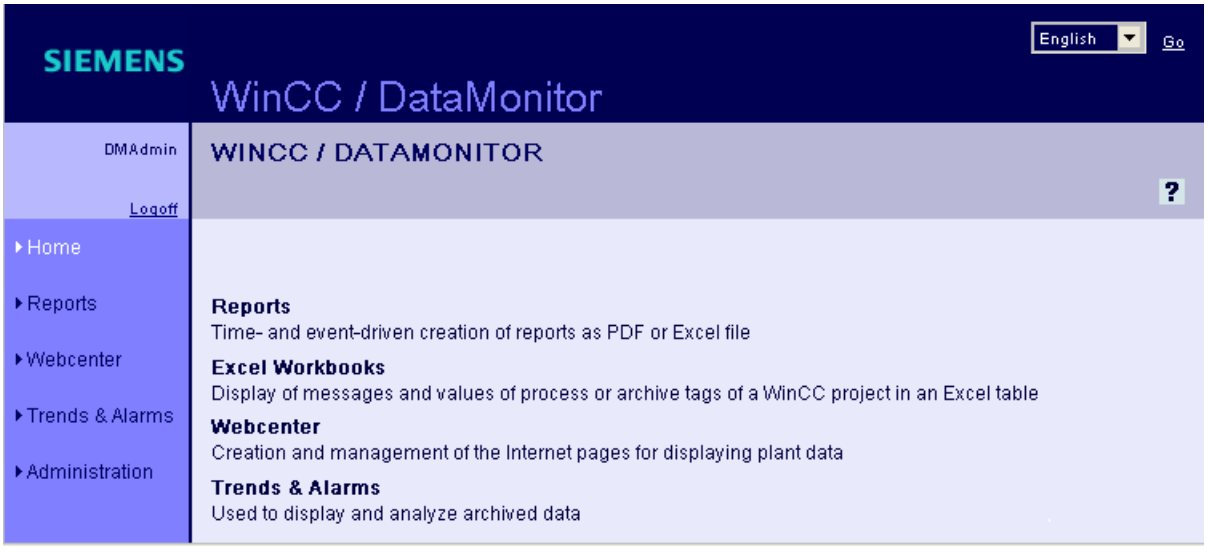
- The user is created in WinCC.
- The user must be a member of the Windows user group "SIMATIC Report Administrators" or "SIMATIC Report Users" .
- The WinCC project on the DataMonitor server is in runtime.

Procedure

1. Start the Internet Explorer on the DataMonitor client.
2. Enter the name of the DataMonitor server in the format "http://<servername>" in the URL.
   Confirm the entry with "Enter".
   The log-in dialog is opened.
3. Enter the name of a Windows user and the associated password. Confirm with "OK".

Result

The start page with the DataMonitor functions will be displayed. The use of the functions depends on the access right of the user.



General Operations of the DataMonitor Client

- Select the desired interface language from the selection field in the header.
- Hide the header on the pages of "Webcenter" and "Trend & Alarms", if necessary.
  Click .
  To show the header line again, click on the symbol .
- In order to log off from the DataMonitor server, click on the "Log off" link.
  Exit Internet Explorer to free-up the used license immediately.

See also

Working with reports (Page 461)

Working with trends and alarms (Page 428)

Working with the Webcenter (Page 398)

3.1.5 Working with WinCCViewerRT

3.1.5.1 Configuring WinCCViewerRT

Introduction

WinCCViewerRT is a program for visualizing WinCC projects.

The behavior of the DataMonitor server and Graphics Runtime is configured in the WinCCViewerRT settings.

Use project settings

If you select the "Use project settings" option, the following settings are applied by the DataMonitor server:

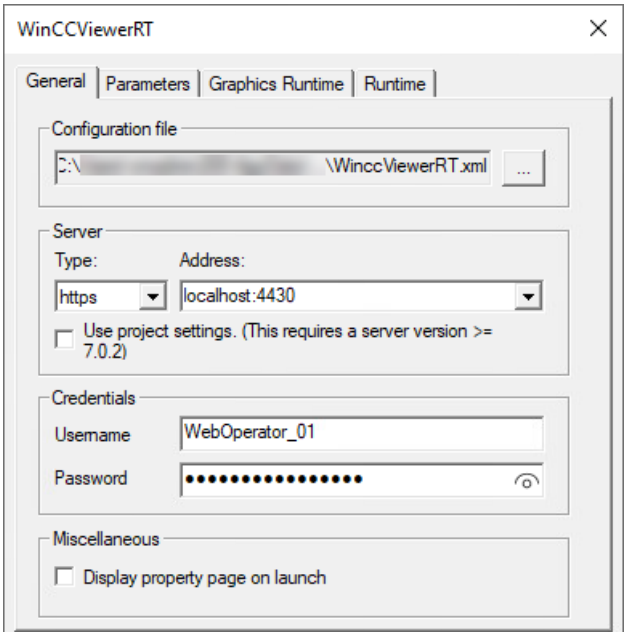
- User Administrator:
  - Automatic logoff
- Computer properties:
  - Runtime language
  - Runtime Default Language
  - Start Picture
  - Start configuration of Menu and Toolbars
  - Hardware accelerated graphics representation (Direct2D):

Requirement

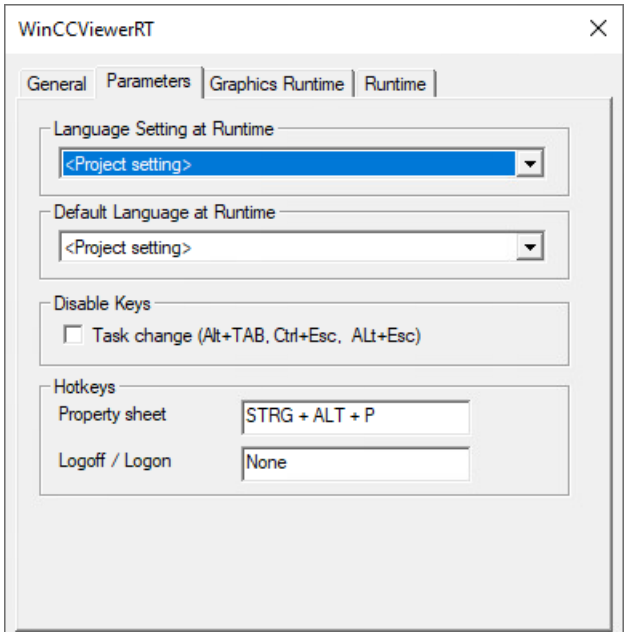
- On the server
  - The DataMonitor server is installed.
  - A WinCC/DataMonitor license is installed.
  - The WinCC project is in Runtime.
  - The WinCC pictures are configured and published for web access.
  - The WinCC user must be assigned authorization no. 1002 - "Web Access - monitoring only".
- On the client
  - The DataMonitor client is installed.

Procedure

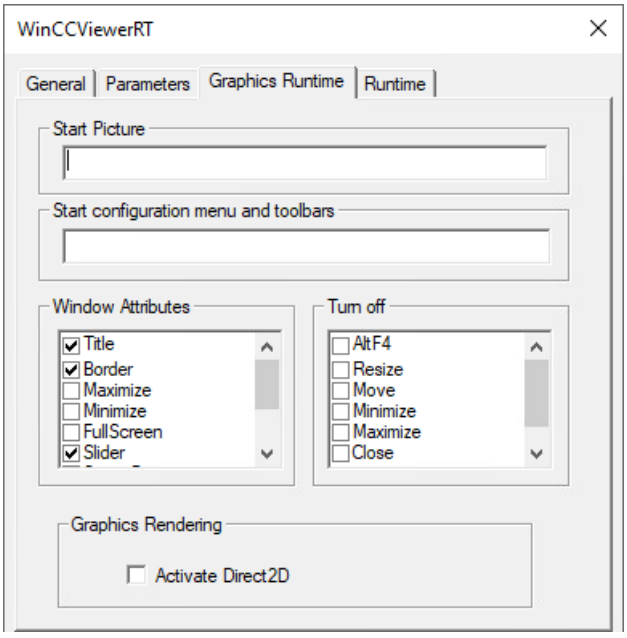
1. In the "Siemens Automation" program group, select the entry "WinCCViewerRT".
   Alternatively, you can find the "WinCCViewerRT.exe" link in the installation folder under "Webnavigator\Client\bin".
   The configuration dialog opens if you reconfigure WinCCViewerRT.
   WinCCViewerRT opens if WinCCViewerRT has already been set up.
   Use the <Ctrl+Alt+P> key combination to open the configuration dialog of WinCCViewerRT.
2. Enter the login data in the "General" tab:
   - Server address: "http://<Servername>" or "http://<IP-Adresse>"
   - Use project settings: Apply settings of the DataMonitor server
   - User name and password, if you want to specify a default user for the login dialog.



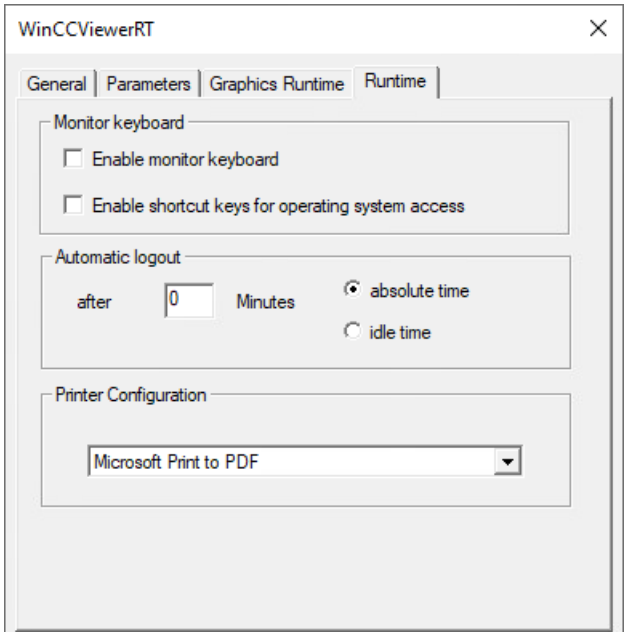
3. On the "Parameter" tab, configure the following settings:
   - Select the Runtime language and the Runtime default language.
   - If necessary, lock any key combinations that allow operators to switch to other programs.
   - If necessary, change the default key combination <Ctrl+Alt+P> that opens the configuration dialog of WinCCViewerRT.
   - Define a key combination with which a user can log off and a new user can log on. The key combination can only be used if no default user has been set in the "General" tab.



4. Specify the WinCC Runtime properties in the "Graphics Runtime" tab:
   - Start Picture
   - Configuration file for user-defined menus and toolbars
   - Window Attributes
     You can define the display of the process picture in the browser with the "Full screen" and "Adapt picture" options.
   - Turn off: Impermissible user actions
     Activate the actions that the operator is not permitted to perform in Runtime.



5. Specify additional user actions in the "Runtime" tab:
   - Activating the monitor keyboard
   - <Ctrl+Alt+Del> key combination to allow switching to the Task Manager or operating system via the screen keyboard.
   - Auto-logoff settings
   - Activating Direct2D to accelerate graphics representation.
   - Specifying the printer you use to print the configured print job in WinCC controls Alternatively, you can print the print job with the "RPTJobPrint" function. A preview via "RPTJobPreview" is not possible on the Web client.



6. Click "OK" to close the dialog.

Result

WinCCViewerRT is configured.

The connection to the DataMonitor server is set up after you close the dialog.

The settings are saved to the "WinCCViewerRT.xml" configuration file. The configuration file settings are used at the next start of WinCCViewerRT.

WinCCViewerRT applies the user interface language from WinCC.

The configuration file is stored in the following folder based on the operating system:

- <User>\AppData\LocalLow\Siemens\SIMATIC.WinCC\WebNavigator\Client

You can rename the file, for example, to "User1.xml".

You can also start WinCCViewerRT by means of the command line with the user-specific configuration file, e.g. "WinCCViewerRT.exe User1.xml". This procedure allows for different configurations, depending on the logged-on user.

The WinCCViewerRT configuration dialog opens at the start if you rename or delete "WinCCViewerRT.xml". Reconfigure WinCCViewerRT or select a different configuration file.

Note

Buttons disabled: Exit WinCCViewerRT

WinCCViewerRT can only be closed by means of script function if you disable a key combination or hide the "Close" button.

Function in the C-Script: DeactivateRTProject; function in the VBScript: HMIRuntime.Stop.

3.1.5.2 Displaying pictures

Requirement

- A WinCC/DataMonitor license is installed on the DataMonitor server.
- The WinCC project on the DataMonitor server is in runtime.
- The WinCC pictures are configured and published for web access.
- The WinCC user must be assigned authorization no. 1002 - "Web Access - monitoring only".
- WinCCViewerRT is configured on the DataMonitor client.

Procedure

1. In the "Siemens Automation" program group, select the entry "WinCCViewerRT".
2. Log on to the DataMonitor server:
   - A login dialog is not displayed if the user name and password are set in the WinCCViewerRT configuration dialog. You are logged on automatically with the stored login data.
   - The login dialog is displayed if a user name and password is not set in the WinCCViewerRT configuration dialog. Enter the user name and password of the WinCC user. Click "OK".
3. To change the user, use the specified key combination for login/logoff of "WinCCViewerRT". The previous user is logged off. Enter the user name and password of the new WinCC user in the login dialog. Click "OK".
   The key combination can only be used if no default user has been set.

Result

WinCCViewerRT automatically connects to the activated WinCC project. The pictures of WinCC project are displayed.

The "View Only Cursor" indicates that process-related operations are not possible.



Certain operations, such as opening the properties dialog of a WinCC OnlineTrendControl, are still possible.

You can also use your own cursor icon as a "View Only Cursor", if required. For more information, refer to "Configuring Runtime settings (Page 379)".

The <F5> key triggers a reselection of WinCCViewerRT.

3.1.6 Use of DataMonitor

3.1.6.1 Create connection and set up language

Introduction

For access of the DataMonitor client to runtime data and archived data, configure connections to the WinCC databases in the "Webcenter".

For each data source, set up a connection, e.g., to the WinCC server.

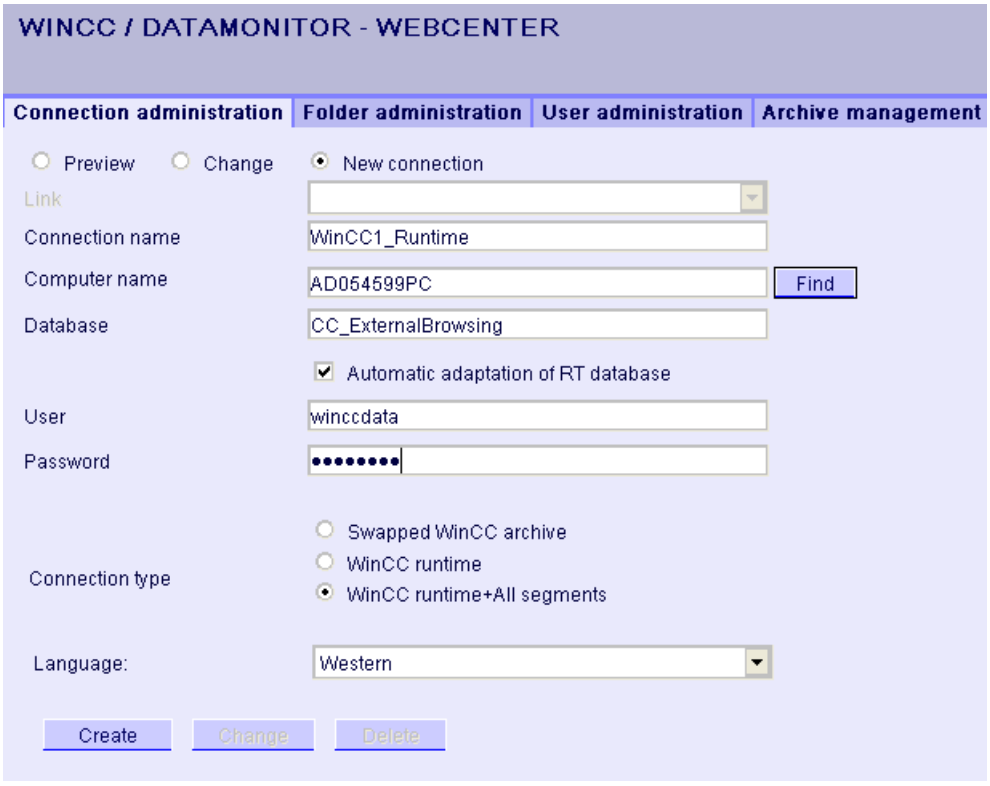
You need the configured connections for Webcenter pages and "Trends & Alarms".

Requirement

- The user is a member of the Windows user group "SIMATIC Report Administrators".
- For access to the WinCC database via DataMonitor, a Windows user with password is created who is a member of the "SIMATIC HMI VIEWER" user group.

Procedure

1. Click "Webcenter > Administration" on the start page.
2. Click the "Connection Administration" tab.



3. Select the option "New Connection".
   After the new installation, no selection is possible in the "Connection" box, as no connections have been configured yet.
4. Select the language that corresponds with the linguistic region of the server or archive to be linked in "Linguistic Region".
   The setting ensures that special national characters are displayed correctly.
5. Enter a name in the "Connection Name" box, such as "WinCC1_Runtime".
   The name should include a reference to the selected connection type.
   Do not use any blank spaces or special characters.
6. Enter the computer name on which the archive backup data are stored.
   As an alternative, select the name of the computer using the "Find" button.
7. Enter the Windows user with password for the connection with the WinCC database.

8. Select the connection type to the WinCC data:
   - "Swapped-out WinCC archive".
     Additional steps are necessary to access data on swapped archives. More information is available under "Connecting or separating swapped archives (Page 407)".
   - "WinCC Runtime".
     Only the open single segment of the Runtime database is used.
   - "WinCC Runtime + all segments".
     The open single segment and all other connected segments of the Runtime database are used.
9. Select the database for the connection type:
   - "Swapped-out WinCC archive":
     Click "Display database" or select the archive from the list.
   - "WinCC Runtime":
     Select the Runtime database of the activated WinCC project. As an alternative, select the name of the database using the "Find" button.
   - "WinCC Runtime + all segments":
     "CC_ExternalBrowsing" is automatically entered as database.
10. Activate "Automatic adaptation of RT database" so that the database name is adjusted in the connection administration during a segment change.
11. Click the "Create" button.

Result

The connection to the data source is created and can be selected in the "Connection" box of the connection administration.

3.1.6.2 Displaying process values and messages via "Trends and Alarms"

Displaying process values in a table

Introduction

Use "Trends & Alarms" to display archived process values and archived texts in a table.

Requirement

- The connection to the WinCC data is established.
- The start page of the DataMonitor is open.

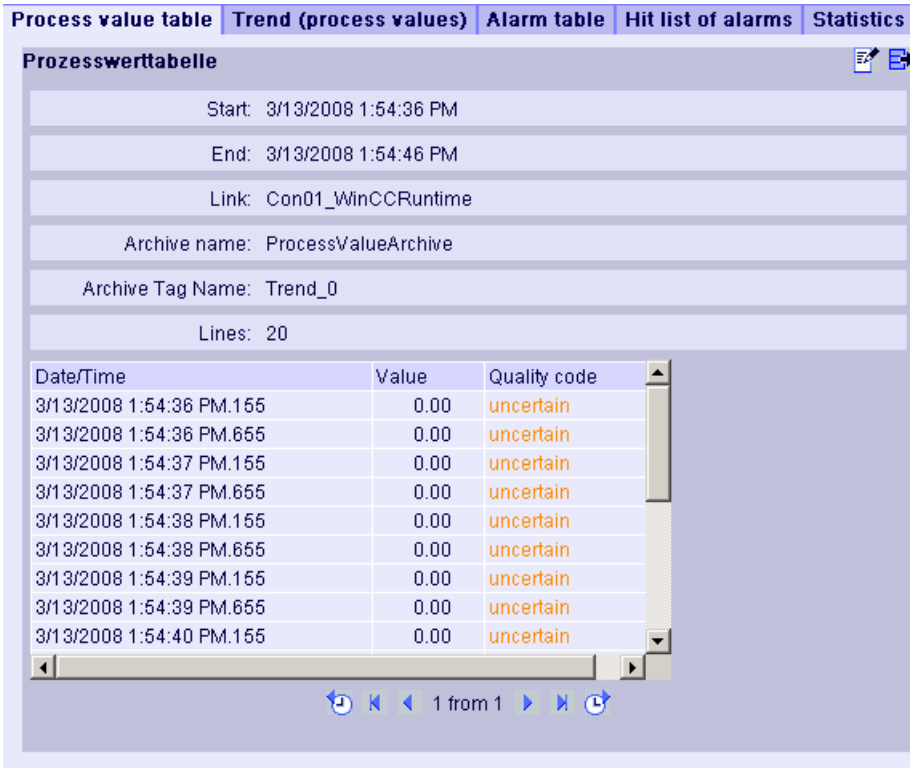
Procedure

1. Click "Trends & Alarms" on the start page.
2. Click the "Process Value Table" tab.
   The Web part "Process Value Table" is displayed.
3. Click . The configuration dialog of the Web part opens.
4. Change the title in the "Title" field. Enter a note in the "Tooltip" field.
5. Select one of the configured connections in the "Connection" field.
   The archive tags available via this connection will be displayed.
   Limit the display of the tags, if necessary:
   - Select individual archives with "Archive selection".
   - Set the filter criteria with "Tag filter".
6. Click "Add" for the required archive tag.
7. Set the time range in the area "Time period".
   With relative times, enter a negative value into the respective field.
   For more information on entering time, click .
   Click "Preview" to check the set time range in the column "Preview Time Range".
8. Specify the number of decimal points in the area "Representation of decimal points".
9. In the "Table size" area, define the size of the display window.
   If the value "0" is entered in both fields, the size is determined automatically. The size depends on the space requirement of the Web part.
10. The available Webcenter pages are displayed in the area "Link to Webcenter pages". Click to assign the web part to one or several Webcenter pages.
11. Click "OK" to confirm your entries.

Result

The values of the archive tags and the quality code are output in the process value table.

If the manual entry of archive values is allowed during runtime, the modified or newly created values are identified as such. There is an "m" in a separate column to show a manual entry of the archive value.



Operation:

	In absolute time required to scroll forward or backward in the selected time range.
Arrow buttons	To scroll forward or backward in multi-page tables.
	Export alarms in CSV format.
	Changing the settings of the Web part.

Displaying process values in a diagram

Introduction

Use "Trends & Alarms" to display archived process values in trends.

Requirement

- The connection to the WinCC data is established.
- The start page of the DataMonitor is open.

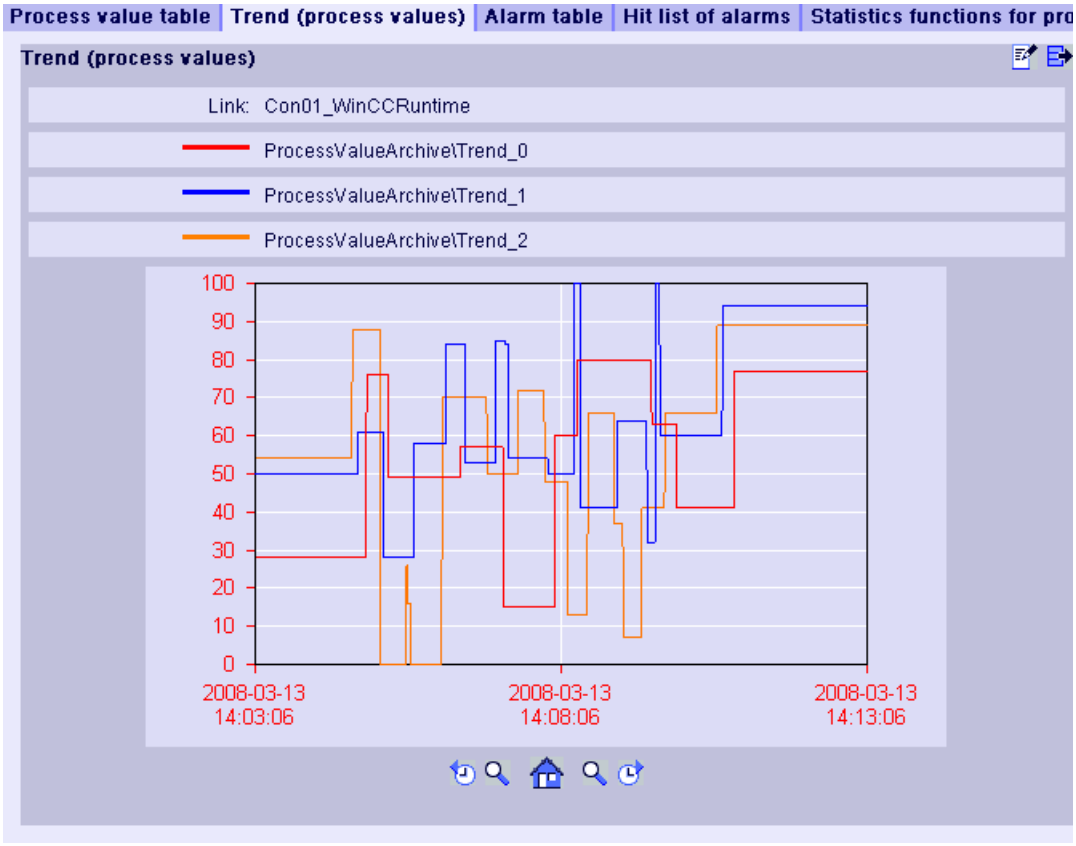
Procedure

1. Click "Trends & Alarms" on the start page.
2. Click the "Trend (Process Values)" tab. The Web part "Trend (process values)" is displayed.
3. Click . The configuration dialog of the Web part opens.

4. Change the title in the "Title" field. Enter a note in the "Tooltip" field.
5. Select one of the configured connections in the "Connection" field. The archive tags available via this connection will be displayed.
   Limit the display of the tags, if necessary:
   - Select individual archives with "Archive selection".
   - Set the filter criteria with "Tag filter".
6. Click "Add" for the required archive tags, e.g. "TREND_0", "TREND_1", "TREND_2.
   The archive tags are listed in the area "Current selection".
7. In the section "Current selection", you specify for the individual archive tag:
   - Color of time axis and value axis
   - Trend presentation type
8. In the section "Value axis editor", you can activate the automatic scaling for the different value axes or you can assign a minimum and maximum value to each axis.
9. Set the time range in the area "Time period".
   With relative times, enter a negative value into the respective field.
   For more information on entering time, click ?.
   Click "Preview" to check the set time range in the column "Preview Time Range".
10. In the section "Diagram settings", you define the size of the display window.
    If the value "0" is entered in both fields, the size is determined automatically. The size depends on the space requirement of the Web part.
11. Activate the option "Show legend" to display the legend.
12. The available Webcenter pages are displayed in the area "Link to Webcenter pages". Click to assign the Web part to one or several Webcenter pages.
13. Click "OK" to confirm your entries.

Result

The selected process values are displayed as trends in a diagram.



The legend shows the assignment of the colors to the archive tags.

Operation:

	In absolute time required to scroll forward or backward in the selected time range.
	Enlarge the presentation and diagram range left or right of the center line.
	Restore the original view.
	Exporting values of the displayed diagrams in CSV format
	Changing the settings of the Web part.

Displaying messages in the alarm table

Introduction

Use "Trends & Alarms" to display alarms in an alarm table.

Requirement

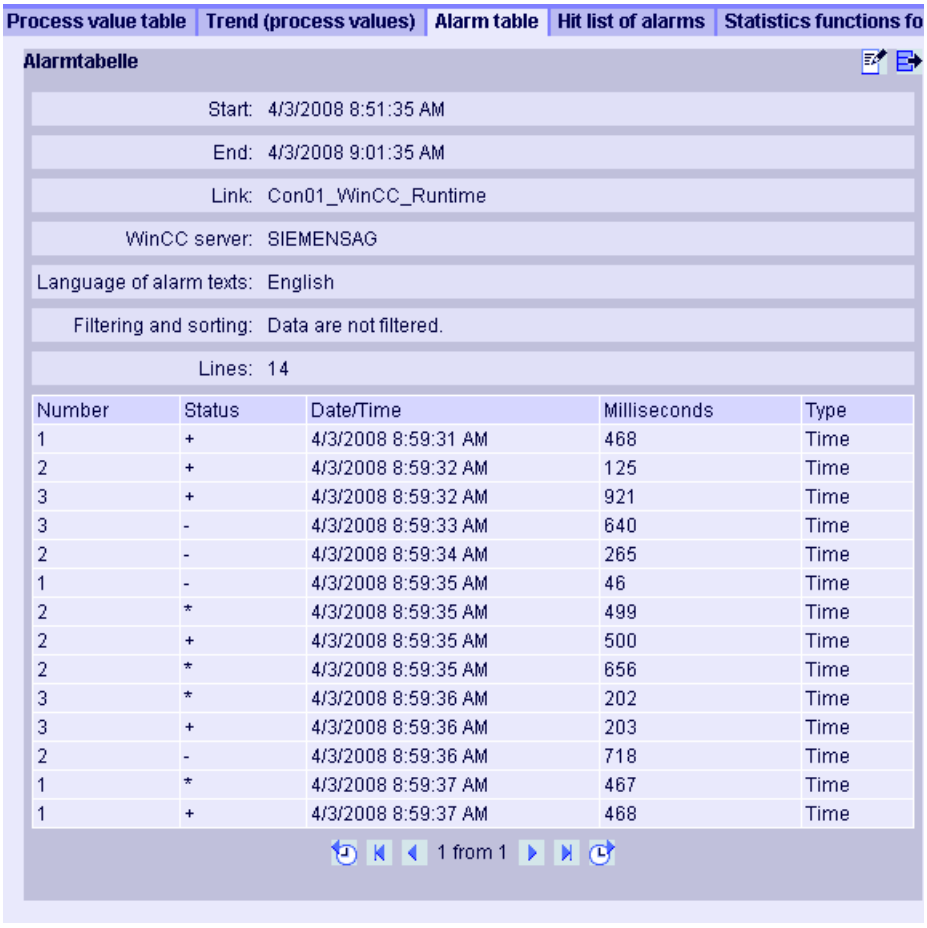
- The connection to the WinCC data is established.
- The start page of the DataMonitor is open.

Procedure

1. Click "Trends & Alarms" on the start page.
2. Click on the "Alarm Table" tab.
   The web part "Alarm Table" is displayed.
3. Click . The configuration dialog of the Web part opens.
4. Change the title in the "Title" field. Enter a note in the "Tooltip" field.
5. Select one of the configured connections in the "Connection" field.
6. Set the time range in the area "Time period".
   With relative times, enter a negative value into the respective field.
   For more information on entering time, click .
   Click "Preview" to check the set time range in the column "Preview Time Range".
7. In the section "Language of the alarm texts", select the language, in which the alarms are displayed.
8. Select the respective WinCC server with "Selection of WinCC server", if necessary. The setting is necessary if you select a connection to swapped archives that include archives of several WinCC servers.
9. In the section "Filter selection", you may limit the expected search results with SQL syntax. Set the filter conditions for individual columns to do so.
   Enter the filter condition for all columns in the "Extended Filter" field.
   For more information on filter conditions, click .
10. For representation of the data set the following:
    - Sort order: For more information on sorting, click .
    - Visible columns: To display all columns, click "Select All".
    - Number of decimal places.
11. In the "Table size" area, define the size of the display window.
    If the value "0" is entered in both fields, the size is determined automatically. The size depends on the space requirement of the Web part.
12. The available Webcenter pages are displayed in the area "Link to Webcenter pages".
    Click to assign the Web part to one or several Webcenter pages.
13. Click "OK" to confirm your entries.

Result

The messages are output in a table.



Operation:

	In absolute time required to scroll forward or backward in the selected time range.
Arrow buttons	To scroll forward or backward in multi-page tables.
	Export alarms in CSV format.
	Changing the settings of the Web part.

3.1.6.3 Displaying process values in an Excel workbook

Excel workbook

Overview

With the Excel add-In "Excel Workbook" you can display the following data of the WinCC project in an Excel workbook on the DataMonitor client:

- Alarms
- Values of process tags and archive tags
- Additional information, such as time stamp or quality code of tags

Data of swapped archives is not displayed.

The data is evaluated by Excel and presented as graphic, e. g. as average value calculation or diagram representation. The created Excel workbooks are made available as templates for "Reports" and as report tools.

Requirement

- Use the Download area in "Reports" to install the Excel add-ins "ExcelWorkbook Wizard" and "Excel Workbook" on the DataMonitor client.
- The "Remote Desktop" user is a member of the Windows user group "SIMATIC HMI Viewer".

Configuring with XML file or online

Simultaneous online access to process data of different WinCC servers is possible using the "Excel Workbook". This requires that you either take the data from an XML file or from a local WinCC project during the configuration with the Excel add-in "Excel Workbook Wizard" . A separation between process and evaluation is possible with the XML file.

- A WinCC project is open on the DataMonitor server.
  The XML file is generated with the "Export Configuration Data" function.
  Then transfer the XML file to a computer with Microsoft Excel.
  Configure the process data display in the workbook.
  Afterwards, transfer the workbook to a DataMonitor client that displays the process data online.
- To accept the data of the WinCC project online, configure directly on the WinCC server or on a WinCC client with an online connection to the respective WinCC server.
- Import the data into an Excel workbook using the "Excel Workbook Wizard".
  Then configure the display of alarms and tag values.

Note

If you rename a table in an Excel workbook, the configuration data of the table is lost.

You can configure up to 32,767 process and archive tags in an Excel workbook. During online display with "Excel Workbook" you may experience considerable delays in updating when there is a large number of tags.

Configuring the Excel workbook

Applying data from WinCC project

Introduction

You need the WinCC configuration data for the configuration of Excel workbooks. This means you apply the data from a local WinCC project during configuration in the "Excel Workbook Wizard" .

Requirement

- Server computer
  - Microsoft Office is installed.
  - The Excel add-in "Excel Workbook" is installed.
  - The DataMonitor server is installed.
  - The WinCC project is in Runtime.
  - A user is created in WinCC.
- Configuration PC
  - Microsoft Office is installed.
  - The Excel add-in "Excel Workbook Wizard" is installed.
- MS Office
  - Only Excel files with extensions "XLS, "XLSX, "XLSB", and "XLSM" may be used.

Procedure

1. Open an empty Excel workbook.
   Select the command "Excel Workbook Wizard" in the "DataMonitor" menu.
2. Activate the option "Establish connection with WinCC server". The "WinCC Server" field is shown.
3. Enter the desired name of the server and click "Connect". The log in dialog is displayed.
4. Enter the name and password of a WinCC user.
5. Click "Next". The "Add / delete tags" dialog opens.

Result

The Excel workbook is set up to configure the display of process data. Then publish the workbook. The workbook is made available on the DataMonitor client as report tool or as template for "Reports".

Note

Language for the Office package and the Windows Regional Settings

Make sure that the language is the same for the Office package, the "Microsoft Office Language Settings", and the Windows Regional Options.

Examples:

- If you are using Office with language "English (U.K.)", select the regional setting "English (United Kingdom)".
- If you have set "Chinese (PRC)" as the region and language option in Windows, you must also select "Chinese (PRC)" as the primary editing language in the "Microsoft Office Language Settings".

More information can be obtained through Microsoft Support: http://support.microsoft.com/kb/320369/en (http://support.microsoft.com/kb/320369/en)

See also

Configuring the display of tag values (Page 323)

Configuring the display of archive tags (Page 327)

Configuring the display of alarms (Page 331)

Applying data from a configuration file

Introduction

You can create reports without connection to the WinCC server.

Configuration steps:

- Create a configuration file on the server.
- Configure data access with the configuration file.
- You can also configure the data access of a dedicated Web server / WinCC client.

Requirement

- Server computer
  - The DataMonitor server is installed.
  - The online tags of the WinCC project are part of one tag group or one structure type.
  - The WinCC project is in Runtime.
  - A user is created in WinCC.
- Configuration PC
  - Microsoft Office is installed.
  - The Excel add-in "Excel Workbook Wizard" is installed.
- MS Office
  - Only Excel files with extensions "XLS, "XLSX, "XLSB", and "XLSM" may be used.

Creating a configuration file on the server

1. Select the entry "WebNavigator" in the navigation window of WinCC Explorer.
   Open the menu command "Export Configuration Data" in the shortcut menu.
2. Specify the data to be exported in the "Export configuration data" dialog.
   If you do not want to create the online tags in one tag group or one structure type, use the "Without structure (fast export)" option for the export.
3. Specify the path and the name of the XML file.
4. Click "Export". An XML file is generated.
5. If no Excel installation exists on the server, transfer the XML file to another computer, on which Excel and the "Excel Workbook Wizard" are installed.

Configuring data access with configuration file

1. Open an empty Excel workbook on the computer with Excel.
   Select the command "Excel Workbook Wizard" in the "DataMonitor" menu.
2. Activate the option "Load configuration data from file". Click "Next".
3. Navigate to the desired XML file.
4. Click "Next". The "Add / delete tags" dialog opens.

Result

The Excel workbook is set up to configure the display of process data. Then publish the workbook. The workbook is made available on the DataMonitor client as report tool or as template for "Reports".

Configuring data access of a dedicated Web server / WinCC client via XML file

If you want to display the project data from a dedicated Web server / WinCC client in the Excel workbook, you need to observe the following when configuring the Excel workbook via an XML file:

- The XML file now includes the data of subordinate servers whose packages are located on the DataMonitor server. The export of the loaded packages to the dedicated DataMonitor server / WinCC client can take several minutes, depending on the size of the package.
- This XML file must be available on the Excel configuration computer. Enter the server prefix when importing the configuration data in the "Excel Workbook Wizard".
- If you configure the data display in the Excel workbook on the WinCC client in the WinCC project, you do not have to specify a server prefix. The server prefix is automatically used when data is inserted from the package.

Note

Language for the Office package and the Windows Regional Settings

Make sure that the language is the same for the Office package, the "Microsoft Office Language Settings", and the Windows Regional Options.

Examples:

- If you are using Office with language "English (U.K.)", select the regional setting "English (United Kingdom)".
- If you have set "Chinese (PRC)" as the region and language option in Windows, you must also select "Chinese (PRC)" as the primary editing language in the "Microsoft Office Language Settings".

More information can be obtained through Microsoft Support: http://support.microsoft.com/kb/320369/en (http://support.microsoft.com/kb/320369/en)

See also

Configuring the display of tag values (Page 323)

Configuring the display of archive tags (Page 327)

Configuring the display of alarms (Page 331)

Publishing the Excel workbook (Page 336)

Configuring the display of tag values

Introduction

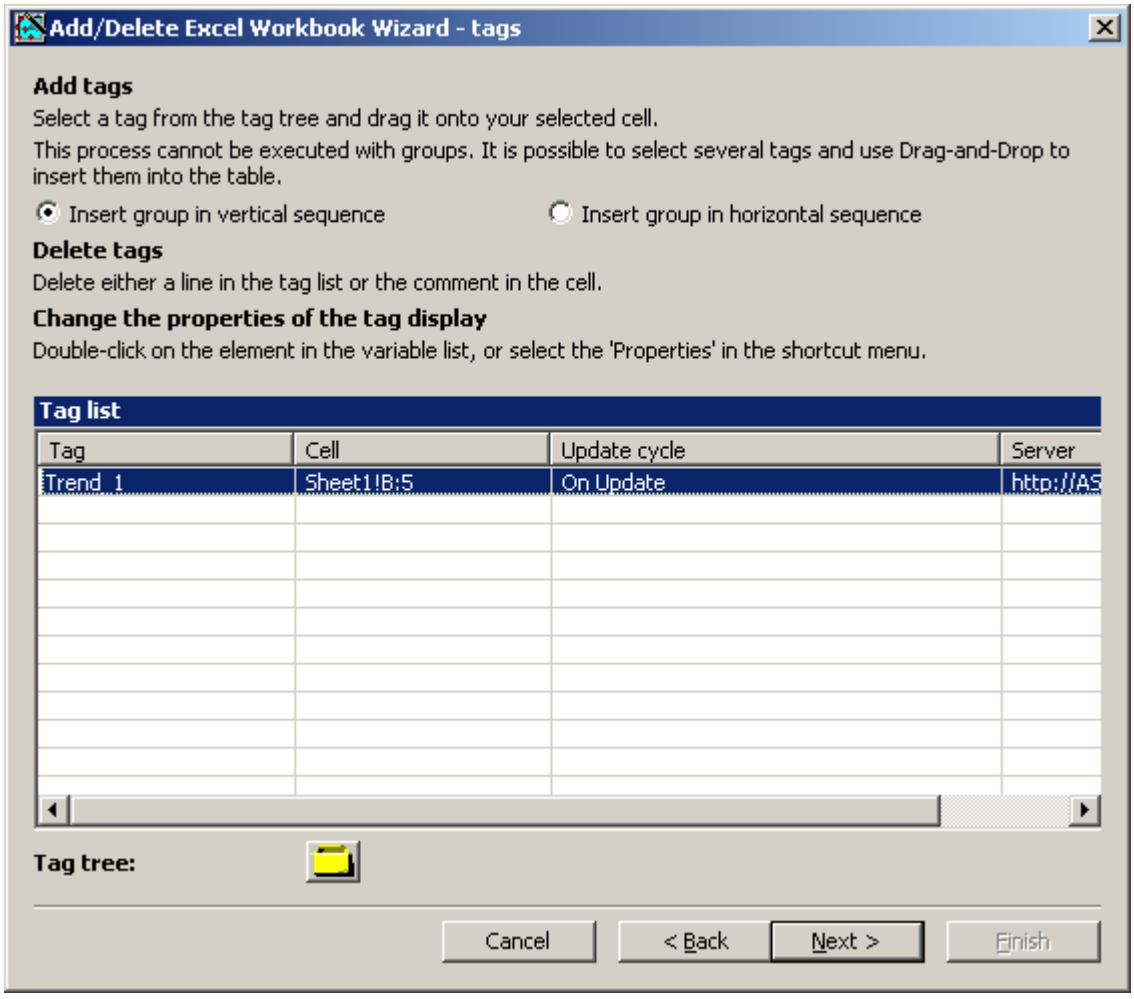
This chapter describes how to configure the display of tag values.

Requirement

- The "Excel Workbook Wizard" is started and an Excel workbook is configured.
- The dialog "Add/delete tags" is open.

Procedure

1. Check the add sequence of tag groups in the "Adding tags" area.



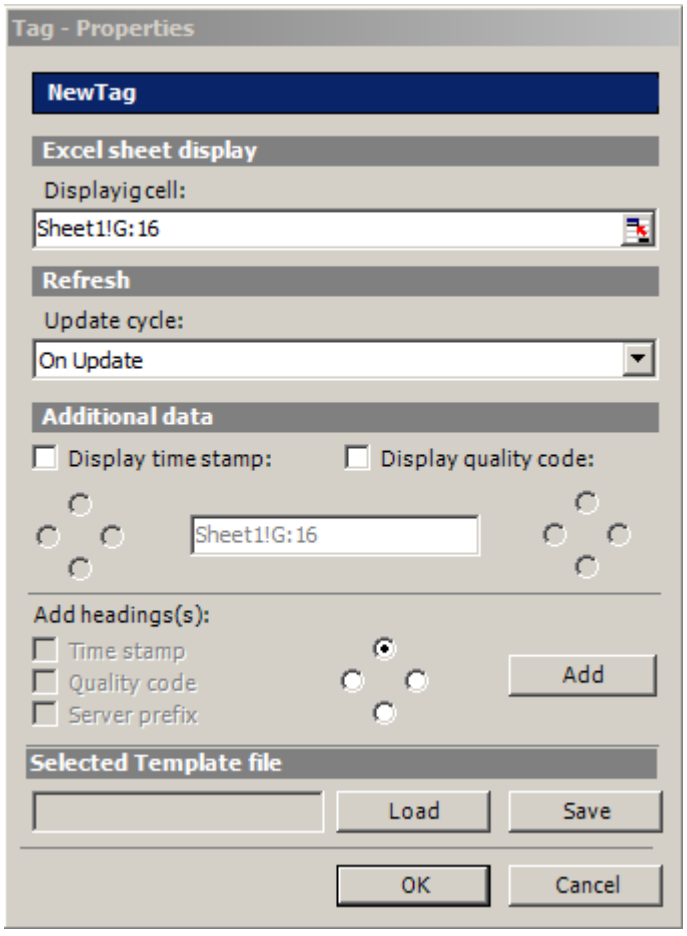
2. Click on . The tag selection dialog opens.
3. Select the required tag and move the tag into a field in the Excel table with drag-and-drop.
4. Close the selection dialog. The tag is displayed in the tag list.

5. Select the tag in the tag list and select the "Server settings" entry in the shortcut menu.



6. Enter the name and password of a WinCC user in the "Server setting" dialog.
   To avoid an additional login during online display of process data, enable "Activate automatic login".
   Confirm your entries with "OK".

7. Select the tag in the tag list and select the "Properties" entry in the shortcut menu.
   The dialog "Tag properties" will be opened.



8. You set the properties for the display in the table. For example, the update cycle or the display of time stamp and quality code.
9. Specify settings for the headings.
10. You can save the settings to the properties. You can then load the settings and use them again after exiting Excel and opening it again. Click "Save" to save the settings in an "xml" file.
11. Confirm your entries with "OK". If necessary, repeat the procedure for additional online tags. The settings for the properties will be used again. Multiple selection of tags is also possible in the tag list.
12. Click "Next" to display archive tags and alarms.
    Additional information is available under "Configuring display of archive tags (Page 327)" and "Configuring display of alarms (Page 331)".

Result

The display of tag values is configured in the Excel workbook. Once you have saved the properties, you can use the settings whenever you need to.

Each table field receives a short text and a comment in the Excel workbook.

The short text "OV" in tag values stands for online tags. In the comments, the source of the displayed values is shown in the format "WDWO_<number>_<tagname>".

Note

Running the Excel Workbook Wizard again

You need to run the Excel Workbook Wizard again:

- after deleting or moving cells with configuration data.
- after deleting or inserting new rows or columns in the Excel workbook.

The configuration data is checked and automatically adapted as a result. Confirm the data displayed with "Next". Save the workbook and close Excel.

Tags with local computer updating are not supported

In multiple station projects, you can activate the "Computer-local update" option in the tag management for internal tags. Any change of the tags only has an effect on the local computer in this case. This function is not supported by Excel Workbooks.

See also

Publishing the Excel workbook (Page 336)

Configuring the display of archive tags

Introduction

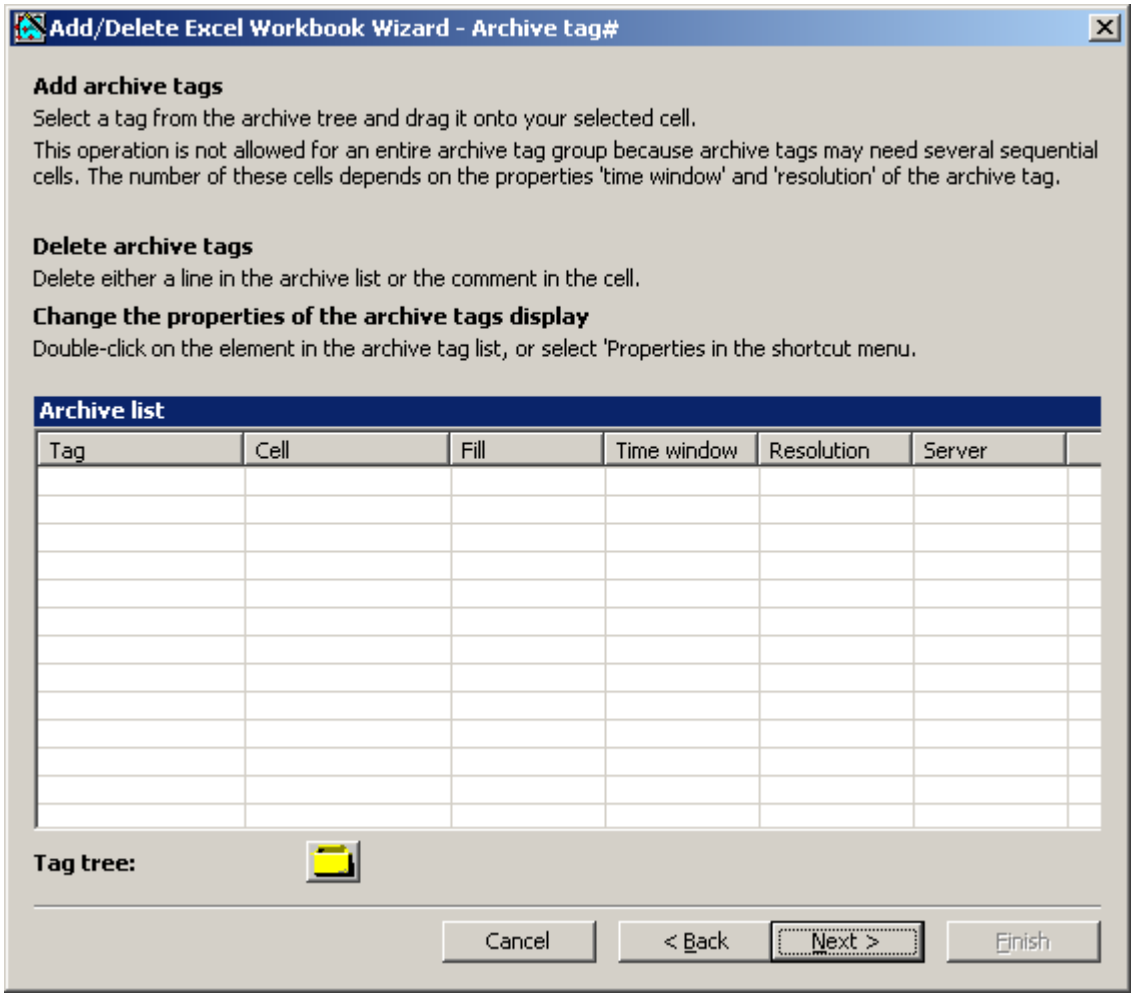
This chapter describes how to configure the display of archive tags.

Requirement

- The "Excel Workbook Wizard" is started and an Excel workbook is configured.
- The "Add/delete archive tags" dialog is open.

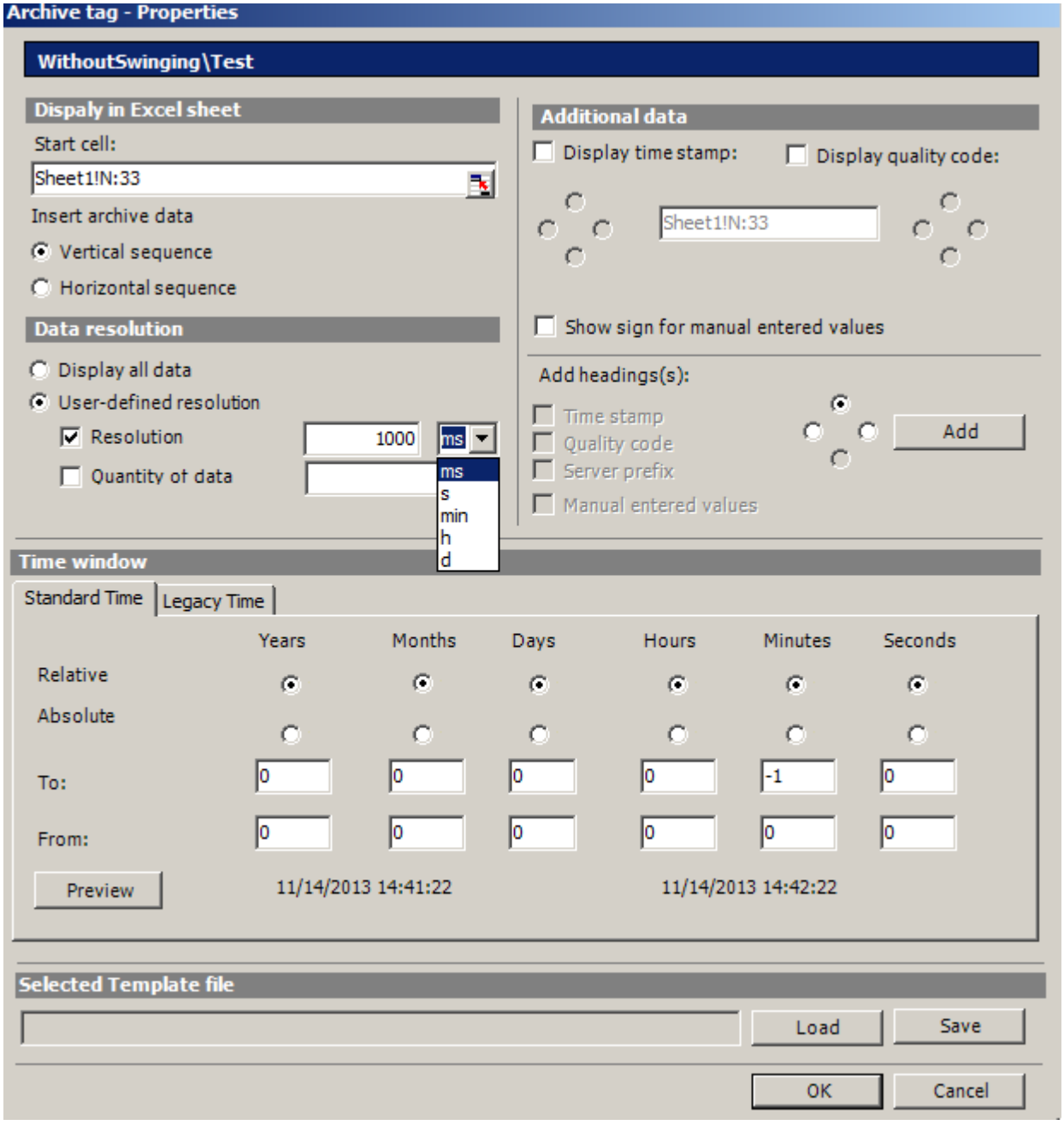
Procedure

1. Click in the dialog "Add/delete archive tags".



2. The tag selection dialog opens.
   Select the desired archive tag.
   Drag the tag to a cell in the Excel table with drag-and-drop.
3. Close the selection dialog. The tag is displayed in the tag list.

4. Select the archive tag in the tag list, and select the "Properties" entry in the shortcut menu. The "Archive tag properties" dialog opens.



5. Specify the settings for the insertion sequence and headings.

6. Specify how much data you want to display. For a user-defined resolution, specify an integer number and the time unit or specify the quantity of data.

   Note

   If you use a user-defined data resolution with a combination of "Resolution" and "Quantity of data", it is possible that the amount of extracted data is not correctly determined. This results under certain circumstances in a mismatch between the displayed values and the configured quantity of data.

   If you use the option "Quantity of data" in "User-defined resolution", enter an even value in the input box. Even values ensure a trend-true display.

7. In the "Time window" box, specify the time window from which you want to display archive tags:

- The time settings on the "Standard time" tag are based on the standard times:
  - The settings for the relative time period refer to a period starting from the current time. You can enter positive and negative values for the past time period in the lines "From" and "To". For example, it is 12:00 (noon). You want to display the values for the last ten minutes. Activate all time options in the "Relative" line. Enter the value "-10" in the "Minutes" column of the "From" line.
  - For settings of the absolute time period, enter the corresponding time parameters in the "From" and "To" lines and in the corresponding columns.

  Click on the "Preview" button to check the time range set.
- You can define a time window yourself or set a fixed interval, for example, "last week", on the "Legacy time" tab. If you want to define a time window yourself, you have the following possible settings:
  - Relative time window: Specify the starting point and the duration. You can specify a duration ranging from a minute to days.
  - Absolute time window: Specify the start and end of the time window.

1. If you select the option "Display manually entered values", an additional column is displayed. You then see the letter "m" if an archived value was manually entered during runtime.
2. You can save the settings to the properties. You can then load the settings and use them again after exiting Excel and opening it again. Click "Save" to save the settings in an "xml" file.
3. Confirm your entries with "OK".
   If necessary, repeat the procedure for additional archive tags. The settings for the properties will be used again. Multiple selection of tags is also possible in the tag list.
4. Click "Next" to display alarms. For more information, refer to "Configuring display of alarms (Page 331)".

Result

The display of archive tag values is configured in the Excel workbook. Once you have saved the properties, you can use the settings whenever you need to.

Each table field receives a short text and a comment in the Excel workbook.

The short text "AV" in tag values stands for archive tags. In the comments, the source of the displayed values is shown in the format "WDWA_<number>_<tagname>".

Note

Running the Excel Workbook Wizard again

You need to run the Excel Workbook Wizard again:

- after deleting or moving cells with configuration data
- after deleting or inserting new rows or columns in the Excel workbook

The configuration data is checked and automatically adapted as a result. Confirm the data displayed with "Next". Save the workbook and close Excel.

See also

Publishing the Excel workbook (Page 336)

Configuring the display of alarms

Introduction

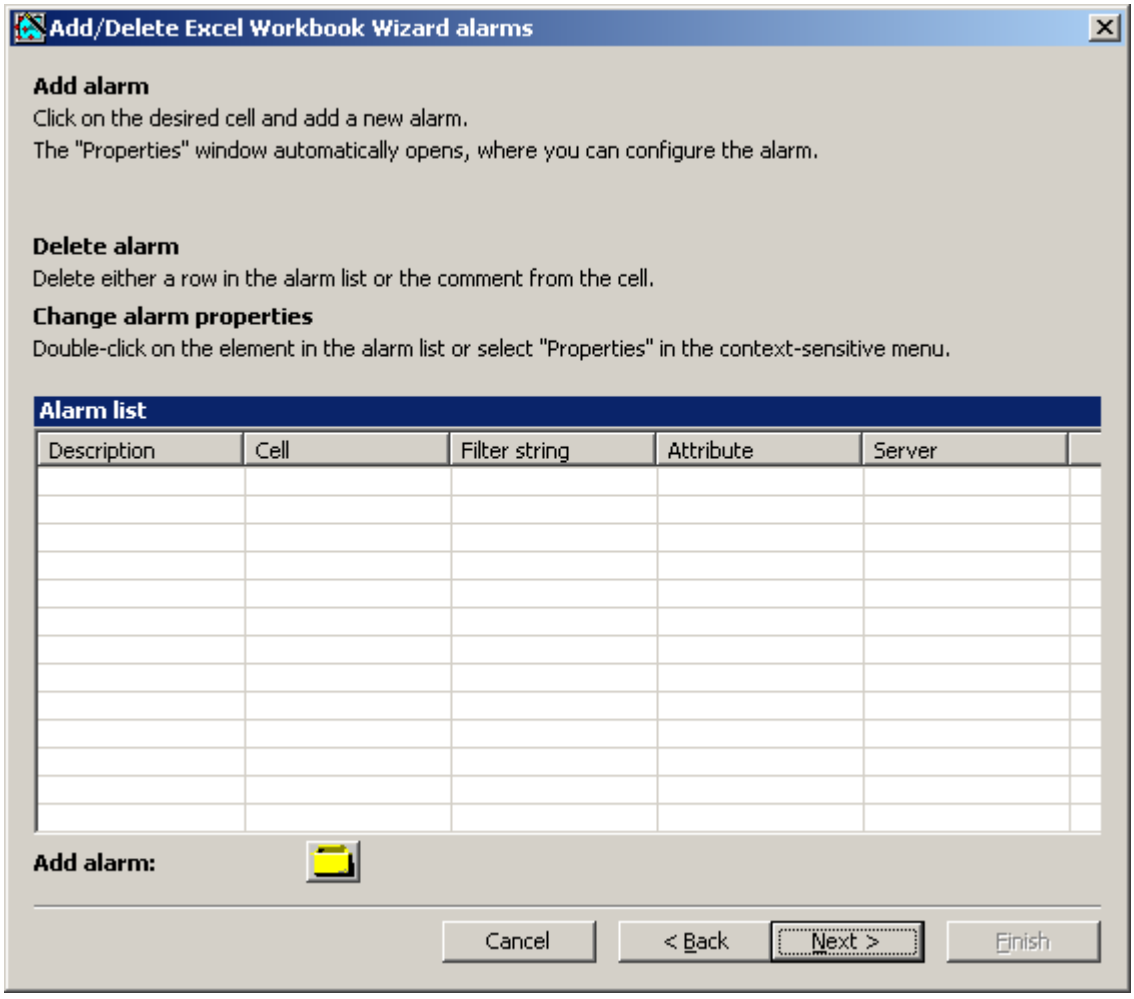
This chapter describes how to configure the display of alarms.

Requirement

- The "Excel Workbook Wizard" is started and an Excel workbook is configured.
- The "Add/delete alarms" dialog is open.

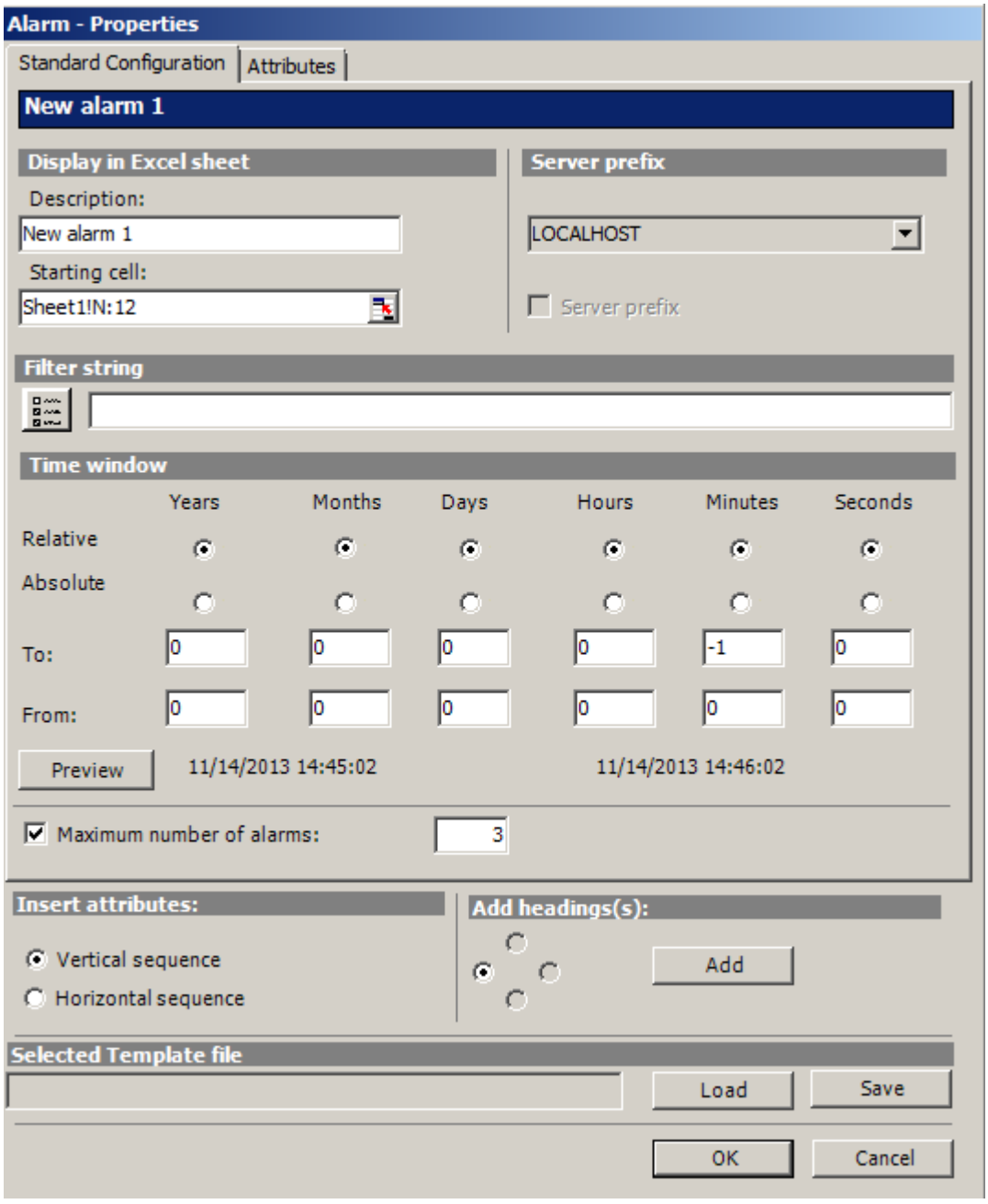
Procedure

1. Configure the alarms in the dialog "Add/delete alarms".



2. Select the required cell in the Excel table.

3. Click . The "Alarm - properties" dialog opens.

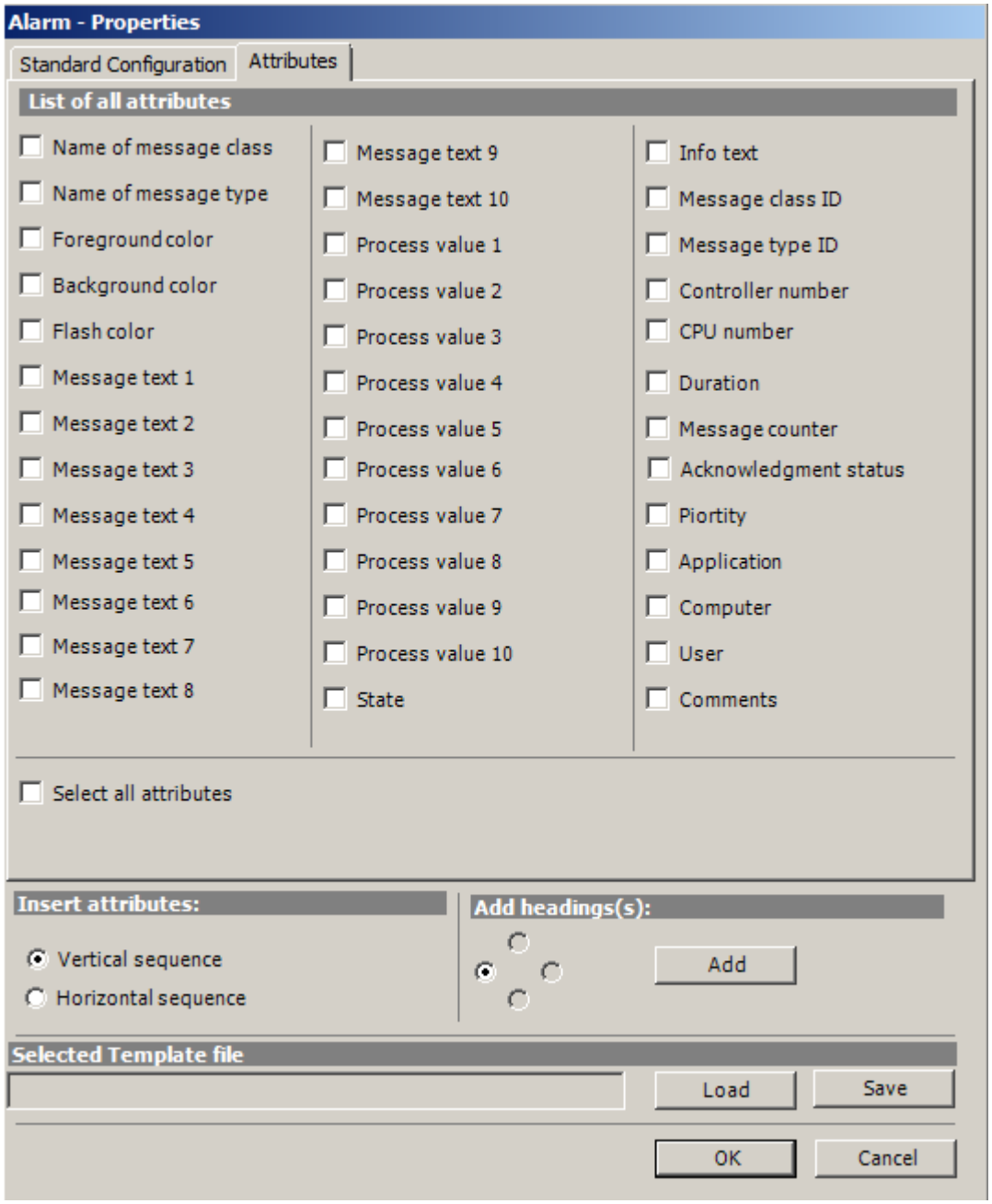


4. On the "Standard configuration" tab, define the display options for alarms in the Excel table.
5. Enter a filter condition in the "Filter string" box or use the selection dialog to define a filter, for example, to display only specific alarms. If the filter contains a date or time, the "Time window" box is disabled.

6. In the "Time window" box, specify the time window from which you want to display alarms:
   - The settings for the relative time period refer to a period starting from the current time. You can enter positive and negative values for the past time period in the lines "From" and "To". For example, it is exactly 12:00. You want to display the alarms for the last ten minutes. Activate all time options in the "Relative" line. Enter the value "-10" in the "Minutes" column of the "From" line.
   - For settings of the absolute time period, enter the corresponding time parameters in the "From" and "To" lines and in the corresponding columns.

   Click on the "Preview" button to check the time range set.
7. Use the "Maximum number of alarms" option to limit the number of most recent alarms displayed. You can display maximum 1,000 messages.

8. On the "Attributes" tab, select the required attributes of the alarms that you want to display. Further details can be found in "Alarm attributes (Page 459)".



9. Specify the settings for the attribute insertion sequence and headings.
10. You can save the settings to the properties. You can then load the settings and use them again after exiting Excel and opening it again. Click "Save" to save the settings in an "xml" file.
11. Confirm your entries with "OK".
    If necessary, repeat the procedure for additional alarms. The settings for the properties will be used again. Multiple selection of alarms is also possible in the "Alarm list".

12. Click "Next". The "Description" dialog box opens.
13. You can enter a comment if needed. This comment is displayed when selecting files provided for download by the DataMonitor server.

Result

The display of alarms is configured in the Excel workbook. Once you have saved the properties, you can use the settings whenever you need to.

Each table field receives a short text and a comment in the Excel workbook.

The short text for alarms is "AL". In the comments, the source of the displayed alarm is shown in the format "WDWL_<number>_<box name>".

Note

Running the Excel Workbook Wizard again

You need to run the Excel Workbook Wizard again:

- after deleting or moving cells with configuration data
- after deleting or inserting new rows or columns in the Excel workbook

The configuration data is checked and automatically adapted as a result. Confirm the data displayed with "Next". Save the workbook and close Excel.

See also

Publishing the Excel workbook (Page 336)

Publishing the Excel workbook

Introduction

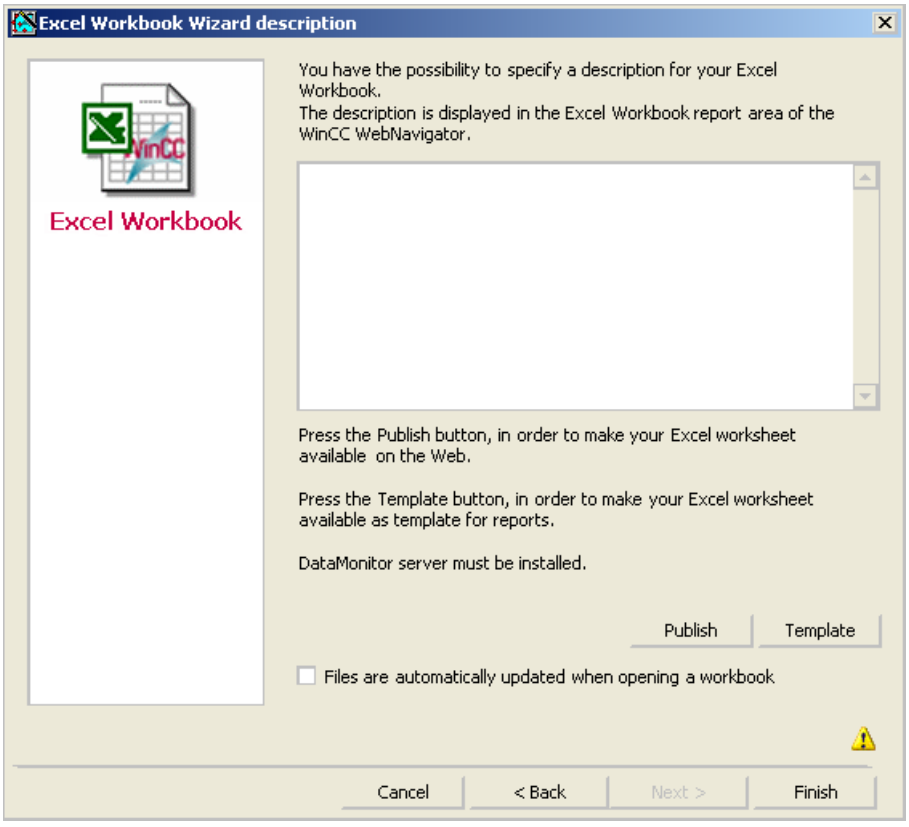
You make the configured Excel workbooks available on the DataMonitor client. The workbooks are published as report tool for the Intranet/Internet or used as template for "Reports".

Requirement

- The DataMonitor server is installed on the computer.
- The display of tag values, archive values and alarms is configured.
- The "Description" dialog is open in the "Excel Workbook Wizard".

Procedure

1. You make the workbooks available in the "Description" dialog.



2. If you click "Publish", the Excel workbook is made available on the DataMonitor client under "Report tools" in "Reports".
   If you click "Template", the Excel workbook is made available on the DataMonitor client as template in "Reports" under "Excel Workbooks".
3. Exit the Excel Workbook-Wizard.
4. Save the workbook and close Excel.

Alternative Procedure

You upload the Excel workbooks on the DataMonitor client. Additional information is available under "Making Excel workbooks available as template (Page 461)" and "Making Excel workbooks available as report tool (Page 463)".

Result

The Excel workbooks are made available on the DataMonitor client:

- The workbook is available on the "Report tools" tab. You can use the workbook to display process data in runtime. For more information, refer to "Displaying process data in an Excel workbook (Page 457)".
- You can create time-controlled and event-controlled reports using the workbook as template. For more information, refer to "Creating reports with an Excel workbook (Page 466)".

See also

Configuring the display of tag values (Page 323)

Configuring the display of archive tags (Page 327)

Configuring the display of alarms (Page 331)

Displaying process data in an Excel workbook

Introduction

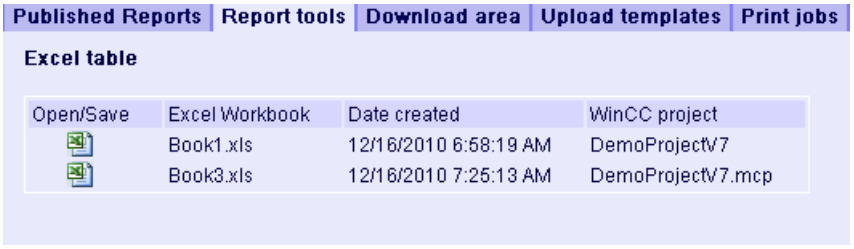
You can display process values or archive values and alarms in an available Excel workbook. You can edit and save the workbook.

Requirement

- The Excel workbooks were made available as report tool.
- MS Excel for online display in the Excel workbook
- The DataMonitor server is installed.
- The WinCC project is in Runtime.
- The start page of the DataMonitor is open.
- A user is created in WinCC.

Procedure

1. Click "Reports" on the start page.
2. Click "Report tools".
   You see the Excel workbooks that you have published in the Excel Workbook Wizard or made available as report tool.



3. Select a workbook.
4. Double-click the icon of the Excel workbook.
5. In the dialog that follows, click "Open". The workbook is opened.
6. Select the entry "Excel Workbook" in the "DataMonitor" menu.
7. The name of the server whose process data are configured in the workbook is displayed in the "WinCC server" field.
   The "WinCC Server" field can include the following information:
   - Access via domain: The server name and the domain are listed for access outside the network domain.
   - The DataMonitor start page is the default web page: The "WinCC Server" field contains only the server name.
   - The DataMonitor start page is in the virtual folder: The server name and the name of the virtual folder are displayed, e.g. "/webnavigator".
8. If the tags in the Excel sheet are from several servers, activate "all servers". The tag values of all servers are updated in the online display.

   Note

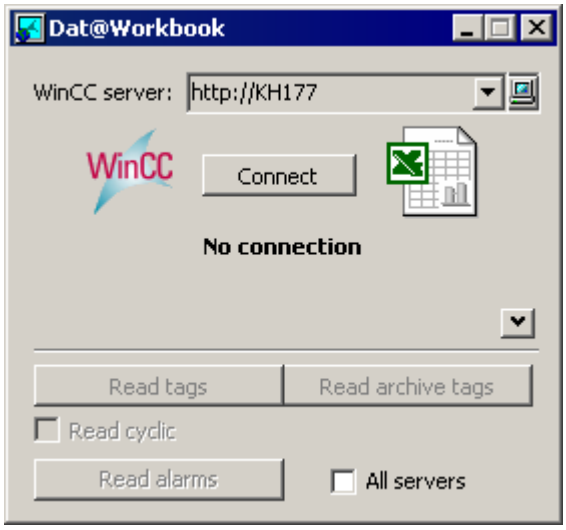
   To establish connections to all servers, activate "all servers" with "Connect" before you establish the connections.

9. Activate the connection to the WinCC project via the button "Connect". After a successful connection, the log-in dialog will be opened.
   Type in the user name and associated password.
   In case of several servers, the log-in dialogs of the respective servers open one after the other.
   If a connection was not established, a corresponding alarm is displayed. Clicking on the dialog will display additional information about the error that has occurred.

   Note

   Do not close the "Excel Workbook" dialog as long as the log-in dialog for connection establishment to the server is still open.

10. The connection status will be displayed in the dialog.
    Click the "Read tags", "Read archive tags" and "Read alarms" buttons to update the respective values or displays.



11. Activate the check box "Read cyclically" to update the tag values in cycles.
12. Close the "Excel Workbook" dialog after finishing your calculations in Excel.
13. Save the results in the workbook with the "Save as" menu command.
14. Close Excel.

Result

The process data are displayed in the Excel workbook and can be processed further.

If errors occur during display of the Excel workbook or no connection to the WinCC server is established, the log entries are displayed in a workbook. The entries contain the date, the tags or alarms affected, the server, and the error message.

3.1.6.4 Outputting data using "Reports"

Reports

Introduction

Use "Reports" to create time-controlled and event-controlled reports independent of the SCADA system. Use the WinCC print jobs and published Excel workbooks to output analysis results and process data. The reports are output as PDF or XLS file and can be attached to an e-mail.

Requirement

- You need a PDF reader for output as PDF file. The PDF reader can be obtained from www.adobe.com for example.
- For Output as XLS-file (Excel workbook):
  - MS Excel is installed.
    To use the automatic creation of Excel reports on the DataMonitor server, MS Excel must be installed on the server.
  - The Excel workbook is created and published as template on the DataMonitor server.
- Use the Download area in "Reports" to install the Excel add-ins "ExcelWorkbook Wizard" and "Excel Workbook".

Using reports

You determine on the DataMonitor server when you want to create reports:

- Manually, for example, by a plant operator.
- Event-controlled, for example, when a tag value changes.
- Time-controlled, such as daily, for example.

The created reports are centrally saved in the directories on the DataMonitor server. Users can access the different folders with appropriate authorization from the DataMonitor client.

Note

The creation time is always displayed on a DataMonitor client in the local time zone of the server.

Making an Excel workbook available as template

Introduction

You can make Excel workbooks available as templates to create ""Reports"". For this you have the following options:

- You publish the Excel workbooks on the WinCC server with "Excel Workbook Wizard" using the "Template" button.
- You upload an Excel workbook not yet published to the DataMonitor client.

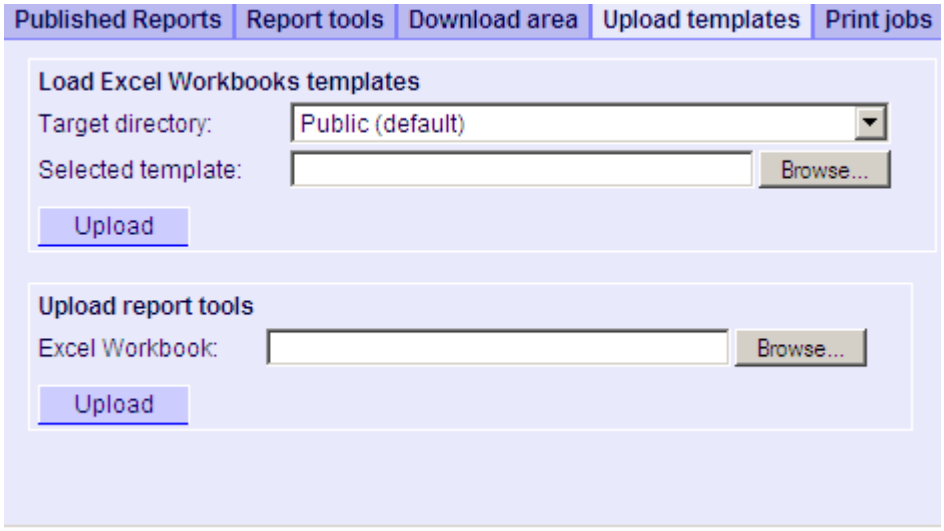
This page includes a description of how you make a template available on a DataMonitor client.

Requirement

- The Excel workbook is created.
- The file size of the Excel workbook is less than 4 MB.
- The start page of the DataMonitor is open.

Procedure

1. Click "Reports" on the start page.
2. Click the "Upload templates" tab.



3. Select a directory, in which the template will be stored in the "Target directory" field. Only the directories, for which the user that is logged in has "Create" access rights, can be selected.
4. Click "Find" for the "Selected template". Navigate to the desired Excel workbook.
5. Click the "Upload" button.

Result

You can create time-controlled and event-controlled reports using the workbook as template.

See also

Displaying a report with an Excel Workbook (Page 345)

Making an Excel workbook available as a report tool

Introduction

You can make Excel workbooks centrally available as report tools in "Reports". For this you have the following options:

- You publish the Excel workbooks on the WinCC server with "Excel Workbook Wizard" using the "Publish" button.
- You upload an Excel workbook not yet published to the DataMonitor client.

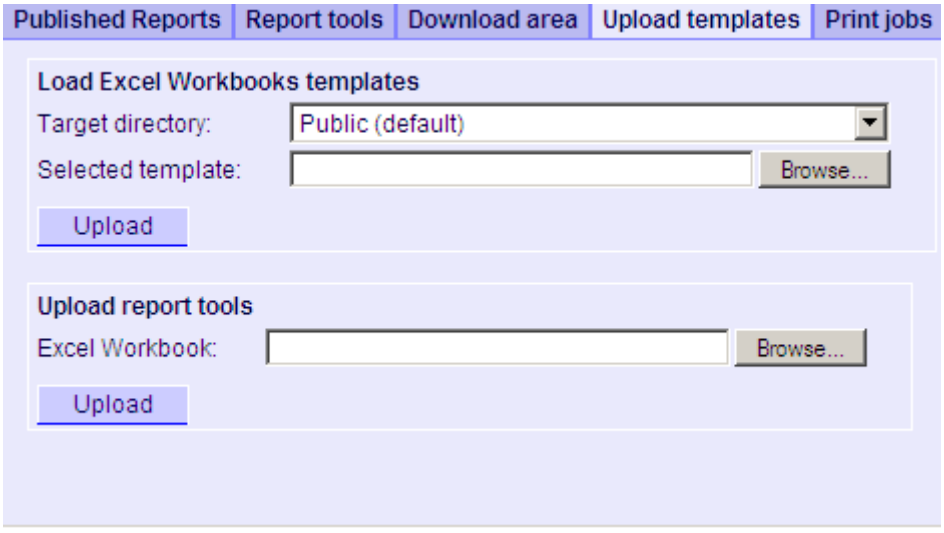
Here you find a description of how you make an Excel workbook not yet published available on the DataMonitor client.

Requirement

- The Excel workbook is created.
- The file size of the Excel workbook is less than 4 MB.
- The start page of the DataMonitor is open.

Procedure

1. Click "Reports" on the start page.
2. Click the "Upload templates" tab.



3. Click "Find" for "Uploading templates for Excel workbooks". Navigate to the desired Excel workbook.
4. Click the "Upload" button.

Result

The workbook is available on the "Report tools" tab. You can use the workbook to display process data in runtime.

See also

Displaying process data in an Excel workbook (Page 338)

Making Settings for Reports

Introduction

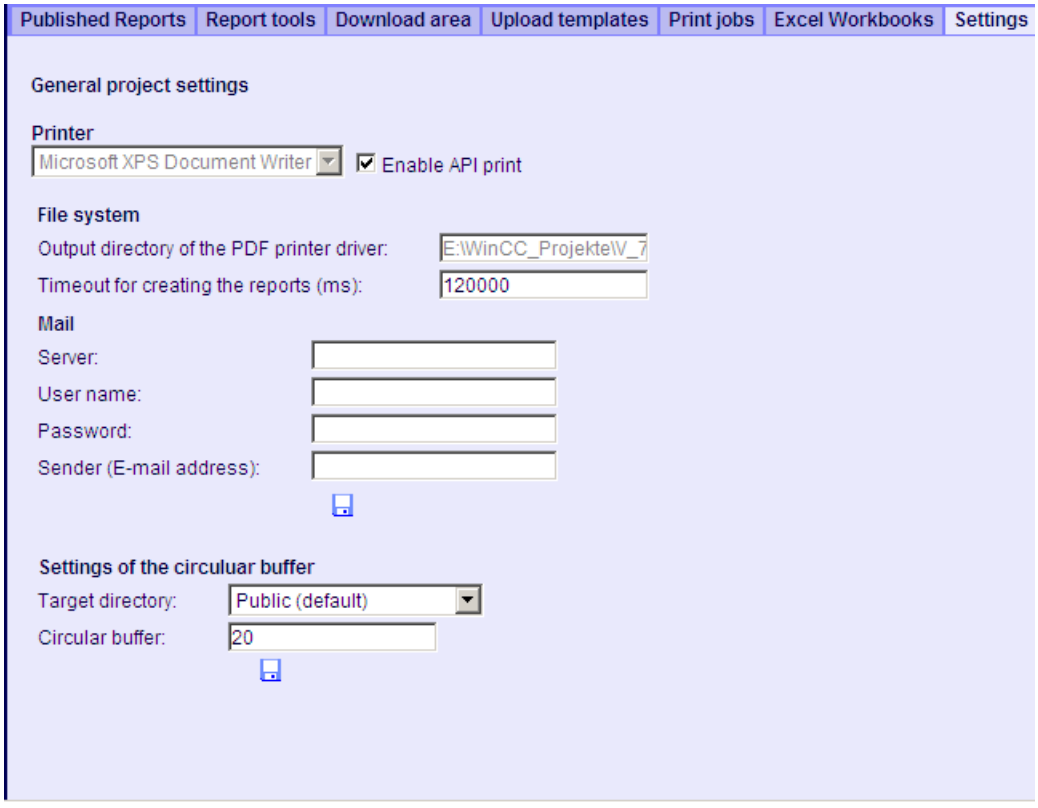
Different settings are required for using the "Reports" function in DataMonitor.

Requirement

- PDF Reader is installed.
- The WinCC project is activated on the DataMonitor server.
- The option "Report Runtime" is activated in the WinCC project in the properties of the computer.
- The start page of the DataMonitor is open.

Procedure

1. Click "Reports" on the start page.
2. Click on the "Settings" tab. The "Settings" page is displayed.



3. Check the entries in the section "General project settings".
   You can now select the printer of the Web server. Printing is only possible in files.
4. To enable the output to a PDF file, activate the option "Activate API print".
5. Enter the data for sending mail in the "Mail" area:
   - Server: Outgoing mail server (SMTP)
   - User name: Name for the sender
   - Password
   - Sender: E-mail account used to sending the e-mail
6. Click the disk icon in the section "General project settings" to save your settings.

7. In the "Settings of the circular buffer" area, you can define the number of created reports that are stored in the selected destination directory. The box has a pre-assigned value of 20. If the maximum number of reports of the same type has been reached, the "First in First out" principle applies. For example, if 21 reports of "Alarm Table" type have been created, the report that was created first is removed.
8. Click the disk icon in this section to save your settings.

Result

The settings for "Reports" have been made.

Product support - example

FAQ "51334611" on the Internet under "Product support" gives a detailed example:

- http://support.automation.siemens.com/WW/view/en/51334611

Displaying a report with an Excel Workbook

Introduction

Use "Reports" to create reports from Excel workbooks or print jobs in PDF format. The following is a description for creating reports from Excel workbooks.

Note

Information on event-controlled "Excel Workbooks"

An event-controlled report is only created if the time period in which the tag changes is greater than one minute.

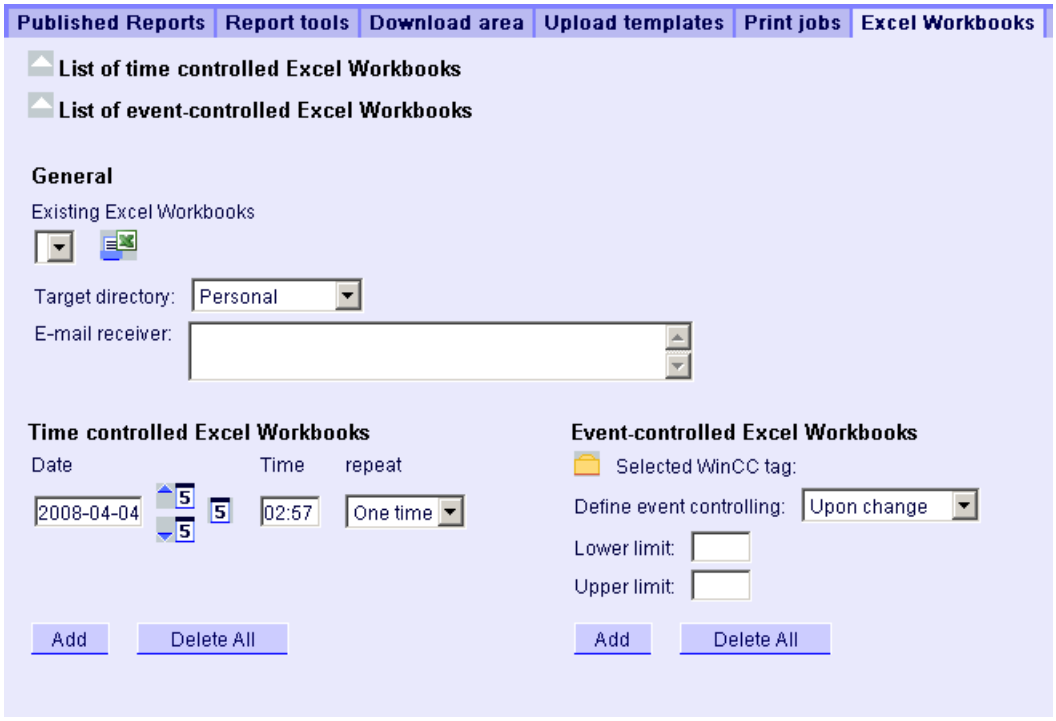
Keep in mind that the frequent creation of one or more event-controlled reports over a long period of time takes up a lot of memory and uses up valuable resources. This case occurs, for example, with frequent signal changes of a tag that triggers an event-controlled report.

Requirement

- The WinCC project is activated on the DataMonitor server.
- The option "Report Runtime" is activated in the WinCC project in the properties of the computer.
- You have already published or made available as templates the Excel workbooks you want to use.
- The start page of the DataMonitor is open.

Procedure

1. Click "Reports" on the start page.
2. Click on the "Excel Workbooks" tab.
   The "Excel Workbooks" page is displayed.
   The icons in front of "List of time-controlled Excel workbooks" and "List of event-controlled Excel workbooks" are deactivated. The icons indicate that no reports are currently configured.



3. Select one of the available Excel workbooks under "Available Excel workbooks".
4. Select the target directory in which you want to store the reports.
   Only the directories, for which the user that is logged in has "Create" access rights, can be selected.
5. If you want to send the report as an e-mail, enter the e-mail addresses in the "E-mail recipient" field. You can enter several recipients as you would with any standard e-mail program.
6. Use  to create the report immediately.
7. If you do not want to create the report immediately, configure a time-controlled or event-controlled creation of the report in the following steps.
8. To configure a time-controlled report, enter the following in the "Time-controlled Excel workbooks" area:
   - Date: Enter the date in the respective field or enter the date using the calendar. To open the calendar, click the "Calendar" icon.
   - Time: Define the time when you want the report to be created.
   - Repetition: Define the repetition rate, for example, "Once" or "Weekly".
9. Click "Add" in the "Time-controlled Excel workbooks" area.
   The report is displayed in the "List of time-controlled Excel workbooks".

10. To configure an event-controlled report, enter the following in the "Event-controlled Excel workbooks" area:
    - Selected WinCC tag:
      Click . Select the required tag in the selection dialog.
      Use the filter to limit the number of tags displayed.
    - Defining event control:
      Set the triggering event, for example, when the tag value changes.
      If you have selected "lower limit", "upper limit" or "both limits" for event control, enter the respective limits.
11. Click "Add" in the "Event-controlled Excel workbooks" area.
    The report is displayed in the "List of event-controlled Excel workbooks".

Result

A time-controlled or event-controlled report is configured as "Excel Workbook".

The configured reports are displayed in the lists of the "Excel Workbooks" . You can edit or delete the reports in the lists.

Once the report has been created, it is available in runtime on the "Published Reports" tab in the selected directory.

Creating a report with a print job

Introduction

Use "Reports" to create reports from Excel workbooks or print jobs in PDF format. The following is a description for creating reports using print jobs in PDF format.

Note

Opening Asian PDF files with Acrobat Reader

To open Asian PDF files created with "Reports", you need the country-specific version or the respective font package of Adobe Acrobat Reader.

The four Asian languages are each permanently associated with one font. This means the font settings in the report layout will not have an effect on the Asian languages.

Information on event-controlled print jobs

An event-controlled print job is only created if the time period in which the tag changes is greater than one minute.

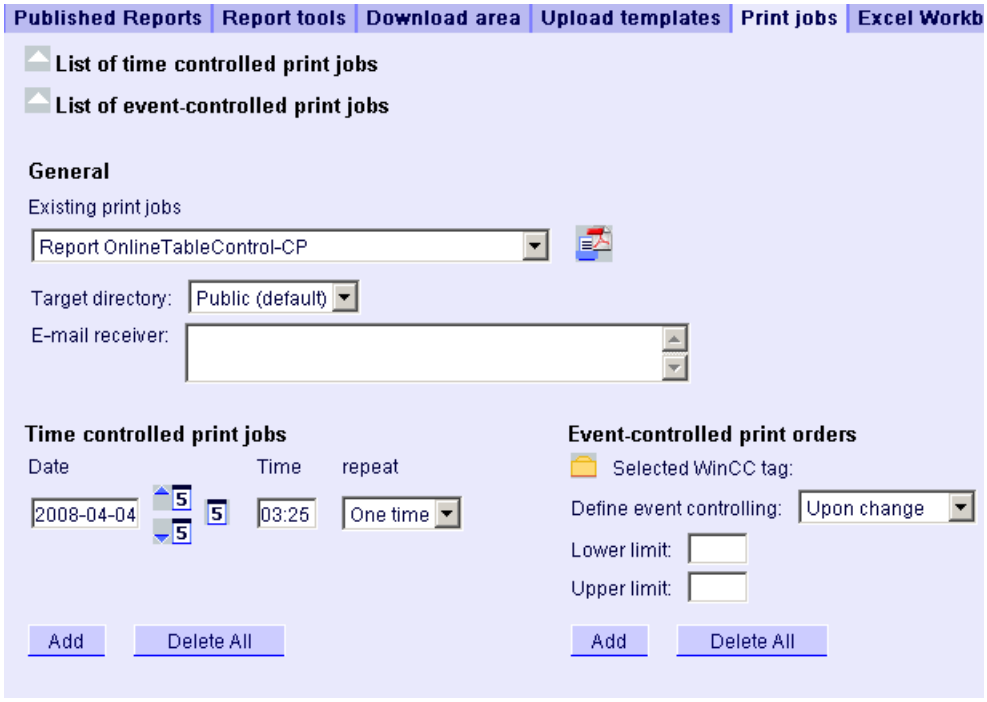
Keep in mind that the frequent creation of one or more event-controlled print jobs over a long period of time takes up a lot of memory and uses up valuable resources. This case occurs, for example, with frequent signal changes of a tag that triggers an event-controlled print job.

Requirement

- PDF Reader is installed.
- The WinCC project is activated on the DataMonitor server.
- The option "Report Runtime" is activated in the WinCC project in the properties of the computer.
- The start page of the DataMonitor is open.

Procedure

1. Click "Reports" on the start page.
2. Click on the "Print jobs" tab.
   The "Print jobs configuration" page is displayed.
   The icons in front of "List of time-controlled print jobs" and "List of event-controlled print jobs" are deactivated. The icons indicate that no print jobs are currently configured.



3. Select the desired print job under "Available print jobs".
4. Select the target directory in which you want to store the reports.
   Only the directories, for which the user that is logged in has "Create" access rights, can be selected.
5. If you want to send the report as an e-mail, enter the e-mail addresses in the "E-mail recipient" field. You can enter several recipients as you would with any standard e-mail program.
6. Use  to create the report immediately.
7. If you do not want to create the report immediately, configure a time-controlled or event-controlled creation of the report in the following steps.

8. To configure a time-controlled report, enter the following in the "Time-controlled print jobs" area:
   - Date: Enter the date in the respective field or enter the date using the calendar. To open the calendar, click the "Calendar" icon.
   - Time: Define the time when you want the report to be created.
   - Repetition: Define the repetition rate, for example, "Once" or "Weekly".
9. Click "Add" in the "Time-controlled print jobs" area.
   The report is displayed in the "List of time-controlled print jobs".
10. To configure an event-controlled report, enter the following in the "Event-controlled print jobs" area:
    - Selected WinCC tag:
      Click . Select the required tag in the selection dialog.
      Use the filter to limit the number of tags displayed.
    - Defining event control:
      Set the triggering event, for example, when the tag value changes.
      If you have selected "lower limit", "upper limit" or "both limits" for event control, enter the respective limits.
11. Click "Add" in the "Time-controlled print jobs" area.
    The report is displayed in the "List of event-controlled print jobs".

Result

A time-controlled or event-controlled report is configured as print job in PDF format.

The configured reports are displayed in the lists of the print jobs. You can edit or delete the reports in the lists.

The report is created in the language that was set during WinCC configuration. The WinCC Runtime language does not have an effect on the representation of dynamic elements, such as tables.

Once the report has been created, the PDF files are available in runtime on the "Published Reports" tab in the selected directory.

3.1.6.5 Creating Webcenter pages in "Webcenter"

Web center

Overview

The Webcenter is the central information portal for access to WinCC data via Intranet/Internet. Users can use the Webcenter pages and web parts to compile and save their views of WinCC data. The Webcenter pages are stored in directories.

The Webcenter pages are stored in modular fashion. The modules are defined by layout templates. Users can either use the supplied layout templates or the ones they create themselves.

The web parts are the individual blocks that prepare and display data. You can combine up to 15 web parts in one screen view. For more information, refer to "Overview of web parts (Page 350)".

Within the WebCenter pages, the configuration of the respective web part is stored and can be called up again at any time. The multiple use of the same web part with different configuration is also possible. The WebCenter pages that have been created in this way can be opened with the same configuration by different users depending on the assigned rights.

You can export the configuration of web parts as XML file.

To transfer the configuration data to another computer, copy the folder:

"\Siemens\WinCC\WebNavigator\DataMonitorServer\WebCenter\App_Data\WebCenter"

Basic procedure

1. Creating directories for Webcenter pages
2. Assigning Access Rights
3. Establishing connection to the WinCC data
4. Publishing pictures for the Webcenter
5. Creating layout template for Webcenter pages
6. Creating Webcenter page
7. Inserting web parts to the Webcenter page
8. Configuring web parts within Webcenter pages

Overview of Web Parts

Overview

You compile Webcenter pages from the web parts in the "Webcenter".

The following web parts are available:

- Process value table
  The available process values are displayed for the defined time period.
- Process Values in the Table (Timestep)
  The complete archive name and the tag name are displayed as tooltip in the column header. The process values are combined beginning with the starting time in the defined time interval.
  Depending on the set aggregate type, the interval for the interval event is displayed. For example, a process value was archived every 30 seconds. You have selected an interval of 60 seconds and the aggregate type "Average value". It determines the average value of two archive values each, which is then displayed in the table with the first time stamp of the averaging interval.
  If you select an aggregate type without interpolation, and if no value is present in the interval, no interval result will be displayed. If you select an aggregate type with linear interpolation, an interval result is displayed for each interval.

- Statistics functions for process values
  All available process values are used for the defined time period, for example, to calculate and display the average value.
- Trend Process Values
  The process values are displayed with trends.
- Trend (Timestep)
  Clear presentation of precompressed values in trends with aggregate functions, such as sum or average.
- Bar Chart (Aggregates)
- Pie Chart (Aggregates)
- Alarm table
  Presentation of accrued alarms.
- Alarm hit list
  Presentation of statistical information on alarms.
- Link to WebCenter pages
- Links (external)
  Links to internal Webcenter pages and external Internet pages, such as stock market news.
- Displaying information
  Such as news, for example.
- Static process pictures
  WinCC pictures are integrated into the Webcenter without installation download. A JPG screenshot of the process picture is created on the DataMonitor server at regular intervals.
- Display Graphic
  JPG screenshots, such as company logo.
- The Last Reports
  Display the reports created last, for example, the last ten print jobs in PDF format created with "Reports".

See also

Displaying process values in a table (Page 428)

Displaying process values in a diagram (Page 429)

Displaying the hit list of messages (Page 435)

Displaying messages in the alarm table (Page 431)

Displaying statistics function for process values (Page 437)

Creating layout template for Webcenter pages

Introduction

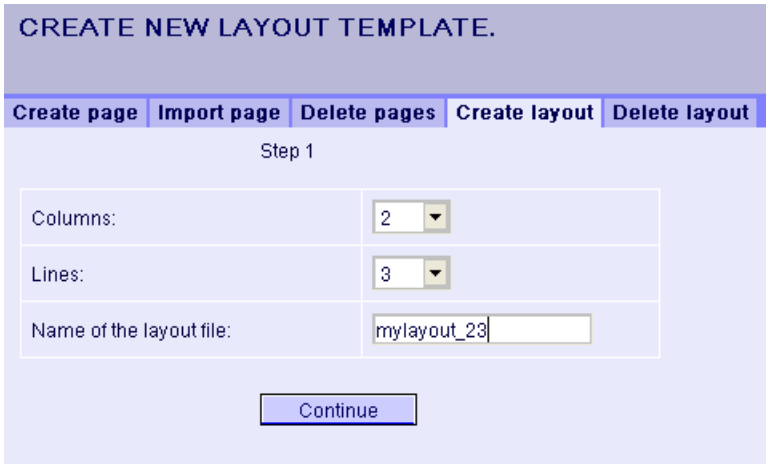
You need a layout template to create a Webcenter page. Predefined layouts were installed during the installation. Additionally, you can create your own Layout Templates.

Requirement

- The logged in user is a member of the Windows user group "SIMATIC Report Administrators".
- The start page of the DataMonitor is open.

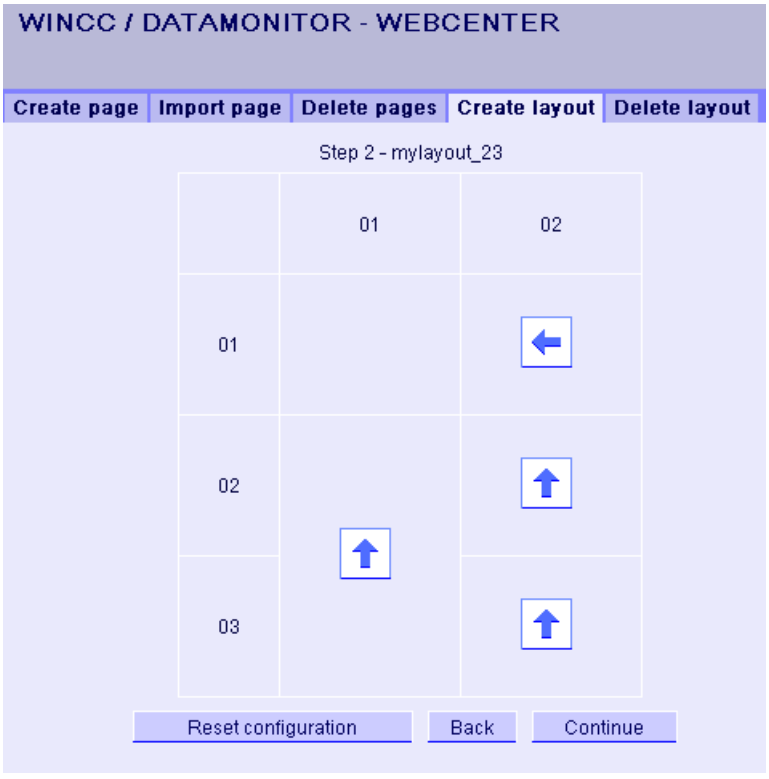
Procedure

1. Click "Webcenter > Configuration" on the start page.
2. Click on the "Creating layout" tab.

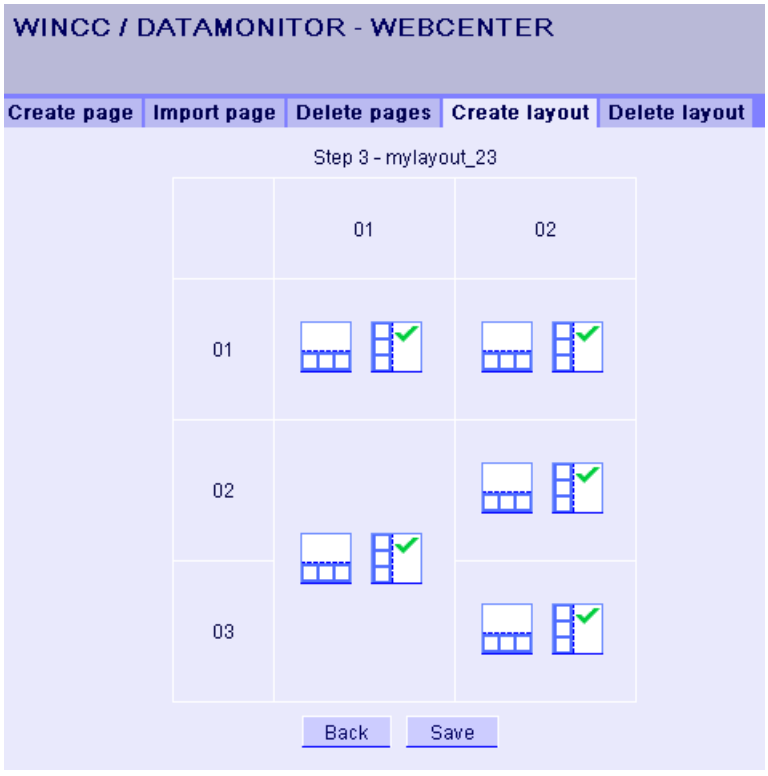


3. Define the number of columns and the number of lines.
4. Enter the name in the "Name of the layout file" box, for example, "mylayout_23". Click "Next".

5. Combine the table fields, if necessary. To do so, click the desired arrow symbol, such as "Arrow up", in the desired field, for example line 3 / column 1. The modified view will be displayed.



6. To restore the original table layout, click "Reset configuration". Click "Next".



7. Arrange the web parts in the table fields. If necessary, activate the corresponding symbol in a table field to place the web parts vertically or horizontally.
8. Click "Save".

Result

The layout template "mylayout_23" is created. You can use the layout template as a template for creating a Webcenter page.

Creating Webcenter page

Introduction

You create Webcenter pages in which you add web parts. The Webcenter pages are stored in directories. In this example, the WebCenter page is saved in the "myPart" directory.

You can only change or create Webcenter pages in directories for which the Windows user group has the "Edit" or "Create" access rights.

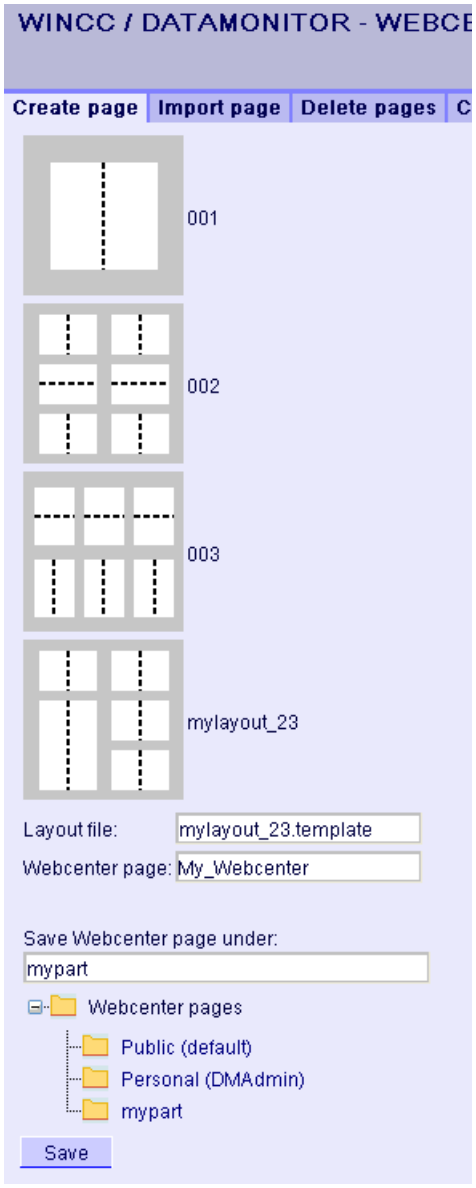
Requirement

- The directory "myPart" is set up.
- The logged in user is a member of the Windows user group "SIMATIC Report Administrators" or "SIMATIC Report Users".
- The Windows user groups have the access rights "Edit" or "Create" for the directory.
- The start page of the DataMonitor is open.

Procedure

1. Click "Webcenter > Configuration" on the start page.
2. Click on the "Creating page" tab.
3. Click on the desired layout template. The file name is displayed in the "Layout file" box.
4. Enter a name in the "Webcenter page" box, for example, "My_Webcenter".

5. Select the directory in which the Webcenter page is stored. The selected directory is displayed in the box "Save WebCenter page as".



6. Click "Save".

Result

The Webcenter page "My_Webcenter" is created and saved.

Inserting web parts to the Webcenter page

Introduction

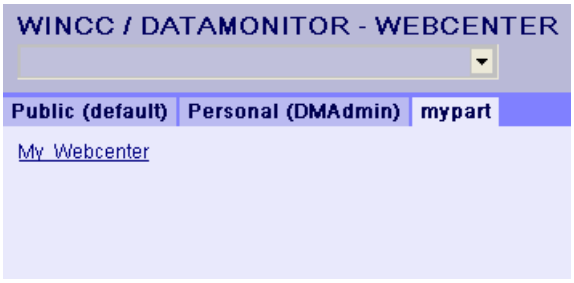
You compile the contents of the Webcenter pages from the web parts.

Requirement

- The directory "myPart" is set up.
- The Webcenter page "My_Webcenter" is stored in the directory.
- The logged in user is a member of the Windows user group "SIMATIC Report Administrators" or "SIMATIC Report Users".
- The Windows user groups have the access rights "Edit" or "Create" for the directory.
- The start page of the DataMonitor is open.

Procedure

1. Click "Webcenter > Pages" on the start page.
2. Click on the "myPart" tab.



3. Click on the entry "My_Webcenter".

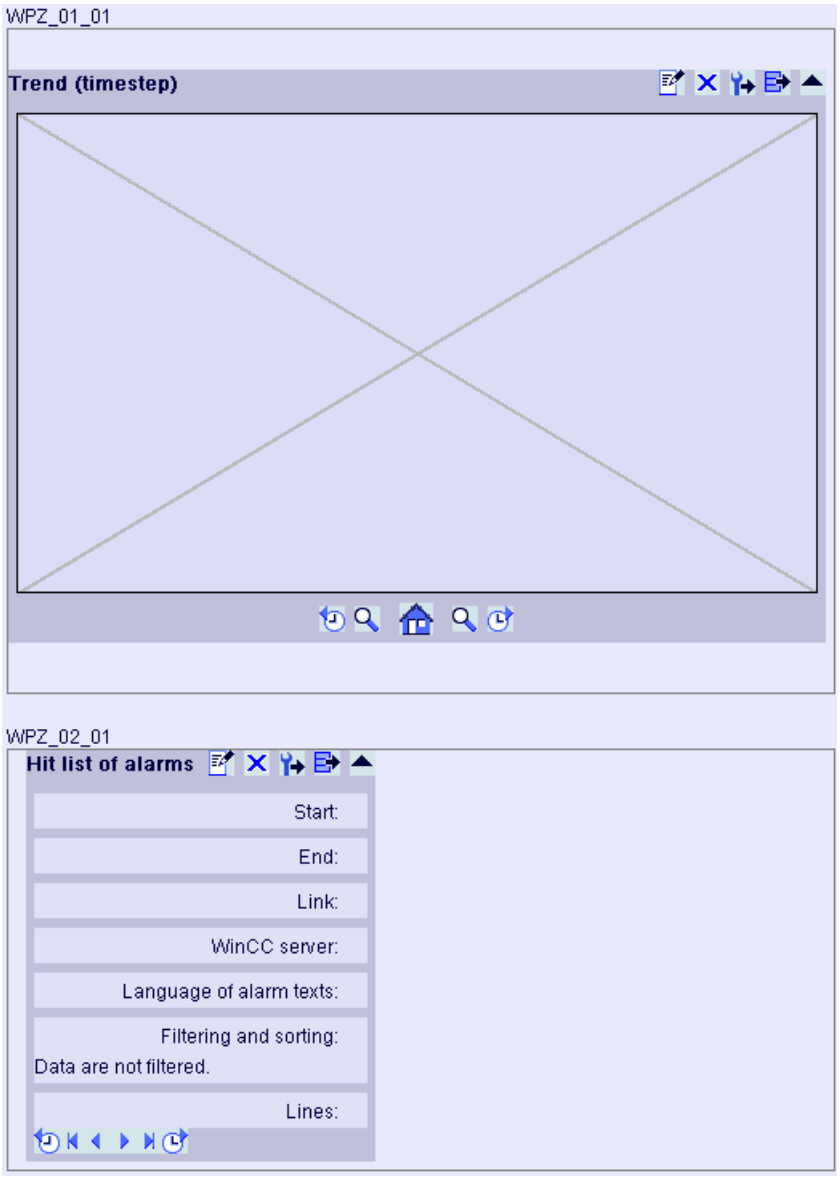
4. To add web parts, click at the top right edge of the page. The available web parts are listed. If you have exported web parts that have already been configured, they are listed under "Imported web parts". If necessary, insert these web parts into your Webcenter page.



5. Activate the entry "Trend (Timestep)".
6. Select the entry "WPZ_01_01" and click "Add".
7. Activate the entry "Hit list of alarms".
   If you insert several web parts into a table field, the web parts are arranged horizontally or vertically. You specify the arrangement when you create the layout template.
8. Select the entry "WPZ_02_01" and click "Add".
9. Click "Exit".

Result

Web parts to display data are inserted into the Webcenter page "My_Webcenter". The current compilation of the Webcenter page is displayed.



3.2 WinCC/DataMonitor Documentation

3.2.1 Basic principles

3.2.1.1 DataMonitor

Overview

You can display and evaluate current process states and historical data with WinCC/DataMonitor via the Intranet/Internet.

WinCC/DataMonitor consists of a server component and a client component. The DataMonitor server makes functions available to the DataMonitor client for analysis and display of data. Access rights control access to the functions.

- "WinCCViewerRT":
  Program for monitoring of WinCC projects. The DataMonitor client is a so-called "View Only Client".
- "Excel Workbook":
  Display of process values and archive values in an Excel table for evaluation and display via the web or as a print template for reports
- "Reports":
  Creating reports from WinCC print jobs or from published Excel workbooks. This also allows for statistics and analyses of certain process data or historical data. The reports are created in PDF format and forwarded as e-mail if necessary.
- "Webcenter":
  Central information portal for access to WinCC data via user-specific views. Clearly structured Webcenter pages with individual user rights for reading, writing and creating Webcenter pages.
- "Trends & Alarms":
  For display and analysis of archived process values and alarms. The data is displayed in tables and diagrams on predefined Webcenter pages.

Quantity Structure

WinCC/DataMonitor allows the simultaneous operation of up to 50 clients per server.

Using terminal services

A configuration with 50 DataMonitor clients per terminal services server has been tested as a typical scenario.

3.2.1.2 WinCCViewerRT

Overview

The Web Viewer "WinCCViewerRT" is solely a display program for WinCC projects that is installed with the DataMonitor client. The DataMonitor Client is therefore a "View Only Client".

You run the "WinCCViewerRT.exe" application instead of Internet Explorer on the DataMonitor Client.

The Web Viewer accesses the DataMonitor server using its own communication. This way you prevent access by users to the Internet and protect the system from viruses and trojans.

The viewer only displays the pictures that you configured for web access and published on the DataMonitor server.

The WinCC user must be assigned authorization no. 1002 - "Web Access - monitoring only". The "View Only Cursor" indicates that process-related operations are not possible. Certain operations, such as opening the properties dialog of an OnlineTrendControl, are still possible.

If the WinCC user does not have authorization no. 1002, the DataMonitor client runs in demo mode after logon.

3.2.1.3 Web center

Overview

The Webcenter is the central information portal for access to WinCC data via Intranet/Internet. Users can use the Webcenter pages and web parts to compile and save their views of WinCC data. The Webcenter pages are stored in directories.

The Webcenter pages are stored in modular fashion. The modules are defined by layout templates. Users can either use the supplied layout templates or the ones they create themselves.

The web parts are the individual blocks that prepare and display data. You can combine up to 15 web parts in one screen view. For more information, refer to "Overview of web parts (Page 362)".

Within the WebCenter pages, the configuration of the respective web part is stored and can be called up again at any time. The multiple use of the same web part with different configuration is also possible. The WebCenter pages that have been created in this way can be opened with the same configuration by different users depending on the assigned rights.

You can export the configuration of web parts as XML file.

To transfer the configuration data to another computer, copy the folder:

"\Siemens\WinCC\WebNavigator\DataMonitorServer\WebCenter\App_Data\WebCenter"

Basic procedure

1. Creating directories for Webcenter pages
2. Assigning Access Rights

3. Establishing connection to the WinCC data
4. Publishing pictures for the Webcenter
5. Creating layout template for Webcenter pages
6. Creating Webcenter page
7. Inserting web parts to the Webcenter page
8. Configuring web parts within Webcenter pages

3.2.1.4 Overview of Web Parts

Overview

You compile Webcenter pages from the web parts in the "Webcenter".

The following web parts are available:

- Process value table
  The available process values are displayed for the defined time period.
- Process Values in the Table (Timestep)
  The complete archive name and the tag name are displayed as tooltip in the column header.
  The process values are combined beginning with the starting time in the defined time interval.
  Depending on the set aggregate type, the interval for the interval event is displayed.
  For example, a process value was archived every 30 seconds. You have selected an interval of 60 seconds and the aggregate type "Average value". It determines the average value of two archive values each, which is then displayed in the table with the first time stamp of the averaging interval.
  If you select an aggregate type without interpolation, and if no value is present in the interval, no interval result will be displayed. If you select an aggregate type with linear interpolation, an interval result is displayed for each interval.
- Statistics functions for process values
  All available process values are used for the defined time period, for example, to calculate and display the average value.
- Trend Process Values
  The process values are displayed with trends.
- Trend (Timestep)
  Clear presentation of precompressed values in trends with aggregate functions, such as sum or average.
- Bar Chart (Aggregates)
- Pie Chart (Aggregates)
- Alarm table
  Presentation of accrued alarms.
- Alarm hit list
  Presentation of statistical information on alarms.
- Link to WebCenter pages

- Links (external)
  Links to internal Webcenter pages and external Internet pages, such as stock market news.
- Displaying information
  Such as news, for example.
- Static process pictures
  WinCC pictures are integrated into the Webcenter without installation download. A JPG screenshot of the process picture is created on the DataMonitor server at regular intervals.
- Display Graphic
  JPG screenshots, such as company logo.
- The Last Reports
  Display the reports created last, for example, the last ten print jobs in PDF format created with "Reports".

See also

Displaying process values in a table (Page 428)

Displaying process values in a diagram (Page 429)

Displaying the hit list of messages (Page 435)

Displaying messages in the alarm table (Page 431)

Displaying statistics function for process values (Page 437)

3.2.1.5 Trends and Alarms

Overview

"Trends & Alarms" is used for display and analysis of archived process values and alarms.

Predefined web pages have the following content:

- Displaying process values in a table (Page 428)
- Displaying a maximum of three process values in a diagram. Displaying process values in a diagram (Page 429)
- Displaying statistics function for process values (Page 437)
- Displaying alarm hit list (Page 435)
- Displaying alarms in the alarm table (Page 431)

The functions of "Trends & Alarms" are configured with web parts. Use the same web parts for this purpose that you used for the Webcenter pages.

Within Trends & Alarms each user can only make one configuration for each web part. The configuration is saved for the user. Other users cannot access the configuration of this web part directly.

3.2.1.6 Excel workbook

Overview

With the Excel add-In "Excel Workbook" you can display the following data of the WinCC project in an Excel workbook on the DataMonitor client:

- Alarms
- Values of process tags and archive tags
- Additional information, such as time stamp or quality code of tags

Data of swapped archives is not displayed.

The data is evaluated by Excel and presented as graphic, e. g. as average value calculation or diagram representation. The created Excel workbooks are made available as templates for "Reports" and as report tools.

Requirement

- Use the Download area in "Reports" to install the Excel add-ins "ExcelWorkbook Wizard" and "Excel Workbook" on the DataMonitor client.
- The "Remote Desktop" user is a member of the Windows user group "SIMATIC HMI Viewer".

Configuring with XML file or online

Simultaneous online access to process data of different WinCC servers is possible using the "Excel Workbook". This requires that you either take the data from an XML file or from a local WinCC project during the configuration with the Excel add-in "Excel Workbook Wizard" . A separation between process and evaluation is possible with the XML file.

- A WinCC project is open on the DataMonitor server.
  The XML file is generated with the "Export Configuration Data" function.
  Then transfer the XML file to a computer with Microsoft Excel.
  Configure the process data display in the workbook.
  Afterwards, transfer the workbook to a DataMonitor client that displays the process data online.
- To accept the data of the WinCC project online, configure directly on the WinCC server or on a WinCC client with an online connection to the respective WinCC server.
- Import the data into an Excel workbook using the "Excel Workbook Wizard".
  Then configure the display of alarms and tag values.

Note

If you rename a table in an Excel workbook, the configuration data of the table is lost.

You can configure up to 32,767 process and archive tags in an Excel workbook. During online display with "Excel Workbook" you may experience considerable delays in updating when there is a large number of tags.

3.2.1.7 Reports

Introduction

Use "Reports" to create time-controlled and event-controlled reports independent of the SCADA system. Use the WinCC print jobs and published Excel workbooks to output analysis results and process data. The reports are output as PDF or XLS file and can be attached to an e-mail.

Requirement

- You need a PDF reader for output as PDF file. The PDF reader can be obtained from www.adobe.com for example.
- For Output as XLS-file (Excel workbook):
  - MS Excel is installed.
    To use the automatic creation of Excel reports on the DataMonitor server, MS Excel must be installed on the server.
  - The Excel workbook is created and published as template on the DataMonitor server.
- Use the Download area in "Reports" to install the Excel add-ins "ExcelWorkbook Wizard" and "Excel Workbook".

Using reports

You determine on the DataMonitor server when you want to create reports:

- Manually, for example, by a plant operator.
- Event-controlled, for example, when a tag value changes.
- Time-controlled, such as daily, for example.

The created reports are centrally saved in the directories on the DataMonitor server. Users can access the different folders with appropriate authorization from the DataMonitor client.

Note

The creation time is always displayed on a DataMonitor client in the local time zone of the server.

See also

Configuring the display of tag values (Page 323)

Making an Excel workbook available as template (Page 461)

Configuring the Excel workbook (Page 320)

3.2.2 Configuring the DataMonitor system

3.2.2.1 Overview of the configuration steps

Introduction

For use of WinCC/DataMonitor the data and process pictures are made available on the DataMonitor server. The DataMonitor client accesses the available data to display data and process pictures.

Requirement

- Server and client are interconnected.
- On the server
  - Internet Information Service is installed.
  - The DataMonitor server is installed.
  - A WinCC/DataMonitor license is installed.
  - WinCC is installed.
- On the client
  - Internet Explorer is installed.

Configuration steps

You have to complete the following configuration steps to set up the DataMonitor system.

1. Configuration of the WinCC project.
   - Publish WinCC pictures.
   - Define users and access rights in "WinCC User Administrator", if you use WinCCViewerRT and/or "Excel Workbook" .
   - Configure the settings for Runtime.
2. Configure the DataMonitor server.
   - Set up the web page and firewall.
   - Define users and access rights in Windows, if you use "Trend & Alarms", "Reports" and "Webcenter".
3. Start WinCC Runtime on the server.

4. Use the DataMonitor functions on the DataMonitor client.
   - Check the security settings of the Internet Explorer.
   - Start the Internet Explorer and enter the address of the DataMonitor server.
   - Log on to the DataMonitor server and access the DataMonitor functions.
5. Monitor the WinCC project on the DataMonitor client.
   - Configuring WinCCViewerRT
   - Displaying pictures

See also

Configuring the DataMonitor web page (Page 383)

Configuring security settings in Internet Explorer (Page 389)

Configuring runtime settings (Page 379)

Creating static process pictures for the Webcenter (Page 414)

Defining users in Windows (Page 380)

3.2.2.2 Configure the WinCC project

Publishing WinCC process pictures

Publishing WinCC Process Pictures

Introduction

If you wish to display WinCC process pictures on the WebNavigator Client or DataMonitor Client, you have to publish the pictures.

For publishing, use the WinCC Web Publishing Wizard. The wizard automatically performs the necessary adjustments to project data.

You open the WinCC Web Publishing Wizard in Windows via "PublishingWizard" or in the WinCC Explorer in the "Web Navigator" shortcut menu via "Web View Publisher".

Overview

The following types of publishing are possible:

- Publishing on the local computer.
  The current WinCC project folder is the source folder.
  The target folder is a subfolder, for example, "Projectname/WebNavigator/Pictures".
- Publishing on a dedicated web server with a server prefix.
  The source folder is the WinCC project folder on another WinCC computer that is defined by the server prefix.
  The target folder is located in subfolder ".../WebNavigator/Pictures" of the WinCC project on the WinCC Client.
  The pictures of your own project are saved with the name "<picturename>.PD_", while the pictures of other projects are saved with the name "<serverprefix>_ _<picturename>.PD_".
- Remote publishing.
  The source and target folders can be located on the same or different web servers.
  You can start the WinCC Web Publishing Wizard on the Web server with the source and target folder or on a third Web server.
- Remote publishing on a dedicated web server or WinCC Client from a different remote station.
  The project folder of the WinCC project must be released in Windows on the dedicated web server/WinCC Client.
  You can start the WinCC Web Publishing Wizard remotely by opening the WinCC project of the Web server/WinCC client on the remote computer.
  On the remote station, you publish the WinCC pictures from other WinCC Servers to the dedicated web server.

The WinCC Web Publishing Wizard makes the following adjustments:

- Compression of the data for optimizing performance on the Internet.
- Removal of project-specific data that is not required for the operation.
- Conversion of picture windows into an ActiveX component.
- Conversion of scripts so that they can be run on the Client.

Opening a published picture in Internet Explorer

In order to open a published picture directly, a website must already be set up.

1. In WinCC Explorer, select a published picture in the table area of the WebNavigator.
2. Select the "Copy URL to clipboard" command from the shortcut menu.
3. Paste the link from the clipboard in the address bar of Internet Explorer.

The file with the picture opens in Internet Explorer.

Publication of pictures with faulty scripts

If warnings or errors occur during publishing, the process pictures affected are marked in the output field of the WinCC Web Publishing Wizard.

The pictures with errors in the scripts are nonetheless published.

However, errors can still occur in Runtime and are reported by the WebNavigator Client.

The "PdlPad" tool can be started directly in the WinCC Web Publishing Wizard in order to check and, if necessary, correct the scripts used in the published pictures.

Publishing Without Project Functions

Publishing without project functions can be an additional source of error.

When publishing with the WinCC Web Publishing Wizard, the selected project functions are always published.

When published without project functions, the pictures no longer contain any project functions. The project functions of the last publishing process are always available in the published pictures and, therefore, on the client.

The selection of project functions in the Publisher is independent of the pictures published in the same process.

If , for example, you modify selected project functions but not their interfaces, you need to publish all necessary project functions. In this case, you do not have to publish the picture.

Changing the process picture in Graphics Designer

Process pictures that you edit in runtime in Graphics Designer on the WebNavigator Server must be published once again.

This is required for the process picture to be displayed on the WebNavigator Client.

You cannot republish unchanged files that have already been published. In the WinCC Web View Publishing Wizard, these files are displayed in gray.

Dedicated web server

To transfer the changes to the WebNavigator Client when using a dedicated Web server, follow these steps:

1. Open the WinCC project remotely on the dedicated Web server.
2. Open and save the modified picture in the Graphics Designer.
3. Publish the picture on the dedicated Web server using the WinCC Web Publishing Wizard.

If you have modified a large number of pictures, you can simplify the process:

1. For this purpose, call the "Convert pictures" function in the shortcut menu of the Graphics Designer.
2. Republish the changed pictures.

Requirements for publishing pictures

General requirements

Naming conventions:

- The picture names may not contain double underscores, e.g. "__furnace_overview.pdl". The string before the double underscore will be interpreted as server prefix.
- The package names and/or symbolic computer names may not contain any double underscores.
- The package names and/or symbolic computer names may not end in an underscore.
- Moreover, the name cannot begin with a single underscore if you are using Basic Process Control.
  When using Picture Tree, the name string of higher-level pictures will have a "@PTN_" prefix. With the leading underscore, the picture name will then have a double underscore.

Header files:

- If two header files of the same name exist in the project path and in the installation path of WinCC, WinCC Web Publishing Wizard will use the header file from the installation path.

Microsoft .NET Framework:

- The WinCC Web Publishing Wizard requires the .Net Framework 4.0 or higher.

Republishing:

- You cannot republish unchanged files that have already been published. In the WinCC Web View Publishing Wizard, these files are displayed in gray.
  Only changed files can be published again.

Requirements for publishing on a dedicated web server

- The Web Navigator Server is installed on the WinCC client.
- The C and VB scripts of all WinCC servers to which the WinCC client has access have been copied to the WinCC client.
- The WinCC server packages that the WinCC client can access are loaded on the WinCC client.
- The standard server is configured for tags.
  Exception:
  - If you are working with Basic Process Control, you must not specify a standard server.
- If you wish to publish projects on other computers, these computers must be linked by means of network drives before you start the WinCC Web Publishing Wizard.
  This procedure enables the display of your projects in the selection dialog of the Publisher. You cannot enter the path directly.

Requirements for remote publishing

- Access to the target and source folders is enabled for the WinCC Web Publishing Wizard.
  WinCC creates these Microsoft Windows shares by default.
  Verify that these shares are not restricted, for example, valid for specific users only.
- If you wish to publish projects on other computers, these computers must be linked by means of network drives before you start the WinCC Web Publishing Wizard.
  This procedure enables the display of your projects in the selection dialog of the Publisher.
  You cannot enter the path directly.

How to publish WinCC process pictures using WinCC Web Publishing Wizard

Introduction

Use the WinCC Web Publishing Wizard to publish the process pictures that you created in Graphics Designer.

Procedure

1. Select "Web Navigator" in the navigation window of WinCC Explorer.
2. Select the "Web View Publisher" command in the shortcut menu.
   The WinCC Web Publishing Wizard is now launched.
   Click "Next".
   Alternatively, start the wizard in Windows via "PublishingWizard".

3. Under "Path to your WinCC project", select the WinCC project folder containing the pictures you want to publish.
   - The folder has the following format for publication on a dedicated web server: "\\<servername>\<serverprefix>_ _<projectname>"
   - If you want to publish from a remote station, select the source project containing the pictures.
     The source project is displayed by its enable name on the other WinCC Server.
     The folder has the following format:
     "\\<computer name>\<enable name>"

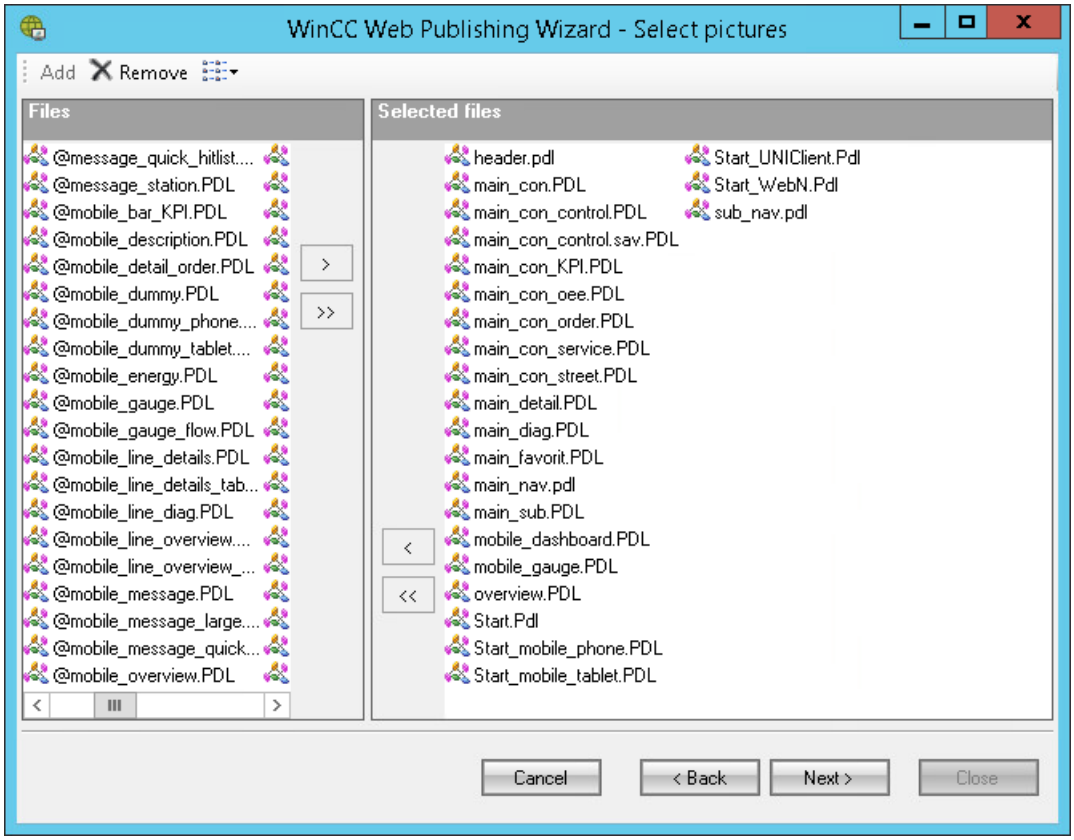
   To display hidden objects that are published automatically, activate the "Show hidden objects" option in the "Diagnostics" area.



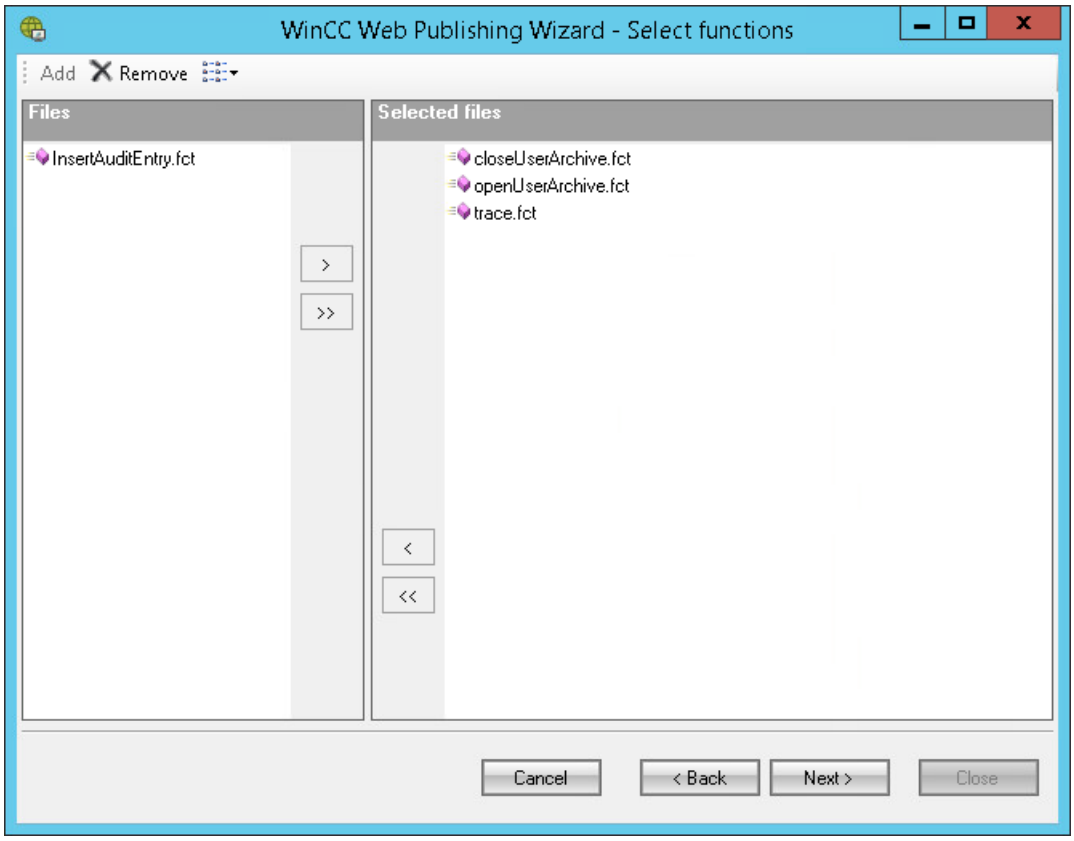
4. Activate the "Server prefix" option if you want to publish the pictures on a dedicated web server.
   Select the prefix of the WinCC Server that contains the WinCC project from the selection list. The list displays the prefixes of the servers whose packages are loaded on the WinCC Client. Deleting a prefix from the selection changes the paths displayed in the fields below.

5. Select the target folder for the published pictures under "Publishing folder of the WinCC web".
   - Accept the proposed folder within the WinCC project folder.
     Do not change the path specification unless you want to transfer pictures to a different project, for example. In this case, the prefix selection list will be expanded accordingly.
   - Verify the specified target project to which the published pictures are saved during remote publishing.
     The path definition will be updated when you select the source project.
     Should the target project be located on another WinCC server, select the corresponding project.

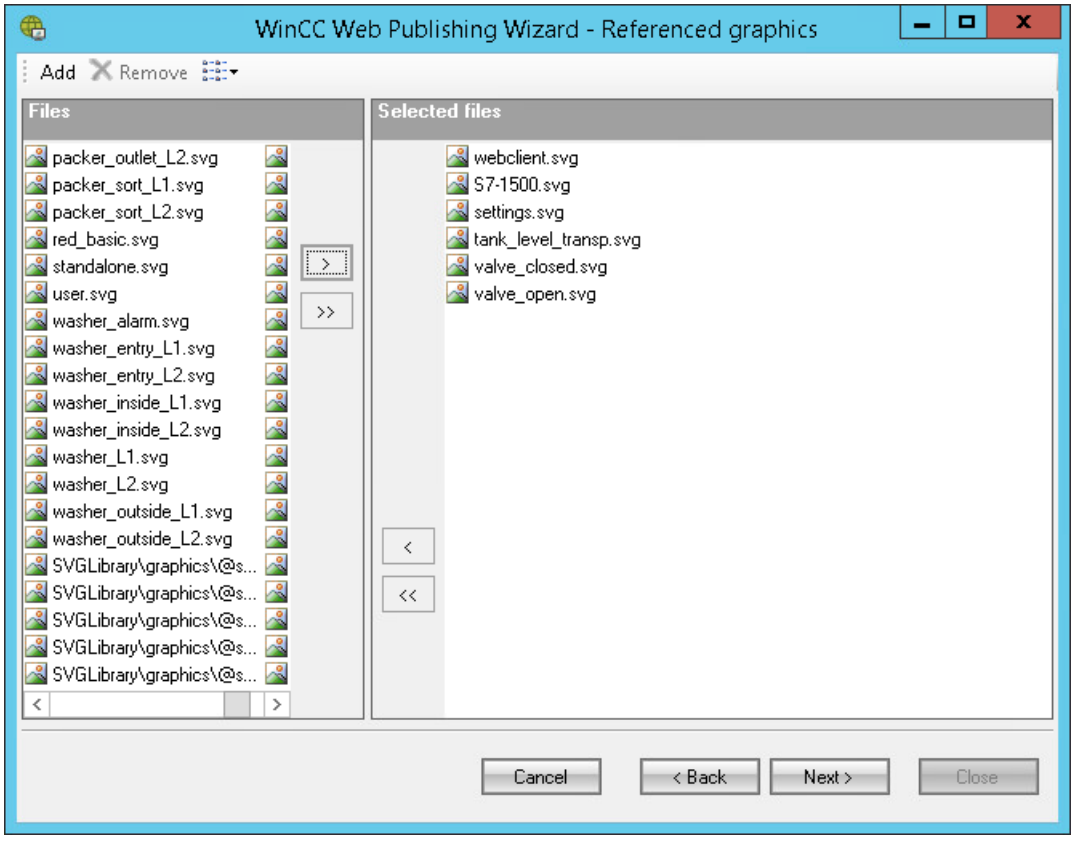
   Click "Next".
6. Move the pictures that you wish to publish to the "Selected files" list.
   Already published, unchanged pictures are grayed out and will not be published again.
   Click "Next".



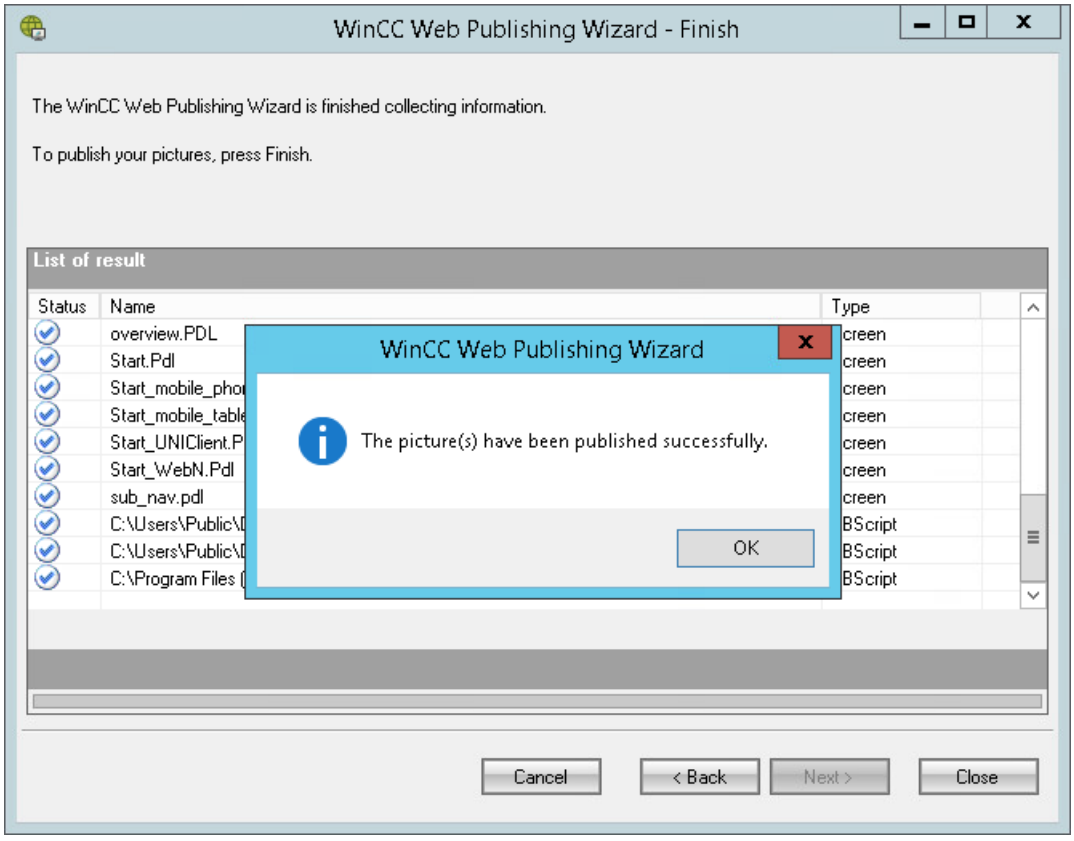
7. Move the C project functions which you use in the published pictures to the "Selected files" list.
   You cannot publish individual VB scripts.
   Already published, unchanged functions are grayed out and will not be published again.
   Click "Next".



8. Move the referenced graphics that you wish to publish to the "Selected files" list.
   The referenced files are in the "GraCS" folder or in subfolders of "GraCS".
   Already published, unchanged graphics are grayed out and will not be published again.
   Click "Next".



9. To start publishing the pictures, click "Finish".
   The selected files are published.



Result

You have successfully published the pictures and functions.

The results list displays the status of all published objects.

You can click an object to view additional object information.

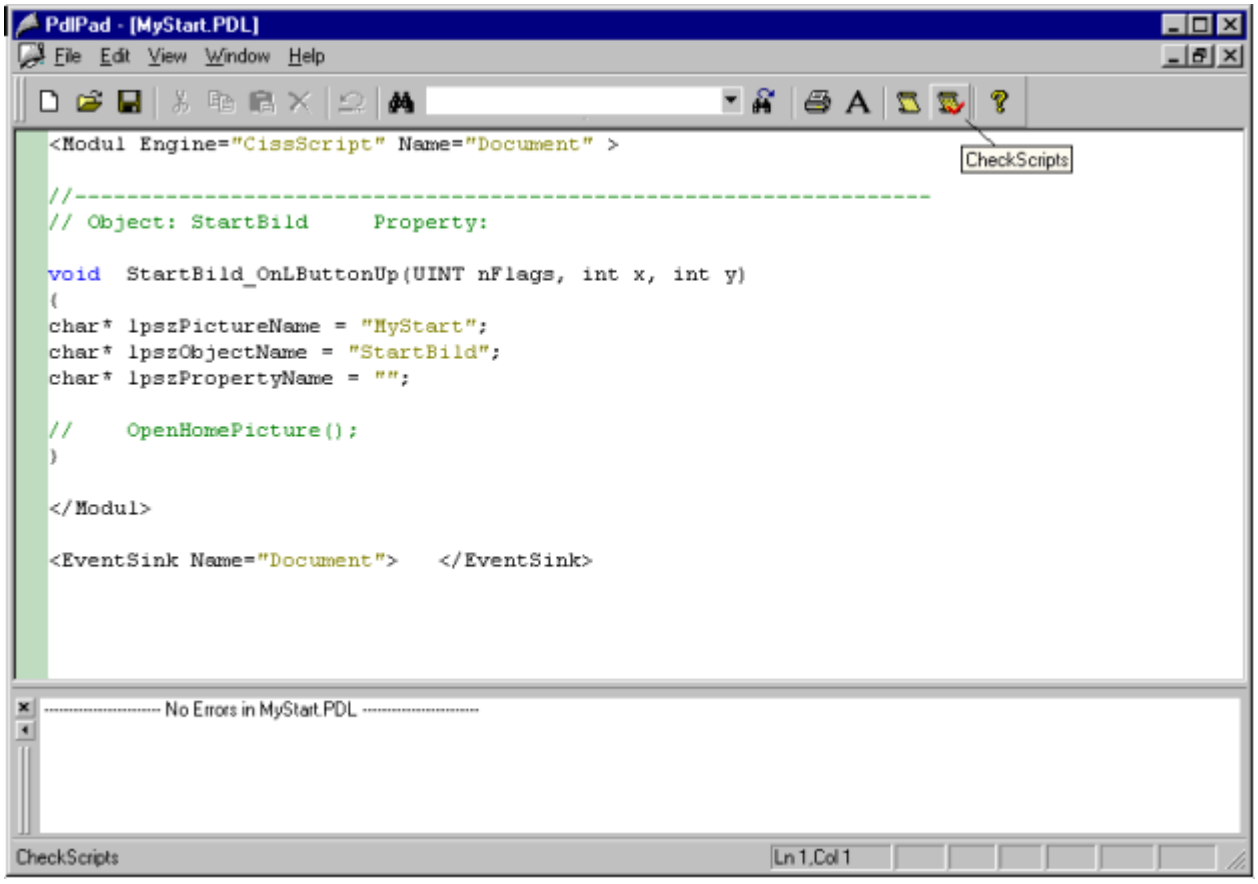
You can trace publishing using the "<projectfolder>\WebNavigator\WizardLog.txt" file.

Checking the scripts using "PdlPad"

The "WizardLog.txt" log file contains information about errors in the scripts used.

You can also find errors using the "PdlPad" debugger.

1. Open "PdlPad" by double-clicking on the affected object in the results list in the WinCC Web Publishing Wizard.
   The script of the published picture is displayed.
   Alternatively, open "PdlPad" in the "Siemens Automation" program group.



2. Click  in order to check the script.
3. You can temporarily correct and save the scripts.
   These corrections are only saved to the published pictures, not in the process picture of the WinCC project.

Administering users for DataMonitor

Introduction

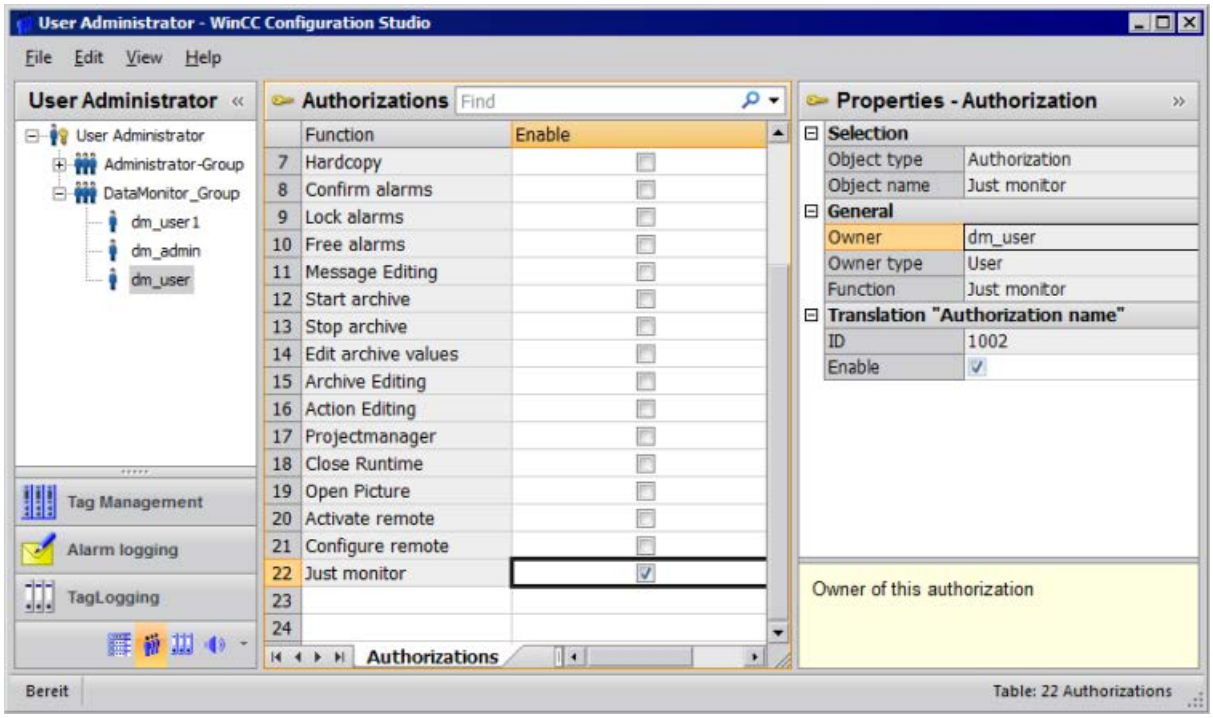
For the use of certain functions on the DataMonitor client, users need authentication as DataMonitor user as well as authentication as WinCC user. Use one WinCC user for "WinCCViewerRT" and "Excel Workbook".

If you are working as DataMonitor user and WinCC user at the DataMonitor client you have to log on twice. You have two alternatives to only log on once:

- The DataMonitor user and the WinCC user have identical names and passwords.
  The user must be configured in Windows and in WinCC and added to the "SIMATIC HMI" and "SIMATIC HMI VIEWER" user groups.
- SIMATIC logon allows the central administration of users.
  In order to use SIMATIC logon in connection with DataMonitor, DataMonitor users must also be added to the user group "SIMATIC HMI VIEWER".

Procedure

1. Select the entry "User Administrator" in the navigation window of WinCC Explorer. Select the "Open" command from the shortcut menu. The editor "User Administrator" is opened.



2. In the navigation window, select a user or create a new user.
3. Select a user group and then open the shortcut menu. Select the entry "New User". The name of the user can be changed directly with the <F2> function key or the shortcut menu command "Rename". The user must be selected beforehand for this purpose.
4. Enter a name and a password with at least six characters for "Login".
   Click "OK".
5. Select the newly created user in the table window. The properties of the user are displayed.
6. Activate the option "WebNavigator". Select a start picture from the dropdown list next to "Web start picture".

7. Check the selected language and change this setting if desired via the dropdown list next to "Web language". You can only select a new language from the dropdown list if one of the two options "WebNavigator" or "PureWebClient" is activated. The languages created in the Text Library are available for selection.
8. The user needs at least the authorization "Web Access - monitoring only".
   In the row in the table window, activate the corresponding authorization in the "Enable" column.
9. Close the User Administrator.

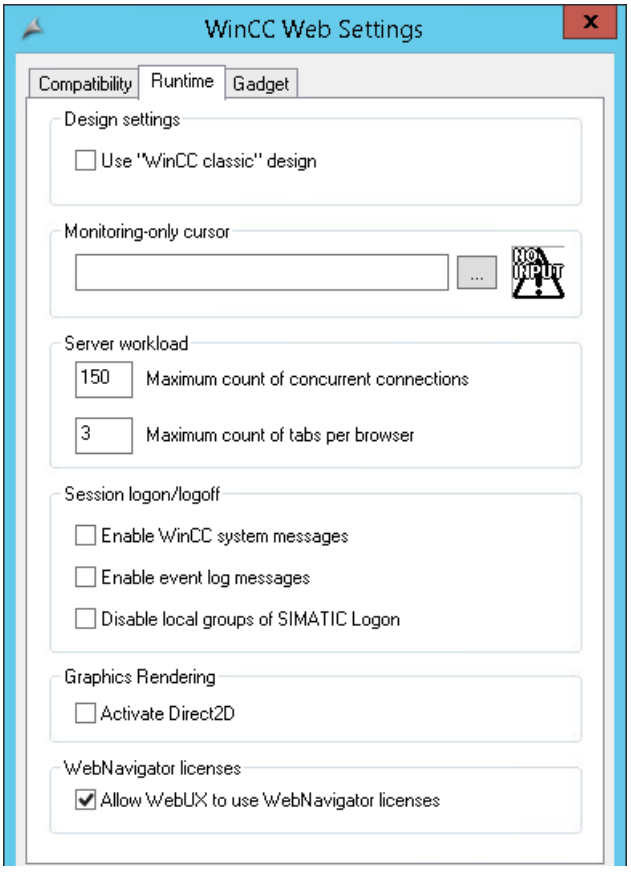
Configuring runtime settings

Introduction

Define the settings for behavior in runtime when you use the DataMonitor.

Procedure

1. Select "WebNavigator" in the navigation window of WinCC Explorer. Select the "Web settings" command from the shortcut menu.
2. Change to the "Runtime" tab in the "WinCC web settings" dialog.
   Select the required settings. Close the dialog with "OK".



Use "WinCC Classic" design

Activate the option to improve the performance of the DataMonitor client. The original style of WinCC V6 is now used.

"Monitoring only" cursor

A default cursor shows that the user of the DataMonitor client is not permitted to operate Runtime. The user has been assigned system authorization no. 1002 - "Web access - monitoring only" in the WinCC User Administrator.

If you want to use your own cursor, enter its path and file name. You can also use the "..." button to navigate to the file of the selected cursor.

Server load

You do not need the settings in the area "Server load" for DataMonitor.

Activate WinCC system messages

The system messages "No. 1012400" or "No. 1012401" are output and archived at the login/ logoff of a DataMonitor client.

Enable event log messages

A successful session login or logoff is recorded in the Windows event viewer.

Disable local groups of SIMATIC Logon

The DataMonitor server can only be accessed by groups in the same domain.

Hardware accelerated graphics representation

The Direct2D representation is activated for the entire project on the WebNavigator clients.

3.2.2.3 Configuring the DataMonitor system

Defining users in Windows

User groups in Windows

Overview

The following user groups are created automatically in Windows when the DataMonitor server is installed.

SIMATIC Report Administrators

Membership of the user group "SIMATIC Report Administrators" is required for extended rights, especially for configuration purposes. At least one user must be created and assigned to the "SIMATIC Report Administrators" user group.

- You can also do the following as "SIMATIC Report Administrators" in the "Webcenter":
  - Configuring connections
  - Creating templates for Webcenter pages
  - Creating and configuring public and private Webcenter pages
- You can also do the following as "SIMATIC Report Administrators" in "Reports":
  - Configuring reports based on WinCC print jobs or Excel workbooks.

SIMATIC Report Users

Membership of the user group "SIMATIC Report Users" or of your own user group is required for the "Webcenter", "Trends & Alarms" and "Reports".

- You can also do the following as "SIMATIC Report Users" in the "Webcenter":
  - Setting up and configuring Webcenter pages. The Webcenter pages are stored in different directories.
  - Opening public pages
- You can also do the following as "SIMATIC Report Users" in "Reports":
  - Opening reports based on WinCC print jobs or Excel workbooks.

Defining Users and Access Rights in Windows

Introduction

When using DataMonitor, users need different authentications.

- All users must be members of the "SIMATIC HMI" user group.
- For access to the WinCC database via DataMonitor, you need a Windows user with password who is a member of the "SIMATIC HMI VIEWER" user group.

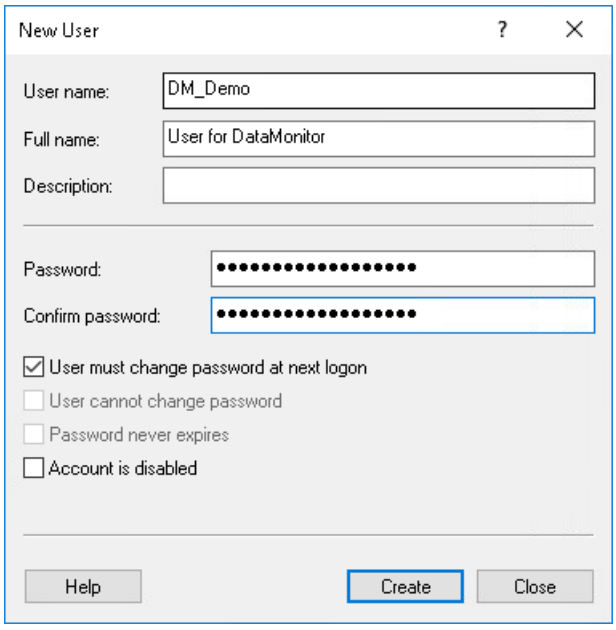
This means you must create users with the matching user rights.

Requirement

- WinCC is installed.
- The DataMonitor server is installed.

Procedure

1. Open the Windows Computer Management.
2. Under "System Tools" navigate to "Local Users and Groups > User".
   In the shortcut menu select the entry "New user".



3. Enter a name such as "DM_Demo" in the "New User" dialog box in the "User name" field.
   Enter a name such as "User for DataMonitor" in the "Full name" field.
   Type the desired password into the "Password" field and then repeat it in the "Confirm password" field.
   Create the user with "Create".
   Close the "New user" dialog.
4. In the table window, click on the newly created user.
   Select the "Properties" command in the shortcut menu.
5. Click "Add" in the "Member of" tab.
6. In the "Select Groups" dialog, click the "Advanced" and then "Find now" button.
7. In the opened list, select the following entries:
   - SIMATIC Report Administrators
   - SIMATIC HMI
   - SIMATIC HMI VIEWER
8. Click "OK" twice to close the dialog.
   In the properties of the user, the groups are added to the list.
9. Click "OK" and close the Computer Management.

Result

The user "DM_Demo" with membership of the user groups "SIMATIC Report Administrators", "SIMATIC HMI" and "SIMATIC HMI VIEWER" has been set up.

The user can now create directories in the Webcenter and make connections to WinCC databases.

Note

Login for remote access

If a user wants to access remote computers via the DataMonitor server, the Windows user must be set up on the DataMonitor server as well as the remote servers with the same password.

Configuring the DataMonitor web page

Introduction

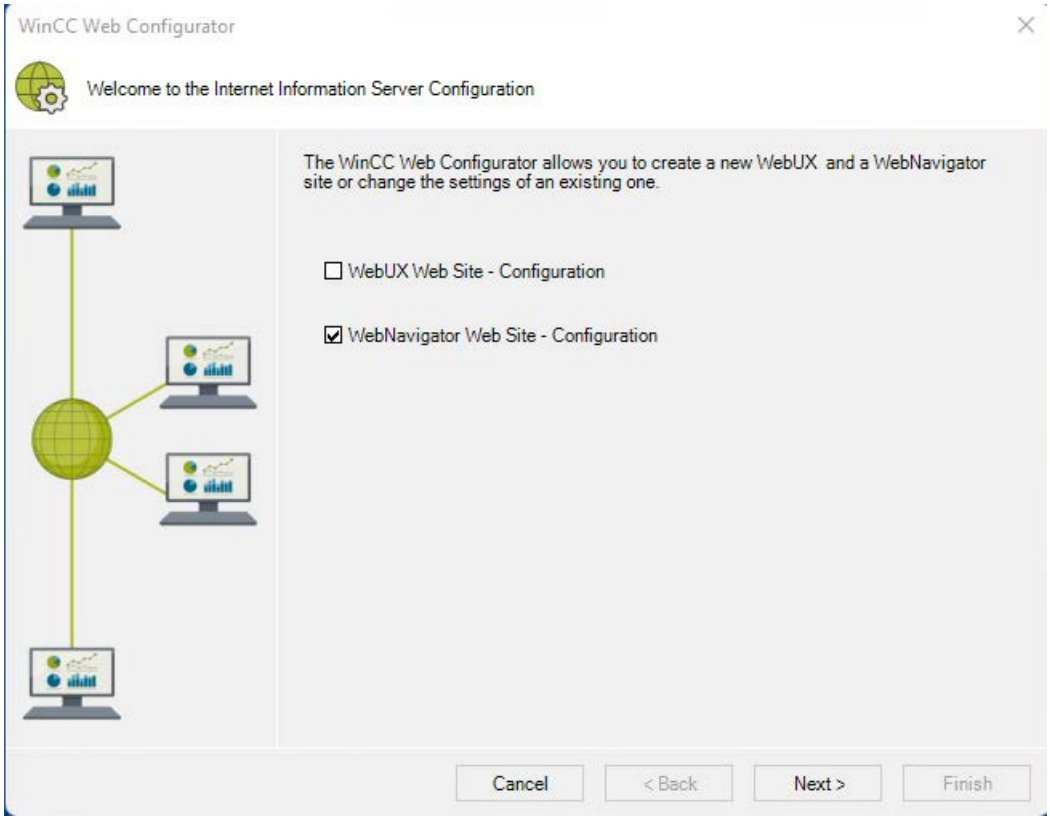
You create the DataMonitor web page with the WinCC Web Configurator.

Requirement

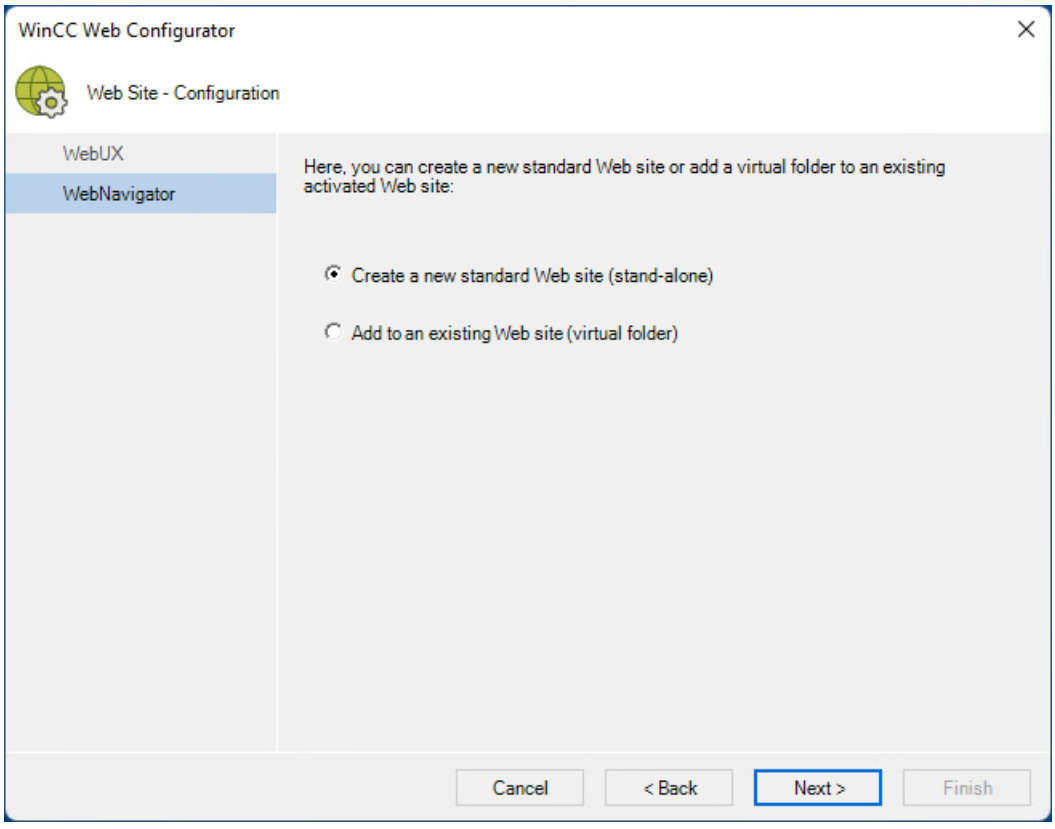
- The DataMonitor server is installed.
- The Windows "Internet Information Service" component is installed.

Procedure

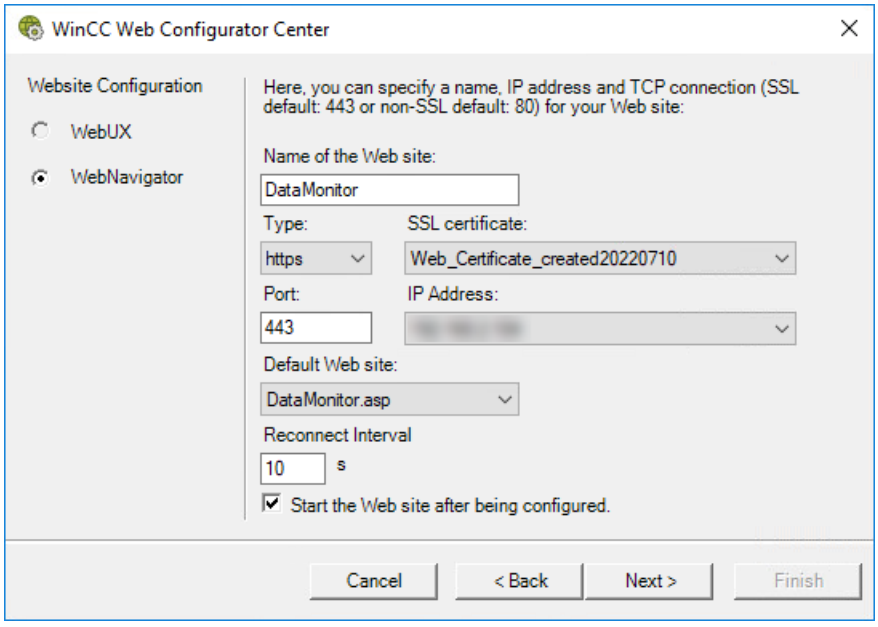
1. Select "Web Navigator" in the navigation window of WinCC Explorer.
   Select "Web Configurator" in the shortcut menu.
   Alternatively, select the "WebConfigurator" entry in the "Siemens Automation" program group.
   The WinCC Web Configurator opens.
2. On the home page, activate the "WebNavigator Website - Configuration" option.



3. The Web Configurator detects whether a configuration already exists.
   - No configuration found:
     Activate "Create a new standard website (Standalone)".
     Click "Next".
   - Configuration found:
     Click "Next" and check the configuration.



4. Select "Name of the web page" and enter the name.



5. Select an SSL certificate from the drop-down list.
   If the drop-down list does not contain a certificate, select the "Create new certificate" option.
   Enter a name in the "New certificate" dialog and confirm with "OK".
6. Enter the number of the port used for access in the "Port" field.
   The HTTPS standard port "443" is set by default.
7. At "IP address", specify whether the computer is to be available on the intranet or Internet or on both networks.
   Use only the addresses that are available in the selection list.
   Select "All not assigned" to enable intranet and Internet access to the computer.
8. Select "DataMonitor.asp" as the default web page.
9. Specify the time interval after which the DataMonitor client starts to reestablish a connection automatically in case of a connection error.
   A time setting of "0 s" disables the "Automatic reconnection" function.
10. Specify whether the web page is started once the configuration is completed.
11. Click "Next" if you have installed a firewall. The next steps are described under "Configuring the firewall (Page 387)".
    Click "Finish" if you have not activated a firewall.

Result

You have created the Web folder and activated the web page.

When you have activated the firewall, use the Web Configurator to configure its settings.

See also

Configuring the firewall (Page 387)

Configuring the firewall

Introduction

This section describes how to activate "HTTP" and "HTTPS" services using Windows Server 2016 as an example.

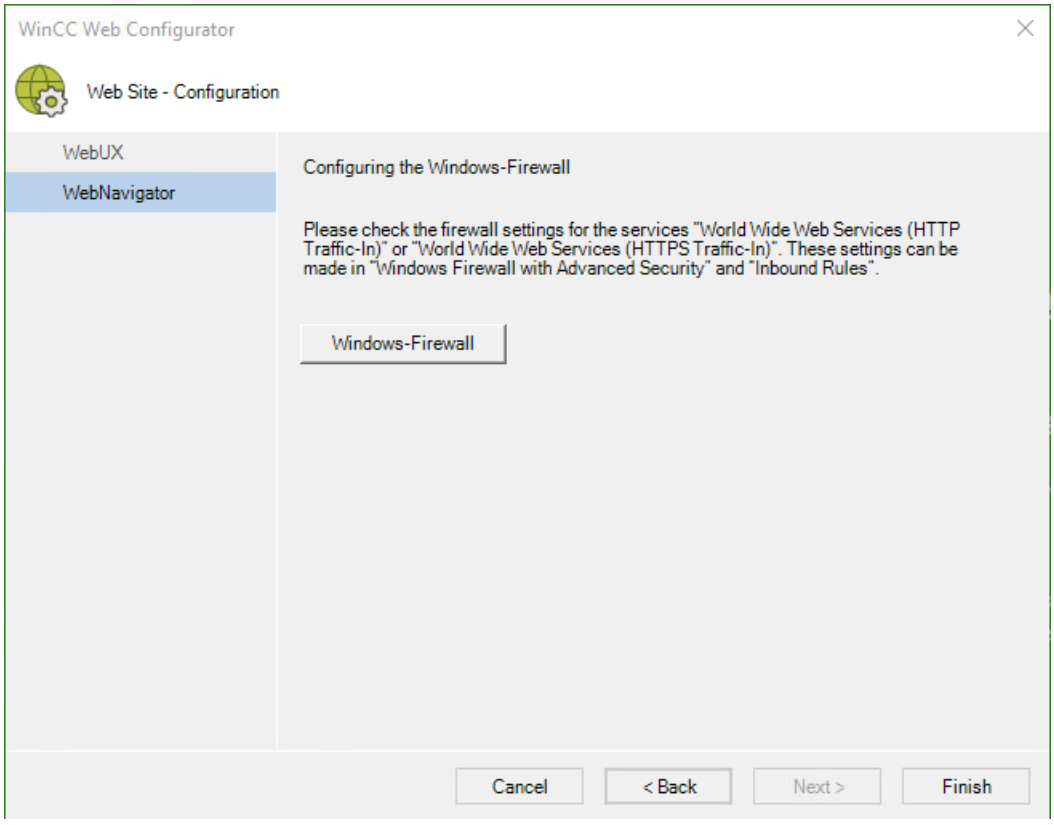
Consult your network administrator if you want to set up the Windows Firewall with advanced security or for a different port.

Requirement

- You have created a default web page with Web Configurator.
- The Firewall is activated.
- The user who is logged has Windows administrator rights.
- You have to set up the HTTPS service in IIS if you are using it for WebNavigator. More information: "WinCC Installation Notes / Release Notes > WinCC/DataMonitor Installation Notes > Setting up a secure connection via HTTPS (http://support.microsoft.com/kb/324069)"

Procedure for the default port

1. Change to the "Configuring the Windows Firewall" page in the "WinCC Web Configurator".



2. Click the "Windows Firewall" button.
   The "Windows Firewall" dialog opens.
3. Click "Allow apps to communicate through Windows Firewall".
4. Activate "Secure World Wide Web Services (HTTPS)".
5. Close all Windows dialogs with "OK".
6. Click "Finish" in the Web Configurator.
   The server configuration is completed.

See also

Configuring the DataMonitor web page (Page 383)

Setting up a secure connection over HTTPS (Page 104)

Setting up an HTTPS service in IIS (http://support.microsoft.com/kb/324069)

3.2.2.4 Working with the DataMonitor client

Configuring security settings in Internet Explorer

Introduction

For full functionality on the DataMonitor client, adapt the security settings in the Internet Explorer.

Requirement

- Internet Explorer is installed.

Procedure

1. Click "Tools > "Internet Options" in the Internet Explorer.
   This will open the "Internet Options" dialog.
2. Select the "Security" tab.
3. Select the "Trusted Sites" icon and click the "Sites" button.
   The "Trusted Sites" dialog opens.
4. Enter the address of the DataMonitor server in the "Add this website to the zone" field.
   Possible formats and wildcards include "*://157.54.100 - 200", "ftp://157.54.23.41", or "http://*.microsoft.com".
5. Deactivate the "Require server verification (https:) for all sites in this zone" check box.
   Click "Add".
   Confirm the entry by clicking "OK".
6. Select the "Trusted Sites" icon.
7. Click "Default Level".
   Click "Adapt Level" in the next dialog.
   The "Security settings" dialog box is opened.
   - Activate the "Activate" option under "Initialize and script ActiveX controls not marked as safe".
   - Confirm the entry by clicking "OK".
8. Close the "Internet Options" dialog by clicking "OK".

Result

The necessary settings in the Internet Explorer of the DataMonitor client are configured.

User authentication: Activated setting "Automatic logon with current user name and password" in Internet Explorer

If the setting "Automatic logon with current user name and password" is activated in Internet Explorer in "Tools > Internet Options > "Security" tab > "Adapt Level" button > entry "User Authentication" > Logon", this can lead to unexpected behavior under the following requirements.

Requirement

- The "Automatic logon with current user name and password" The setting is activated in Internet Explorer.
- The user logs onto the DataMonitor client as a WinCC user who is not configured in the user groups on the DataMonitor server.
- The user is logged onto the computer with a Windows logon that is set up as a user name on the DataMonitor server.

Behavior

1. The DataMonitor server does not recognize the WinCC user name the user has used to log onto the DataMonitor client and therefore rejects it. The user cannot see this behavior.
2. Internet Explorer automatically starts a new logon using the current Windows logon as user name.
3. The DataMonitor server recognizes the Windows logon as DataMonitor user name and accepts the logon for this user.
4. The user is logged on but not with the DataMonitor user name the user has entered. The current DataMonitor user is not displayed.

Recommendation

Disable the "Automatic logon with current user name and password" setting.

Use the setting only when there is a clear distinction between Windows logon and DataMonitor user name.

DataMonitor start page on the DataMonitor client

Overview

You start the DataMonitor client on a standalone computer or on a DataMonitor server. The start page of the DataMonitor summarizes the functions of the DataMonitor:

- "Reports":
  Creation and output of analysis results and process data in print jobs and published Excel workbooks.
- "Webcenter":
  Creation of Webcenter pages for the display of archived data.

- "Trends & Alarms":
  Display of alarms and process values from archives in tables and diagrams.
- "Administration"
  Configuration of connections and management of users, archives and pictures.

Requirement

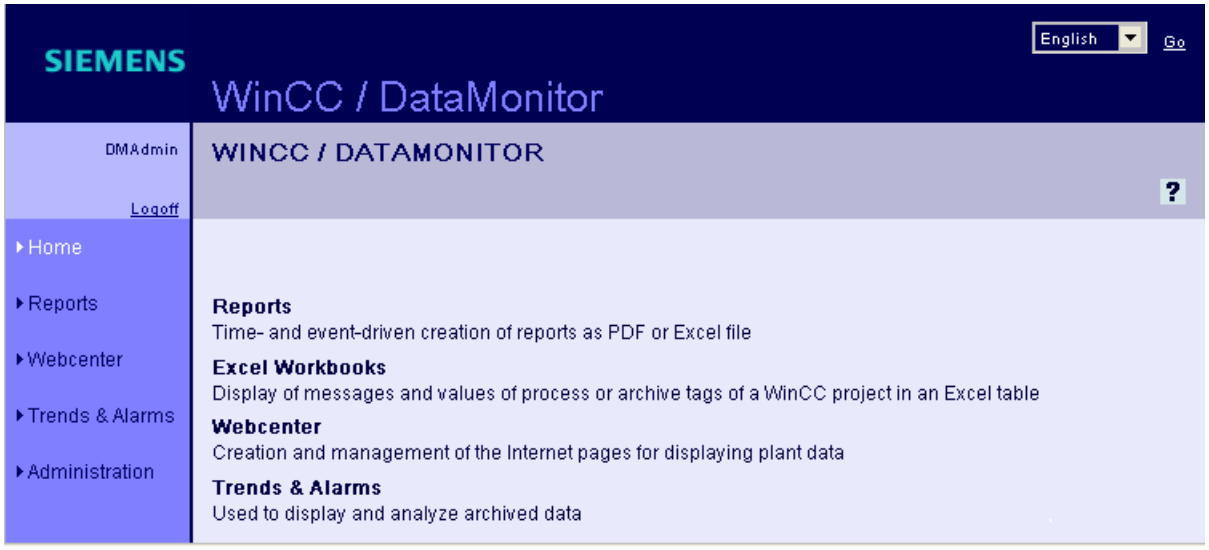
- The user is created in WinCC.
- The user must be a member of the Windows user group "SIMATIC Report Administrators" or "SIMATIC Report Users" .
- The WinCC project on the DataMonitor server is in runtime.

Procedure

1. Start the Internet Explorer on the DataMonitor client.
2. Enter the name of the DataMonitor server in the format "http://<servername>" in the URL.
   Confirm the entry with "Enter".
   The log-in dialog is opened.
3. Enter the name of a Windows user and the associated password. Confirm with "OK".

Result

The start page with the DataMonitor functions will be displayed. The use of the functions depends on the access right of the user.



General Operations of the DataMonitor Client

- Select the desired interface language from the selection field in the header.
- Hide the header on the pages of "Webcenter" and "Trend & Alarms", if necessary.
  Click .
  To show the header line again, click on the symbol .
- In order to log off from the DataMonitor server, click on the "Log off" link.
  Exit Internet Explorer to free-up the used license immediately.

See also

Working with trends and alarms (Page 428)

Working with reports (Page 461)

Working with the Webcenter (Page 398)

3.2.3 Working with WinCCViewerRT

3.2.3.1 Configuring WinCCViewerRT

Introduction

WinCCViewerRT is a program for visualizing WinCC projects.

The behavior of the DataMonitor server and Graphics Runtime is configured in the WinCCViewerRT settings.

Use project settings

If you select the "Use project settings" option, the following settings are applied by the DataMonitor server:

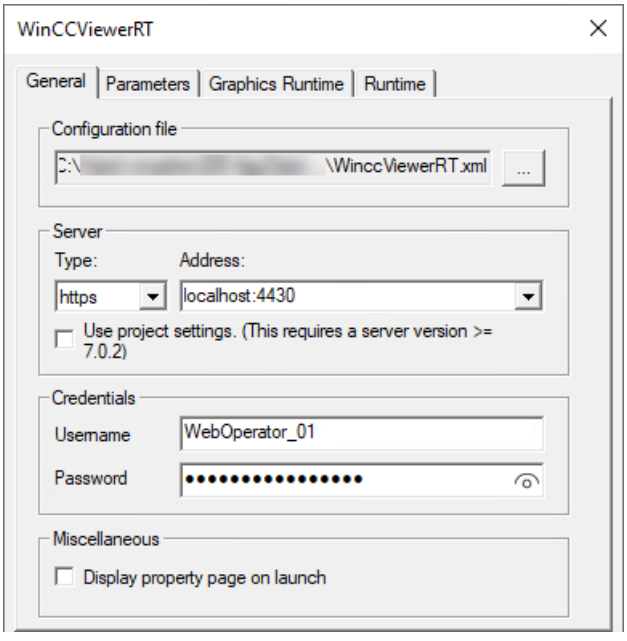
- User Administrator:
  - Automatic logoff
- Computer properties:
  - Runtime language
  - Runtime Default Language
  - Start Picture
  - Start configuration of Menu and Toolbars
  - Hardware accelerated graphics representation (Direct2D):

Requirement

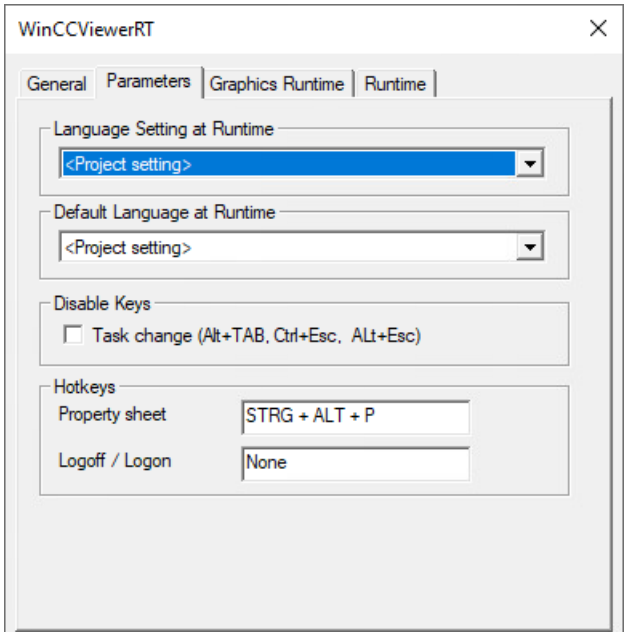
- On the server
  - The DataMonitor server is installed.
  - A WinCC/DataMonitor license is installed.
  - The WinCC project is in Runtime.
  - The WinCC pictures are configured and published for web access.
  - The WinCC user must be assigned authorization no. 1002 - "Web Access - monitoring only".
- On the client
  - The DataMonitor client is installed.

Procedure

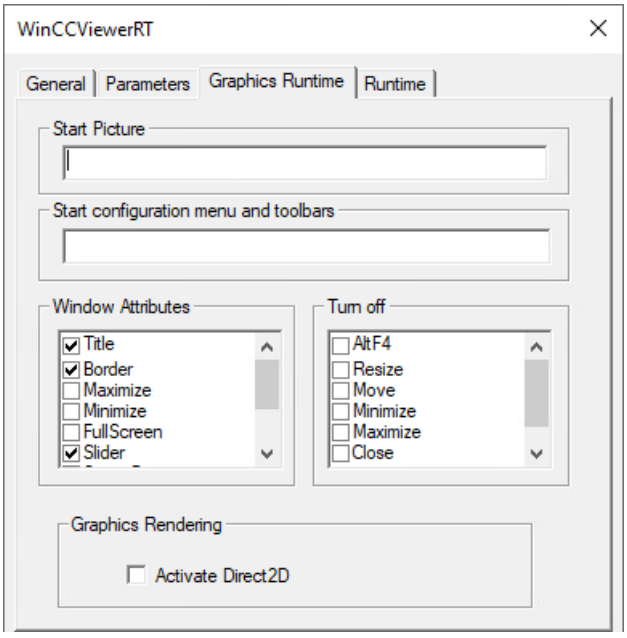
1. In the "Siemens Automation" program group, select the entry "WinCCViewerRT".
   Alternatively, you can find the "WinCCViewerRT.exe" link in the installation folder under "Webnavigator\Client\bin".
   The configuration dialog opens if you reconfigure WinCCViewerRT.
   WinCCViewerRT opens if WinCCViewerRT has already been set up.
   Use the <Ctrl+Alt+P> key combination to open the configuration dialog of WinCCViewerRT.
2. Enter the login data in the "General" tab:
   - Server address: "http://<Servername>" or "http://<IP-Adresse>"
   - Use project settings: Apply settings of the DataMonitor server
   - User name and password, if you want to specify a default user for the login dialog.



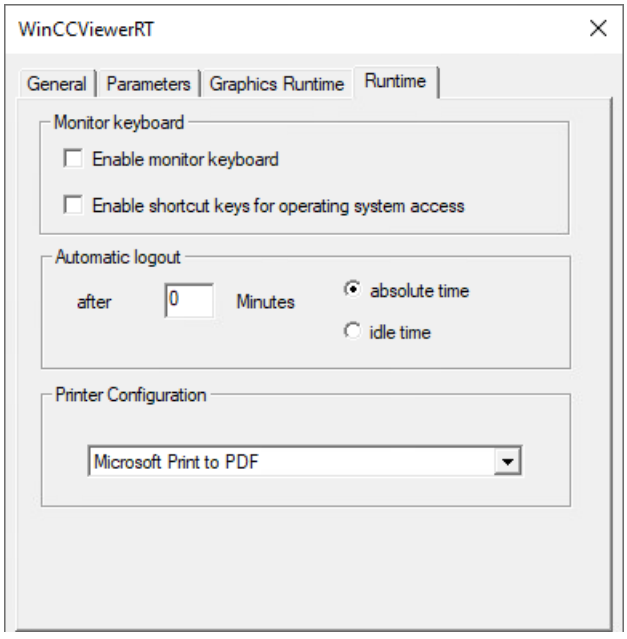
3. On the "Parameter" tab, configure the following settings:
   - Select the Runtime language and the Runtime default language.
   - If necessary, lock any key combinations that allow operators to switch to other programs.
   - If necessary, change the default key combination <Ctrl+Alt+P> that opens the configuration dialog of WinCCViewerRT.
   - Define a key combination with which a user can log off and a new user can log on. The key combination can only be used if no default user has been set in the "General" tab.



4. Specify the WinCC Runtime properties in the "Graphics Runtime" tab:
   - Start Picture
   - Configuration file for user-defined menus and toolbars
   - Window Attributes
     You can define the display of the process picture in the browser with the "Full screen" and "Adapt picture" options.
   - Turn off: Impermissible user actions
     Activate the actions that the operator is not permitted to perform in Runtime.



5. Specify additional user actions in the "Runtime" tab:
   - Activating the monitor keyboard
   - <Ctrl+Alt+Del> key combination to allow switching to the Task Manager or operating system via the screen keyboard.
   - Auto-logoff settings
   - Activating Direct2D to accelerate graphics representation.
   - Specifying the printer you use to print the configured print job in WinCC controls Alternatively, you can print the print job with the "RPTJobPrint" function. A preview via "RPTJobPreview" is not possible on the Web client.



6. Click "OK" to close the dialog.

Result

WinCCViewerRT is configured.

The connection to the DataMonitor server is set up after you close the dialog.

The settings are saved to the "WinCCViewerRT.xml" configuration file. The configuration file settings are used at the next start of WinCCViewerRT.

WinCCViewerRT applies the user interface language from WinCC.

The configuration file is stored in the following folder based on the operating system:

- <User>\AppData\LocalLow\Siemens\SIMATIC.WinCC\WebNavigator\Client

You can rename the file, for example, to "User1.xml".

You can also start WinCCViewerRT by means of the command line with the user-specific configuration file, e.g. "WinCCViewerRT.exe User1.xml". This procedure allows for different configurations, depending on the logged-on user.

The WinCCViewerRT configuration dialog opens at the start if you rename or delete "WinCCViewerRT.xml". Reconfigure WinCCViewerRT or select a different configuration file.

Note

Buttons disabled: Exit WinCCViewerRT

WinCCViewerRT can only be closed by means of script function if you disable a key combination or hide the "Close" button.

Function in the C-Script: DeactivateRTProject; function in the VBScript: HMIRuntime.Stop.

3.2.3.2 Displaying pictures

Requirement

- A WinCC/DataMonitor license is installed on the DataMonitor server.
- The WinCC project on the DataMonitor server is in runtime.
- The WinCC pictures are configured and published for web access.
- The WinCC user must be assigned authorization no. 1002 - "Web Access - monitoring only".
- WinCCViewerRT is configured on the DataMonitor client.

Procedure

1. In the "Siemens Automation" program group, select the entry "WinCCViewerRT".
2. Log on to the DataMonitor server:
   - A login dialog is not displayed if the user name and password are set in the WinCCViewerRT configuration dialog. You are logged on automatically with the stored login data.
   - The login dialog is displayed if a user name and password is not set in the WinCCViewerRT configuration dialog. Enter the user name and password of the WinCC user. Click "OK".
3. To change the user, use the specified key combination for login/logoff of "WinCCViewerRT". The previous user is logged off. Enter the user name and password of the new WinCC user in the login dialog. Click "OK".
   The key combination can only be used if no default user has been set.

Result

WinCCViewerRT automatically connects to the activated WinCC project. The pictures of WinCC project are displayed.

The "View Only Cursor" indicates that process-related operations are not possible.



Certain operations, such as opening the properties dialog of a WinCC OnlineTrendControl, are still possible.

You can also use your own cursor icon as a "View Only Cursor", if required. For more information, refer to "Configuring Runtime settings (Page 379)".

The <F5> key triggers a reselection of WinCCViewerRT.

3.2.4 Working with the Webcenter

3.2.4.1 Administration

User Groups and Directories

User Groups and Directories

Overview

WebCenter pages and reports are stored in directories on the DataMonitor server.

Its standard complement of directories is as follows:

- "Public"
- "Private" Every user has a "Private" directory. Only the respective user has access rights to this directory.

A user of the user group "SIMATIC Report Administrators" can create other directories and assign the other user groups different access rights to these directories.

More information on setting up directories can be found in chapter "Setting up directories (Page 401)".

Windows User Groups

The user groups "SIMATIC Report Administrators" and "SIMATIC Report Users" are created when the DataMonitor server is installed. You can create more user groups. More information on setting up user groups and users can be found in chapter "Defining users and access rights in Windows (Page 381)".

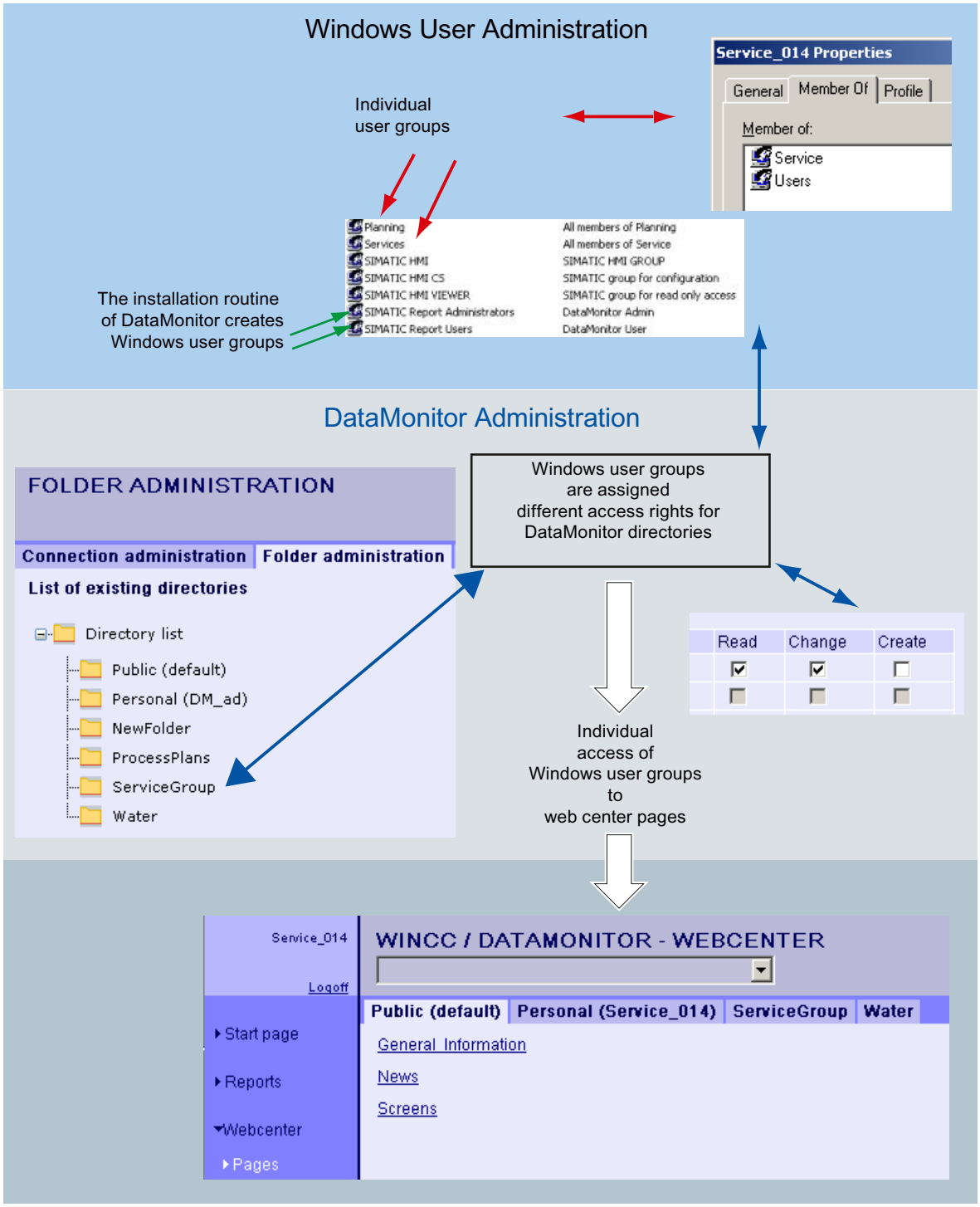
To access the DataMonitor, assign all members of a user group the same access rights to the directories of the DataMonitor server.

The following access authorization is possible:

- Read
- Change
- Create

A user, as a member of a user group, only has access to a directory if the respective user group has access rights to that directory. This permits user group-specific access. More information on assigning access authorization can be found in chapter "Assigning access rights (Page 401)".

The following picture shows the basic user administration for the WebCenter.


Windows User Administration
Service_014 Properties
General
Member Of
Profile
Member of:
Service
Users
Individual
user groups
Planning
Services
SIMATIC HMI
SIMATIC HMI CS
SIMATIC HMI VIEWER
SIMATIC Report Administrators
SIMATIC Report Users
All members of Planning
All members of Service
SIMATIC HMI GROUP
SIMATIC group for configuration
SIMATIC group for read only access
DataMonitor Admin
DataMonitor User
The installation routine
of DataMonitor creates
Windows user groups
DataMonitor Administration
FOLDER ADMINISTRATION
Connection administration
Folder administration
List of existing directories
Directory list
Public (default)
Personal (DM_ad)
NewFolder
ProcessPlans
ServiceGroup
Water
Windows user groups
are assigned
different access rights for
DataMonitor directories
Read
Change
Create
Individual
access of
Windows user groups
to
web center pages
Service_014
Logoff
Start page
Reports
Webcenter
Pages
WINCC / DATAMONITOR - WEBCENTER
Public (default)
Personal (Service_014)
ServiceGroup
Water
General Information
News
Screens

Creating Directories

Introduction

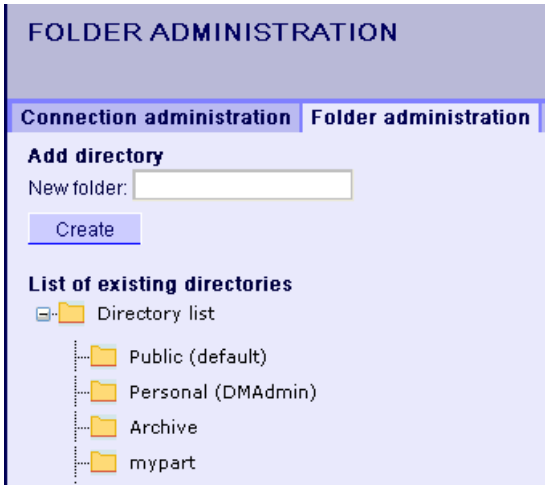
You store Webcenter pages in directories. The default directories are "Public" and "Private".

Requirement

- The logged in user is a member of the Windows user group "SIMATIC Report Administrators".
- The start page of the DataMonitor is open.

Procedure

1. Click "Webcenter > Administration" on the start page.
2. Click the "Directory administration" tab.



3. Enter a name, such as "mypart", in the "New directory" field.
4. Click the "Create" button.

Result

The directory "mypart" is created. The directories are created in a layer.

Assigning Access Rights

Introduction

Directories are created within the Webcenter in which you store, for example, Webcenter pages. You can assign different access rights for the individual directories to Windows user groups.

The following access authorization is possible:

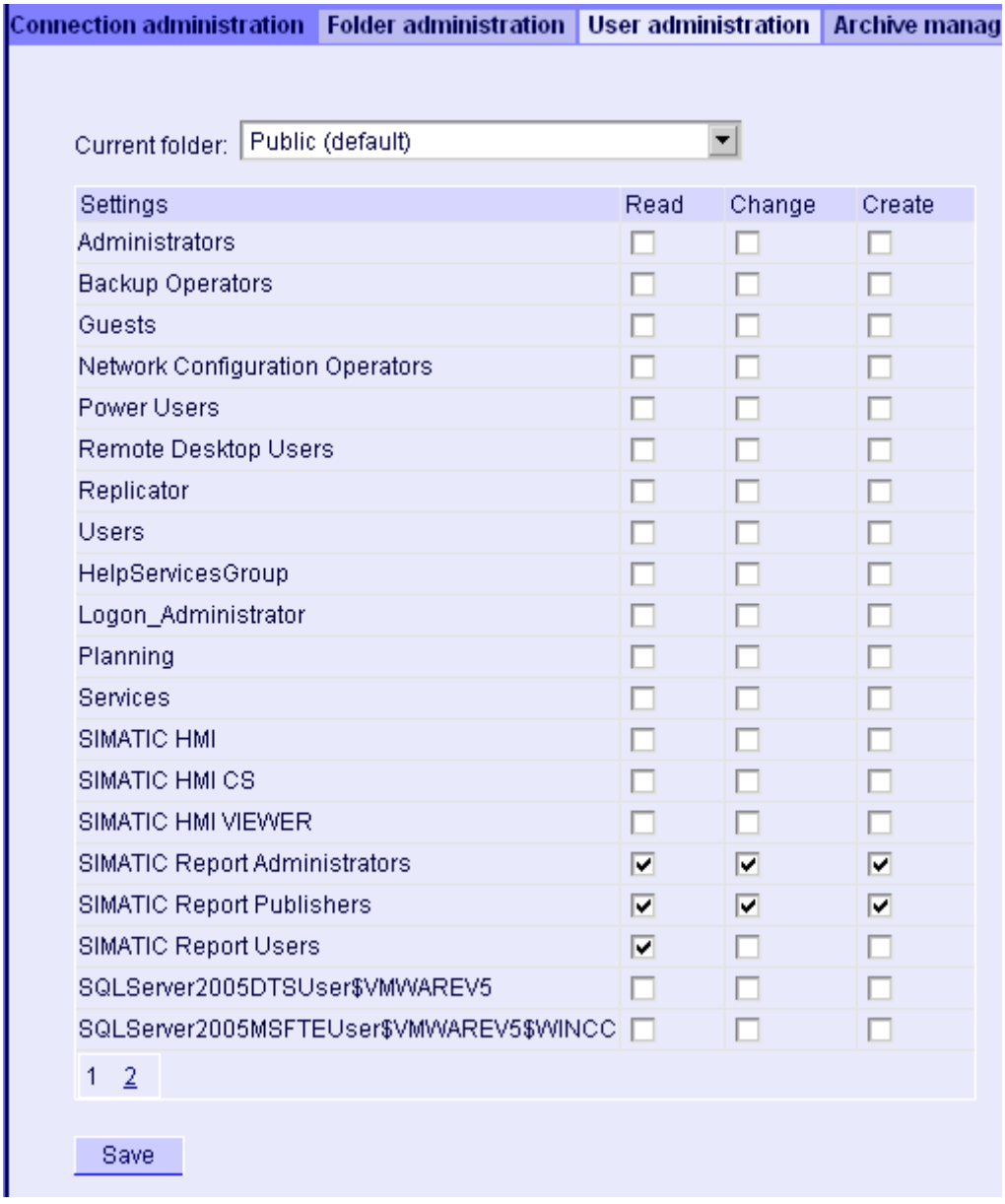
- Read
- Change
- Create

Requirement

- The logged in user is a member of the Windows user group "SIMATIC Report Administrators".

Procedure

1. Click "Webcenter > Administration" on the start page.
2. Click on the "User administration" tab.



3. Select the desired directory from the "Current directory".
   All existing Windows user groups are listed.
4. Activate the access rights in the line of the required Windows user group.
5. Click "Save".

Result

The access rights for the required directory are configured.

See also

User Groups and Directories (Page 398)

Example: User Groups and Directories

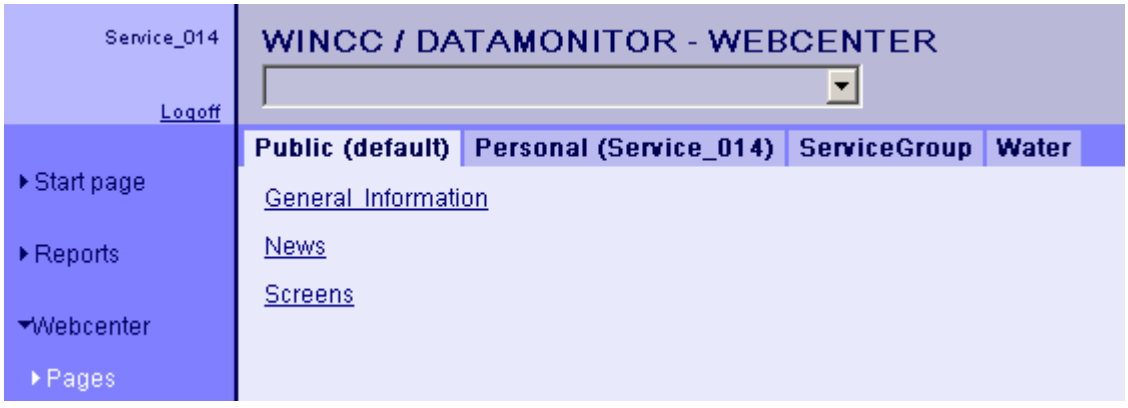
Overview

The user groups "Service" and "Planning" have been created in the following example. The directories "ServiceGroup", "Water" and "ProcessPlans" are created in the Webcenter.

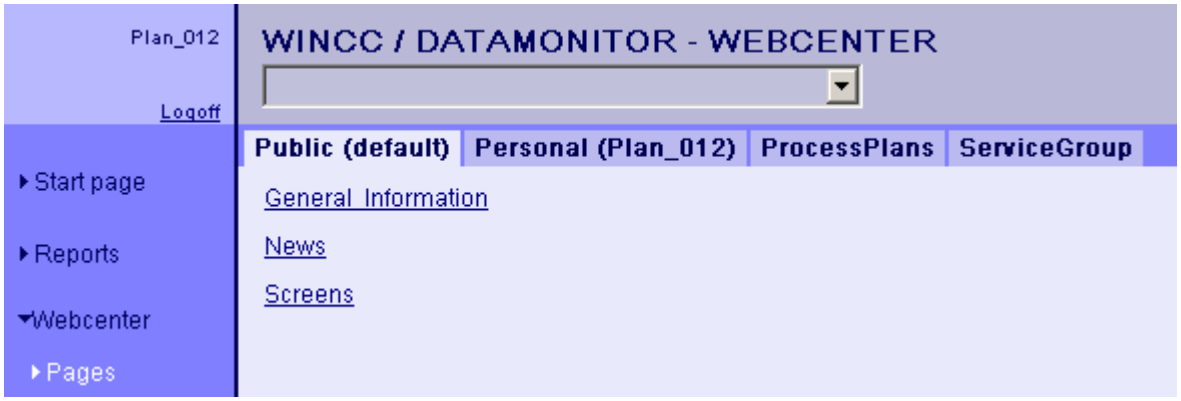
The following table shows which access rights the members of the user groups "Service" and "Planning" have for the following directories:

Directory	User group "Service"	User group"Planning"
Public	• Read	• Read
Private	• Read • Change • Create	• Read • Change • Create
ServiceGroup	• Read • Change • Create	• Read
Water	• Read • Change	No access authorization
ProcessPlans	No access authorization	• Read • Change

When a member of the user group "Service" logs in and clicks "Pages" in the Webcenter, the member will see the directories as tabs to which the user group has at least read access. The "Webcenter > Pages" looks as follows for the member "Service_014" of the user group "Service":



The "Webcenter > Pages" looks as follows for the member "Plan_012" of the user group "Planning":



Create connection and set up language

Introduction

For access of the DataMonitor client to runtime data and archived data, configure connections to the WinCC databases in the "Webcenter".

For each data source, set up a connection, e.g., to the WinCC server.

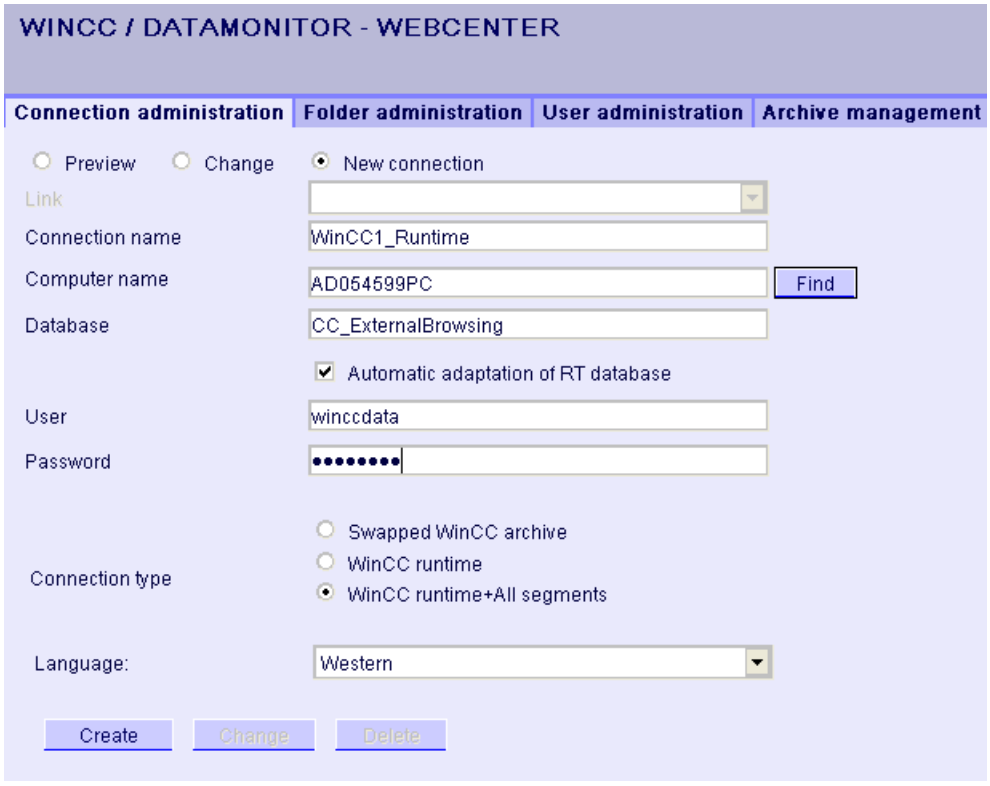
You need the configured connections for Webcenter pages and "Trends & Alarms".

Requirement

- The user is a member of the Windows user group "SIMATIC Report Administrators".
- For access to the WinCC database via DataMonitor, a Windows user with password is created who is a member of the "SIMATIC HMI VIEWER" user group.

Procedure

1. Click "Webcenter > Administration" on the start page.
2. Click the "Connection Administration" tab.



3. Select the option "New Connection".
   After the new installation, no selection is possible in the "Connection" box, as no connections have been configured yet.
4. Select the language that corresponds with the linguistic region of the server or archive to be linked in "Linguistic Region".
   The setting ensures that special national characters are displayed correctly.
5. Enter a name in the "Connection Name" box, such as "WinCC1_Runtime".
   The name should include a reference to the selected connection type.
   Do not use any blank spaces or special characters.
6. Enter the computer name on which the archive backup data are stored.
   As an alternative, select the name of the computer using the "Find" button.
7. Enter the Windows user with password for the connection with the WinCC database.

8. Select the connection type to the WinCC data:
   - "Swapped-out WinCC archive".
     Additional steps are necessary to access data on swapped archives. More information is available under "Connecting or separating swapped archives (Page 407)".
   - "WinCC Runtime".
     Only the open single segment of the Runtime database is used.
   - "WinCC Runtime + all segments".
     The open single segment and all other connected segments of the Runtime database are used.
9. Select the database for the connection type:
   - "Swapped-out WinCC archive":
     Click "Display database" or select the archive from the list.
   - "WinCC Runtime":
     Select the Runtime database of the activated WinCC project. As an alternative, select the name of the database using the "Find" button.
   - "WinCC Runtime + all segments":
     "CC_ExternalBrowsing" is automatically entered as database.
10. Activate "Automatic adaptation of RT database" so that the database name is adjusted in the connection administration during a segment change.
11. Click the "Create" button.

Result

The connection to the data source is created and can be selected in the "Connection" box of the connection administration.

See also

Configuring a symbolic directory (Page 407)

Connect archives using the WinCC Archive Connector (Page 411)

Connecting or disconnecting swapped archives

Configuring a symbolic directory

Introduction

To access data on swapped-out WinCC archives, these archives must be connected to an SQL server once again.

You can connect all or individual archive backup files of a directory with the SQL server.

If you want to remove a directory containing archives from the list of symbolic names, disconnect all archives contained therein.

You see the status of the archives in the tab "Connecting/disconnecting archives".

Note

Connected archives on changeable media

Before changing the media in the drive you need to disconnect the archives on this medium.

After changing the medium, check whether the archives are connected on the new medium.

Requirement

- Archive backup files are write-protected.
  Create a backup copy of the file before connecting and remove the write-protection of the copied archive backup file.
- The archive backup files are stored on a local drive.
- The directories in which the archive backup files are stored have been released.
  - The directory must be set for sharing in the Windows Explorer before you start the DataMonitor server.
  - Restart the DataMonitor server if you are releasing the directories at a later time.
- The user group "SIMATIC HMI VIEWER" has "Full access" to the directories.
- The logged in user is a member of the Windows user group "SIMATIC Report Administrators".
- "Network service" is added in the "Print operators" group.

Procedure

1. Click "Webcenter > Administration" on the start page.
2. Click on the "Archive administration" tab.



3. In the "Symbolic Name" box, enter a unique symbolic name for each directory.
   The name should only contain characters permitted in the SQL syntax.
   You use the symbolic name for access via the DataMonitor client.
4. Select the folder which contains the archive backup files.
   You can only select released directories.

5. To automatically connect all existing archive backup files of the directory, activate "Automatically connect all archives in this directory".
6. To connect individual archive backup files of the directory, deactivate "Automatically connect all archives in this directory".
7. Click "Add".

Result

The symbolic directory "Test" is created.

If you have deactivated "Automatically connect all archives in this directory", specify the archive backup files in the "Connecting/disconnecting archives" tab.

To disconnect archives, deactivate the respective archives in the "Connecting/disconnecting archives" tab.

Connecting or disconnecting archives

Introduction

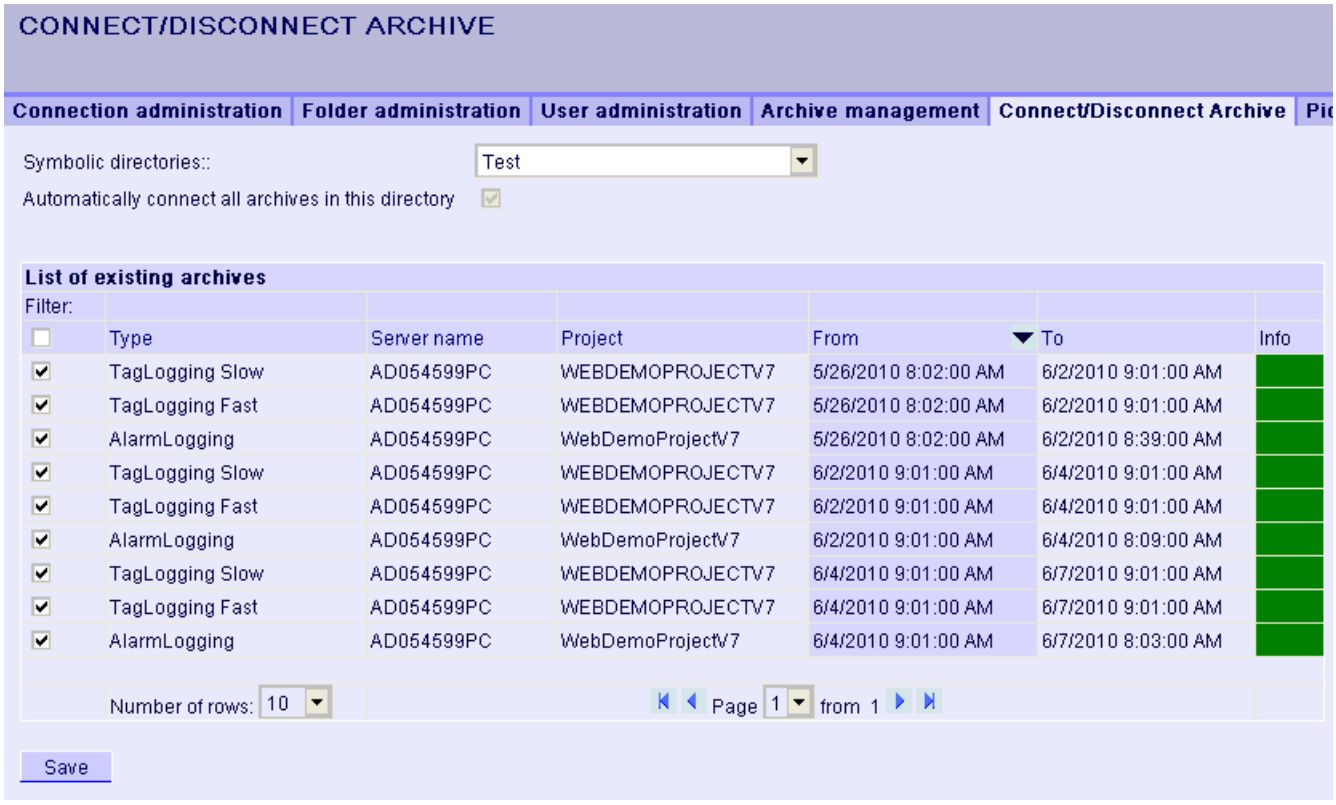
All archives of a selected archiving directory are displayed on the "Connecting/disconnecting archives" tab. You can connect or disconnect the existing archives.

Requirement

- Archive backup files are write-protected. Create a backup copy of the file before connecting and remove the write-protection of the copied archive backup file.
- The logged in user is a member of the Windows user group "SIMATIC Report Administrators".
- A symbolic directory is created, such as "Test".

Procedure

1. Click "Webcenter > Administration" on the start page.
2. Click on the "Connecting/disconnecting archives" tab.



3. Select a directory from "Symbolic directories", such as "Test". The available archives are displayed in a list. The "Info" column indicates the status:
   - Green: Connected
   - Red: Disconnected
4. To limit the display, click "Filter".
5. Enter a filter criterion in a column and click . Click with "From" and "To" to enter a required period of time. Then click .
6. To connect an individual archive, activate the desired archive in the "List of available archives". Click "Save".
7. To disconnect an individual archive, deactivate the desired archive in the "List of available archives". Click "Save".
8. You sort the list entries by clicking on one of the column headers.

Alternative Procedure

To connect archive backup files, you can also use the WinCC Archive Connector. For additional information, refer to "Connecting archives using the WinCC Archive Connector (Page 411)".

Result

The required swapped-out WinCC archives are connected. If you connect signed archives, which have been changed after the swap, a message is output.

Connect archives using the WinCC Archive Connector

Introduction

You use the Archive Connector to reconnect swapped-out WinCC archives with an SQL Server.

The Archive Connector has the following functions:

- Manual Connection: Local databases are selected and connected to the local SQL Server.
- Manual disconnection: Connected databases are disconnected from the SQL Server.
- Automatic Connection: Local directories can be selected in which WinCC archives have been exported. After activation of monitoring, all archives added to the directory are automatically connected with the SQL Server.

Note

Connected archives on changeable media

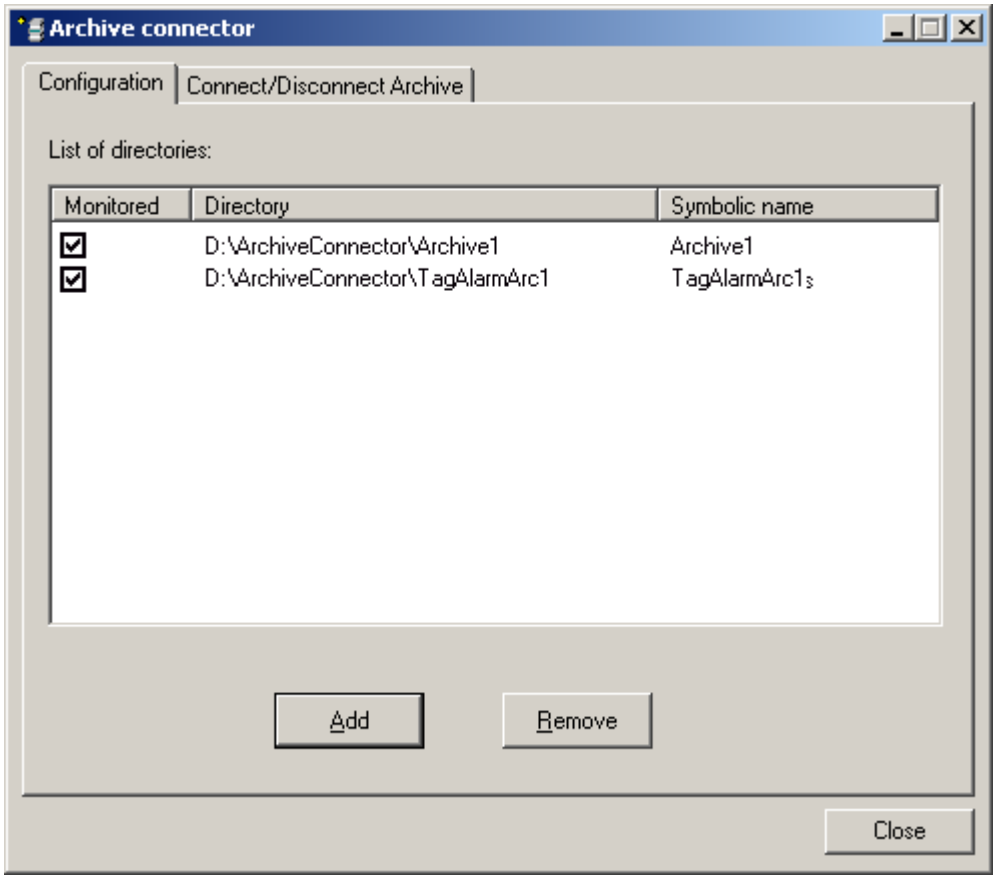
Before changing the media in the drive you need to disconnect the archives on this medium using the Archive Connector. After changing the medium, check in Archive Connector whether the archives are connected on the new medium.

Requirement

- The Archive Connector may only be operated using a local SQL Server and a WinCC/ DataMonitor license.
- Archive backup files are write-protected. Create a backup copy of the file before connecting and remove the write-protection of the copied archive backup file.
- The archive backup files are stored on a local drive.
- The directories in which the archive backup files are stored have been released.
- The user group "SIMATIC HMI VIEWER" has "Full access" to the directories.
- The logged in user is a member of the Windows user group "SIMATIC Report Administrators".

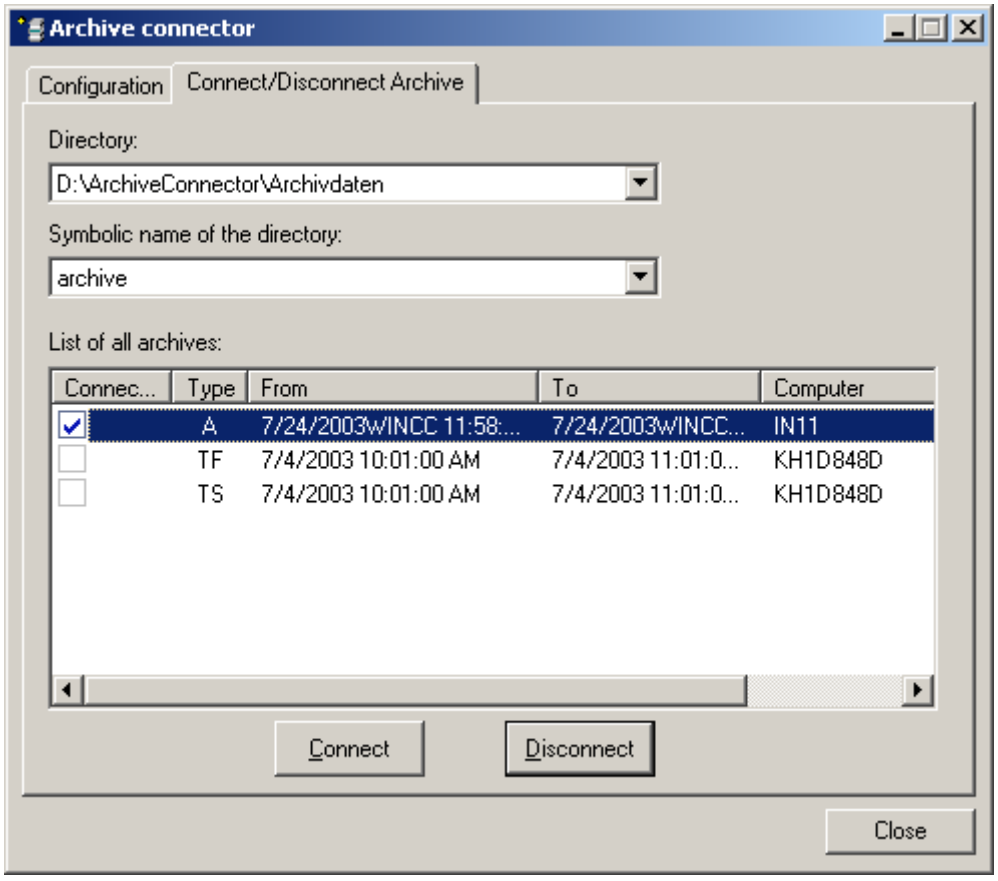
Procedure

1. In the "Siemens Automation" program group, select the entry "ArchiveConnector".



2. Click "Add" in the "Configuration" tab. The "New directory" dialog opens.
3. Navigate to the directory in which the archive backup files are stored.
4. Enter a unique symbolic name for the directory. The name should only contain characters permitted in the SQL syntax. You use the symbolic name for access via the DataMonitor client.
5. Click "OK". The directory is displayed on the "Configuration" tab.
6. If you activate the checkbox for a directory in the "Monitored" column, then all archives that are added to the directory from the time of activation are automatically connected to the SQL server.
7. Remove a selected directory again, if necessary. The archives in the directory must already be disconnected. The status of the archives of a directory can be verified on the "Connect/ disconnect archives" tab in the "Connected" column.

8. Click on the "Connecting/disconnecting archives" tab. All archives of a selected directory are displayed on the "Connecting/disconnecting archives" tab.



9. Select a directory with archives either from the list of directories or by its symbolic name.
10. Select the required archive and click "Connect".
11. Disconnect the connection of a selected archive, if necessary.

Result

A connection is created and the required archive backup files are connected with the SQL Server.

The "Connecting/disconnecting archives" tab displays the connection status of each archive. "From" and "To" columns contain the archiving period in the local time zone.

The "Type" column contains the details for archive type:

- A - Alarm archive
- TF - Tag Logging Fast
- TS - Tag Logging Slow

If you connect signed archives, which have been changed after the swap, a message is output.

3.2.4.2 Creating static process pictures for the Webcenter

Introduction

In the picture administration you specify which pictures you need for the web part "Static process pictures". The process pictures cannot be operated.

The DataMonitor server creates copies of pictures in a cycle that can be set. The server makes the pictures available as static process pictures on the DataMonitor client.

The following objects are not displayed in the web part "Static process pictures":

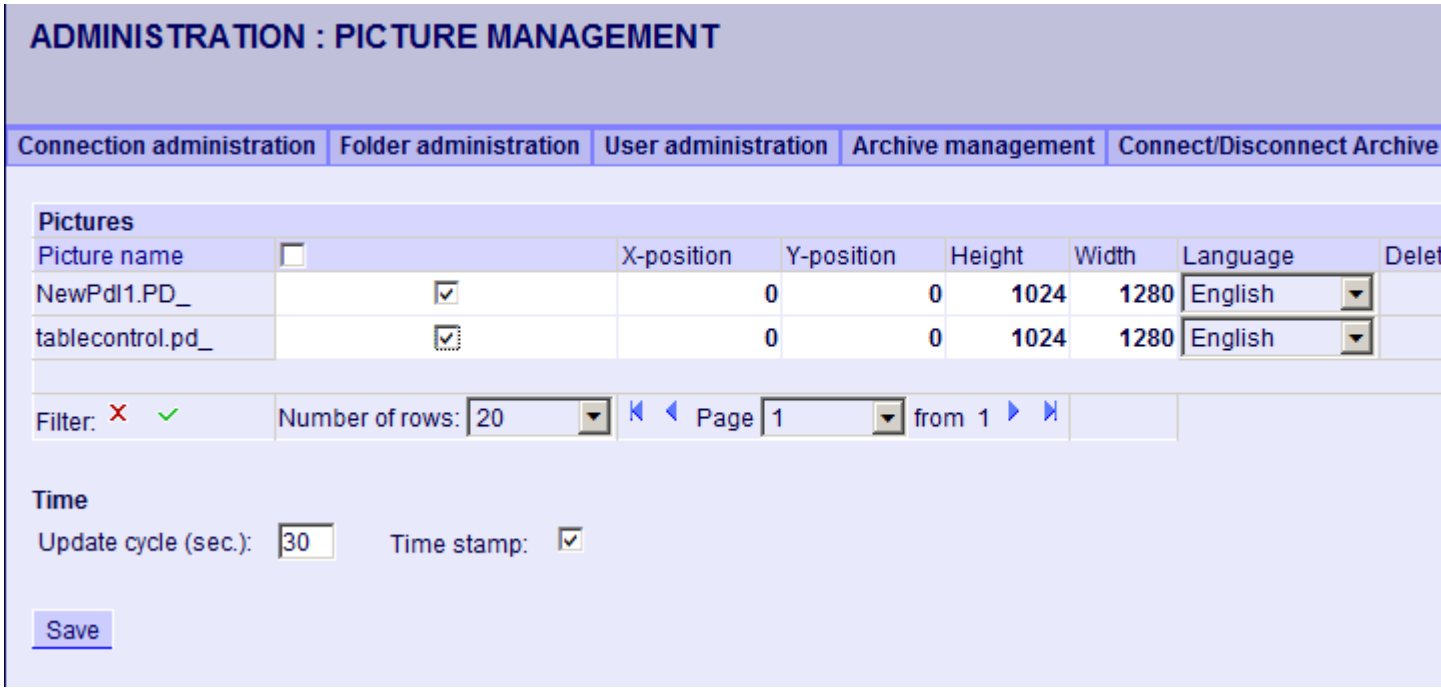
- Global Script Diagnostics Window
- WinCC Media Control
- WinCC Controls from migrated projects that have been created with versions prior to WinCC V7.0.

Requirement

- The logged in user is a member of the Windows user group "SIMATIC Report Administrators".
- The WinCC pictures are published for web access. Additional information is available under "Publishing WinCC process pictures (Page 367)".
- The start page of the DataMonitor is open.
- The "Picture administration" tab is open. All published process pictures are listed.

Procedure

1. Select the desired pictures.
   - To select all pictures, activate the checkbox in the column header.
   - To select individual pictures, activate the checkbox in front of the required picture.



2. To show only a part of the picture, specify the following:
   - X position: Start positions in x direction in pixels
   - Y position: Start positions in y direction in pixels
   - Height: Height of the picture in pixels
   - Width: Width of the picture in pixels
3. If you have configured and published pictures in different languages, select a language from the list to display the language-specific picture.
4. To output the time when the process picture was created by the DataMonitor server, activate "Stamp". The date and time are displayed in the picture.
5. In order to change the update cycle, enter the desired value in "Update time interval". Select this cycle as large as possible. A cycle that is too small results in limited performance.
6. Click "Save".

Result

The DataMonitor server creates static process pictures from the selected pictures. You can configure the static process pictures in the web part "Static process pictures".

Deleting static process pictures

To delete static process pictures, select the checkbox "Delete graphic" for the selected picture name. Click "Save" to delete the static process picture or the copy. You can no longer configure the deleted process picture in the web part "Static process pictures".

Finding picture names or limiting display

Use a filter to find a picture name or limit the display to certain picture names.

When you click with "Filter", the filter is shown above the table. Enter a picture name in the text field or click <Enter>.

To hide the filter, click .

3.2.4.3 Creating layout template for Webcenter pages

Introduction

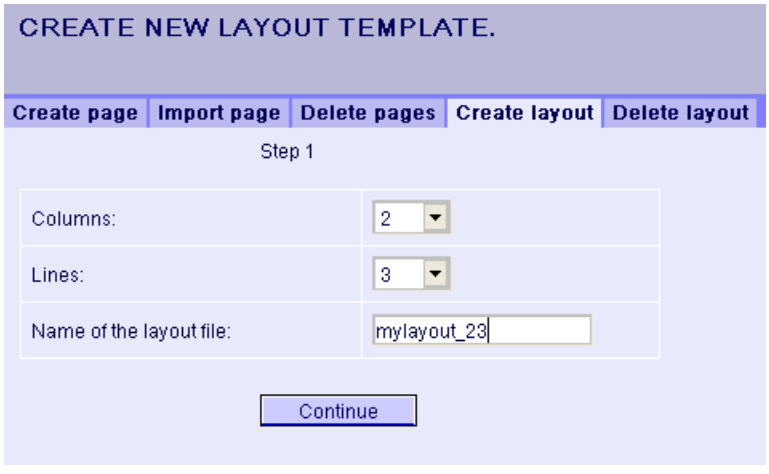
You need a layout template to create a Webcenter page. Predefined layouts were installed during the installation. Additionally, you can create your own Layout Templates.

Requirement

- The logged in user is a member of the Windows user group "SIMATIC Report Administrators".
- The start page of the DataMonitor is open.

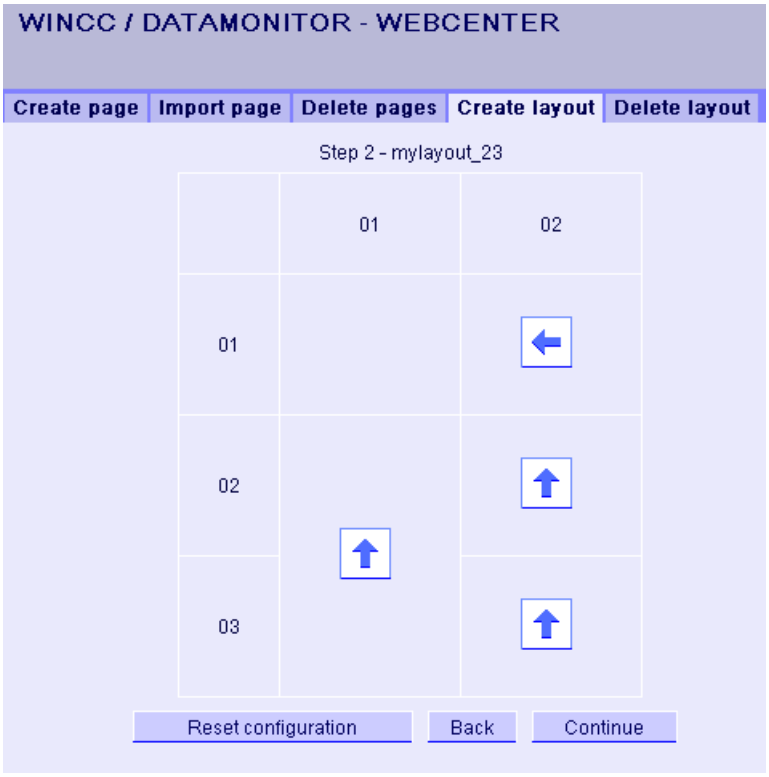
Procedure

1. Click "Webcenter > Configuration" on the start page.
2. Click on the "Creating layout" tab.

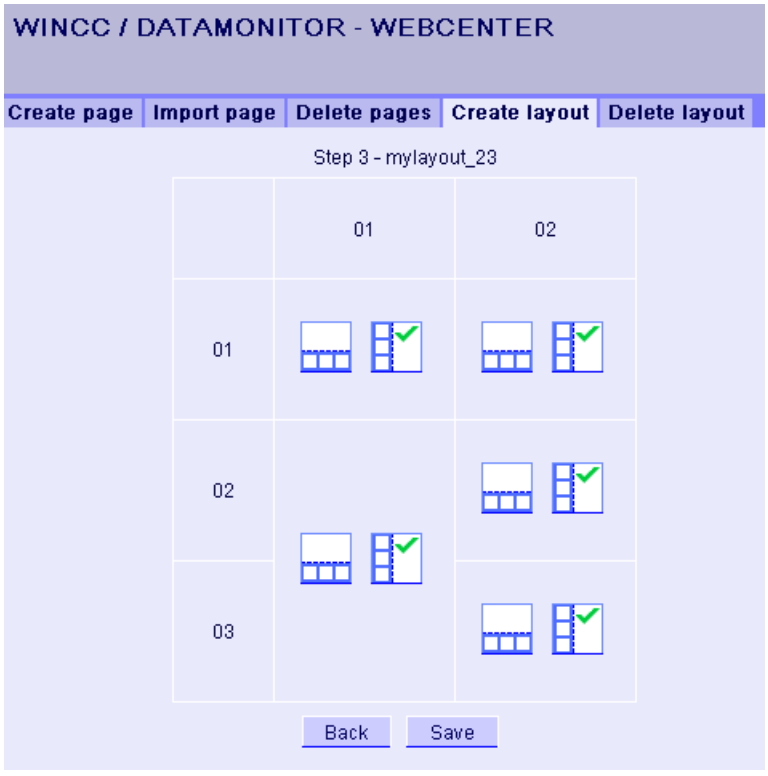


3. Define the number of columns and the number of lines.
4. Enter the name in the "Name of the layout file" box, for example, "mylayout_23". Click "Next".

5. Combine the table fields, if necessary. To do so, click the desired arrow symbol, such as "Arrow up", in the desired field, for example line 3 / column 1. The modified view will be displayed.



6. To restore the original table layout, click "Reset configuration". Click "Next".



7. Arrange the web parts in the table fields. If necessary, activate the corresponding symbol in a table field to place the web parts vertically or horizontally.
8. Click "Save".

Result

The layout template "mylayout_23" is created. You can use the layout template as a template for creating a Webcenter page.

3.2.4.4 Creating Webcenter page

Introduction

You create Webcenter pages in which you add web parts. The Webcenter pages are stored in directories. In this example, the WebCenter page is saved in the "myPart" directory.

You can only change or create Webcenter pages in directories for which the Windows user group has the "Edit" or "Create" access rights.

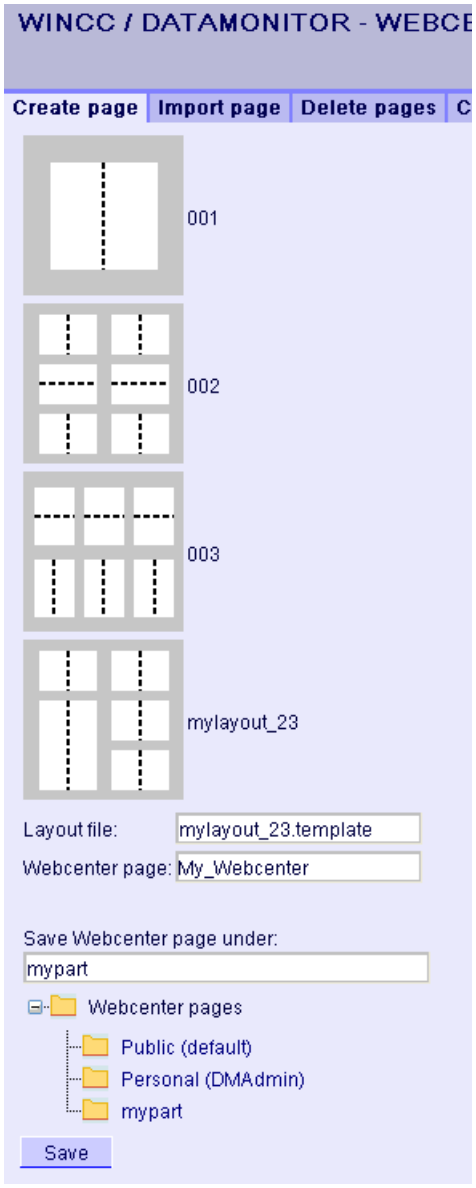
Requirement

- The directory "myPart" is set up.
- The logged in user is a member of the Windows user group "SIMATIC Report Administrators" or "SIMATIC Report Users".
- The Windows user groups have the access rights "Edit" or "Create" for the directory.
- The start page of the DataMonitor is open.

Procedure

1. Click "Webcenter > Configuration" on the start page.
2. Click on the "Creating page" tab.
3. Click on the desired layout template. The file name is displayed in the "Layout file" box.
4. Enter a name in the "Webcenter page" box, for example, "My_Webcenter".

5. Select the directory in which the Webcenter page is stored. The selected directory is displayed in the box "Save WebCenter page as".



6. Click "Save".

Result

The Webcenter page "My_Webcenter" is created and saved.

See also

Inserting web parts to the Webcenter page (Page 421)

Configuring web parts within Webcenter pages (Page 424)

3.2.4.5 Inserting web parts to the Webcenter page

Introduction

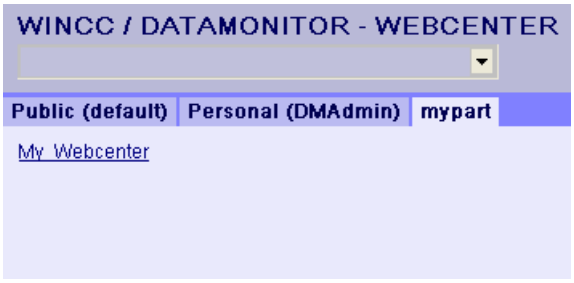
You compile the contents of the Webcenter pages from the web parts.

Requirement

- The directory "myPart" is set up.
- The Webcenter page "My_Webcenter" is stored in the directory.
- The logged in user is a member of the Windows user group "SIMATIC Report Administrators" or "SIMATIC Report Users".
- The Windows user groups have the access rights "Edit" or "Create" for the directory.
- The start page of the DataMonitor is open.

Procedure

1. Click "Webcenter > Pages" on the start page.
2. Click on the "myPart" tab.



3. Click on the entry "My_Webcenter".

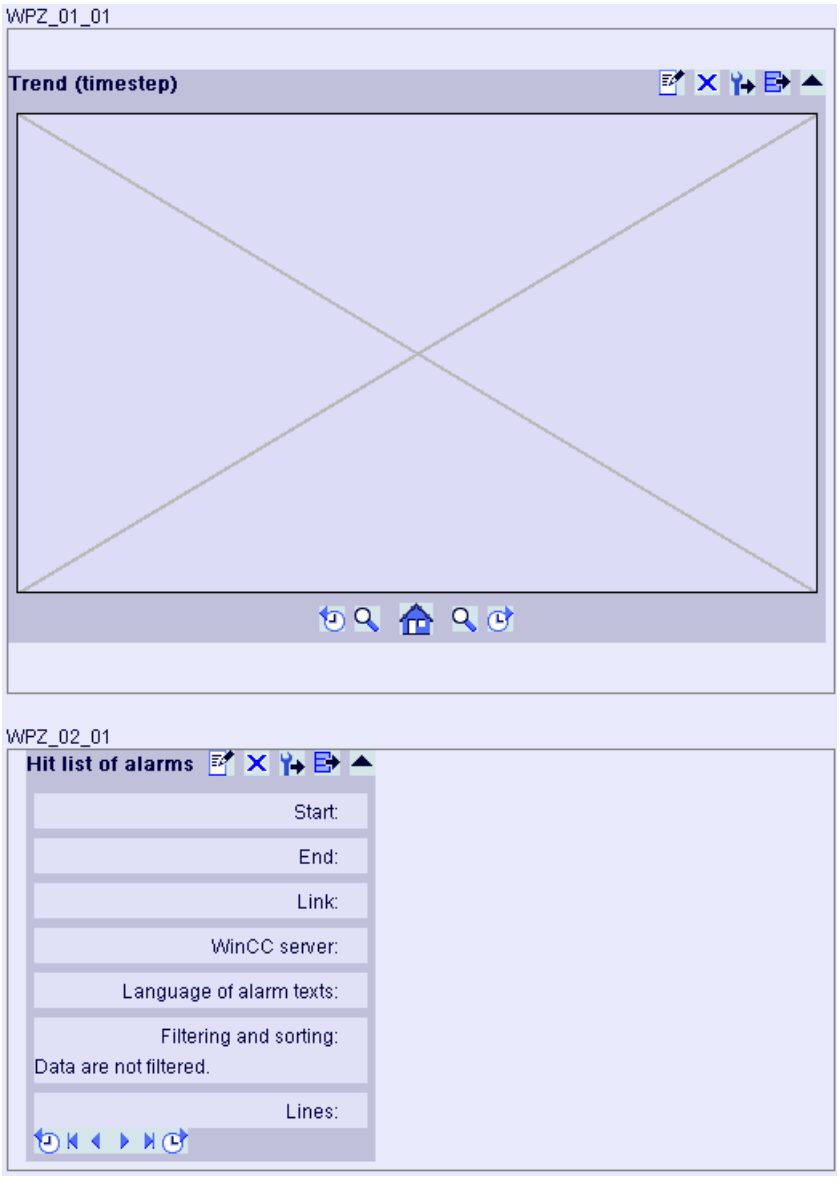
4. To add web parts, click at the top right edge of the page. The available web parts are listed. If you have exported web parts that have already been configured, they are listed under "Imported web parts". If necessary, insert these web parts into your Webcenter page.



5. Activate the entry "Trend (Timestep)".
6. Select the entry "WPZ_01_01" and click "Add".
7. Activate the entry "Hit list of alarms".
   If you insert several web parts into a table field, the web parts are arranged horizontally or vertically. You specify the arrangement when you create the layout template.
8. Select the entry "WPZ_02_01" and click "Add".
9. Click "Exit".

Result

Web parts to display data are inserted into the Webcenter page "My_Webcenter". The current compilation of the Webcenter page is displayed.



See also

Overview of Web Parts (Page 362)

Creating Webcenter page (Page 418)

Configuring web parts within Webcenter pages (Page 424)

3.2.4.6 Configuring web parts within Webcenter pages

Introduction

To display data from WinCC Runtime or an archive, you must configure the web parts.

Web part configuration

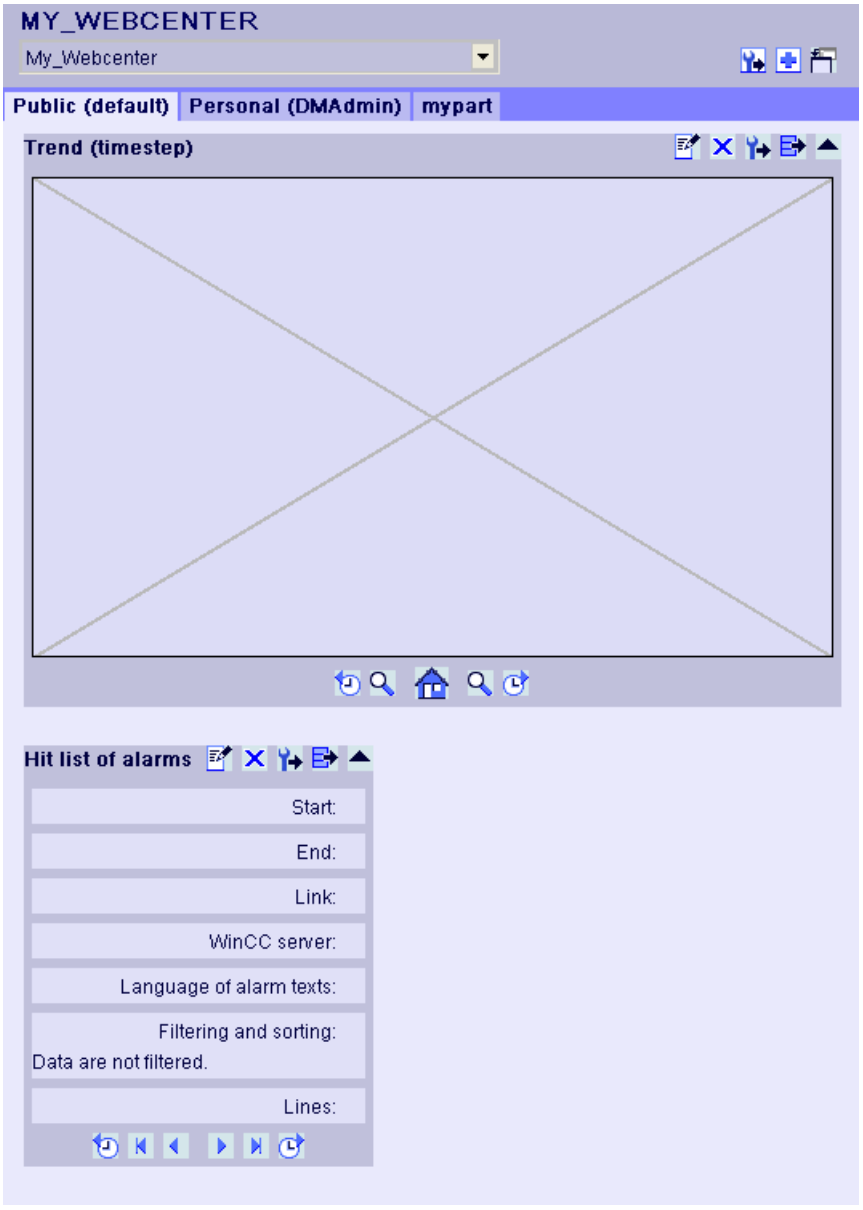
	Open the configuration dialog of the web part
	Deleting the web part
	Minimizing the web part
	Maximizing the web part
	Exporting the web part
	Exporting the configuration of the web part as XML file

Requirement

- The logged in user is a member of the Windows user group "SIMATIC Report Administrators" or "SIMATIC Report Users".
- The Windows user groups have the access rights "Edit" or "Create" for the directory.
- The Webcenter page "My_Webcenter" is open.
- The WinCC project is in Runtime.

Procedure

1. Click in the required web part. The configuration dialog is opened.



2. Configure the web part:
   - Displaying process values in a table (Page 428)
   - Displaying process values in a diagram (Page 429)
   - Displaying alarm hit list (Page 435)
   - Displaying alarms in the alarm table (Page 431)
   - Displaying statistics function for process values (Page 437)
3. To change the position of the web part, move the web part to the desired position with the mouse.

See also

Creating Webcenter page (Page 418)

Inserting web parts to the Webcenter page (Page 421)

3.2.4.7 Deleting Webcenter pages and layout templates

Introduction

You can delete layout templates and Webcenter pages that are no longer required.

Requirements - Deleting Layout Templates

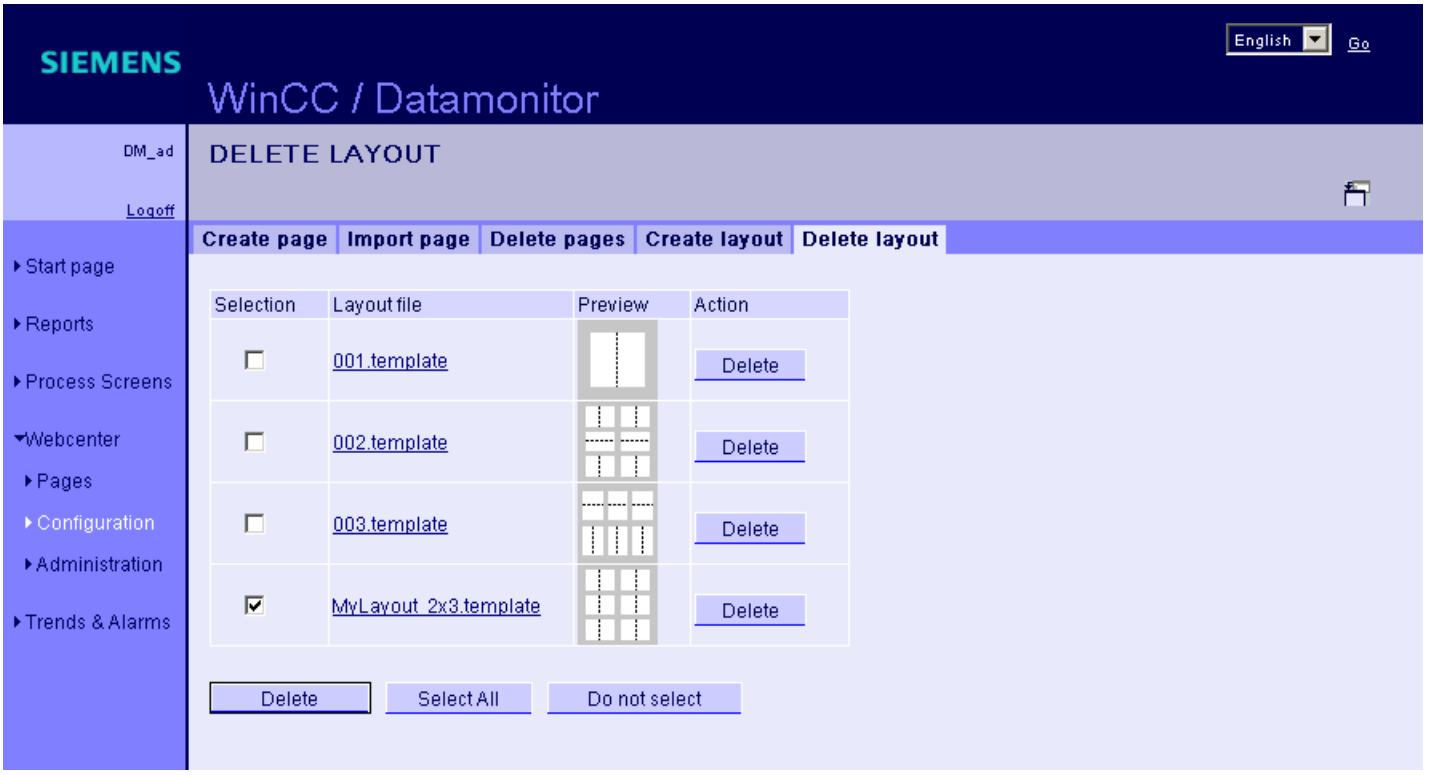
- The user is a member of the Windows user group "SIMATIC Report Administrators".
- The start page of the DataMonitor is open.

Requirements - Deleting Webcenter pages

- The logged in user must have "Create" access rights for the directory, in which the page to be deleted is stored.
- The start page of the DataMonitor is open.

Deleting layout templates

1. Click "Webcenter > Configuration" on the start page.
2. Click on the "Deleting layout" tab.



3. Delete the required layout files:
   - To delete several layout files, activate the checkbox "Selection" for the files you want to delete. Click "Delete".
   - To delete all layout files, click "Select All". Click "Delete".
   - To delete individual layout files, click the respective "Delete" button in the "Action" column.

Result

The selected layout file is deleted. You can also delete the supplied layout files. Existing Webcenter pages that are using this layout template are not deleted. You cannot create new Webcenter pages with this layout.

Deleting Webcenter pages

1. Click "Webcenter > Configuration" on the start page.
2. Click on the "Deleting page" tab.
3. Activate the respective check box to mark the pages to be deleted.
4. Click on the "Delete" button.

Result

The selected Webcenter pages are deleted.

3.2.5 Working with trends and alarms

3.2.5.1 Displaying process values in a table

Introduction

Use "Trends & Alarms" to display archived process values and archived texts in a table.

Requirement

- The connection to the WinCC data is established.
- The start page of the DataMonitor is open.

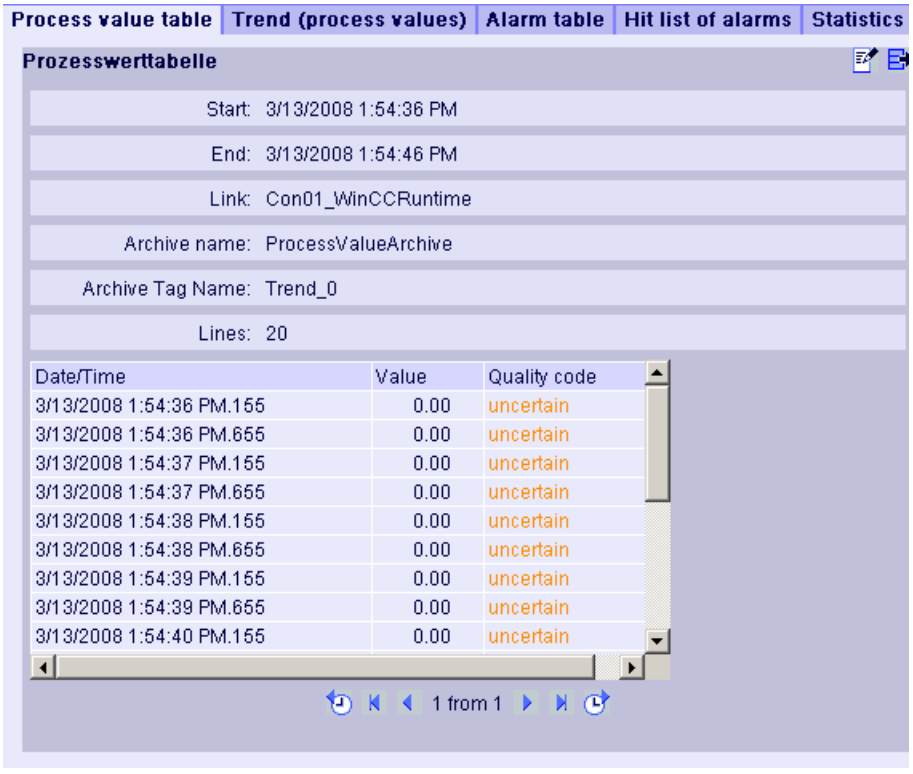
Procedure

1. Click "Trends & Alarms" on the start page.
2. Click the "Process Value Table" tab.
   The Web part "Process Value Table" is displayed.
3. Click . The configuration dialog of the Web part opens.
4. Change the title in the "Title" field. Enter a note in the "Tooltip" field.
5. Select one of the configured connections in the "Connection" field.
   The archive tags available via this connection will be displayed.
   Limit the display of the tags, if necessary:
   - Select individual archives with "Archive selection".
   - Set the filter criteria with "Tag filter".
6. Click "Add" for the required archive tag.
7. Set the time range in the area "Time period".
   With relative times, enter a negative value into the respective field.
   For more information on entering time, click .
   Click "Preview" to check the set time range in the column "Preview Time Range".
8. Specify the number of decimal points in the area "Representation of decimal points".
9. In the "Table size" area, define the size of the display window.
   If the value "0" is entered in both fields, the size is determined automatically. The size depends on the space requirement of the Web part.
10. The available Webcenter pages are displayed in the area "Link to Webcenter pages". Click to assign the web part to one or several Webcenter pages.
11. Click "OK" to confirm your entries.

Result

The values of the archive tags and the quality code are output in the process value table.

If the manual entry of archive values is allowed during runtime, the modified or newly created values are identified as such. There is an "m" in a separate column to show a manual entry of the archive value.



Operation:

	In absolute time required to scroll forward or backward in the selected time range.
Arrow buttons	To scroll forward or backward in multi-page tables.
	Export alarms in CSV format.
	Changing the settings of the Web part.

3.2.5.2 Displaying process values in a diagram

Introduction

Use "Trends & Alarms" to display archived process values in trends.

Requirement

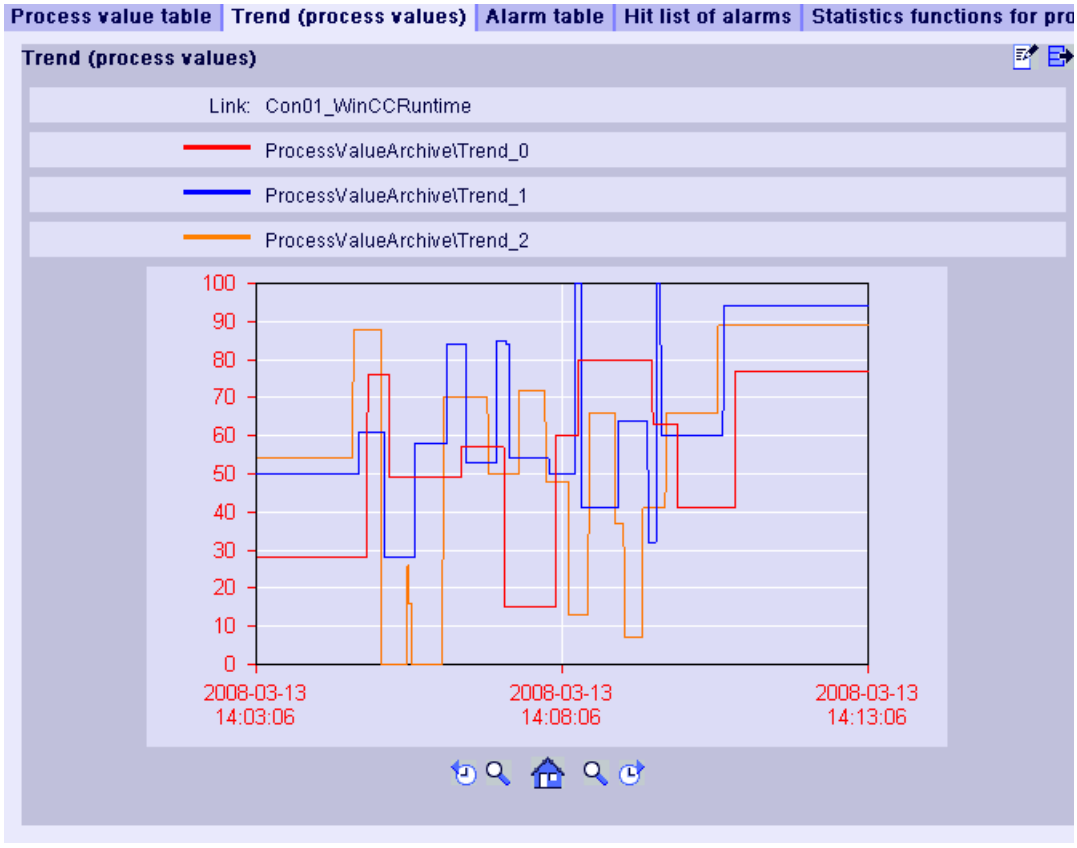
- The connection to the WinCC data is established.
- The start page of the DataMonitor is open.

Procedure

1. Click "Trends & Alarms" on the start page.
2. Click the "Trend (Process Values)" tab. The Web part "Trend (process values)" is displayed.
3. Click . The configuration dialog of the Web part opens.
4. Change the title in the "Title" field. Enter a note in the "Tooltip" field.
5. Select one of the configured connections in the "Connection" field. The archive tags available via this connection will be displayed.
   Limit the display of the tags, if necessary:
   - Select individual archives with "Archive selection".
   - Set the filter criteria with "Tag filter".
6. Click "Add" for the required archive tags, e.g. "TREND_0", "TREND_1", "TREND_2.
   The archive tags are listed in the area "Current selection".
7. In the section "Current selection", you specify for the individual archive tag:
   - Color of time axis and value axis
   - Trend presentation type
8. In the section "Value axis editor", you can activate the automatic scaling for the different value axes or you can assign a minimum and maximum value to each axis.
9. Set the time range in the area "Time period".
   With relative times, enter a negative value into the respective field.
   For more information on entering time, click .
   Click "Preview" to check the set time range in the column "Preview Time Range".
10. In the section "Diagram settings", you define the size of the display window.
    If the value "0" is entered in both fields, the size is determined automatically. The size depends on the space requirement of the Web part.
11. Activate the option "Show legend" to display the legend.
12. The available Webcenter pages are displayed in the area "Link to Webcenter pages". Click to assign the Web part to one or several Webcenter pages.
13. Click "OK" to confirm your entries.

Result

The selected process values are displayed as trends in a diagram.



The legend shows the assignment of the colors to the archive tags.

Operation:

	In absolute time required to scroll forward or backward in the selected time range.
	Enlarge the presentation and diagram range left or right of the center line.
	Restore the original view.
	Exporting values of the displayed diagrams in CSV format
	Changing the settings of the Web part.

3.2.5.3 Displaying messages in the alarm table

Introduction

Use "Trends & Alarms" to display alarms in an alarm table.

Requirement

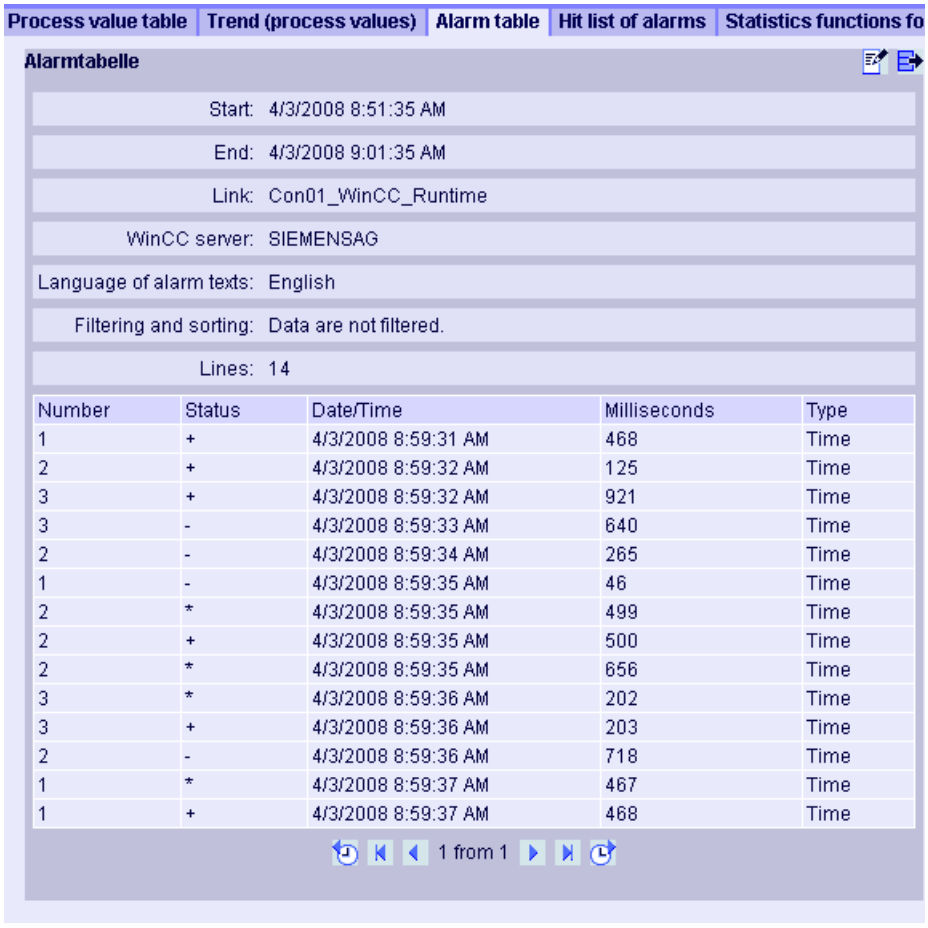
- The connection to the WinCC data is established.
- The start page of the DataMonitor is open.

Procedure

1. Click "Trends & Alarms" on the start page.
2. Click on the "Alarm Table" tab.
   The web part "Alarm Table" is displayed.
3. Click . The configuration dialog of the Web part opens.
4. Change the title in the "Title" field. Enter a note in the "Tooltip" field.
5. Select one of the configured connections in the "Connection" field.
6. Set the time range in the area "Time period".
   With relative times, enter a negative value into the respective field.
   For more information on entering time, click ?.
   Click "Preview" to check the set time range in the column "Preview Time Range".
7. In the section "Language of the alarm texts", select the language, in which the alarms are displayed.
8. Select the respective WinCC server with "Selection of WinCC server", if necessary. The setting is necessary if you select a connection to swapped archives that include archives of several WinCC servers.
9. In the section "Filter selection", you may limit the expected search results with SQL syntax. Set the filter conditions for individual columns to do so.
   Enter the filter condition for all columns in the "Extended Filter" field.
   For more information on filter conditions, click ?.
10. For representation of the data set the following:
    - Sort order: For more information on sorting, click ?.
    - Visible columns: To display all columns, click "Select All".
    - Number of decimal places.
11. In the "Table size" area, define the size of the display window.
    If the value "0" is entered in both fields, the size is determined automatically. The size depends on the space requirement of the Web part.
12. The available Webcenter pages are displayed in the area "Link to Webcenter pages".
    Click to assign the Web part to one or several Webcenter pages.
13. Click "OK" to confirm your entries.

Result

The messages are output in a table.



Number	Status	Date/Time	Milliseconds	Type
1	+	4/3/2008 8:59:31 AM	468	Time
2	+	4/3/2008 8:59:32 AM	125	Time
3	+	4/3/2008 8:59:32 AM	921	Time
3	-	4/3/2008 8:59:33 AM	640	Time
2	-	4/3/2008 8:59:34 AM	265	Time
1	-	4/3/2008 8:59:35 AM	46	Time
2	*	4/3/2008 8:59:35 AM	499	Time
2	+	4/3/2008 8:59:35 AM	500	Time
2	*	4/3/2008 8:59:35 AM	656	Time
3	*	4/3/2008 8:59:36 AM	202	Time
3	+	4/3/2008 8:59:36 AM	203	Time
2	-	4/3/2008 8:59:36 AM	718	Time
1	*	4/3/2008 8:59:37 AM	467	Time
1	+	4/3/2008 8:59:37 AM	468	Time

Operation:

	In absolute time required to scroll forward or backward in the selected time range.
Arrow buttons	To scroll forward or backward in multi-page tables.
	Export alarms in CSV format.
	Changing the settings of the Web part.

See also

Alarm Log Column Names (Page 433)

3.2.5.4 Alarm Log Column Names

Introduction

You can select the alarm log columns while displaying alarms in "Trends & Alarms".

Overview of column names

Position	Name	Type	Comments
1	MsgNo	Integer 4 Bytes	Message number
2	State	Small Integer 2 Bytes	Alarm Log Status
3	DateTime	DateTime 8 Bytes	Time stamp of message (Date/time without millisec-onds)
4	Ms	Small Integer 2 Bytes	Time stamp of message (milliseconds)
5	Instance	VarChar (255)	Instance Name of the Alarm Log
6	Flags1	Integer 4 Bytes	(only for internal use)
7	PValueUsed	Integer 4 Bytes	Process Values used
8 to 17	PValue1 to PValue10	Real 8 Bytes	Numerical Process Value 1 to 10
18 to 27	PText1 to PText10	VarChar (255)	Process Value Text 1 to 10
28	ComputerName	VarChar (255)	Computer Name
29	Application	VarChar (255)	Application Name
30	Comment	VarChar (255)	Comments
31	UserName	VarChar (255)	User Name
32	Counter	Integer 4 Bytes	Running Alarm Message Counter
33	TimeDiff	Integer 4 Bytes	Time difference to "Came in" status
34	ClassName	VarChar (255)	Name of the alarm class
35	Type name	VarChar (255)	Name of the alarm type
36	Class	Small Integer 2 Bytes	Message class ID
37	Type	Small Integer 2 Bytes	Message type ID
38 to 47	Text1 to Text10	VarChar (255)	Message Text 1 to 10
48	AG_NR	Small Integer 2 Bytes	Number of the PLC
49	CPU_NR	Small Integer 2 Bytes	Number of the CPU
50	CrComeFore	Integer 4 Bytes	Foreground Color for the "Came in" Status
51	CrComeBack	Integer 4 Bytes	Background Color for the "Came in" Status
52	CrGoFore	Integer 4 Bytes	Foreground Color for the "Went out" Status
53	CrGoBack	Integer 4 Bytes	Background Color for the "Went out" Status
54	CrAckFore	Integer 4 Bytes	Foreground Color for the "Acknowledged" Status
55	CrAckBack	Integer 4 Bytes	Background Color for the "Acknowledged" Status
56	LocalID	Integer 4 Bytes	Location of the Alarm
57	Priority	Integer 4 Bytes	Priority
58	AP_type	Integer 4 Bytes	Loop-in alarm
59	AP_name	VarChar (255)	Loop-in-Alarm Function Name
60	AP_PAR	VarChar (255)	Loop-in-Alarm Screen
61	InfoText	VarChar (255)	Info text
62	TxtCame	VarChar (255)	Text came in
63	TxtWent	VarChar (255)	Text went out
64	TxtCameNWent	VarChar (255)	Text came in and went out
65	TxtAck	VarChar (255)	Text acknowledged
66	AlarmTag	Integer 4 Bytes	Message tag

Position	Name	Type	Comments
67	AckType	Small Integer 2 Bytes	Acknowledgment Type
68	Params	Integer 4 Bytes	Parameter

3.2.5.5 Displaying the hit list of messages

Introduction

Use "Trends & Alarms" to display the hit list of alarms in a table.

Note

The display of alarms in the hit list may take some time and may place a strong load on the CPU. A message is displayed in "Trends & Alarms" if the data volume is too high.

Confirm this message to continue without changes. If you want to reduce the data volume, stop the process and change the filter criteria.

Requirement

- Connection to the WinCC data is established.
- The start page of the DataMonitor is open.

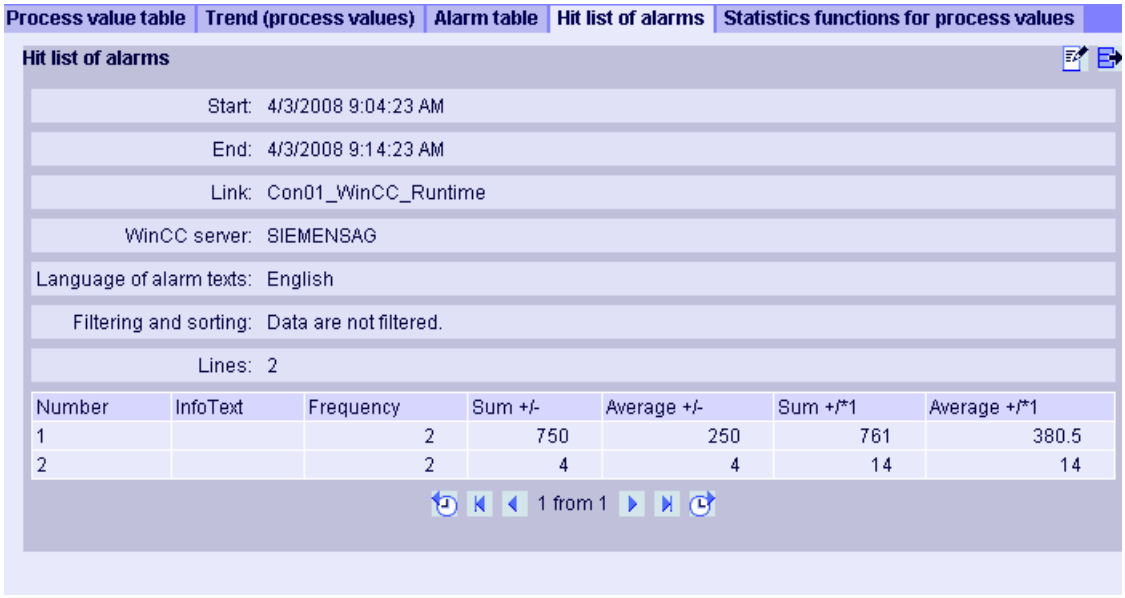
Procedure

1. Click "Trends & Alarms" on the start page.
2. Select the "Hit list of the alarms" tab. The web part "Hit list of the alarms" is displayed.
3. Click . The configuration dialog of the web part opens.
4. Change the title in the "Title" field. Enter a short message in the "Tooltip" field.
5. Select one of the configured connections in the "Connection" field.
6. Set the time range in the area "Time period". With relative times, enter a negative value into the respective field. For more information on entering time, click ?.
   Click "Preview" to check the set time range in the column "Preview Time Range".
7. In the section "Language of the alarm texts", select the language, in which the alarms are displayed.
8. Select the respective WinCC server with "Selection of WinCC server". The setting is necessary if you select a connection to swapped archives that include archives of several WinCC servers.
9. In the section "Filter selection", you may limit the expected search results with SQL syntax. Set the filter conditions for individual columns to do so. Enter the filter condition for all columns in the "Extended Filter" field. For more information on filter conditions, click ?.

10. For representation of the data set the following:
    - Sort order: For more information on sorting, click ?.
    - Visible columns: To display all columns, click "Select All".
    - Number of decimal places.
11. In the "Table size" area, define the size of the display window.
    If the value "0" is entered in both fields, the size is determined automatically. The size depends on the space requirement of the web part.
12. The available Webcenter pages are displayed in the area "Link to Webcenter pages". Click to assign the web part to one or several Webcenter pages.
13. Click "OK" to confirm your entries.

Result

The analysis values for the alarms are displayed in a hit list.



The table includes configured data and statistical values, such as the frequency of the alarm.

If you move the mouse above the column header, an explanation is displayed in a tooltip.

Operation:

	In absolute time required to scroll forward or backward in the selected time range.
Arrow buttons	To scroll forward or backward in multi-page tables.
	Export alarms in CSV format.
	Changing the settings of the web part.

3.2.5.6 Displaying statistics function for process values

Introduction

Use "Trends & Alarms" to display the statistics functions for process values in a table.

Requirement

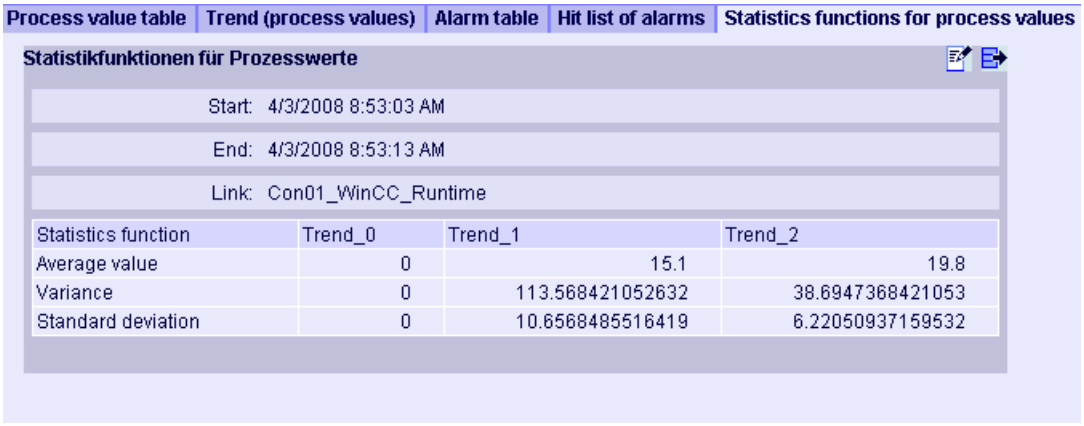
- The connection to the WinCC data is established.
- The start page of the DataMonitor is open.

Procedure

1. Click "Trends & Alarms" on the start page.
2. Click on the "Statistics functions for process values" tab. The web part "Statistics functions for process values" is displayed.
3. Click . The configuration dialog of the web part opens.
4. Change the title in the "Title" field.
   Enter a note in the "Tooltip" field.
5. Select one of the configured connections in the "Connection" field. The archive tags available via this connection will be displayed.
   You can limit the number of tags displayed using the "Archive selection" and "Tag filter" fields.
6. Click "Add" for the required archive tag.
7. Set the time range in the area "Time period".
   With relative times, enter a negative value into the respective field. For more information on entering time, click .
   Click "Preview" to check the set time range in the column "Preview Time Range".
8. For representation of the data set the following:
   - Number of decimal places
   - Aggregate selection: Define the analysis function for the process values.
9. In the "Table size" area, define the size of the display window.
   If the value "0" is entered in both fields, the size is determined automatically. The size depends on the space requirement of the web part.
10. The available Webcenter pages are displayed in the area "Link to Webcenter pages". Click to assign the web part to one or several Webcenter pages.
11. Click "OK" to confirm your entries.

Result

Statistics functions for the selected process values were executed and output in the table.



If you move the mouse above the column header, the archive name and the tag name are displayed in a tooltip.

You can export the displayed table in CSV format using the icon.

To change the settings, click .

3.2.6 Working with Excel Workbook

3.2.6.1 Configuring the Excel workbook

Applying data from WinCC project

Introduction

You need the WinCC configuration data for the configuration of Excel workbooks. This means you apply the data from a local WinCC project during configuration in the "Excel Workbook Wizard" .

Requirement

- Server computer
  - Microsoft Office is installed.
  - The Excel add-in "Excel Workbook" is installed.
  - The DataMonitor server is installed.
  - The WinCC project is in Runtime.
  - A user is created in WinCC.
- Configuration PC
  - Microsoft Office is installed.
  - The Excel add-in "Excel Workbook Wizard" is installed.
- MS Office
  - Only Excel files with extensions "XLS, "XLSX, "XLSB", and "XLSM" may be used.

Procedure

1. Open an empty Excel workbook.
   Select the command "Excel Workbook Wizard" in the "DataMonitor" menu.
2. Activate the option "Establish connection with WinCC server". The "WinCC Server" field is shown.
3. Enter the desired name of the server and click "Connect". The log in dialog is displayed.
4. Enter the name and password of a WinCC user.
5. Click "Next". The "Add / delete tags" dialog opens.

Result

The Excel workbook is set up to configure the display of process data. Then publish the workbook. The workbook is made available on the DataMonitor client as report tool or as template for "Reports".

Note

Language for the Office package and the Windows Regional Settings

Make sure that the language is the same for the Office package, the "Microsoft Office Language Settings", and the Windows Regional Options.

Examples:

- If you are using Office with language "English (U.K.)", select the regional setting "English (United Kingdom)".
- If you have set "Chinese (PRC)" as the region and language option in Windows, you must also select "Chinese (PRC)" as the primary editing language in the "Microsoft Office Language Settings".

More information can be obtained through Microsoft Support: http://support.microsoft.com/kb/320369/en (http://support.microsoft.com/kb/320369/en)

See also

Configuring the display of tag values (Page 323)

Configuring the display of archive tags (Page 327)

Configuring the display of alarms (Page 331)

Applying data from a configuration file

Introduction

You can create reports without connection to the WinCC server.

Configuration steps:

- Create a configuration file on the server.
- Configure data access with the configuration file.
- You can also configure the data access of a dedicated Web server / WinCC client.

Requirement

- Server computer
  - The DataMonitor server is installed.
  - The online tags of the WinCC project are part of one tag group or one structure type.
  - The WinCC project is in Runtime.
  - A user is created in WinCC.
- Configuration PC
  - Microsoft Office is installed.
  - The Excel add-in "Excel Workbook Wizard" is installed.
- MS Office
  - Only Excel files with extensions "XLS, "XLSX, "XLSB", and "XLSM" may be used.

Creating a configuration file on the server

1. Select the entry "WebNavigator" in the navigation window of WinCC Explorer.
   Open the menu command "Export Configuration Data" in the shortcut menu.
2. Specify the data to be exported in the "Export configuration data" dialog.
   If you do not want to create the online tags in one tag group or one structure type, use the "Without structure (fast export)" option for the export.
3. Specify the path and the name of the XML file.
4. Click "Export". An XML file is generated.
5. If no Excel installation exists on the server, transfer the XML file to another computer, on which Excel and the "Excel Workbook Wizard" are installed.

Configuring data access with configuration file

1. Open an empty Excel workbook on the computer with Excel.
   Select the command "Excel Workbook Wizard" in the "DataMonitor" menu.
2. Activate the option "Load configuration data from file". Click "Next".
3. Navigate to the desired XML file.
4. Click "Next". The "Add / delete tags" dialog opens.

Result

The Excel workbook is set up to configure the display of process data. Then publish the workbook. The workbook is made available on the DataMonitor client as report tool or as template for "Reports".

Configuring data access of a dedicated Web server / WinCC client via XML file

If you want to display the project data from a dedicated Web server / WinCC client in the Excel workbook, you need to observe the following when configuring the Excel workbook via an XML file:

- The XML file now includes the data of subordinate servers whose packages are located on the DataMonitor server. The export of the loaded packages to the dedicated DataMonitor server / WinCC client can take several minutes, depending on the size of the package.
- This XML file must be available on the Excel configuration computer. Enter the server prefix when importing the configuration data in the "Excel Workbook Wizard".
- If you configure the data display in the Excel workbook on the WinCC client in the WinCC project, you do not have to specify a server prefix. The server prefix is automatically used when data is inserted from the package.

Note

Language for the Office package and the Windows Regional Settings

Make sure that the language is the same for the Office package, the "Microsoft Office Language Settings", and the Windows Regional Options.

Examples:

- If you are using Office with language "English (U.K.)", select the regional setting "English (United Kingdom)".
- If you have set "Chinese (PRC)" as the region and language option in Windows, you must also select "Chinese (PRC)" as the primary editing language in the "Microsoft Office Language Settings".

More information can be obtained through Microsoft Support: http://support.microsoft.com/kb/320369/en (http://support.microsoft.com/kb/320369/en)

See also

Configuring the display of tag values (Page 323)

Configuring the display of archive tags (Page 327)

Configuring the display of alarms (Page 331)

Publishing the Excel workbook (Page 336)

Configuring the display of tag values

Introduction

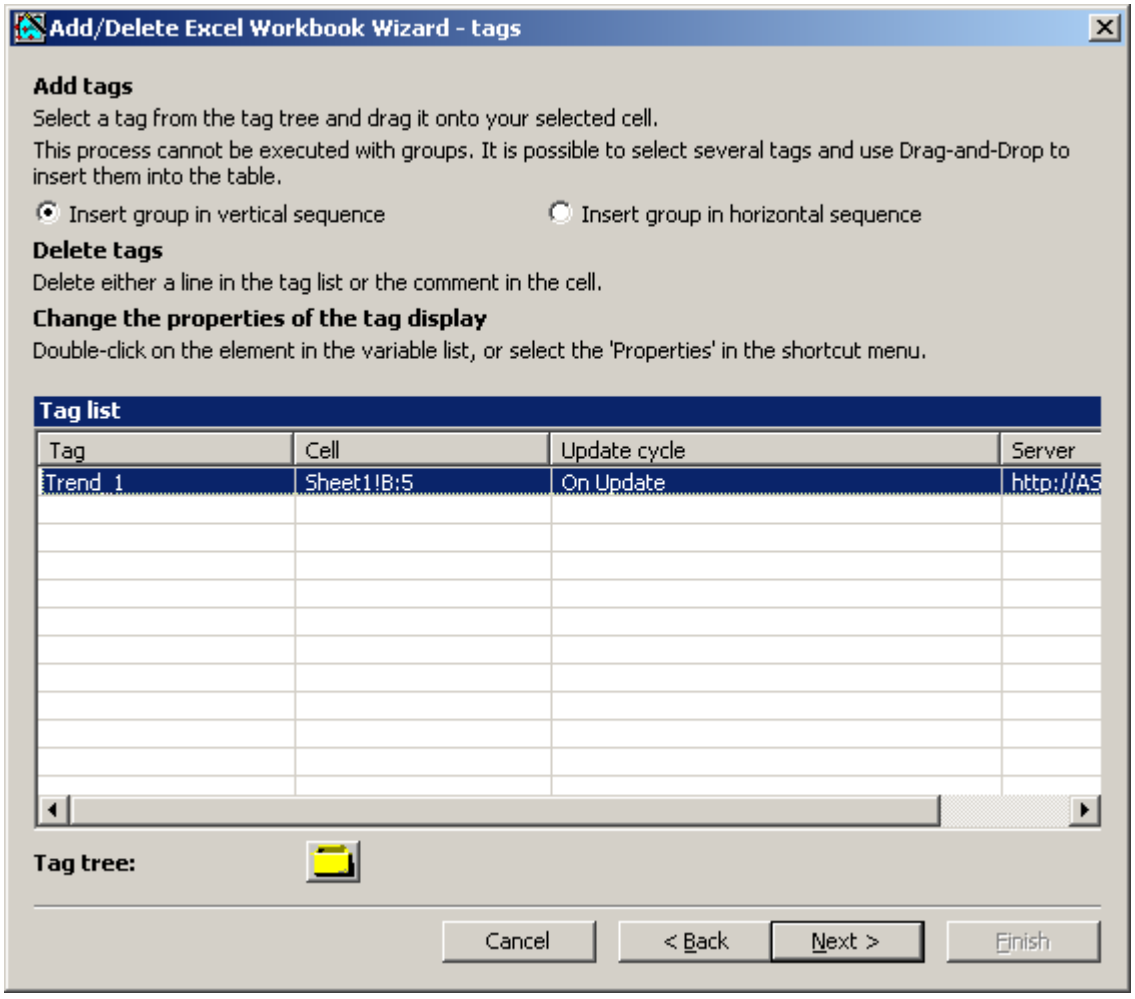
This chapter describes how to configure the display of tag values.

Requirement

- The "Excel Workbook Wizard" is started and an Excel workbook is configured.
- The dialog "Add/delete tags" is open.

Procedure

1. Check the add sequence of tag groups in the "Adding tags" area.



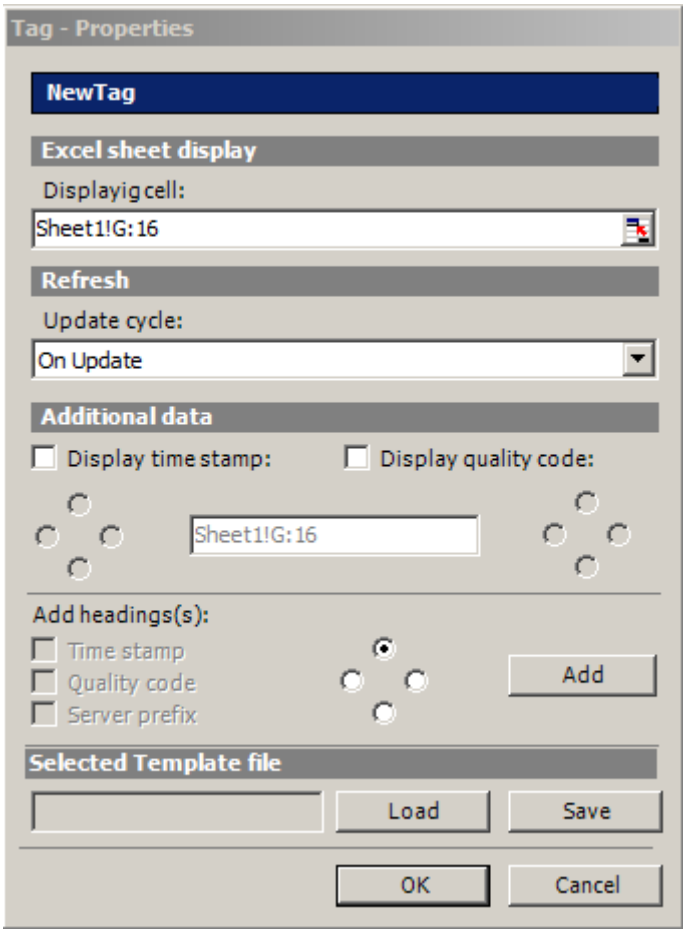
2. Click on . The tag selection dialog opens.
3. Select the required tag and move the tag into a field in the Excel table with drag-and-drop.
4. Close the selection dialog. The tag is displayed in the tag list.

5. Select the tag in the tag list and select the "Server settings" entry in the shortcut menu.



6. Enter the name and password of a WinCC user in the "Server setting" dialog.
   To avoid an additional login during online display of process data, enable "Activate automatic login".
   Confirm your entries with "OK".

7. Select the tag in the tag list and select the "Properties" entry in the shortcut menu.
   The dialog "Tag properties" will be opened.



8. You set the properties for the display in the table. For example, the update cycle or the display of time stamp and quality code.
9. Specify settings for the headings.
10. You can save the settings to the properties. You can then load the settings and use them again after exiting Excel and opening it again. Click "Save" to save the settings in an "xml" file.
11. Confirm your entries with "OK". If necessary, repeat the procedure for additional online tags. The settings for the properties will be used again. Multiple selection of tags is also possible in the tag list.
12. Click "Next" to display archive tags and alarms.
    Additional information is available under "Configuring display of archive tags (Page 327)" and "Configuring display of alarms (Page 331)".

Result

The display of tag values is configured in the Excel workbook. Once you have saved the properties, you can use the settings whenever you need to.

Each table field receives a short text and a comment in the Excel workbook.

The short text "OV" in tag values stands for online tags. In the comments, the source of the displayed values is shown in the format "WDWO_<number>_<tagname>".

Note

Running the Excel Workbook Wizard again

You need to run the Excel Workbook Wizard again:

- after deleting or moving cells with configuration data.
- after deleting or inserting new rows or columns in the Excel workbook.

The configuration data is checked and automatically adapted as a result. Confirm the data displayed with "Next". Save the workbook and close Excel.

Tags with local computer updating are not supported

In multiple station projects, you can activate the "Computer-local update" option in the tag management for internal tags. Any change of the tags only has an effect on the local computer in this case. This function is not supported by Excel Workbooks.

See also

Publishing the Excel workbook (Page 336)

Configuring the display of archive tags

Introduction

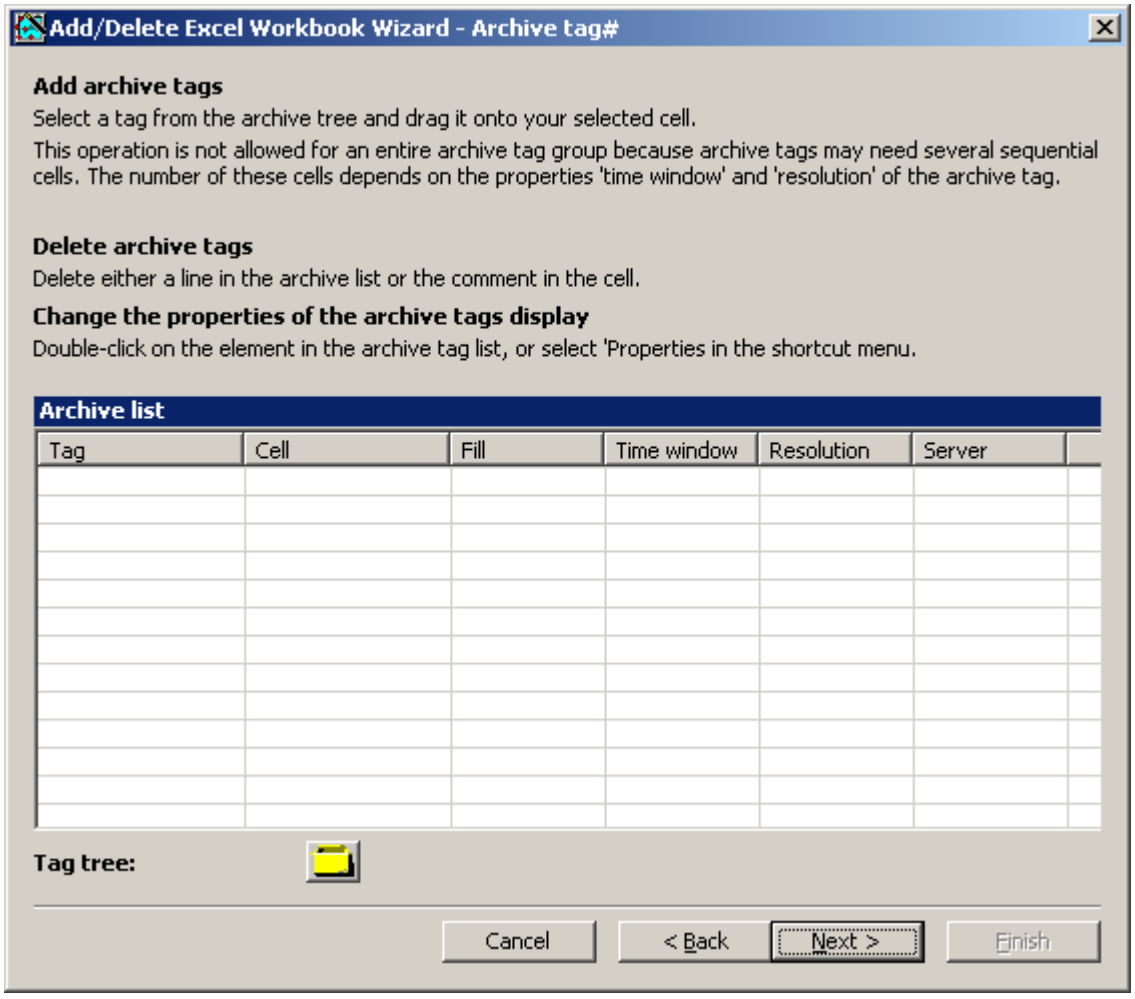
This chapter describes how to configure the display of archive tags.

Requirement

- The "Excel Workbook Wizard" is started and an Excel workbook is configured.
- The "Add/delete archive tags" dialog is open.

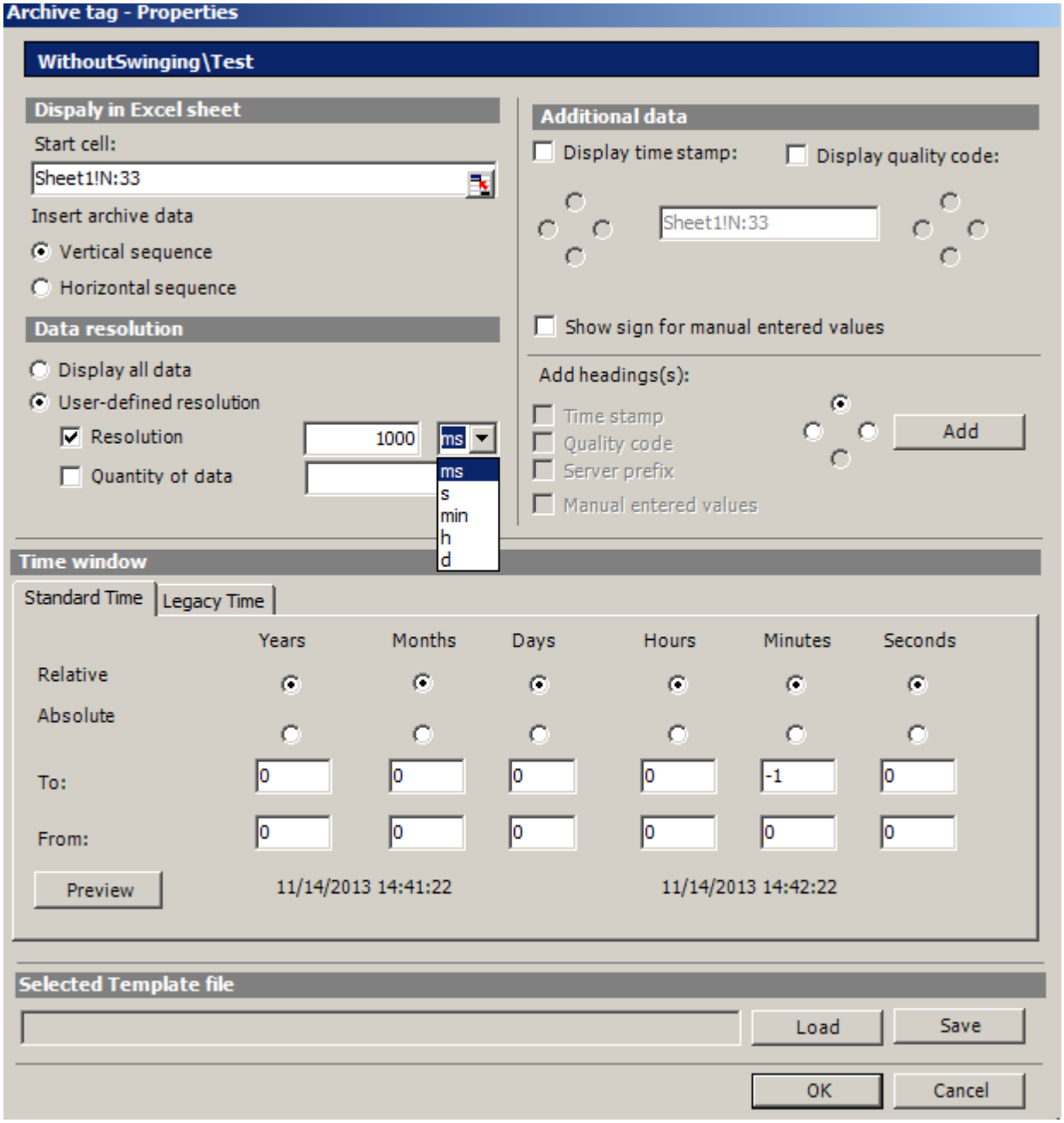
Procedure

1. Click  in the dialog "Add/delete archive tags".



2. The tag selection dialog opens.
   Select the desired archive tag.
   Drag the tag to a cell in the Excel table with drag-and-drop.
3. Close the selection dialog. The tag is displayed in the tag list.

4. Select the archive tag in the tag list, and select the "Properties" entry in the shortcut menu. The "Archive tag properties" dialog opens.



5. Specify the settings for the insertion sequence and headings.

6. Specify how much data you want to display. For a user-defined resolution, specify an integer number and the time unit or specify the quantity of data.

   Note

   If you use a user-defined data resolution with a combination of "Resolution" and "Quantity of data", it is possible that the amount of extracted data is not correctly determined. This results under certain circumstances in a mismatch between the displayed values and the configured quantity of data.

   If you use the option "Quantity of data" in "User-defined resolution", enter an even value in the input box. Even values ensure a trend-true display.

7. In the "Time window" box, specify the time window from which you want to display archive tags:

- The time settings on the "Standard time" tag are based on the standard times:
  - The settings for the relative time period refer to a period starting from the current time. You can enter positive and negative values for the past time period in the lines "From" and "To". For example, it is 12:00 (noon). You want to display the values for the last ten minutes. Activate all time options in the "Relative" line. Enter the value "-10" in the "Minutes" column of the "From" line.
  - For settings of the absolute time period, enter the corresponding time parameters in the "From" and "To" lines and in the corresponding columns.

  Click on the "Preview" button to check the time range set.
- You can define a time window yourself or set a fixed interval, for example, "last week", on the "Legacy time" tab. If you want to define a time window yourself, you have the following possible settings:
  - Relative time window: Specify the starting point and the duration. You can specify a duration ranging from a minute to days.
  - Absolute time window: Specify the start and end of the time window.

1. If you select the option "Display manually entered values", an additional column is displayed. You then see the letter "m" if an archived value was manually entered during runtime.
2. You can save the settings to the properties. You can then load the settings and use them again after exiting Excel and opening it again. Click "Save" to save the settings in an "xml" file.
3. Confirm your entries with "OK".
   If necessary, repeat the procedure for additional archive tags. The settings for the properties will be used again. Multiple selection of tags is also possible in the tag list.
4. Click "Next" to display alarms. For more information, refer to "Configuring display of alarms (Page 331)".

Result

The display of archive tag values is configured in the Excel workbook. Once you have saved the properties, you can use the settings whenever you need to.

Each table field receives a short text and a comment in the Excel workbook.

The short text "AV" in tag values stands for archive tags. In the comments, the source of the displayed values is shown in the format "WDWA_<number>_<tagname>".

Note

Running the Excel Workbook Wizard again

You need to run the Excel Workbook Wizard again:

- after deleting or moving cells with configuration data
- after deleting or inserting new rows or columns in the Excel workbook

The configuration data is checked and automatically adapted as a result. Confirm the data displayed with "Next". Save the workbook and close Excel.

See also

Publishing the Excel workbook (Page 336)

Configuring the display of alarms

Introduction

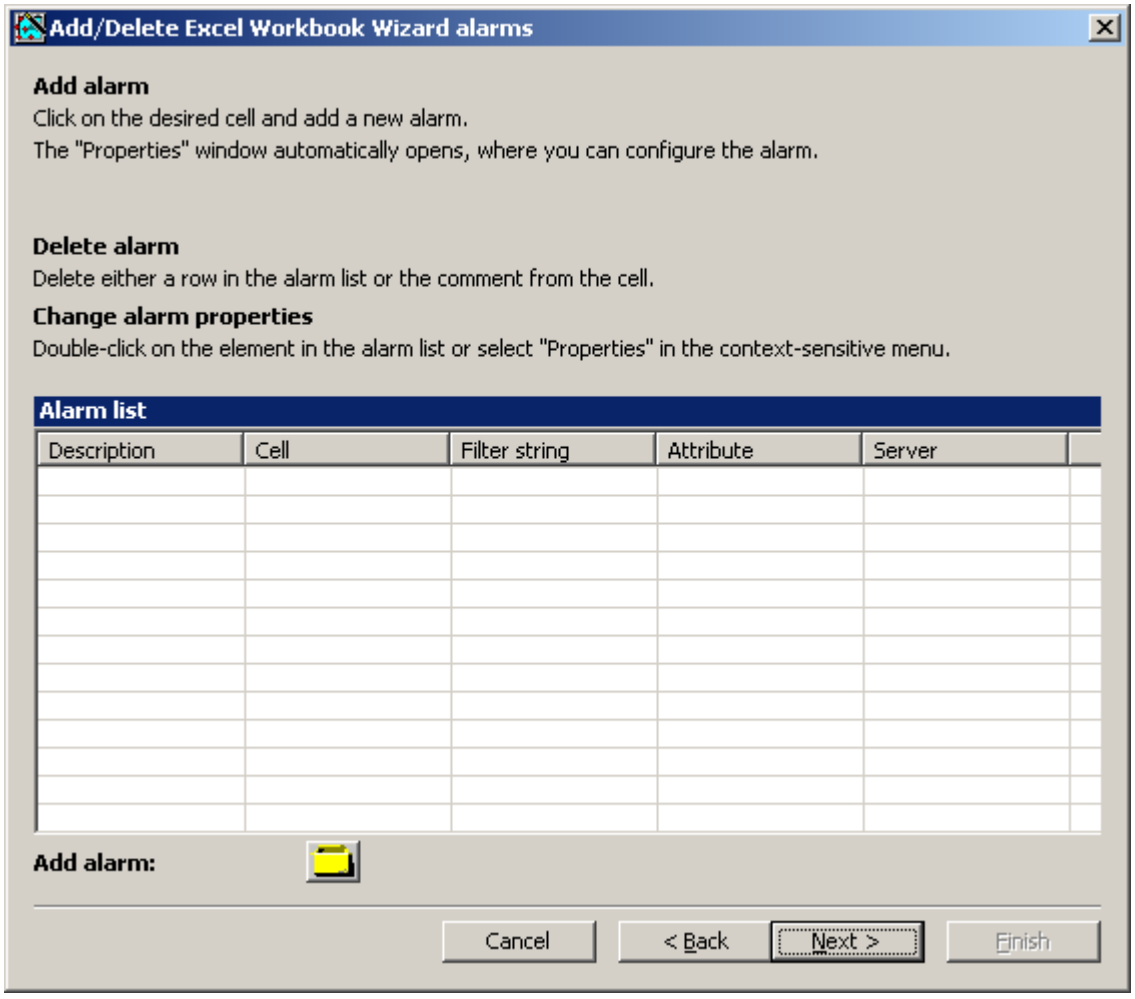
This chapter describes how to configure the display of alarms.

Requirement

- The "Excel Workbook Wizard" is started and an Excel workbook is configured.
- The "Add/delete alarms" dialog is open.

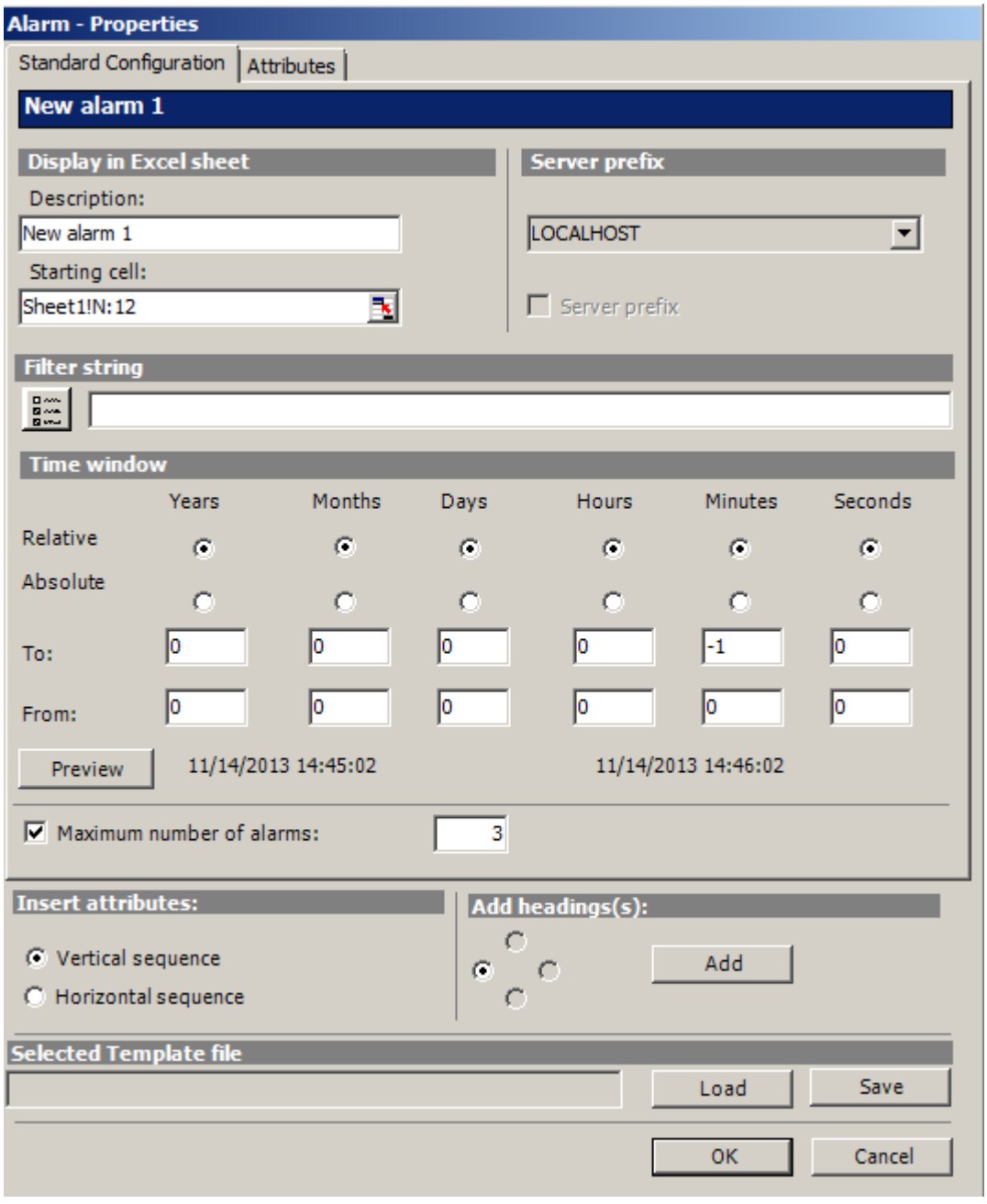
Procedure

1. Configure the alarms in the dialog "Add/delete alarms".



2. Select the required cell in the Excel table.

3. Click . The "Alarm - properties" dialog opens.

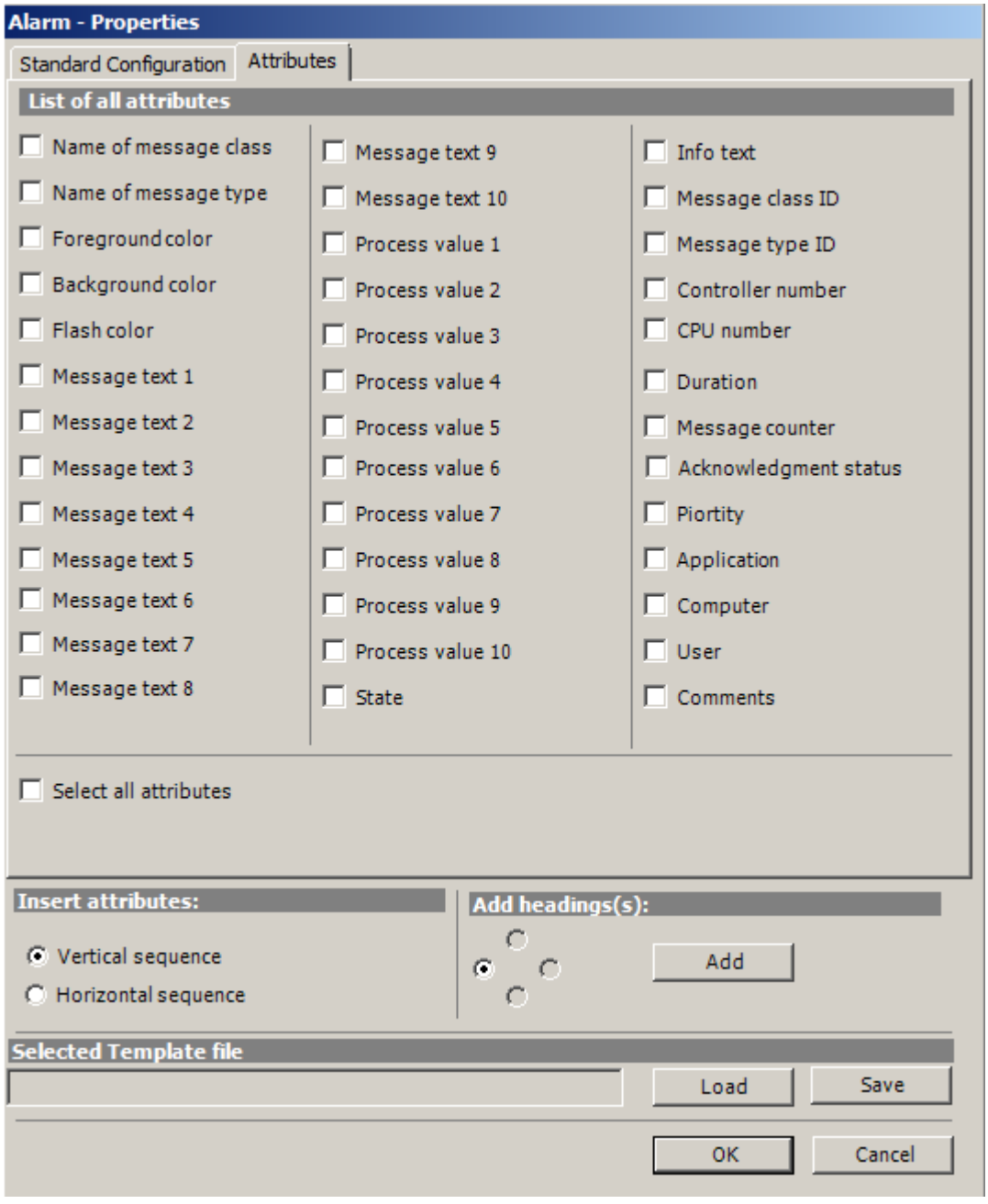


4. On the "Standard configuration" tab, define the display options for alarms in the Excel table.
5. Enter a filter condition in the "Filter string" box or use the selection dialog to define a filter, for example, to display only specific alarms. If the filter contains a date or time, the "Time window" box is disabled.

6. In the "Time window" box, specify the time window from which you want to display alarms:
   - The settings for the relative time period refer to a period starting from the current time. You can enter positive and negative values for the past time period in the lines "From" and "To". For example, it is exactly 12:00. You want to display the alarms for the last ten minutes. Activate all time options in the "Relative" line. Enter the value "-10" in the "Minutes" column of the "From" line.
   - For settings of the absolute time period, enter the corresponding time parameters in the "From" and "To" lines and in the corresponding columns.

   Click on the "Preview" button to check the time range set.
7. Use the "Maximum number of alarms" option to limit the number of most recent alarms displayed. You can display maximum 1,000 messages.

8. On the "Attributes" tab, select the required attributes of the alarms that you want to display. Further details can be found in "Alarm attributes (Page 459)".



9. Specify the settings for the attribute insertion sequence and headings.
10. You can save the settings to the properties. You can then load the settings and use them again after exiting Excel and opening it again. Click "Save" to save the settings in an "xml" file.
11. Confirm your entries with "OK".
    If necessary, repeat the procedure for additional alarms. The settings for the properties will be used again. Multiple selection of alarms is also possible in the "Alarm list".

12. Click "Next". The "Description" dialog box opens.
13. You can enter a comment if needed. This comment is displayed when selecting files provided for download by the DataMonitor server.

Result

The display of alarms is configured in the Excel workbook. Once you have saved the properties, you can use the settings whenever you need to.

Each table field receives a short text and a comment in the Excel workbook.

The short text for alarms is "AL". In the comments, the source of the displayed alarm is shown in the format "WDWL_<number>_<box name>".

Note

Running the Excel Workbook Wizard again

You need to run the Excel Workbook Wizard again:

- after deleting or moving cells with configuration data
- after deleting or inserting new rows or columns in the Excel workbook

The configuration data is checked and automatically adapted as a result. Confirm the data displayed with "Next". Save the workbook and close Excel.

See also

Publishing the Excel workbook (Page 336)

Publishing the Excel workbook

Introduction

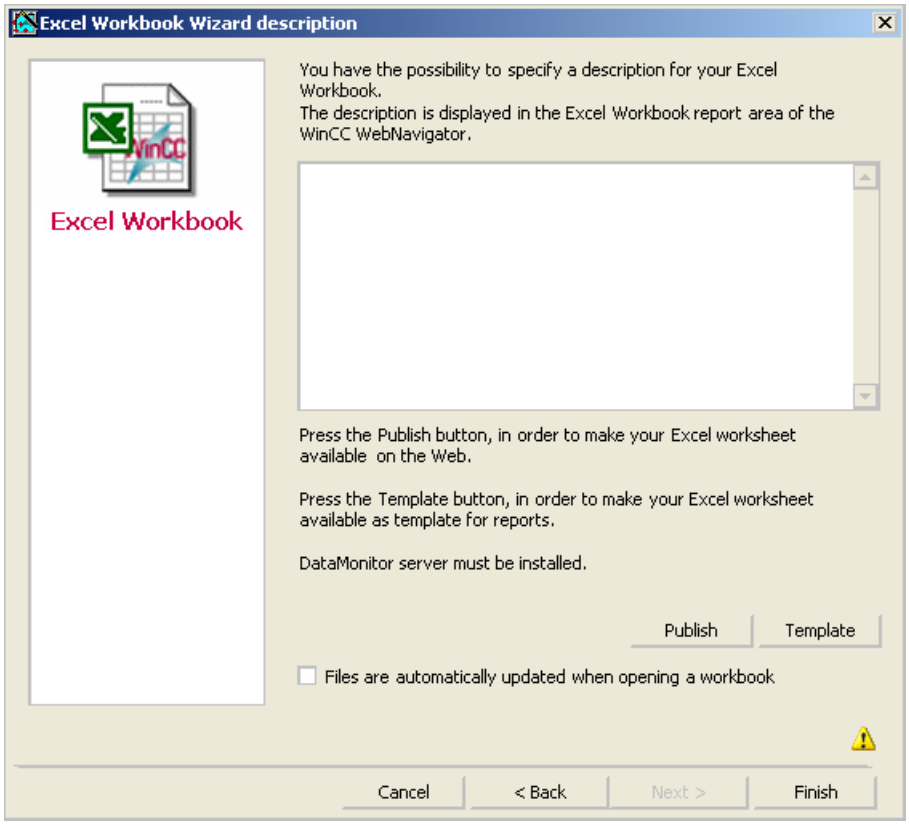
You make the configured Excel workbooks available on the DataMonitor client. The workbooks are published as report tool for the Intranet/Internet or used as template for "Reports".

Requirement

- The DataMonitor server is installed on the computer.
- The display of tag values, archive values and alarms is configured.
- The "Description" dialog is open in the "Excel Workbook Wizard".

Procedure

1. You make the workbooks available in the "Description" dialog.



2. If you click "Publish", the Excel workbook is made available on the DataMonitor client under "Report tools" in "Reports".
   If you click "Template", the Excel workbook is made available on the DataMonitor client as template in "Reports" under "Excel Workbooks".
3. Exit the Excel Workbook-Wizard.
4. Save the workbook and close Excel.

Alternative Procedure

You upload the Excel workbooks on the DataMonitor client. Additional information is available under "Making Excel workbooks available as template (Page 461)" and "Making Excel workbooks available as report tool (Page 463)".

Result

The Excel workbooks are made available on the DataMonitor client:

- The workbook is available on the "Report tools" tab. You can use the workbook to display process data in runtime. For more information, refer to "Displaying process data in an Excel workbook (Page 457)".
- You can create time-controlled and event-controlled reports using the workbook as template. For more information, refer to "Creating reports with an Excel workbook (Page 466)".

See also

Configuring the display of tag values (Page 323)

Configuring the display of archive tags (Page 327)

Configuring the display of alarms (Page 331)

3.2.6.2 Displaying process data in an Excel workbook

Introduction

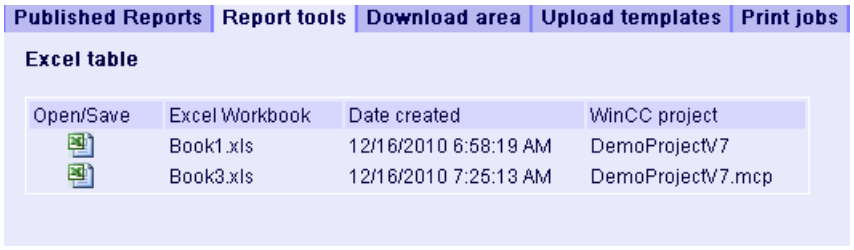
You can display process values or archive values and alarms in an available Excel workbook. You can edit and save the workbook.

Requirement

- The Excel workbooks were made available as report tool.
- MS Excel for online display in the Excel workbook
- The DataMonitor server is installed.
- The WinCC project is in Runtime.
- The start page of the DataMonitor is open.
- A user is created in WinCC.

Procedure

1. Click "Reports" on the start page.
2. Click "Report tools".
   You see the Excel workbooks that you have published in the Excel Workbook Wizard or made available as report tool.



3. Select a workbook.
4. Double-click the icon of the Excel workbook.
5. In the dialog that follows, click "Open". The workbook is opened.
6. Select the entry "Excel Workbook" in the "DataMonitor" menu.
7. The name of the server whose process data are configured in the workbook is displayed in the "WinCC server" field.
   The "WinCC Server" field can include the following information:
   - Access via domain: The server name and the domain are listed for access outside the network domain.
   - The DataMonitor start page is the default web page: The "WinCC Server" field contains only the server name.
   - The DataMonitor start page is in the virtual folder: The server name and the name of the virtual folder are displayed, e.g. "/webnavigator".
8. If the tags in the Excel sheet are from several servers, activate "all servers". The tag values of all servers are updated in the online display.

Note

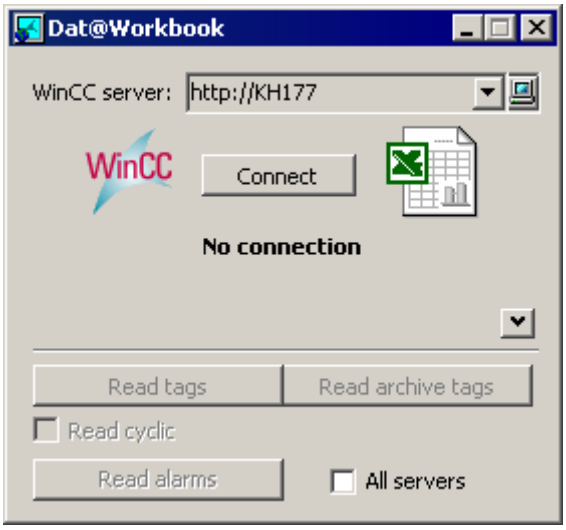
To establish connections to all servers, activate "all servers" with "Connect" before you establish the connections.

9. Activate the connection to the WinCC project via the button "Connect". After a successful connection, the log-in dialog will be opened.
   Type in the user name and associated password.
   In case of several servers, the log-in dialogs of the respective servers open one after the other.
   If a connection was not established, a corresponding alarm is displayed. Clicking on the dialog will display additional information about the error that has occurred.

Note

Do not close the "Excel Workbook" dialog as long as the log-in dialog for connection establishment to the server is still open.

10. The connection status will be displayed in the dialog.
    Click the "Read tags", "Read archive tags" and "Read alarms" buttons to update the respective values or displays.



11. Activate the check box "Read cyclically" to update the tag values in cycles.
12. Close the "Excel Workbook" dialog after finishing your calculations in Excel.
13. Save the results in the workbook with the "Save as" menu command.
14. Close Excel.

Result

The process data are displayed in the Excel workbook and can be processed further.

If errors occur during display of the Excel workbook or no connection to the WinCC server is established, the log entries are displayed in a workbook. The entries contain the date, the tags or alarms affected, the server, and the error message.

See also

Administering users for DataMonitor (Page 377)

3.2.6.3 Alarm Attributes

Introduction

When displaying alarms in "Excel Workbook" you can select the attributes to be displayed in the table in the "Excel Workbook Wizard" .

Overview

Position	Attribute	Type	Comments
1	Name of the alarm class	VarChar (255)	
2	Name of the alarm type	VarChar (255)	
3	Foreground color	Integer 4 Bytes	
4	Background color	Integer 4 Bytes	
5	Flash color	Integer 4 Bytes	
6 to 15	Message Text 1 to 10	VarChar (255)	
16 to 25	Process value 1 to 10	Real 8 Bytes	Numerical Process Value 1 to 10
26	State	VarChar (255)	Status text
27	Info text	VarChar (255)	
28	Message class ID	Integer 4 Bytes	
29	Message type ID	Integer 4 Bytes	
30	AS Number	Small Integer 2 Bytes	
31	CPU Number	Small Integer 2 Bytes	
32	Duration	Integer 4 Bytes	Time difference to "Came in" status
33	Alarm counter	Integer 4 Bytes	Consecutive alarm counter
34	Acknowledgment Status	VarChar (255)	Text of the acknowledgement status
35	Priority	Integer 4 Bytes	
36	Application		Application with which the comment was created.
37	Computer	VarChar (255)	Computer on which the comment was created.
38	Users	VarChar (255)	User who created the comment.
39	Comments	VarChar (255)	

3.2.6.4 VBA Functions of the Excel Workbook

VBA Functions of the Excel Workbook

The following functions are available to you in an Excel workbook if you have generated an instance of the Excel workbook object using the "Application.COMAddIns.Item("ExcelWorkbook.Connect").Object":

- ShowDialog(0):
  Opens the "Excel Workbook" dialog with a normal size.
- ShowDialog(1):
  Opens the "Excel Workbook" dialog with a minimized size.
- ShowDialog(2):
  Opens the "Excel Workbook" dialog hidden.
- CloseDialog:
  Closes the "Excel Workbook" dialog.
- GetServerID(server name):
  Gets the ID of the WinCC server with a specified name, for example: "http://Local_PC".

- Connect(ServerID):
  Connects the specified WinCC server to the Excel workbooks. You can get the "ServerID" using the "GetServerID(server name)" function.
  The "Excel Workbook" dialog must be opened before establishing a connection.
- ConnectAll:
  Connects all WinCC servers to Excel workbooks. The "Excel Workbook" dialog must be opened before establishing a connection.
- Disconnect(ServerID):
  Disconnects the Excel workbook from the specified WinCC server.
- DisconnectAll:
  Disconnects the Excel workbook from all WinCC servers.
- ReadTags(ServerID):
  Reads the tags from WinCC server with "ServerID". The connection must be established before tags can be read.
- ReadArchives(ServerID):
  Reads the archives from WinCC server with "ServerID". The connection must be established before archives can be read.
- ReadAlarms(ServerID):
  Reads the alarms from the WinCC server with "ServerID". The connection must be established before alarms can be read.

As soon as a connection is established or closed, the event "ServerConnected(ServerID)" or "ServerDisconnected(ServerID)" is output by the "ExcelWorkbook.Connect" object. These events can be integrated, for example, using "WithEvents" (VB standard).

3.2.7 Working with reports

3.2.7.1 Making an Excel workbook available as template

Introduction

You can make Excel workbooks available as templates to create ""Reports"". For this you have the following options:

- You publish the Excel workbooks on the WinCC server with "Excel Workbook Wizard" using the "Template" button.
- You upload an Excel workbook not yet published to the DataMonitor client.

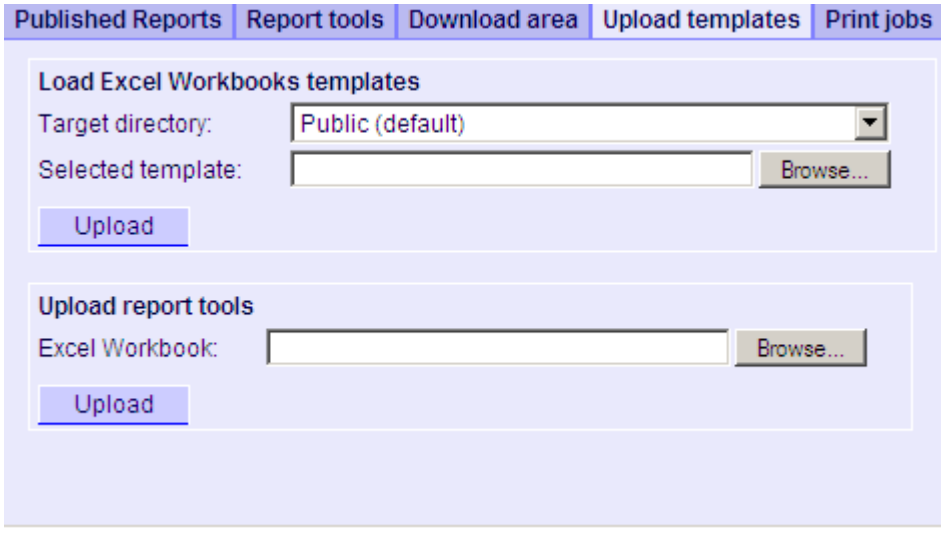
This page includes a description of how you make a template available on a DataMonitor client.

Requirement

- The Excel workbook is created.
- The file size of the Excel workbook is less than 4 MB.
- The start page of the DataMonitor is open.

Procedure

1. Click "Reports" on the start page.
2. Click the "Upload templates" tab.



3. Select a directory, in which the template will be stored in the "Target directory" field.
   Only the directories, for which the user that is logged in has "Create" access rights, can be selected.
4. Click "Find" for the "Selected template". Navigate to the desired Excel workbook.
5. Click the "Upload" button.

Result

You can create time-controlled and event-controlled reports using the workbook as template.

See also

Assigning Access Rights (Page 401)

Displaying a report with an Excel Workbook (Page 466)

Configuring the Excel workbook (Page 320)

3.2.7.2 Making an Excel workbook available as a report tool

Introduction

You can make Excel workbooks centrally available as report tools in "Reports". For this you have the following options:

- You publish the Excel workbooks on the WinCC server with "Excel Workbook Wizard" using the "Publish" button.
- You upload an Excel workbook not yet published to the DataMonitor client.

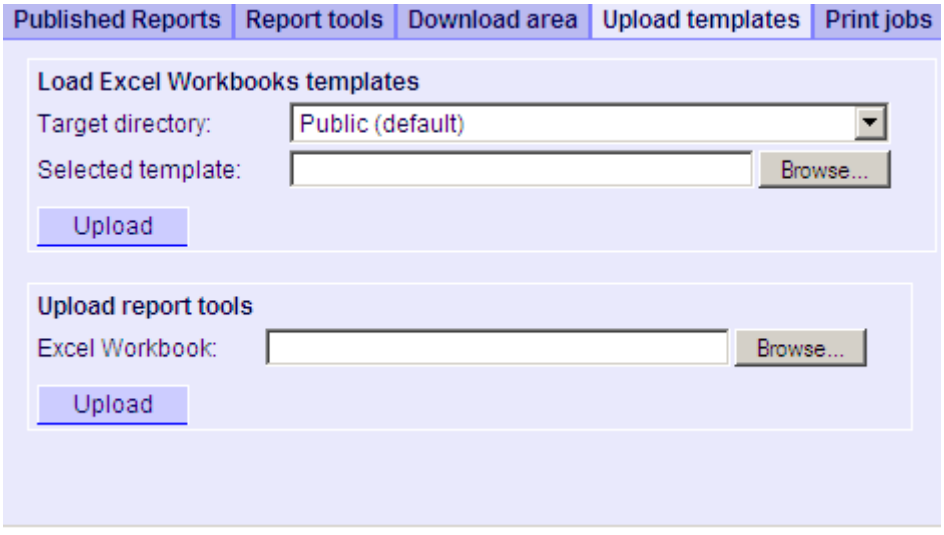
Here you find a description of how you make an Excel workbook not yet published available on the DataMonitor client.

Requirement

- The Excel workbook is created.
- The file size of the Excel workbook is less than 4 MB.
- The start page of the DataMonitor is open.

Procedure

1. Click "Reports" on the start page.
2. Click the "Upload templates" tab.



3. Click "Find" for "Uploading templates for Excel workbooks". Navigate to the desired Excel workbook.
4. Click the "Upload" button.

Result

The workbook is available on the "Report tools" tab. You can use the workbook to display process data in runtime.

See also

Displaying process data in an Excel workbook (Page 457)

3.2.7.3 Making Settings for Reports

Introduction

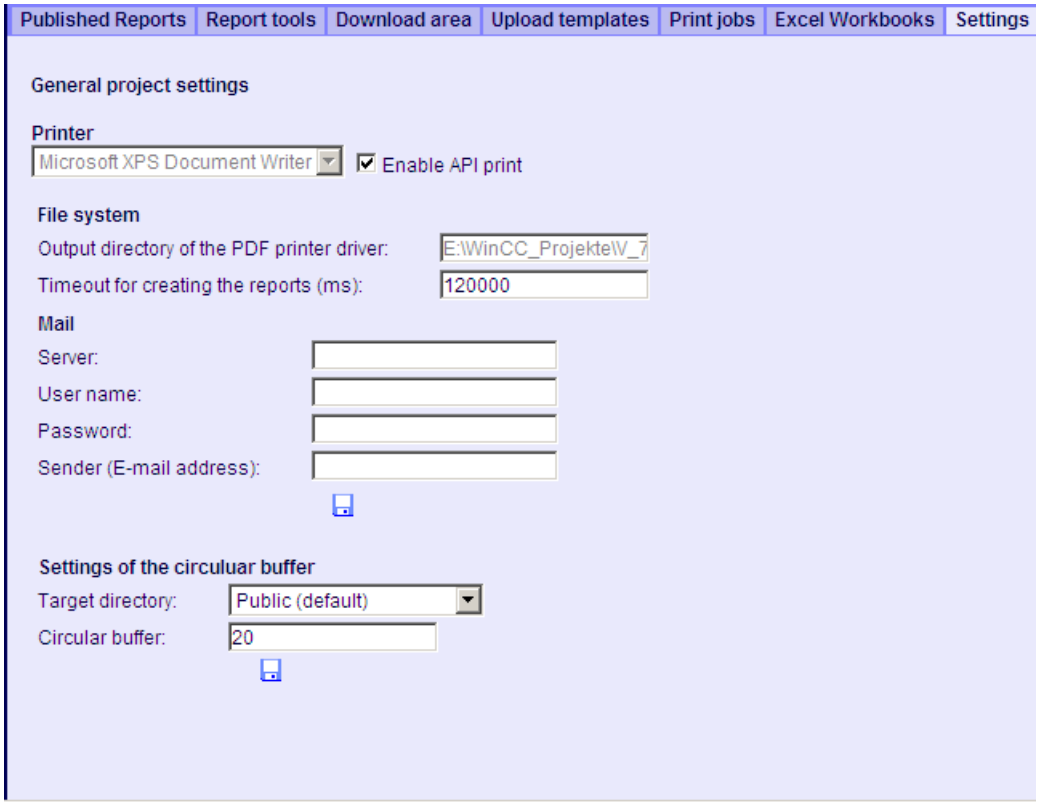
Different settings are required for using the "Reports" function in DataMonitor.

Requirement

- PDF Reader is installed.
- The WinCC project is activated on the DataMonitor server.
- The option "Report Runtime" is activated in the WinCC project in the properties of the computer.
- The start page of the DataMonitor is open.

Procedure

1. Click "Reports" on the start page.
2. Click on the "Settings" tab. The "Settings" page is displayed.



3. Check the entries in the section "General project settings".
   You can now select the printer of the Web server. Printing is only possible in files.
4. To enable the output to a PDF file, activate the option "Activate API print".
5. Enter the data for sending mail in the "Mail" area:
   - Server: Outgoing mail server (SMTP)
   - User name: Name for the sender
   - Password
   - Sender: E-mail account used to sending the e-mail
6. Click the disk icon in the section "General project settings" to save your settings.
7. In the "Settings of the circular buffer" area, you can define the number of created reports that are stored in the selected destination directory. The box has a pre-assigned value of 20. If the maximum number of reports of the same type has been reached, the "First in First out" principle applies. For example, if 21 reports of "Alarm Table" type have been created, the report that was created first is removed.
8. Click the disk icon in this section to save your settings.

Result

The settings for "Reports" have been made.

Product support - example

FAQ "51334611" on the Internet under "Product support" gives a detailed example:

- http://support.automation.siemens.com/WW/view/en/51334611 (http://support.automation.siemens.com/WW/view/de/51334611)

See also

Sending WinCC/DataMonitor reports by e-mail (http://support.automation.siemens.com/WW/view/de/51334611)

3.2.7.4 Displaying a report with an Excel Workbook

Introduction

Use "Reports" to create reports from Excel workbooks or print jobs in PDF format. The following is a description for creating reports from Excel workbooks.

Note

Information on event-controlled "Excel Workbooks"

An event-controlled report is only created if the time period in which the tag changes is greater than one minute.

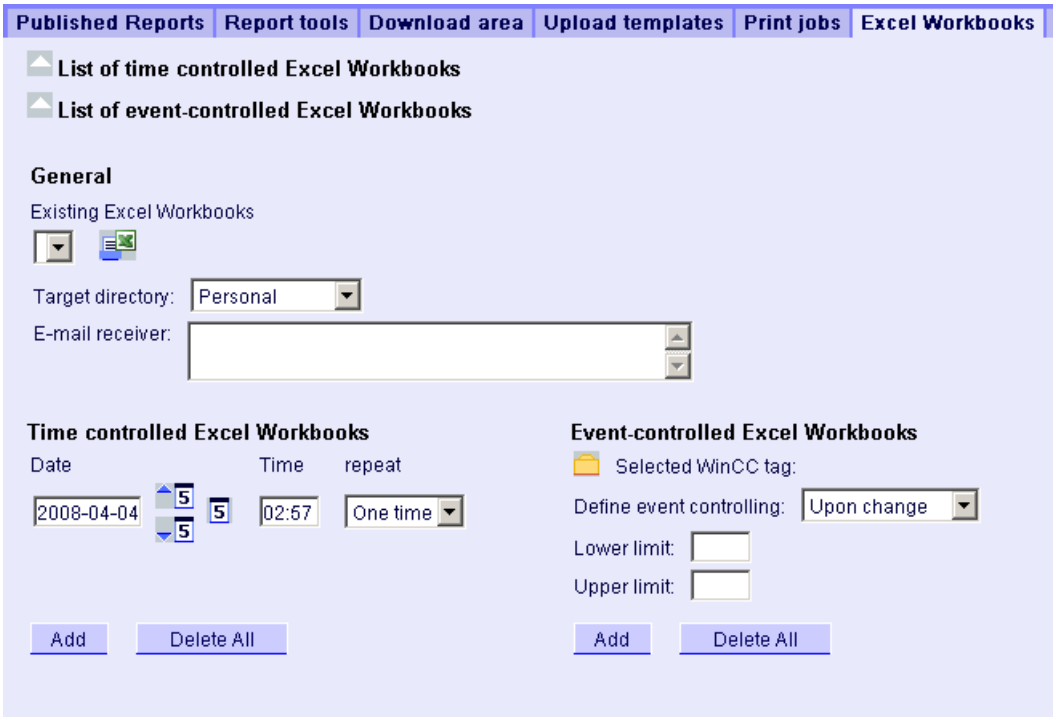
Keep in mind that the frequent creation of one or more event-controlled reports over a long period of time takes up a lot of memory and uses up valuable resources. This case occurs, for example, with frequent signal changes of a tag that triggers an event-controlled report.

Requirement

- The WinCC project is activated on the DataMonitor server.
- The option "Report Runtime" is activated in the WinCC project in the properties of the computer.
- You have already published or made available as templates the Excel workbooks you want to use.
- The start page of the DataMonitor is open.

Procedure

1. Click "Reports" on the start page.
2. Click on the "Excel Workbooks" tab.
   The "Excel Workbooks" page is displayed.
   The icons in front of "List of time-controlled Excel workbooks" and "List of event-controlled Excel workbooks" are deactivated. The icons indicate that no reports are currently configured.



3. Select one of the available Excel workbooks under "Available Excel workbooks".
4. Select the target directory in which you want to store the reports.
   Only the directories, for which the user that is logged in has "Create" access rights, can be selected.
5. If you want to send the report as an e-mail, enter the e-mail addresses in the "E-mail recipient" field. You can enter several recipients as you would with any standard e-mail program.
6. Use  to create the report immediately.
7. If you do not want to create the report immediately, configure a time-controlled or event-controlled creation of the report in the following steps.
8. To configure a time-controlled report, enter the following in the "Time-controlled Excel workbooks" area:
   - Date: Enter the date in the respective field or enter the date using the calendar. To open the calendar, click the "Calendar" icon.
   - Time: Define the time when you want the report to be created.
   - Repetition: Define the repetition rate, for example, "Once" or "Weekly".
9. Click "Add" in the "Time-controlled Excel workbooks" area.
   The report is displayed in the "List of time-controlled Excel workbooks".

10. To configure an event-controlled report, enter the following in the "Event-controlled Excel workbooks" area:
    - Selected WinCC tag:
      Click . Select the required tag in the selection dialog.
      Use the filter to limit the number of tags displayed.
    - Defining event control:
      Set the triggering event, for example, when the tag value changes.
      If you have selected "lower limit", "upper limit" or "both limits" for event control, enter the respective limits.
11. Click "Add" in the "Event-controlled Excel workbooks" area.
    The report is displayed in the "List of event-controlled Excel workbooks".

Result

A time-controlled or event-controlled report is configured as "Excel Workbook".

The configured reports are displayed in the lists of the "Excel Workbooks" . You can edit or delete the reports in the lists.

Once the report has been created, it is available in runtime on the "Published Reports" tab in the selected directory.

See also

Making an Excel workbook available as template (Page 461)

Publishing the Excel workbook (Page 336)

3.2.7.5 Creating a report with a print job

Introduction

Use "Reports" to create reports from Excel workbooks or print jobs in PDF format. The following is a description for creating reports using print jobs in PDF format.

Note

Opening Asian PDF files with Acrobat Reader

To open Asian PDF files created with "Reports", you need the country-specific version or the respective font package of Adobe Acrobat Reader.

The four Asian languages are each permanently associated with one font. This means the font settings in the report layout will not have an effect on the Asian languages.

Information on event-controlled print jobs

An event-controlled print job is only created if the time period in which the tag changes is greater than one minute.

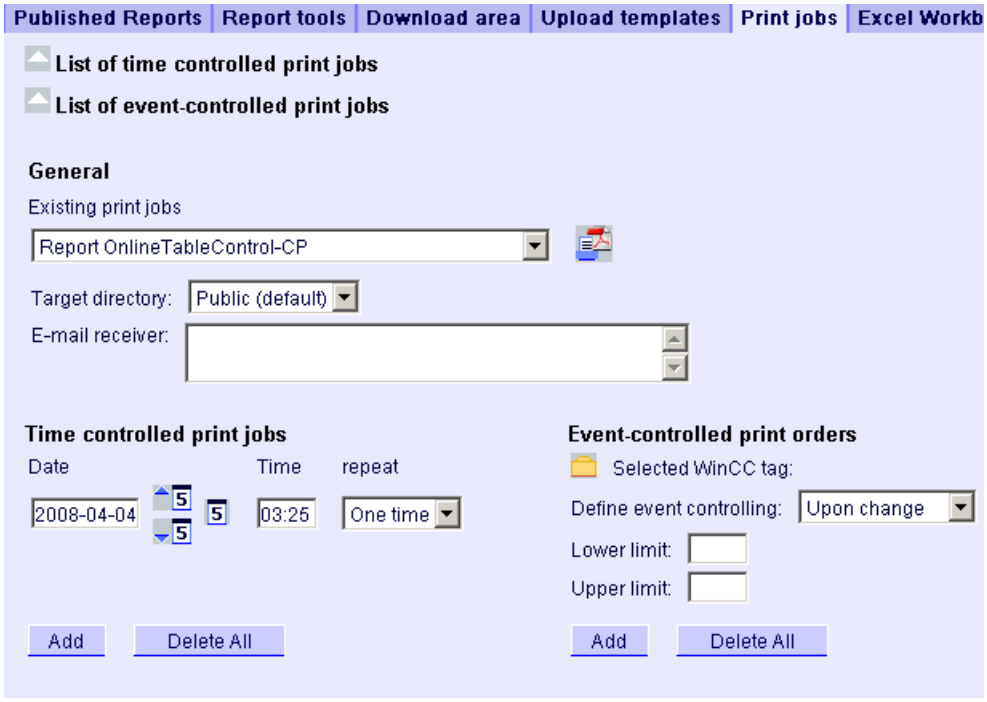
Keep in mind that the frequent creation of one or more event-controlled print jobs over a long period of time takes up a lot of memory and uses up valuable resources. This case occurs, for example, with frequent signal changes of a tag that triggers an event-controlled print job.

Requirement

- PDF Reader is installed.
- The WinCC project is activated on the DataMonitor server.
- The option "Report Runtime" is activated in the WinCC project in the properties of the computer.
- The start page of the DataMonitor is open.

Procedure

1. Click "Reports" on the start page.
2. Click on the "Print jobs" tab.
   The "Print jobs configuration" page is displayed.
   The icons in front of "List of time-controlled print jobs" and "List of event-controlled print jobs" are deactivated. The icons indicate that no print jobs are currently configured.



3. Select the desired print job under "Available print jobs".
4. Select the target directory in which you want to store the reports.
   Only the directories, for which the user that is logged in has "Create" access rights, can be selected.
5. If you want to send the report as an e-mail, enter the e-mail addresses in the "E-mail recipient" field. You can enter several recipients as you would with any standard e-mail program.
6. Use to create the report immediately.
7. If you do not want to create the report immediately, configure a time-controlled or event-controlled creation of the report in the following steps.
8. To configure a time-controlled report, enter the following in the "Time-controlled print jobs" area:
   - Date: Enter the date in the respective field or enter the date using the calendar. To open the calendar, click the "Calendar" icon.
   - Time: Define the time when you want the report to be created.
   - Repetition: Define the repetition rate, for example, "Once" or "Weekly".
9. Click "Add" in the "Time-controlled print jobs" area.
   The report is displayed in the "List of time-controlled print jobs".

10. To configure an event-controlled report, enter the following in the "Event-controlled print jobs" area:
    - Selected WinCC tag:
      Click . Select the required tag in the selection dialog.
      Use the filter to limit the number of tags displayed.
    - Defining event control:
      Set the triggering event, for example, when the tag value changes.
      If you have selected "lower limit", "upper limit" or "both limits" for event control, enter the respective limits.
11. Click "Add" in the "Time-controlled print jobs" area.
    The report is displayed in the "List of event-controlled print jobs".

Result

A time-controlled or event-controlled report is configured as print job in PDF format.

The configured reports are displayed in the lists of the print jobs. You can edit or delete the reports in the lists.

The report is created in the language that was set during WinCC configuration. The WinCC Runtime language does not have an effect on the representation of dynamic elements, such as tables.

Once the report has been created, the PDF files are available in runtime on the "Published Reports" tab in the selected directory.

WinCC/WebUX

4

4.1 WebUX - Overview

Overview

WinCC/WebUX provides a solution for the monitoring and control of the automation system, independent of device and browser.

As of WinCC V8.1, you can also use WebUX for the Basic Process Control (BPC) and Advanced Process Control (APC) options.

In the interests of process security, only HTTPS connections are supported with SSL certificates.

The employed Web technology results in constraints to the WinCC basic system. Some Graphics Designer objects and their properties are not supported. You can find more information under:

- Functions supported in WebUX (Page 489)

Working with WebUX

The following steps are necessary for the use of WinCC/WebUX:

1. Install WinCC and WinCC/WebUX on the WebUX server. (Page 481)
2. Set up a WebUX website.
3. Configure a WinCC project for WebUX. (Page 498)
4. Access the WebUX server with the terminal device. (Page 502)

Distinction WebUX - WebNavigator

WinCC/WebUX	WinCC/WebNavigator
Based on generally established Web standards	Based on ActiveX technology from Microsoft
Can be used regardless of browser. Optimized for the Chrome browser.	Only supports Microsoft Internet Explorer
Runs on a wide variety of devices, regardless of operating system, for example on tablets, PCs and smart phones.	Runs only on Windows computers.
Does not require a client installation.	Requires a client installation.
Default user rights are sufficient	Requires administrative rights to install.

Visualization in WebUX

WinCC pictures and the supported WinCC controls are displayed in the Web browser with the "HTML5" and "SVG" standards:

- The graphic elements are created with SVG elements.
- The dynamic updating of the process picture is performed via a permanent connection between the browser and server.

Note

Browser-dependent representation

Differences in display and behavior are possible in the different browser versions.

To display a configured character set, for example, this must also be available in the browser or on the device.

Performance data

The performance of the WebUX system depends on the following factors:

- Hardware of the WebUX server used
- Number of WebUX clients that access the WebUX server simultaneously
- Quantity structure of the graphic objects, tags, and scripts

Configuration

As a typical scenario, we tested the simultaneous access of 100 WebUX clients to one WebUX server.

Picture change in Runtime:

The load times during picture changes on a WebUX client are influenced by the following factors:

- Number of WebUX clients that access the WebUX server simultaneously
- Performance of the WebUX clients
- Utilized browser
  Depending on the browser, the picture setup time can vary by several seconds.
  More information on tested browsers is available on the Internet on the Customer Support pages under entry ID =109480708:
  - http://support.automation.siemens.com/WW/view/de/109480708 (http://support.automation.siemens.com/WW/view/en/109480708)
- Number of scripts in the process pictures
  Unlike with WinCC clients, all scripts are executed on the WebUX server.
- Number of graphic objects in the process pictures
- Type of graphic objects in the process pictures
  Web controls can extend the load times.

Note

Connection loss due to performance load

High performance load can result in a timeout.

The connection of the WebUX client to the WebUX server is disconnected as a result.

WinCC/WebUX - Migration

Converting process pictures and faceplates

To use process pictures and faceplate types that were created with a previous version in WebUX, convert the pictures:

1. In the data area of the "Graphics Designer" editor in WinCC Explorer, sort the files by the column "Type".
2. Open the pictures marked as "web-enabled" in the Graphics Designer.
3. Save and close the pictures.

Alternatively, convert the pictures in the WinCC Explorer.

However, all process pictures and faceplates are converted with "Tools > Convert project data". Depending on the project size, this conversion can take some time.

WinCC/WebUX V7.3

To use a project migrated from V7.3 in WebUX V7.4 and higher, convert the process pictures and project functions.

You can find more information in the WinCC Information System under: "First Steps > Migration > Additional steps during migration".

See also

Functions supported in WebUX (Page 489)

Installation of WebUX (Page 481)

Configuring a WinCC project for WebUX (Page 498)

How to use WebUX (Page 502)

http://support.automation.siemens.com/WW/view/de/109480708 (http://support.automation.siemens.com/WW/view/en/109480708)

4.2 WebUX licensing

The WinCC/WebUX basic package with an integrated WinCC WebUX Monitor license is included in WinCC.

WebUX client

The WebUX clients are licensed on the WebUX server.

No license is required for the WebUX client on the computer.

WebUX server

The WebUX server is installed on a WinCC system. The WinCC basic system requires at least the WinCC basic RT license.

The license keys are differentiated as described below and run in parallel on the WinCC/ WebUX server:

License [1)]	Function	Comments
WinCC WebUX Monitor	The user has only read access.	The authorization level 1002 "Web access - monitoring only" is configured for the user in the User Administrator. If the available "Monitor" licenses have been allocated, an "Operate" license can also be allocated to a WebUX client for read access.
WinCC WebUX Operate	The user has read and write access.	
WinCC/WebNavigator	The user's authorizations determine whether write access is possible in addition to read access.	

1) If a WinCC/WebNavigator license is also installed in the WinCC system, the WebNavigator license can also be allocated to a WebUX client.

To do so, the following option must be enabled in the WebNavigator dialog "WinCC Web settings":

- "Allow WebUX to use the WebNavigator licenses".

First, however, all available WebUX licenses are used.

License packages

The license packages are available with 1, 3, 10, 30 and 100 clients.

If you have upgraded from WebUX V7.3, there may also be licenses for 5 / 25 / 50 / 150 clients.

As of WinCC V8.1, there is also an "Unlimited" license for an unlimited number of connected clients.

If the number of licensed clients is exceeded during the logon attempt by a WebUX client, no further logon is permitted.

The packages are version-independent and can be combined.

WebUX demo license

With WinCC/WebUX you also receive a demo license for accessing the WebUX server.

This allows a maximum of one user without a valid WebUX license or WebNavigator license to have read access to the project.

Reserved license

A reserved WebUX license always gives the user guaranteed access to the WebUX server.

A connection remains reserved for the user. The number of freely available WebUX licenses is reduced by each configured reserved license.

Applications

Possible applications include:

- Remote operator access:
  If the connections to the WebUX server are occupied by read-only access, a connection remains reserved for operation.
- Central display:
  Central client stations are always connected, for example, to display the status of the WinCC system.

Reserving WebUX licenses

In the User Administrator, you assign one of the available licenses to a WebUX user as a reserve license.

To do this, enable the "Reserve WebUX license" option for the user. The field "WebUX Number of reserved licenses" shows how many WebUX licenses are assigned through reservation.

Reserved licenses cannot be configured for user groups, only for individual users.

If more reserved licenses are configured than those available on the WebUX server, the licenses of the first users logged on are used.

Using WebNavigator licenses

You can also use WebNavigator licenses for WebUX clients.

To enable licenses for WebUX clients, open the "WinCC Web settings" dialog in the shortcut menu of the "WebNavigator" editor in the WinCC Explorer.

In the "Runtime" tab, enable the "Allow WebUX to use the WebNavigator licenses" option.

Administering clients in runtime

To identify inactive clients and to disconnect them, if necessary, use the page "http://<servername>/status.html".

You can find further information in the documentation of the WinCC/WebNavigator option under:

- WinCC/WebNavigator documentation > Operating a WinCC project > Diagnosis of the Connections with "Status.html" (Page 257)

See also

Diagnosis of the Connections with "Status.html" (Page 257)

4.3 Communication: SSL certificate for HTTPS connections

To improve the security of your communication, WebUX only supports HTTPS connections.

You need a digital SSL certificate for the WebUX server.

NOTICE
Protecting the infrastructure Setting up a Web server may enable access to your plant infrastructure. Therefore, protect the computer on which the Web server is installed. Make sure that the following rules are followed: • The computer is only accessible via secure connections. • The check mechanisms provided by software vendors are activated and cannot be bypassed under any circumstances.

Install a SSL certificate

You have the following options when setting up the WebUX website:

- Select an existing certificate
- Create self-signed certificate
- Install a certificate after setting it up

Creating a new certificate

1. Activate the "Create a new certificate" option.
2. Enter a name of your choice.

When the configuration is completed, a self-signed certificate is created. The certificate is valid for 1 year.

Additional information

You can find information on self-signed certificates when using different web browsers on the Internet under Entry ID 109773769:

- SiePortal: "How do you fix problems when using self-signed certificates from WebUX or WebNavigator with different web browsers?" (https://support.industry.siemens.com/cs/ww/en/view/109773769)

Note

Restricted authentication

The certificates that you create when you configure the WebUX website itself are not verified by an official certification body. Depending on your browser settings, a warning message is displayed when you access the website.

To better secure the server authentication, install the certificate of an official certification body.

Display of secure data sources only

For display of web pages and external files, one of the following conditions must be met:

- Call via the HTTPS connection
- Call of a trusted site

Enabling SSL in IIS

To use SSL, configure SSL access in the Internet Information Service (IIS).

Requirement

- You have administrator rights on the WebUX server.

Procedure

1. Open the "Internet Information Services (IIS) Manager".
2. Select the web page under "Sites" in the "Connections" navigation area.
3. Click "Bindings" in the "Actions" area.
   The "Site bindings" dialog opens.
4. To configure the settings, click "Add".
   The "Add site bindings" dialog opens.
5. Select the website type, IP address and the port.
   To display the fields for configuration of the SSL certificate, select the type "https".
6. Select the SSL certificate from the list or with "Select".
7. Confirm with "OK" to close the dialog.
   You can delete the other entries in the "Site bindings" dialog.
8. Exit the configuration with "Close".
9. In the data area "Default Web Site Home", select the "SSL settings" under "IIS".
10. Activate the "Require SSL" option and select the setting for client certificates.

See also

SiePortal: "How do you fix problems when using self-signed certificates from WebUX or WebNavigator with different web browsers?" (https://support.industry.siemens.com/cs/ww/en/view/109773769)

4.4 Installation of WebUX

Software requirements

Certain requirements concerning operating system and software configuration must be met for the installation.

WebUX server: Operating system

Software	Configuration	Comments
Microsoft Windows 10	Pro Enterprise	Standard installation 64-bit A maximum of 9 WebUX clients can connect to the WebUX server. [1)]
Microsoft Windows 10	Enterprise LTSC (Long-Term Servicing Channel)	Standard installation 64-bit A maximum of 9 WebUX clients can connect to the WebUX server. [1)]
Microsoft Windows 11	Pro Enterprise	64-bit A maximum of 9 WebUX clients can connect to the WebUX server. [1)]
Microsoft Windows Server 2019	Standard Datacenter	64-bit
Microsoft Windows Server 2022	Standard Datacenter	64-bit

1) Only a limited number of connections is possible:

The maximum number of WebUX clients depends on the number of connections that the IIS supports on the installed Microsoft Windows version.

The number of available connections can decrease if other applications access these connections, e.g. WinCC/WebNavigator.

In the Microsoft Windows system monitor, use the "Performance Monitor" application to analyze the connection status.

Additional software requirements

	Version / setting	Relevant for	Comments
Web browser	The browser must support HTML5.	WebUX client / terminal	WebUX can be used with any browser. The display is optimized for the Chrome browser.
WinCC version	WinCC V8.1	WebUX server	The WebUX server is installed on a WinCC system.
SIMATIC Logon version (optional)	SIMATIC Logon V2.0	WebUX server	Only relevant if you are using SIMATIC Logon for central user administration.
User rights for installation	Administrator rights	WebUX server	Required rights for installing the WebUX server.

	Version / setting	Relevant for	Comments
User rights for operation	Default user rights	WebUX client WebUX server	Required rights on the WebUX server and WebUX client.
Microsoft Internet Information Service (IIS)	WWW Services > Common HTTP Features or Shared HTTP Features: • Standard document • Static content WWW Services > Performance Features: • Compression of dynamic content • Compression of static content WWW Services > Application Development Features: • ASP.NET ≥ 4.5	WebUX server	During the WinCC installation, the Microsoft Internet Information Service (IIS) is installed and configured.

WebUX client (terminal)

You only need an HTML5-capable Web browser such as Chrome, Firefox or Safari on a terminal that accesses the WebUX server.

Note

Browser-dependent representation

Differences in display and behavior are possible in the different browser versions.

To display a configured character set, for example, this must also be available in the browser or on the device.

Installation of the WebUX server

You can install WinCC/WebUX during the installation of WinCC.

When you install the server WebUX at a later time, proceed as follows:

1. Start the WinCC installation DVD.
2. Select the installation type "Custom Installation".
3. In the "WinCC" group of the "Program" dialog, select the entry "WinCC WebUX".
4. Transfer the WebUX license. You can find more information under:
   – WebUX licensing (Page 476)

You can find information about configuring WebUX under:

- Configuring the WebUX web page (Page 484)

Limiting the number of connections

The number of the connections between WebUX server and WebUX clients was limited to a standard limit value of 150.

If the number of WebUX client connections reaches this limit value, further connections are rejected by the WebUX server. This supports the defense against DoS attacks.

You can modify the connection limit value in the config.js file.

Configuring the limit value

1. Log into the WebUX server with administrator rights.
2. Navigate to the folder:
   - `C:\inetpub\wwwroot\Siemens\WebRH\conf\`

   This contains the file `config.js`.
3. Open the file `config.js` with a text editor.
4. Search the text line "`config.sessionLimit = 150;`".
   The default limit value is 150.
5. Change the value "`config.sessionLimit`" and save the file.
6. Open the Internet Information Services (IIS) Manager and restart the WebUX website.

See also

WebUX licensing (Page 476)

Communication: SSL certificate for HTTPS connections (Page 479)

Configuring the WebUX web page (Page 484)

4.5 Configuring the WebUX web page

4.5.1 WinCC Web Configurator

Introduction

You use the WebUX Configurator to set up the standard configuration for the use of WebUX.

- Configuration of the Microsoft Internet Information Service
- Settings of the web server
- SSL certificate for the HTTPS connections
- Virtual folder

Note

The configuration for the WebUX web page and the WebNavigator web page can be carried out in one operation.

Note

Default web page on a 64-bit operating system

If you operate the default web page on a 64-bit operating system, you must allow 32-bit applications in the "DefaultAppPool" application pool in the advanced settings of the "Default Web Site" of IIS Manager.

Requirement

- The WebNavigator server is installed.
- The Windows "Internet Information Service" component is installed.

Starting WinCC Web Configurator

1. Select "WebNavigator" in the navigation window of WinCC Explorer.
2. Click the "Web Configurator" command in the shortcut menu.
   Alternatively, click on the "Web Configurator" link on the desktop or select the entry "WebConfigurator" in the "Siemens Automation" program group.
3. Enable the "WebUX Web Site - Configuration" option.
4. Click "Next".

Initial configuration using WinCC Web Configurator

On the start page, select "WebUX Web Site - Configuration".

During the course of initial configuration, you specify whether you wish to create a new default web page or a new virtual folder.

- If you only operate the Web Navigator web page on the server, select the "Create a new standard web page (standalone)" option.
- To add the WebNavigator web page as subfolder to an existing web page, select the "Add to existing web page (virtual folder)" check option.
  This option may be necessary if the current default web page must remain active or if the operating system only supports operation of one web page.

Managing the configuration in WinCC Web Configurator

If IIS has already been configured, edit the settings of the existing web server or the virtual folder using the Web Configurator.

The Web Configurator automatically detects whether a configuration already exists and applies the settings.

Web folder was modified or deleted

If you have deleted the web folder, restart the computer before you create a new web folder with Web Configurator.

Note the following:

- If web communication fails after you have changed the web folder, the Web Configurator attempts to adjust the settings.
- If this action is unsuccessful, proceed as follows:
  1. Exit the IIS console.
  2. To delete the WebNavigator web page, enter the following command line in the window "Run":
  "<wincc_installationpath>\WebNavigator\Server\bin\WinCCWebConfigurator.exe" deinstall="yes".
  3. Start the desired web page from the IIS console, for example, the standard web page.

4.5.2 Creating a new default web page

Introduction

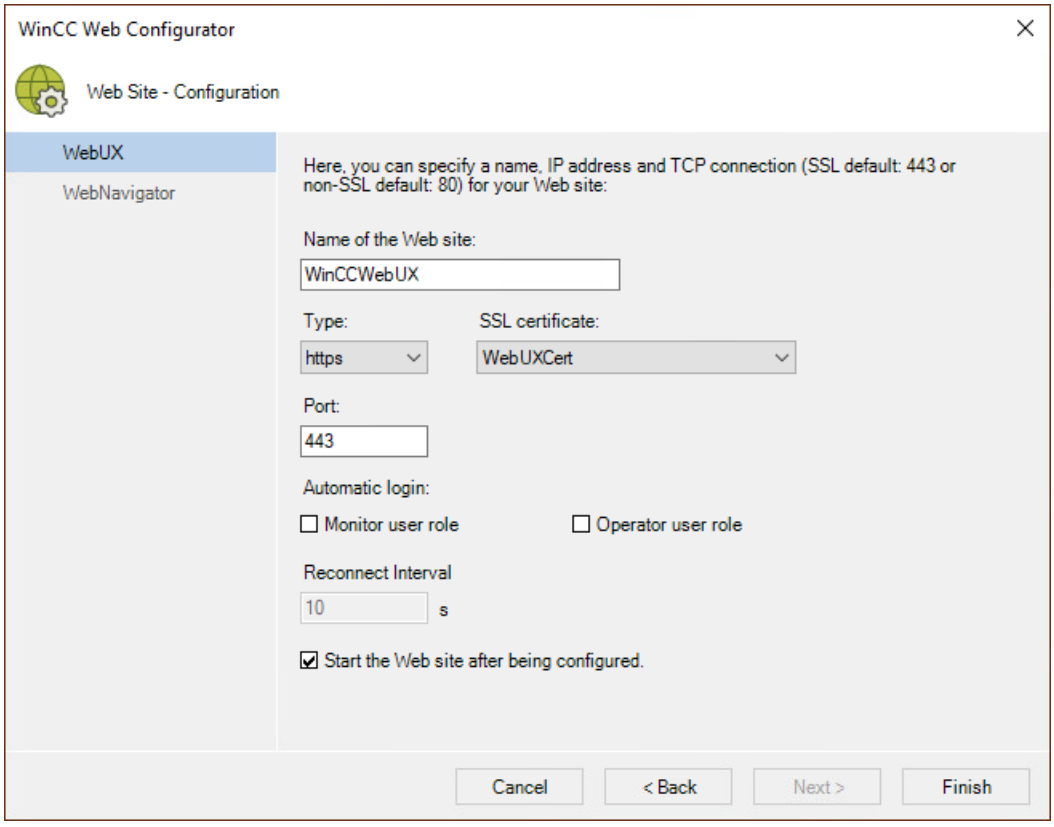
You can create the standard web page using the WinCC Web Configurator.

Requirement

- The Windows "Internet Information Service" component is installed.
- The "WinCC WebUX" program package is installed.
- The "WinCC WebUX" license is installed.
- WinCC Web Configurator is started.

Procedure

1. Select the "Create a new standard web page (standalone)" option and then click "Next".



   The name of the web page is preset: "WinCC WebUX".

2. Enter the number of the port used for access in the "Port" field.
   The HTTPS standard port "443" is set by default.
   To increase the security of your communication, configure the WebNavigator server in such a way that only HTTPS connections are supported.
   If you select a different port number, the address must be adapted on the WebUX client: When logging in on the terminal, this number is appended to the server name in the address bar of the browser.
3. Specify whether the web page is started once the configuration is completed.

Result

You have created the Web folder.

The web page is activated.

You have configured the internal user "WNUSR_DC92D7179E29" To increase the security of the system, change the password for the user on a regular basis with the tool "CCSetWebNavPwd.exe".

See also

Ports and protocols (Page 86)

4.5.3 Creating a virtual folder

Introduction

You can create a virtual folder using the WinCC Web Configurator.

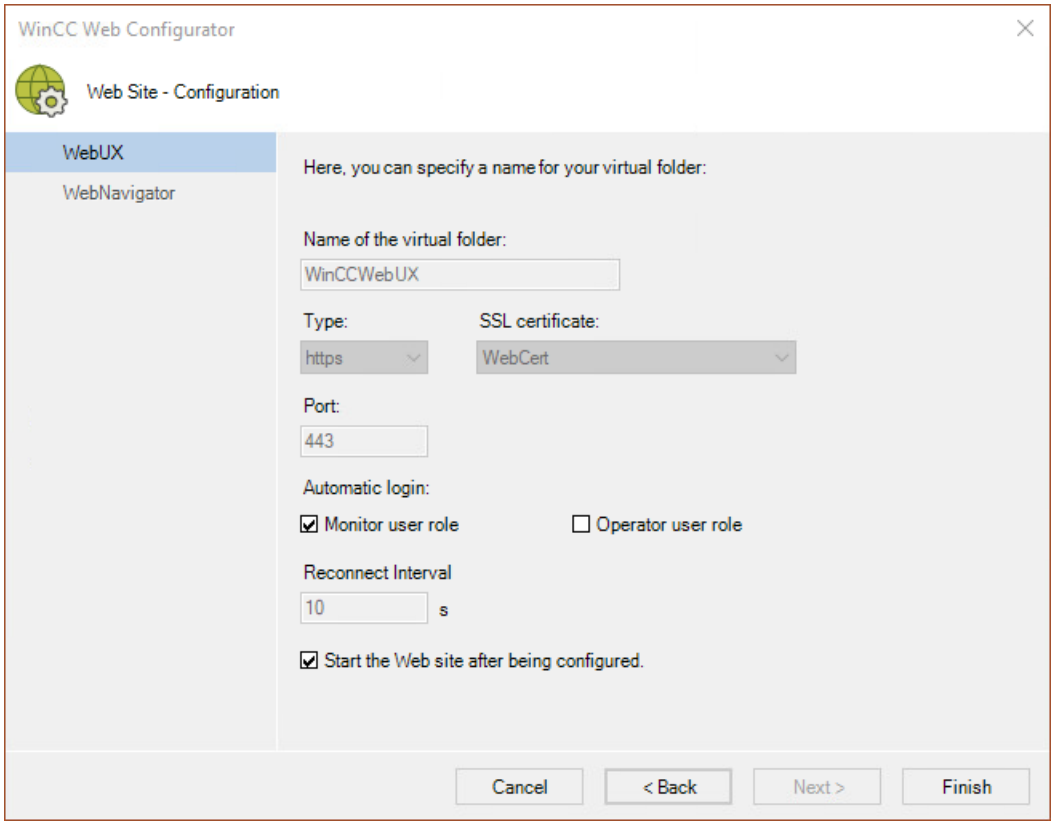
Requirement

- The Windows "Internet Information Service" component is installed.
- The "WinCC WebUX" program package is installed.
- The "WinCC WebUX" license is installed.
- WinCC Web Configurator is started.

Procedure

1. Enable "Add to existing web (virtual folder)".
   Click "Next".
2. Select the active web page to which you want to add the virtual folder.
3. Click "Next".

4. Enter the name for the web page in "Name of the virtual folder".



5. Web Configurator applies the IIS settings as port number and IP address.
6. Specify whether the web page is started once the configuration is completed.
7. Click "Finish" to complete the configuration.

Result

The WebUX server has been configured and the WebUX web page has been set up.

The WinCC project must be activated in Runtime in order to access the WebUX server.

4.6 Functions supported in WebUX

4.6.1 Functions supported in WebUX

Constraints compared with WinCC Runtime

The following constraints apply as compared to the range of functions in WinCC:

- Touch operation is not optimized.
  You can, however, use all touch gestures supported by WinCC.
- Not all objects or properties are supported for graphic objects.
  (For details, see "Supported functions: Graphic objects (Page 490)")
- Only the SVG libraries are supported.
  The symbol library is not supported.
- Not all controls or functions are supported for WinCC ActiveX controls
  (For details, see "Supported functions: WinCC Controls (Page 492)")
- Dynamization (for details, see "Supported functions: Dynamization (Page 495)"):
  - Global script: ANSI-C and VBScript are supported with constraints.
  - Dynamic dialog: Constraints for complex formulas or scripts.
  - Dynamization via the Dynamic Wizard is not supported.

All unsupported objects are hidden in WebUX.

Basic Process Control/Advanced Process Control

As of WinCC V8.1, WebUX also supports the "Basic Process Control" (BPC) WinCC and "Advanced Process Control" (APC) options.

Constraints compared with WinCC Runtime

The following key functions are not supported:

System operator input	System login / password
	Change language
	Plant network configuration
	Save screen composition
	Recall saved screen composition
	Delete screen composition
	Reports
	Switch user
	User authorization
	Lock messages
	Unlock messages
	Group acknowledgment

Pictures	Picture by name
	Picture via measuring point

See also

Configuring a WinCC project for WebUX (Page 498)

Supported functions: WinCC Controls (Page 492)

Supported functions: Dynamization (Page 495)

Supported functions: Graphic objects (Page 490)

4.6.2 Supported functions: Graphic objects

WebUX supports most of the graphic objects.

You can find more information on limitations in the dynamization of object properties on the Customer Support pages on the Internet under entry ID=109481796:

- http://support.automation.siemens.com/WW/view/en/109481796 (http://support.automation.siemens.com/WW/view/en/109481796)

Restrictions for all Graphics Designer objects

The following restrictions apply to all graphic objects in WebUX:

Process picture	Unsupported object properties: • Password protection • Extended zooming (ExtendedZoomingEnable)
Print function	Not supported.
Grouped objects	The "Tooltip Text" object property is not supported.
Standard objects	The line ends do not flash
Image / background image	The following graphic formats are not supported: • EMF • WMF
Preconfigured text lists and graphics lists	Not supported. Object properties that are connected with lists of the "Text and graphics lists" editor are not dynamized in WebUX Runtime.
Font	The selected character set must be available on the WebUX client. This applies to all object properties with which a character set is selected. Font / FontName / HeaderFont / NavigationPathFont / StatusbarFont Exception: The WebUX client always loads the "FontAwesome" and "Siemens Sans" fonts from the WebUX server.

Object properties

The following object properties are generally not supported:

Object property	OLE Automation Name	Comment
Draw inside frame	DrawInsideFrame	The border lines are always drawn inside the frame.
Global shadow	GlobalShadow	The shadow is not sketched.
Layer	Layer	
LocalID property	LocaleID	
Server name	ServerName	
Time Base	TimeBase	The local time zone is always displayed, regardless of the project properties.
Windows style	WindowsStyle	The object is shown according to the respective settings instead.

Supported Graphics Designer objects

Standard object	WebUX	Unsupported properties [1]
All objects except for "Connector"	Yes	see "Restrictions for all Graphics Designer objects"
Connector	No	The connector is handled in the same way as the static object "Line". The ends of a line can have a different design.

Smart object	WebUX	Unsupported properties [1]
Application window	Yes	• Can only be used for script diagnostics. The "Application" property is not supported.
Picture window	Yes	• Independent window (IndependentWindow) • Preferred picture target (PreferredTarget) • Monitor number (WindowMonitorNumber) • Window mode (WindowPositionMode) • Menu/Toolbar configuration (MenuToolbBarConfig)
Control	No	-
OLE object	No	-
I/O field	Yes	• Apply on Full Input • Limited cursor movement (RestrictedCursorMovement)
Bar	Yes	-
Graphic Object	Yes	-
Status display	Yes	-
Text list	Yes	• Maximum of 512 entries • Text reference (LanguageSwitch)
Multiple row text	Yes	-
Combo box	Yes	• Maximum of 512 entries
List box	Yes	• Maximum of 512 entries

Smart object	WebUX	Unsupported properties [1]
Faceplate instance	Yes	-
.NET Control	No	-
WPF Control	No	-
3D bar	No	-
Group display	Yes	-
SVG object	Yes	• The symbol library is not supported. The SVG libraries are supported. As of V2.0 of the "IndustryGraphicLibrary" SVG library, the dynamization of SVG library objects is also supported.
Status display (extended)	No	-
Analog display (extended)	No	-
DataSet object	Yes	-

Windows object	WebUX	Unsupported properties [1]
All objects	Yes	see "Restrictions for all Graphics Designer objects"
Button	Yes	• Hotkey (Hotkey)
Slider object	Yes	• High limit color (HighLimitColor) • Low limit color (LowLimitColor)

Tube object	WebUX	Unsupported properties [1]
All objects	Yes	see "Restrictions for all Graphics Designer objects"

1) Restrictions for all Graphics Designer objects are not listed again.

See also

Functions supported in WebUX (Page 489)

Supported functions: WinCC Controls (Page 492)

http://support.automation.siemens.com/WW/view/en/109481796 (http://support.automation.siemens.com/WW/view/en/109481796)

4.6.3 Supported functions: WinCC Controls

WinCC ActiveX controls

Most ActiveX controls are executable as web controls in WebUX.

Restrictions on individual controls are listed below.

WinCC ActiveX control	WebUX control	Restriction [1]
WinCC AlarmControl	WinCC Alarm Web Control	Yes
WinCC OnlineTableControl	WinCC OnlineTable Web Control	Yes

WinCC ActiveX control	WebUX control	Restriction [1]
WinCC OnlineTrendControl	WinCC OnlineTrend Web Control	Yes
WinCC FunctionTrendControl	WinCC FunctionTrend Web Control	Yes
WinCC RulerControl	WinCC Ruler Web Control	Yes
WinCC Slider Control	WinCC Slider Control	Yes
WinCC Digital/Analog Clock Control	WinCC Digital/Analog Clock Control	Yes
WinCC Gauge Control	WinCC Gauge Control	Yes
WebBrowser Control	WebBrowser Control	Yes
WinCC BarChartControl	WinCC BarChartControl	Yes
WinCC SysDiagControl	WinCC SysDiagControl	Yes
WinCC UserAdminControl	WinCC UserAdminControl	Yes
WinCC UserArchiveControl	WinCC UserArchiveControl	Yes
User-defined object		Yes
Unsupported WinCC controls:		
WinCC Media Control	-	
WinCC Channel Diagnosis Control	-	
ProDiag Controls	-	
Siemens HMI Symbol Library	-	

1) Restrictions for all Graphics Designer objects have not been listed again (see "Supported functions: Graphic objects (Page 490)").

ActiveX controls in WebUX: Restrictions

The following limitations apply to web controls.

You can find more information on object property limitations on the Customer Support pages on the internet under entry ID=109481796:

- http://support.automation.siemens.com/WW/view/en/109481796 (http://support.automation.siemens.com/WW/view/en/109481796)

Restriction applies to the following controls	Unsupported functions
All WinCC controls	• Object events
WinCC Alarm Web Control WinCC OnlineTable Web Control WinCC OnlineTrend Web Control WinCC FunctionTrend Web Control WinCC Ruler Web Control	• Operator authorization for the key functions in the toolbar • Configuring the key functions of the toolbar in Runtime • VBScript: no methods • Online configuration in Runtime: possible, but not persistent
WinCC OnlineTrend Web Control WinCC FunctionTrend Web Control	• Trend selection
WinCC OnlineTrend Web Control	• User scaling • Trend display: – "Display values" trend type – Color coding of a value with uncertain status

Restriction applies to the following controls	Unsupported functions
WinCC Alarm Web Control	• Message blocks – Daylight saving/standard time – Archiving – Logging – Class priority – Frequency – Sum +/-, Sum +/*1, Sum +/*2, Sum +/+ – Average +/-, Average +/*1, Average +/*2, Average +/+ – Apply project settings • Acknowledgment of a central signaling device • Configuration of the filter in Runtime • Configuration of the lock list in Runtime • User-defined sorting of the displayed messages • Page through long-term archive list • The contents of each of the "Class", "Type", "Date", and "Time" columns are displayed in one common column. • SQL statements for filtering messages in AlarmControl
WebBrowser Control	• Only HTTPS connections are possible. You can find more information under "Displaying files in the web browser control". • The browse dialog for locating the URL is not available. • Depending on the web browser, unsupported buttons and functions are grayed out.
WinCC Slider Control	-
WinCC Digital/Analog Clock Control	-
WinCC Gauge Control	-

Displaying files in the web browser control

To display a file in the web browser control, follow these steps:

1. Save the file in a subfolder in the following path:
   – C:\inetpub\wwwroot\siemens\WebRH\public\<folder>
2. Use the following call in the web browser control:
   – https://<server name>/<folder>/<file name>

Example

The"WinCC.pdf" PDF file is located in the "WebUXFiles" subfolder:

• C:\inetpub\wwwroot\siemens\WebRH\public\WebUXFiles

Call using the following URL:

• https://localhost/WebUXFiles/WinCC.pdf

Note

No access restrictions for the "public" folder

Note that files in the "C:\inetpub\wwwroot\siemens\WebRH\public" folder can be accessed by all users.

The WinCC authorizations do not have an effect on the files in this folder.

See also

Functions supported in WebUX (Page 489)

http://support.automation.siemens.com/WW/view/en/109481796 (http://support.automation.siemens.com/WW/view/en/109481796)

4.6.4 Supported functions: Dynamization

Dynamization via scripts and dynamic dialog

WebUX supports graphics objects in which the following dynamics are configured:

- Trigger
- Tag connection
- Dynamic dialog
  Dynamics via the dynamic dialog are converted to VBScript.
- Animation
- Direct connection
- VBS action
- C action

Restrictions

The following restrictions apply to the dynamization:

- The behavior of the "Focus Change" event is different to that in WinCC Runtime.
- Dynamic dialog:
  Complex formulas and scripts are not supported.

- VBScript / ANSI-C:
  - Scripts cannot open interactive applications, for example, Microsoft Excel.
    This function is disabled by restrictions of the operating system.
  - WebUX Web controls do not support methods.
    Instead, address the elements of the controls through an assigned index.
  - The following methods are not supported:
    - "item.Activate" to activate a picture or picture element
    - "HMIRuntime.Stop" to end WinCC Runtime
    Instead of "HMIRuntime.Stop", use the dialog for WebUX login.
  - Triggering the animation via the "Animation cycle" trigger type is not supported.
  - The VBS object "DataSet" can only include global tags with a scalar data type, e.g. "BOOL", "DOUBLE", "LONG INT".
    OLE automation data types are not processed, e.g. "VARIANT" or a Microsoft Excel spreadsheet.
  - Some object properties cannot be made dynamic or use a different value format.
    You can find more information on this on the Customer Support pages on the Internet under entry ID=109481796:
    http://support.automation.siemens.com/WW/view/en/109481796 (http://support.automation.siemens.com/WW/view/en/109481796)
  - Restriction during script output on the WebUX client:
    C scripts or VBS scripts which are triggered by services such as Global Script, Alarm Logging, or Tag Logging, are independent of Graphics Runtime.
    These scripts only run on the web server.
    The output of these functions, such as via "printf()" or "HMIRuntime.Trace()" is not displayed in the script diagnostics window on a WebUX client.
    Function accesses included in these scripts on Graphics Runtime always address the local Graphics Runtime on the WinCC server.
- Dynamic Wizard:
  Dynamization via the Dynamic Wizard is not supported.

Note

Scripts always run on the WebUX server

Scripts are not executed locally on a WebUX client. Scripts that run locally on a WinCC client are executed on the WebUX server in the case of access via WebUX.

This means that the following factors can affect the WebUX server performance:

- Number of running scripts
- Number of WebUX clients accessing the server

If necessary, reduce the scripts in the process pictures that are saved for WebUX.

Dynamization via the dynamic dialog

The configuration of the dynamic dialog is converted to VBScript for display in the browser. The restrictions for complex formulas or scripts apply here (Details (Page 504)*).

The conversion takes place automatically when you save the process picture.

If the configuration cannot be implemented, the object and the dynamic property are listed in the output window.

You can jump from the message to the property, and adapt the dynamic dialog there.

Note

Script adaptation overwrites dynamization

If you adapt the dynamization in VBScript, the dynamization is overwritten in the dynamic dialog.

The process pictures may then be displayed modified in WinCC Runtime. This also applies to the representation on WinCC clients and WinCC servers.

*) The detail window is displayed in the online help in the upper area of the content window.

Procedure

1. Double-click on the object property listed in the output window of the Graphics Designer. Alternatively, select the object in the process picture.
2. Open the shortcut menu for the dynamic property listed in the message.
3. Select the entry "VBS action".
   A message indicates that the change is stored permanently for the dynamization of the property.
   After the message is confirmed, the "Edit VB action" editor opens.
   The script comments contain more information on the formulas that are not automatically converted.
4. Check the script and save the changes.
   When you close the editor without saving the script, the original dynamization is retained via the dynamic dialog.

See also

Functions supported in WebUX (Page 489)

http://support.automation.siemens.com/WW/view/en/109481796 (http://support.automation.siemens.com/WW/view/en/109481796)

4.7 Configuring a WinCC project for WebUX

Introduction

To use WinCC/WebUX on the terminal devices, the WinCC project must be configured accordingly:

- The WebUX users are set up.
- The process pictures are optimized for viewing on the Web.
- The "WebUX Runtime" application is enabled in the startup list of the WebUX server.

Note

Limited number of WebUX clients

If the WebUX server runs on a PC with Microsoft Windows 10 or Microsoft Windows 11, only a limited number of connections is possible.

The maximum number of WebUX clients depends on the number of connections that the IIS supports on the installed Microsoft Windows version.

WebUX requires more than one connection for a client.

Therefore, a maximum of 9 WebUX clients can connect to the WebUX server. If this number is exceeded, you can no longer operate the instances already connected.

- Use a server operating system for Web applications with multiple WebUX clients.

The number of available connections can decrease if other applications access these connections, e.g. WinCC/WebNavigator.

In the Microsoft Windows system monitor, use the "Performance Monitor" application to analyze the connection status.

Setting up WebUX users

WebUX server: Management in the User Administrator

You can also set up and manage users and user groups via SIMATIC Logon.

However, you always configure the settings for accessing the WebUX server in the WinCC User Administrator.

You can find additional information in the WinCC Information System under:

- Structure of the User Administration > Administering users > Administering users for Web access

Automatic login

You can configure automatic login for the following users:

- Monitor user role
  Users with the authorization level 1002 "Web access – monitoring only"
- Operator user role
  Users who are authorized to control the WebUX project

When you first log into WinCC/WebUX, activate the setting that saves the login data.

The user name and password are automatically entered at the next login.

Electronic signature

WebUX supports the electronic signature for protection of critical operations.

However, the electronic signature is only supported for individual users.

Multiple users or user groups can only sign when using WinCC/Audit in WinCC Runtime.

Logout with shortcut key

To make logging users off from the web client easier, you can specify a shortcut key in User Administrator.

The selected shortcut key applies for all users and user groups.

Adjust process pictures for WebUX

To configure the display in WebUX, select the "Web-enabled" object property for the process pictures.

- Process pictures are saved in the "*.json" format in addition.
- Faceplate types are saved in the "*.jsof" format in addition.

In the WinCC Explorer, however, only the process pictures or faceplates in the "*.pdl" or "*.rdf" format are displayed.

The Web-enabled process pictures and faceplates are marked in the data area of the "Graphics Designer" editor:

- The "Type" column contains the additional comment (Web-enabled).
- The symbol has a dark background in the "Name" column.

Checking the process picture

When a process picture is saved as web-enabled, the properties of the picture and the objects are checked.

The result is shown in the output window of the Graphics Designer. Make sure that the following option is activated: "Tools > Settings > Options > Display performance warnings".

The messages included a list of graphic objects that have not been saved web-enabled for each process picture. Double-click on the entry in the output window to edit the objects.

Only web-enabled objects are displayed in WebUX Runtime.

More information:

- Functions supported in WebUX (Page 489)

Configuring the WinCC project for WebUX use

1. Configure the process pictures as executable for Web browsers in the Graphics Designer:
   - Select "Yes" for the "Web-enabled" object property in the "Miscellaneous" group.
   - Save the process picture.
   - If necessary, check the messages in the output window.
2. Configure the WebUX users in the WinCC User Administrator:
   - Activate the "WebUX" option in the properties.
   - Select the start picture from the list of process pictures that have been saved as "Web-enabled".
   - Select the Runtime language.
     The runtime language cannot be changed at the terminal.
   - If the user should be restricted to read-only access, select the authorization level 1002 "Web access – monitoring only".
   - If guaranteed access should be reserved for the user, activate the "Reserve license" option.
   - In the "Properties - User Administrator" area, select a shortcut key for user logoff if necessary.
3. Check whether the "WebUX Runtime" application is enabled in the startup list of the WebUX server:
   - In WinCC Explorer, select the "Properties" entry in the "Computer" context menu.
   - The "Computer Properties" dialog opens.
   - Enable the "WebUX Runtime" application in the "Startup" tab if necessary.
     The application is enabled by default.
   - Close the dialog with "OK".

   Alternatively, you can edit the startup lists of the WebUX server in the "Computer" editor of the WinCC project.

Configuring the dedicated WebUX server

With WinCC/WebUX, you can use a dedicated Web server for the central data supply of the WebUX clients.

Requirements

- WinCC/WebUX must be installed on the dedicated WebUX server.
- The WebUX start picture must be available locally on the dedicated WebUX server.
- Additional process pictures can only be called via a picture window in the start picture. Configure the following object properties for the object "Picture Window":
  - "Picture Name (PictureName)":
    Configure the picture name without server prefix.
  - "Server Prefix (ServerPrefix)":
    Configure the server prefix for the dedicated WebUX server.

You can find additional information on using a dedicated Web server in the documentation for WinCC/WebNavigator:

- Possible applications of WinCC/WebNavigator > Dedicated Web Server

See also

Functions supported in WebUX (Page 489)

4.8 How to use WebUX

Introduction

To use WinCC/WebUX on the terminals, you only need a Web browser with access to the network of the WebUX server.

Note

Limited number of WebUX clients

If the WebUX server runs on a PC with Microsoft Windows 10 or Microsoft Windows 11, only a limited number of connections is possible.

The maximum number of WebUX clients depends on the number of connections that the IIS supports on the installed Microsoft Windows version.

WebUX requires more than one connection for a client.

Therefore, a maximum of 9 WebUX clients can connect to the WebUX server. If this number is exceeded, you can no longer operate the instances already connected.

- Use a server operating system for Web applications with multiple WebUX clients.

The number of available connections can decrease if other applications access these connections, e.g. WinCC/WebNavigator.

In the Microsoft Windows system monitor, use the "Performance Monitor" application to analyze the connection status.

Tips: Operation in Runtime

- Before you exit the browser, close the session to release an allocated license.
- Close the browser to reduce the power consumption and the transferred data volumes, particularly when using mobile devices.
  As long as a process picture is open in the browser, its display will be constantly updated.
- Avoid the following operator inputs because they would end the session:
  - Browser navigation (Back / Next)
  - Reload web site (update or <F5>)

Requirements

- The "WinCC WebUX" license installed on WebUX server.
- The WinCC project is configured for WebUX.
- The "WebUX Runtime" application is enabled in the startup list of the WebUX server.
- The WinCC project is in Runtime.

Procedure

1. Go to the address bar of the browser and enter the address of the WebUX server.
   - https://<servername>

   If you do not use the default port, add the port number to the URL:
   - https://<servername>:<portnummer>

   If you are using a virtual folder instead of a web site, add the name of the virtual web folder:
   - https://<servername>/<directoryname>
2. Type in the user name and password.

Alternative procedure: Open via deep link

On a WebUX client, you can call up a process picture directly via a deep link.

Requirements

- The process picture is "web-enabled".

Procedure

1. Go to the address bar of the browser and enter the link.
   The link contains the server name, the port and the file name:
   - `https://<IP address or computer name:port number>/?StartScreen=<Process picture name>`

   Example of process picture "Plant01_Overview.PDL":
   - `https://WebServer01:443/?StartScreen=Plant01_Overview`
2. When you open the process picture, you are prompted to log on.
   Enter your user name and password.
   The process picture is displayed.

Alternatively, use the "Simatic Unified AR" app.

Result

Depending on the user rights, you can monitor or operate the WinCC project.

See also

General properties of the WebNavigator Client (Page 236)

4.9 Appendix

4.9.1 Dynamics dialog Restrictions on expressions / formulas

When you save a process picture for WinCC/WebUX, the dynamization of the Dynamics dialog is converted to VBScript.

Complex expressions and formulas are not converted during the conversion. When you open the affected dynamization as VBScript, you can obtain detailed information in the Global Script Editor.

The following operators and formulas are not converted as a rule:

- Expressions with C function
- Assignment operators: ^= %= /= &= |= += -= *=
- Bit-by-bit operators: & | ^ ~
- Additional operators: << >> ? : ++ -- /
- Logical operators if the expression is in parentheses: (&& || !)
- Logical operators for the "Analog" data type: (&& ||)
- Logical operators for the "Direct" data type for properties that belong to the "BOOLEAN" data type: (&& ||)

==========

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