

SIMATIC

PCS 7 Web Option for OS (V8.2)

Function Manual

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Valid for PCS 7 as of V8.2

Legal information

Warning notice system

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

 DANGER
indicates that death or severe personal injury will result if proper precautions are not taken.
 WARNING
indicates that death or severe personal injury may result if proper precautions are not taken.
 CAUTION
indicates that minor personal injury can result if proper precautions are not taken.
NOTICE
indicates that property damage can result if proper precautions are not taken.

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Qualified Personnel

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Note the following:

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

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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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Security information

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

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

To stay informed about product updates as they occur, sign up for a product-specific newsletter. For more information, visit <http://support.automation.siemens.com>.

Preface

Purpose of this documentation

This documentation provides information about the software components, applications, configuration options and commissioning of Web Option for OS for SIMATIC PCS 7.

It answers the following key questions:

- What is the Web Option for OS?
- Which software components are part of the Web Option for OS?
- What hardware and software requirements apply and which licenses are required for installation?
- For which application areas is the Web Option for OS suitable?
- How is the Web Option for OS used?
- How is the Web Option for OS commissioned?

Options for accessing PCS 7 documentation

The documentation required for PCS 7 includes the following types:

- **PCS 7 Readme**

The readme file is available in two versions:

- **PCS 7 Readme (offline)**

This version is installed by PCS 7 Setup. The file only contains general information and links to documents on the Internet.

- **PCS 7 Readme (online)**

This version contains all information on the installation and use of PCS 7 in the format which is already familiar to you. The file is only available on the Internet to keep it always up-to-date

Note

The information provided in the *PCS 7 Readme* (online) on the Internet takes precedence over **all** other PCS 7 documentation.

Read this *PCS 7 Readme* carefully, because it contains important information and amendments on PCS 7.

- **PCS 7 System Documentation**

System documentation contains information that covers several products, such as configuration manuals and Getting Started manuals. This documentation serves as a guideline for the overall system and explains the interaction between the individual hardware and software components.

Note the information on "PCS 7 Documentation Portal Setup" in the product overview *Process Control System PCS 7; PCS 7 - Documentation*; Section "Options for accessing the documentation"

- **PCS 7 Product Documentation**

Product documentation contains information about special hardware and software components. The individual documents provide detailed information on the specific component.

Full versions of the documentation are available from the "Technical Documentation SIMATIC PCS 7" website: <http://www.siemens.com/pcs7-documentation> (<http://www.siemens.com/pcs7-documentation>)

Required basic knowledge

This documentation is aimed at anyone who is involved in configuring, commissioning and operating automated systems based on SIMATIC PCS 7.

A certain amount of basic knowledge is assumed and readers are expected to know how to use a PG/PC and the Windows operating system in general. You should be familiar with the SIMATIC PCS 7 functions and configurations.

Conventions

In this documentation, the names of elements in the software user interfaces are specified in the language of this documentation. If you have installed a multi-language package for the operating system, some of the designations will be displayed in the basic operating system language even after you change the language and will, therefore, differ from the designations used in the documentation.

If you use the operating system Windows 10, you will find the Siemens SIMATIC programs in the "Start" menu under the menu command **All apps > Siemens Automation**.

Overview of the Web Option for OS

3.1 Using Web Option for OS

Introduction

The Web Option for OS enables operator control and monitoring of automated processes over the Intranet/Internet using PCS 7.

You can use the Web Option for OS in a PCS 7 plant:

- With a PCS 7 OS multiple-station system
- With a PCS 7 OS single-station system

The Web Option for OS consists of the following components:

- PCS 7 Web server/PCS 7 Web diagnostics server
- PCS 7 Web client/PCS 7 Web diagnostics client

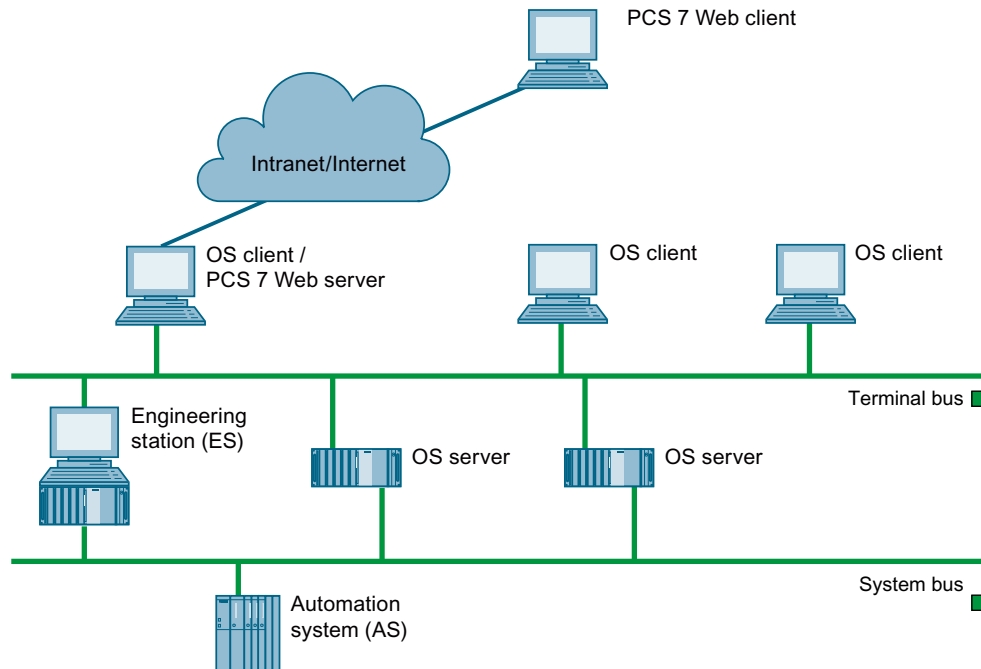
Using the product on a PCS 7 OS multiple-station system

Within a PCS 7 OS multiple station system, the Web server is an OS client with PCS 7 Web server functionality. An OS client that is configured as a Web server can no longer be utilized as an operator station (OS client, SIMATIC BATCH client, or Route Control client) within the PCS 7 plant.

The Web client accesses project data provided by the Web server via the intranet/Internet using Internet Explorer. Operator control and monitoring of the process is supported.

Example configuration

The following figure depicts the PCS 7 plant configuration for the application of Web Option for OS in an OS multiple-station system.



Using the product on a PCS 7 OS single-station system

Within a PCS 7 OS single station system, the single station system provides the PCS 7 Web server functionality. The PCS 7 OS single station system with PCS 7 Web server can still be used as a PCS 7 OS within the PCS 7 plant.

The PCS 7 OS single-station system can be operated on two different bases:

- PCS 7 OS single-station system (OS single-station)
- PCS 7 OS single-station system (engineering station and OS on one PC station)

If the PCS 7 OS single-station system takes the form of the PCS 7 OS single-station system (engineering station and OS on one PC station), then process control and engineering cannot be performed simultaneously.

The Web client accesses project data provided by the Web server via the intranet/Internet using Internet Explorer. Operator control and monitoring of the process is supported.

Depending on the requirements of your PCS 7 system, you have a choice of two configurations:

- PCS 7 Web server and PCS 7 Web client
- PCS 7 Web diagnostics server and PCS 7 Web diagnostics client

Note for the reader

Throughout the remainder of the documentation, the term OS single-station system shall be used to refer to both implementations: "OS single-station" and "engineering station and OS on one PC station". The reader's attention will be drawn to any differences between the two, where applicable.

Terminology

The following terms appear in the documentation:

Designation	Synonym used in the documentation	Validity
PCS 7 Web server	Web server	Information applies to all configurations
PCS 7 Web client	Web client	Information applies to all configurations
PCS 7 Web diagnostics server	Web diagnostics server	Information only applies to OS single-station systems (with diagnostics license key)
PCS 7 Web diagnostics client	Web diagnostics client	

3.2 Web server and Web client**Web server**

All pictures and required scripts are stored on the Web server to enable them to be displayed or run on the Web client. All screens and scripts must be prepared accordingly (published). The *Web View Publisher* is used for this purpose.

Note

The following applies in an OS multiple-station system:

Data from several OS servers can be prepared (published) on the Web server.

The Web server may not be used as an operator station (OS client, BATCH client, Route Control client) since the required reaction/response times cannot be guaranteed.

Web client

The operator can log onto the Web client through a TCP/IP connection and access the data of the Web server.

The user interface displayed in Internet Explorer corresponds with the appearance of the user interface on the operator station (OS) with an overview area, work area, and key area.

All operations that the operator performs on the OS Web client are automatically logged with the name of the operator.

Note

The Web client must not be used as an additional PCS 7 station.

3.3 Overview of configuration steps

Overview of configuration steps required

The following table provides an overview of the configuration tasks for the Web Option for OS in a recommended order.

Step	Where?	What?
1	Engineering station (ES)	Publish pictures in Web View Publisher (Page 33)
2	Engineering station (ES)	Configure the user rights, start screen and language in the User Administrator for the purpose of accessing Web clients (Page 38)
3	Engineering station (ES)	In the case of an OS multiple-station system: Clear the graphics runtime option in the "Computer properties" dialog box (Page 42)
4	Web server	Installation of the Web server (Page 31)
5	Engineering station (ES)	Download the project to the Web server (Page 43)
6	Web server	Check the settings in the User Administrator after downloading to the Web server (Page 45)
7	Web server	In the case of an OS multiple-station system: Check that graphics process mode has been disabled in the "Computer properties" dialog box. (Page 42)
8	Web server	Execute the Web Configurator (Page 46)
9	Web client	Installation and setting operations for the Web client (Page 51)

3.4 Notes on the Web Option for OS

Web client setup

If you decide to install the Web client by downloading it from the Intranet/Internet you can choose whether to "Open" or "Save" the setup file. You should make a note of which option you select when installing the Web client for the first time, because you will need to use the same method when installing subsequent plug-ins. If the methods do not match, you will get an error message. However, you will not get an error message if you combine the "From DVD" and "Download and save" installation methods.

Performance of your Web server

- The speed and bandwidth of the Internet access on your Web server has a significant affect on the performance of your PCS 7 projects, as well as picture selections and update times of your Web clients. Each Web client requires a bandwidth of approx. 10 kbps.
- You achieve maximum performance in a LAN. High transmission rates have a positive effect on your picture loading times, updating, and the number of Web clients that can be operated at the same time.
- Synchronous script functions place a great deal of strain on the system. For this reason, you should not use the "SetTagxxx" function in cyclic scripts. If numerous Web clients (> 10) call SetTagxxx functions in a fast cycle time (1 second or less), the Web server will be overloaded.

Fail-safe components

Access to the HMI system for fail-safe components ("F-HMI" components from the "F-Systems" add-on package) is not approved.

DataMonitor

- Operator control and monitoring via WEB
The "Process Screen" function is no longer used for operator control and monitoring via WEB in DataMonitor. Instead, the "WinCCViewerRT" web viewer can be used on the DataMonitor client.
You can find more information in the "DataMonitor Release Notes".
- Restriction on the use of the DataMonitor server
Only use the DataMonitor server on a computer that is not operated in WinCC Service Mode.

Additional information

For additional information, refer to the Online Help for the *WinCC Information System*.

Additional documentation

Additional documentation

The following table lists documentation in which you will find additional information. The entire content of the online help (CHM) is also available in the electronic manuals (PDF).

Online Help/Manual	Purpose	After installation of SIMATIC PCS 7 it can be opened via:
Manual: SIMATIC Logon, SIMATIC Electronic Signature	Provides support for setting up central administration of access rights using SIMATIC Logon	Manual: In the Start menu under SIEMENS SIMATIC programs in the Documentation folder*: SIMATIC Logon
Online help: Web Navigator Information System Manual: SIMATIC HMI WinCC/Web Navigator	As WinCC Product Information, this manual contains all the information you will need to install and configure the WinCC Web Navigator Server and Client.	You can only find this documentation on a PCS 7 Web server. Online help: In the Start menu under SIEMENS SIMATIC programs WinCC > Web Navigator > Web Navigator Information System Manual: When you have opened the online help, select "Web Navigator Information System" from the menu bar under Options > PDF .
Online help: Configuration - Operator Station Manual: Process Control System PCS 7; Operator Station	Helps you to configure the SIMATIC PCS 7 process control system on an operator station.	In the Start menu under SIEMENS SIMATIC programs in the Documentation folder* Online Help: • PCS 7 - Basic Documentation > Configuration - Operator Station Manual: • PCS 7 - Operator Station Configuration Manual
Online help: Configuration - Engineering System Manual: Process Control System PCS 7; Engineering System	Helps you to configure the SIMATIC PCS 7 process control system on an engineering system.	In the Start menu under SIEMENS SIMATIC programs in the Documentation folder* Online Help: • PCS 7 - Basic Documentation > Configuration - Engineering System Manual: • PCS 7 - Engineering System Configuration Manual
Online help: Operator Station Process Control Manual: Process Control System PCS 7; OS Process Control	Provides detailed instructions for operator control and monitoring of processes using the SIMATIC PCS 7 process control system, including all necessary information for safe operation.	In the Start menu under SIEMENS SIMATIC programs in the Documentation folder* Online Help: • PCS 7 - Basic Documentation > OS Process Control Manual: • PCS 7 - OS Process Control

* Select the desired language.

Configuration with Web Option for OS

5.1 Configuration options

Overview of configurations

The following configurations are possible when you use Web Option for OS in a PCS 7 plant:

- With a PCS 7 OS multiple-station system
 - Configuration with web server and web client (OS multiple station system) (Page 19)
- With a PCS 7 OS single-station system
 - Configuration with Web server and Web client (OS single-station system) (Page 21)
 - Configuration with Web diagnostics server and Web diagnostics client (OS single-station system) (Page 23)

Note

Note the following:

- The Web Option for OS has not been approved for OS single-station systems with SIMATIC BATCH.
 - **The preferred and standard solution is a configuration with a Web server and Web client.** The configuration with Web diagnostics servers and Web diagnostics clients is only intended for plants that have a relatively small number of clients and in which clients connect sporadically to the servers for **diagnostic purposes**.
-

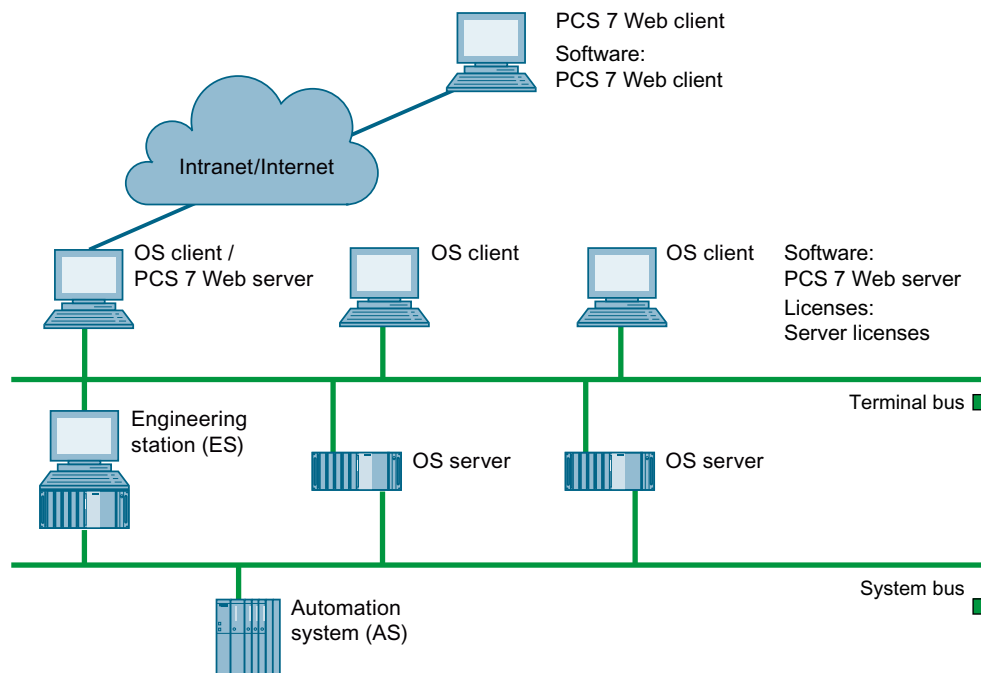
5.2 Configuration with web server and web client (OS multiple station system)

Introduction

You use this configuration in the case of an OS multiple-station system.

Example configuration

The following figure depicts an example for PCS 7 plant configuration for configuration with Web server and Web client in an OS multiple-station system.



Installation and license key requirements

With an OS multiple-station system, you will need to carry out the following installation operations:

- Install the "PCS 7 Web Server" software package from the *Process Control System; SIMATIC PCS 7* DVD onto the Web server (OS client) using the system setup.
- Install the "PCS 7 Web Client" software package.
There are two ways to install the software package:
 - Remote installation
 - Local installation

You can find additional information about installing the software package in the section "How to install the Web client on your PC (Page 54)".

- Install plug-ins
You can find additional information about installing the plug-ins in the section "How to install the plug-ins (Page 56)".
- Install a license key for the Web servers and Web clients on the Web server (OS client)

Number of Web clients

The maximum number of web clients per web server in an OS multiple station system is limited by the installed license keys.

- Maximum 50 Web clients

Additional information

You can find information on the required license key on the Internet in the *Process Control System PCS 7; Licenses and configuration limits* documentation.

5.3 Configuration with Web server and Web client (OS single-station system)

Introduction

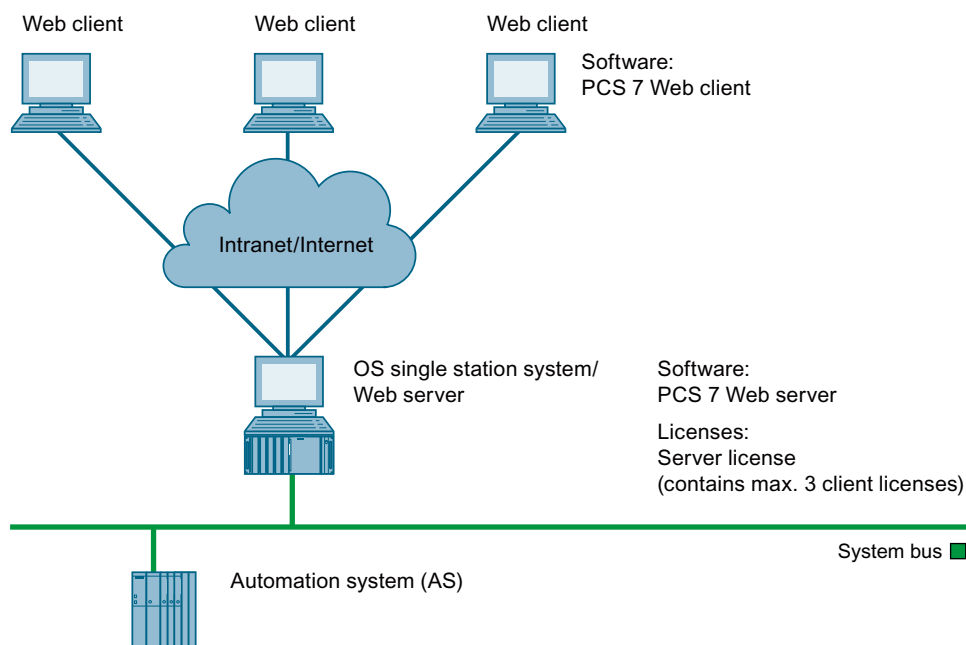
You use this configuration for OS single-station systems.

The following OS single-station systems can be configured as Web servers:

- OS single-station systems
- Redundant OS single-station systems
- OS single-station systems configured as reference stations

Example configuration

The following figure depicts an example of a PCS 7 plant in a configuration with a Web server in an OS single-station system and the associated Web clients.



Installation and license key requirements

Perform the following installations in an OS single-station system:

- OS single station system:
Install the software packages "OS Single Station" and "PCS 7 Web Server" from the *Process Control System; SIMATIC PCS 7* DVD. The "PCS 7 Web Server" software package can also be run with the "PCS 7 Engineering" software package.
- Install the "PCS 7 Web Client" software package.
There are two ways to install the software package:
 - Remote installation
 - Local installation

You can find additional information about installing the software package in the section "How to install the Web client on your PC (Page 54)".
- Install plug-ins
You can find additional information about installing the plug-ins in the section "How to install the plug-ins (Page 56)".
- Install a license key for the Web servers and Web clients on the Web server (OS single-station system)

Number of Web clients

A maximum of 3 Web clients can be operated simultaneously for each Web server in an OS single-station system.

Configuration with multiple OS single-station systems

A plant configuration with a redundant OS single-station system and up to 6 non-redundant OS single-station systems is possible.

Requirements:

- Operating systems:
Windows 7 Ultimate SP1 (64-bit) or Server 2008 R2 SP1 Standard Edition (64-bit)
- Automation systems (depending on the firmware version)
 - S7 400 as of firmware version V5
 - S7 400H as of firmware version V4.5
- OS single-station system without a Web server allows connection of SIMATIC BATCH
- Separate engineering station required.

The following functions are not supported:

- Visibility of remote OS operations (exception: operation information stored on an external archive server)
- Maintenance Station
- OpenPCS 7

Additional information

- Documentation *Process Control System PCS 7; PCS 7 - PC Configuration*
- Documentation *Process Control System PCS 7; Operator Station*
- You can find information on the required license key on the Internet in the *Process Control System PCS 7; Licenses and configuration limits* documentation.

5.4 Configuration with Web diagnostics server and Web diagnostics client (OS single-station system)

Introduction

You use this configuration for an OS single-station system.

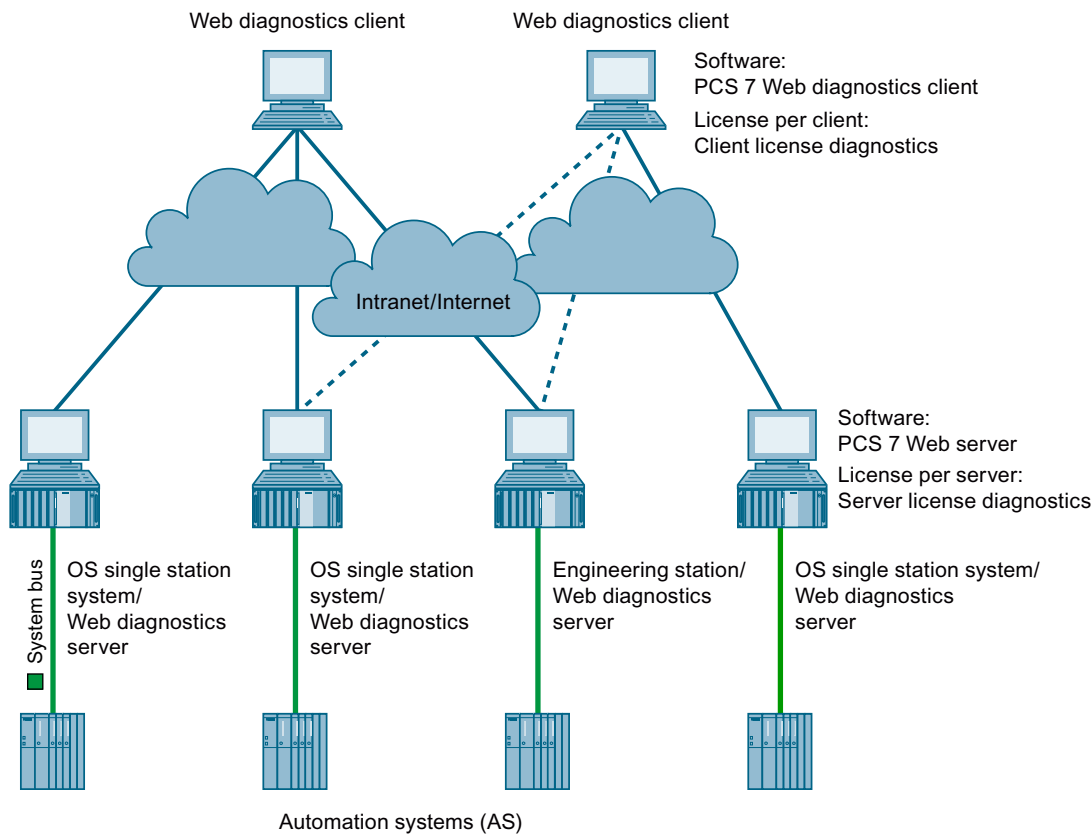
You can use this configuration to perform cost-effective remote maintenance with one or a few Web diagnostics clients on multiple OS single-station systems/Web diagnostics servers.

Note

The preferred and standard solution is a configuration with a Web server and Web client. The configuration with Web diagnostics servers and Web diagnostics clients is only intended for plants that have a relatively small number of clients and in which clients connect sporadically to the servers for **diagnostic purposes**.

Example configuration

The following figure depicts an example PCS 7 plant configuration for configuration with Web diagnostics server and Web diagnostics client in an OS single-station system.



Installation and license key requirements

Perform the following installations in an OS single-station system:

- OS single station system:
Install the software packages "OS Single Station" and "PCS 7 Web Server" from the *Process Control System; SIMATIC PCS 7* DVD. The "PCS 7 Web Server" software package can also be run with the "PCS 7 Engineering" software package.
- Install the "PCS 7 Web diagnostics Client" software package
 - Local installation

You can find additional information about installing the software package in the section "How to install the Web client on your PC (Page 54)".
- Install plug-ins
You can find additional information about installing the plug-ins in the section "How to install the plug-ins (Page 56)".
- How to install the license key
 - Install a license key for each web diagnostics server on the computer (OS single station system)
 - Install a license key for each web diagnostics client on the computer

Number of Web clients

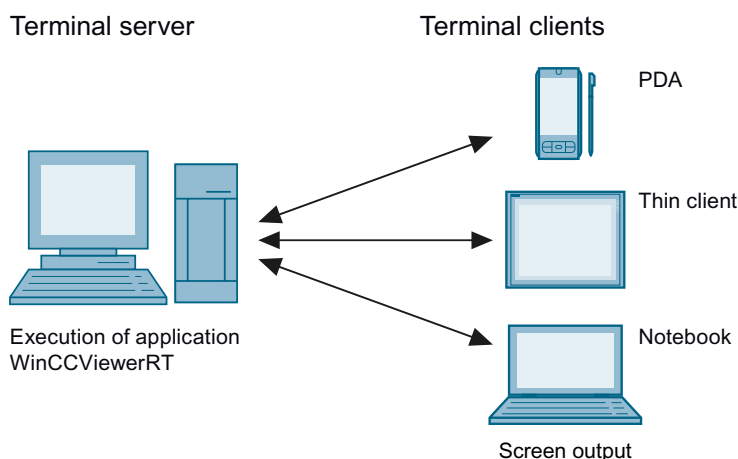
- Up to 3 Web diagnostics clients can be simultaneously operated on a Web diagnostics server.
- A Web diagnostics client can access up to 3 Web diagnostics servers simultaneously.

Additional information

You can find information on the required license key on the Internet in the *Process Control System PCS 7; Licenses and configuration limits* documentation.

5.5 Configuration with terminal service

In addition to remote access via the Web Option for OS, remote control can be performed on a PCS 7 plant with local PC systems (terminal client based on the Web Option for OS).



A terminal server must be installed in the PCS 7 plant to enable this access option. The terminal server can be installed on the following PC stations:

- Separate PC
- In a multi-station system on a Web server

A terminal client opens a process (terminal session) for operation on the terminal server.

Note

Combined Web and terminal server

- For the combined Web and terminal server, the memory must be increased according to the maximum number of terminal clients to be connected.
- Authorizations for users of the terminal service
To allow users of the terminal service to establish an RDP connection and use the Web client, you need to grant the following authorization:
 - Add the users of the terminal service to the "SIMATIC HMI Viewer" group.
 - Users of the "SIMATIC HMI" group have adequate authorizations.

Advantages

- Use of robust hardware with low memory requirements for the clients, for example, no fan is required and the hard drive can run in a dusty environment.
- Use of mobile clients with limited power consumption, for example, handhelds, palmtops, PDA.
- Simple and centralized administration and system maintenance.
- All applications are located on the server in a secure environment.
- Support of a variety of operating systems, for example, Windows CE, Windows 98.

Installing the Web client as terminal service

The basic installation of the Web client as terminal service is described in the online help *WinCC Information System*.

Below you will find information for installing and configuring the terminal services for PCS 7.

- In order to perform the work described in Chapter "Using the terminal services for WinCC/ WebNavigator" you need the file "CCEClient_service.vbs". You can find this on DVD 2 of SIMATIC PCS 7 in folder "WinCC_Options\WinCC_WebNavigator".
- Open Internet Explorer and install the necessary plug-ins on the terminal server. You can find additional information on this in the section "How to install the plug-ins (Page 56)".
- In order to access the terminal services, the Windows user must be set up so that the "WinCCViewerRT.exe" is started directly (instead of the standard Windows interface).

User settings

This setting is adjusted in the properties of the relevant user as follows:

1. Open the operating system's User Management area. Open the folder **Local Users and Groups > Users**
2. Open the "Properties" dialog for the relevant user.
3. Select the "Environment" tab.
4. Under "Starting program" select the "Start the following program at logon:" check box.
5. In the "Program:" text box, enter the path to WinCCViewerRT (e.g. <Program Files> \Siemens\WinCC\Webnavigator\Client\bin\WinCCViewerRT.exe) .
 - Alternatively, you can transfer a configuration file to the box as a parameter, (e.g. <Program Files>\Siemens\WinCC\Webnavigator\Client\bin\WinCCViewerRT.exe D:\ViewerConfig.xml)

Additional information

For information about terminal services, refer to the *WinCC Information System* online help:

- Communication via terminal services
- Setting up the terminal services
- Activating terminal services on the Windows server

- Creating users for access to the terminal server
- Starting application of the terminal server on the terminal client

5.6 Configuration with load balancing

The "load balancing" function enables Web Navigator clients to be distributed automatically and evenly to different web servers, according to the relevant server license. Load balancing allows each web server to participate in load distribution. A web server can be configured as a distributing load balancing server or only as a participating web server. A load balancing server is automatically also a participating web server. In a group of participating web servers, several web servers can also be configured as load balancing servers.

Note

Load balancing can only be used in an OS multiple station system with web server.

Additional information

You can find information on the "Load Balancing" function in the *WinCC/WebNavigator* system manual

Hardware and software requirements

6.1 Requirements for the Web server

Hardware and software requirements

Property	Requirement
Operating system	Windows Server You can find information on this in the <i>Process Control System PCS 7; PCS 7 Readme (Internet version)</i> document
Software	• Internet Explorer • Internet Information Services (IIS)
Hardware	You can find information on this in the <i>Process Control System PCS 7; PCS 7 Readme</i> document.
Miscellaneous	Fast access (≥ 64 kbit/s) to Web client over Intranet/Internet or via TCP/IP connection

Additional information

For additional information about the hardware and software requirements, refer to the *Process Control System PCS 7; PCS 7 Readme (Internet version)* document.

6.2 Requirements for the Web client

Hardware and software requirements

The Web client must meet the following hardware and software requirements:

Property	Requirement
Possible operating systems	You can find information on this in the <i>Process Control System PCS 7; PCS 7 Readme (Internet version)</i> document
Software	Internet Explorer
Minimum hardware requirement	No PDAs, tablet PCs, etc.
Miscellaneous	Fast access (≥ 64 Kbps) to the Web server via intranet/Internet or a TCP/IP connection

Additional information

For additional information about the hardware and software requirements, refer to the *Process Control System PCS 7; PCS 7 Readme (Internet version)* document.

Installation of the Web server

7.1 How to install the Web server

Requirements

Information about the operating systems for PC stations on which PCS 7 software is installed is available in the *Process Control System PCS 7; PCS 7 Readme* file (see "Preface (Page 7)").

The following requirements must be met to install the Web server:

- The requirements specified in the section titled "Requirements for the Web server (Page 29)" must be met.
- For an OS multiple-station system
 - A server operating system must be installed on the OS Client.
 - The OS client is used exclusively as a Web server.
- For an OS single-station system
 - A server operating system must be installed on the OS single station system.

Software for Web configurations

The required "PCS 7 Web Server" software can be found on the DVD *Process Control System; SIMATIC PCS 7*. You install this software for all configurations of the Web Option for OS:

- Configuration with web server and web client (OS multiple station system) (Page 19)
- Configuration with Web server and Web client (OS single-station system) (Page 21)
- Configuration with Web diagnostics server and Web diagnostics client (OS single-station system) (Page 23)

Procedure

1. Insert the *Process Control System; SIMATIC PCS 7* DVD into the DVD drive.
2. Double-click on "Setup.exe" to start the setup.
Setup starts.
3. Follow the setup instructions until you reach the "Type of installation" dialog box.
4. Select the "package installation" radio button.
5. Click "Next".
The "Program packages" dialog box opens.
6. For operator control and monitoring via the Web server, enable the check boxes according to the following table and follow the instructions until the end of the setup routine.

Selecting the program package in the Setup	OS multiple-station system (OS client)	OS single-station system (OS single-station)	OS single-station system (engineering station and OS on one PC station)
Runtime > Web Components > Select the check box "PCS 7 Web Server"	X	X	X
Runtime > single-station > Check "OS single-station" box		X	
Engineering > Check "PCS 7 engineering" box			X

Configuring the Web server on an ES

Overview

The following table provides an overview of the configuration tasks for the Web server on the engineering station in the Web server project.

Step	Where?	What?
1	Engineering station (ES)	Publish pictures in Web View Publisher (Page 33)
2	Engineering station (ES)	Configure the user rights, start screen and language in the User Administrator for the purpose of accessing Web clients (Page 38)
3	Engineering station (ES)	In the case of an OS multiple-station system: Clear the graphics runtime option in the "Computer properties" dialog box (Page 42)
4	Engineering station (ES)	Download the project to the Web server (Page 43)

Project changes

Note

Always make changes to the project on the ES.

8.1 Adapting project data

8.1.1 Overview of the adaptations by the Web View Publisher

Tasks of the Web View Publisher

The Web View Publisher makes all pictures and scripts that are displayed or run on the Web client known to the Web server known - it publishes them. The following actions are performed here:

- Project data are compressed and saved.
- Picture windows in process pictures are converted into Internet-enabled ActiveX components.
- Scripts are converted so that they can run in the Web

8.1.2 Web-enabled functions for the Web Option for OS

Supported script normal functions

Not all standard script functions are supported for the Web Option for OS. Lists of web-executable normal script functions for the Web client are available in the following sections or documentation:

- In the following sections of this manual:
 - "Supported functions on the Web client (Page 61)"
 - "Supported "BPC" and "APC" functions (Page 69)"
- In the *Web Navigator Information System* online help in the following sections:
 - "Supported functions"
 - "Non-supported functions"
- In the *PCS 7 – Programming Instructions for Blocks* manual in section "Function names in WinCC/Web"
 - * Select the desired <Language>.

Additional information

Additional documentation (Page 17)

8.1.3 Publishing requirements

Requirements

In order to edit data on the ES with Web View Publisher, you must first ensure that the following data publishing requirements have been met:

- The PCS 7 project must have been created and fully configured.
- The "Compile OS" function must have been performed for all operator stations.
- The C and VB scripts of all OS servers to which the Web client should have access are available on the Web server.
- The names of the process mimics to be used by the Web clients must not contain any double underscores (e.g., yy__xx.pdl). The character string that precedes the two underscores will be interpreted as a separator for the server prefix.
- The "@ PTN_xx.pdl" pictures are specific to the Web server and must be published by every Web server with the appropriate server prefix.

- Plain text variable names (in quotation marks) in C scripts must not contain any spaces.
- In the case of an OS multiple-station system, the following additional requirements apply:
 - An OS client is added to your PCS 7 project as a PC station which will be used as a Web server.
For additional information about creating and configuring a PC station refer to the *PCS 7 Process Control System; Engineering System* manual.
 - The server data of the OS server is downloaded to the Web server which the Web client is to access.
For additional information about downloading server data refer to the section "How to download server data" in the *Process Control System PCS 7; Operator Station* manual.

8.1.4 Overview of the publishing procedure

Basic Procedure

1+n publishing procedures are required on the ES, where "n" is the number of OS servers (server pairs for redundancy) which the Web server accesses or whose pictures are to be published.

The first publishing procedure processes the local @ pictures and functions on the Web server. The further publishing processes edit the pictures of the OS servers.

Note

Only one publishing procedure is needed to publish local data on the Web server for an OS single-station system.

The following standard procedure applies to publishing:

1. Open the Web server project on the ES; source path and destination path are on the ES during the configuration
2. Publish all pictures of the WinCC source projects on the ES (1+n procedures) and then download to the PC station of the Web server

8.1.5 How to publish data

Procedure

1. Open the SIMATIC Manager component view on the ES.
2. Select the OS to be used as the Web server in the tree view.
Select the menu command **Edit > Open Object**.
3. Open the "Web Navigator" editor in WinCC Explorer.
4. Select the shortcut menu command **Web View Publisher**.
The "WinCC Web Publishing Wizard - Introduction" dialog box opens.

8.1 Adapting project data

5. Click "Next".
The "WinCC Web Publishing Wizard - Select files and folders" dialog box is opened.
6. To publish local data, proceed as follows:
 - Clear the "Server prefix" check box.
7. To publish data from OS Servers, proceed as follows:
 - Select the "Server prefix" check box.
 - Select the OS server to which the Web client should have data access from the drop-down list.
The server prefix handles the data access and corresponds to the logical OS server name.
8. If you want to use the preset target and source path, proceed with Step 11.
9. If you want to change the preset source path, proceed as follows:
 - Click the "Browse" button next to the "Path to your WinCC project:" text box.
 - Select the desired path.
10. If you want to change the preset target path, proceed as follows:
 - Click the "Browse" button next to the "Folder for Web access to your pictures:" text box.
 - Select the desired path.
Make sure that the same path is entered for publishing local data and publishing data of OS servers.
Check the server prefix in the drop-down list after all path specifications.
11. Click "Next".
The "WinCC Web Publishing Wizard - Select pictures" dialog box is opened.
You will be presented with all the standard and all the project-specific pictures.
12. Select the pictures that you wish to publish:
 - Click ">>" to publish all the pictures.
 - Press the <Ctrl> key and click on the desired pictures if you want to publish a selection of pictures.
Then click on the ">" button.

Note: We would recommend that you always publish all the standard pictures.
13. Click "Next".
The "WinCC Web Publishing Wizard - Select functions" dialog box is opened.
This lists the standard functions and project functions (project-specific C scripts) that you have stored on the Web server.

14. Select the functions that you wish to publish:

- Click ">>" to publish all the functions.
- If you only want to publish a selection of the functions, hold down the <Ctrl> key and select the ones you want.

Note

The pictures will only offer the scripts that were selected during the last publication process.

You should, therefore, select all the functions that are required whenever you carry out a publication process.

15. Click the "Next" button.

The "WinCC Web Publishing Wizard - Referenced graphics" dialog box opens.

This shows you both the standard graphics as well as the project-specific graphics which are involved in the process pictures.

16. Click ">>" to publish all the graphics.

17. Select the graphics that you want to publish:

- Click ">>" to publish all the graphics.
- If you only want to publish a selection of the graphics, hold down the <Ctrl> key and select the ones you want.
Then click ">".

Note

We recommend that you always publish all graphics.

18. Then click "Next".

The "WinCC Web Publishing Wizard - Exit" dialog box is opened.

19. Click "Finish".

After the publication process the following messages may be displayed:

- "The picture(s) have been published successfully."
- "Not all pictures and functions were successfully published."

20. Click "OK" to confirm the message.

The transferred pictures are listed in the "WinCC Web Publishing Wizard - Exit" dialog box. In the results list, pictures and functions that contain faulty scripts are marked with a red "(!)" symbol.

8.2 Setting the user rights, start screen and language

21. Only in the event of errors in the publication process:

- Double-click on each faulty picture to open and correct it in the "PdIPad" editor. Check faulty scripts for unsupported functions.
- In the "PdIPad" editor, select the menu command **Edit > Check Scripts**. The compilation window provides information about potential errors including the relevant row number.

Note

Any changes that you make in the "PdIPad" editor will be discarded when you next carry out a publication process. Therefore, you should first correct the pictures in the Graphics Designer and then repeat the publication process.

22. Once you have corrected all pictures, click "Close".

Result

The published pictures are displayed in the Web Navigator data window.

8.2 Setting the user rights, start screen and language

8.2.1 Restricting access via user rights

Restricting access

You can control the level of access that the Web client has to the OS system by means of user rights. You assign user rights in the User Administrator editor of the Web server. The user rights correspond to those of the standard clients.

In addition to the user rights of standard clients, you can assign the "Web Access - Monitoring only" user right to the Web client. This right overrides higher level user rights.

Before you can assign user rights, you will first need to have prepared all the data using Web View Publisher.

8.2.2 How to set user rights, start screen and language in the User Administrator

Requirement

The necessary data must have been published with Web View Publisher.

Procedure

1. Open the User Administrator editor of the Web server on the ES.
2. Create the new users/operators or user groups and assign the required authorizations to them.
For additional information refer to the *Process Control System PCS 7; Operator Station* manual.
3. In the tree view, select the desired user group or individual user.
4. Check the "Web Navigator" box.
Two additional input fields will appear.
5. Click "Browse" next to the "Start screen" input field.
The "Open" dialog box will appear. The "Open" dialog box will present you with all the graphics that you have published.
6. Select the file called "@screen.pd_". Check if the picture file comes from the path `..\\Web Server\\<wincc_project_release_name>\\Web Navigator\\pictures` and then click the "Open" button.
7. If you wish to set a specific language for the user groups or individual user concerned, click "Browse" next to the "Language" input field.
8. In the "Select language" dialog box, select the desired language for the Web client operator control and monitoring interface and then click "OK".
9. Close the User Administrator.

NOTICE
When selecting a language, please ensure that you have configured the relevant language for all process mimics. For example, in a label field you will need to have entered the label text in all the languages.

8.3 Configuration of the Web settings

The following configurations of the WebNavigator can be made in the SIMATIC Manager:

- Specifying "Monitoring only" cursor persistently for the project (Page 40)
- Publishing process pictures centrally for access via browser with Web clients (Page 39)

8.3.1 How to configure the "Monitoring only" recognizability

Requirement

The user has been assigned system authorization function - "Web access - monitoring only" in the WinCC User Administrator.

Specifying the "Monitoring only" mouse pointer

Follow these steps to use a plant-specific mouse pointer:

1. In the "Options" menu of the SIMATIC Manager, select "Central OS Settings" > "WebNavigator".
2. Enter the path and file name of the mouse pointer or navigate to the file of the desired mouse pointer by using the "..." button.
3. Click "OK".

The setting applies in the multiproject.

Result

The selected plant-specific mouse pointer is displayed for users having the system authorization function "Web access - monitoring only".

8.3.2 How to publish the process pictures centrally

Configuring and starting the publishing of process pictures centrally

In order to display process pictures of an OS server on the Web client or Web Diagnostics client, publish the process pictures by using the Web View Publisher.

Web server or OS server whose pictures you want to publish

The "Publish to Web server" dialog shows the following OS stations in the multiproject on the engineering station:

- All single-station systems
- All OS clients with the associated OS servers

Sample	Web server	Display	Procedure
	Single-station system	Single-station systems are displayed on one line without sub-entry.	Select the process pictures of the local OS project.
	OS client	OS clients have at least one sub-entry. The subentries correspond to the server data that are loaded on the OS client.	Select the desired data for the OS computers (OS clients and / or OS servers): - Process pictures in the local OS client project: Select the check box in the line of the OS client. - Process pictures of the server data of an OS server on the OS client: Select the check box in the line of the desired OS server.

Pictures and functions to be published

To select the pictures and functions, start the WinCC Web Publishing Wizard:

- By selecting a check box
- With the button 

With the closing the WinCC Web Publishing Wizard, you save the settings for each Web server or OS server data.

Procedure

1. Select the entry "Central OS settings > Publish to Web server" in the "Options" menu in the SIMATIC Manager.
The PC stations of the multiproject are displayed in the "Publish to Web server" dialog.
 2. Select the Web server or OS server whose pictures you want to publish.
The WinCC Web Publishing Wizard is opened.
 3. Select the pictures and functions to be published.
Save the configuration. This closes the wizard.
 4. Click "Publish" in the "Publish to Web server" dialog.
 - The configuration is saved.
 - Publishing is started for the selected Web servers and OS servers.
- To save the configuration without starting the publishing, select "Save".

Result

The pictures will be published. In case of error a log-file displayed with further information.

8.4 Disabling Graphics Runtime

8.4.1 How to disable Graphics Runtime

Introduction

In an OS multiple-station system, an OS client that is configured as a Web server for OS can no longer be used as an operator station (OS client) within the PCS 7 plant. You should, therefore, deselect "Graphics runtime" in the startup list, which will have been selected by default.

Note

In the case of an OS single-station system, there is no need to deselect "Graphics runtime".

Procedure

1. Open the Web server in WinCC Explorer on the ES.
You can also select the desired OS in the SIMATIC Manager (component view) in the tree view and then select the menu command **Edit > Open Object**.
2. In the tree view, click the "PC" component.
3. Open the context menu for the name displayed in the data window and select **Properties**.
4. Go to the "Startup" tab and deselect "Graphics runtime" in the "Order when starting WinCC runtime" group.
5. Click "OK" to apply the setting.

Result

When you start WinCC in process mode on the Web server, the graphics runtime interface is not started.

8.5 Downloading the Web server

Downloading

Since the Web server is an operator station (OS) at first, downloading the Web server is the same as downloading the operator station (OS).

Note

If the ES and OS are together on a PC station that functions as a Web server at the same time, downloading the Web server is not required (for example, OS single-station system with ES/OS/Web server).

Downloading changes

Note

A delta download of the Web server can be performed for a configuration of the Web server in an OS single-station system.

Downloading changes for a single-station system with reference OS

If you have created operator stations as reference OS, be aware of the following:

NOTICE
If you download a change to the basic OS, you must always download this change to associated reference operator stations.
A new reference operator station download of changes can only be performed once all reference operator stations have first performed a download of changes.
If you do not do this for a reference OS, it is absolutely essential that you perform a complete download of this reference OS.

Information relating to the download procedure

For detailed information about how to download to an OS, please refer to the "Downloading a project and configuring changes > How to download to an individual OS" section of the *Process Control System PCS 7; Operator Station* manual.

Completing the configuration on the Web server

9.1 Overview of configuration steps

Overview

The following table provides an overview of the configuration tasks on the Web server.

Step	Where?	What?
1	Web server	Check the settings in the User Administrator after downloading to the Web server (Page 45)
2	Web server	In the case of an OS multiple-station system: Check that graphics process mode has been disabled in the "Computer properties" dialog box. (Page 42)
3	Web server	Run the Web Configurator (Page 46)

Web Configurator

In the Web Configurator set up the website for the Web client access.

The Web Configurator is located in WinCC Explorer in the shortcut menu of the Web Navigator editor.

9.2 Check the settings for the Web server

9.2.1 How to check settings following download

Procedure

After downloading the project from the engineering station (ES) to the Web server, check the following settings:

1. In the User Administrator editor of the opened Web server, verify that the configured settings on the ES have been correctly applied.
2. In the Computer editor of the opened Web server, open the "Computer Properties" dialog box and select the "Startup" tab. Check whether "Graphics runtime" has been deselected in the "Order when starting WinCC runtime" group. If necessary, deactivate this option.

Note

In the case of an OS single-station system, there is no need to deselect "Graphics runtime".

9.3 Setting up the website

9.3.1 Using the Web Configurator

Role of the Web Configurator

The Web Configurator is used to set up and manage the Internet Information Service (IIS) and website of the Web server. This setup takes place on the Web server after you have downloaded the project to the Web server. This setup and configuration is necessary to set up an operating station (OS) as a Web server and make it accessible to Web clients via the intranet/Internet.

You can use the Web Configurator to make the necessary firewall settings for the network card (assuming that you have activated the firewall).

Using the Web Configurator

The Web Configurator is used:

- Generally, after each new installation of the Web server
- Whenever there is a change of project
- Whenever new SIMATIC PCS 7 components are installed or existing ones are updated

9.3.2 Opening the web server start screen

The setting for calling the web server start screen is determined in the Web Configurator during initial configuration.

You have the following options for calling up the web server start screen:

- Call via a virtual folder in an existing website
- Call as default IIS website

Note

If you run the Web Configurator again without having reinstalled the web server, the dialog box in which you specify how the web server start screen is called is no longer displayed.

9.3.3 Setting options for calling up the default website

Setting options for calling the web server start screen

The following table explains the setting options for calling the web server start screen on the web client.

Setting option	Meaning
Web page name	Enter the name of the website. The default entry is "WebNavigator" . - If the Web server start screen is called from a virtual folder on an existing website, it is called from the following address: http://<server name or IP address of the Web server>/<name of the website> For example, http://APDL254/WebNavigator or http://145.223.123.155/WebNavigator. - If the Web server start screen is called as a default IIS website, it is called from the following address: http://<server name or IP address of the Web server> For example, http://APDL254 or http://145.223.123.155. The documentation uses the term "<server address>" for the address with which the Web Server start screen is called.
Port	Enter the port to be used for the "http" protocol. This field is set to the HTTP port number 80 by default. This must be a number within the range of 1 to 65535. As a general rule, port numbers up to 1024 are pre-assigned by the system.
IP address	Select the web server IP address, via which the web clients are to communicate with the web server. The default in the drop-down list is "(All not assigned)".
Standard web page selection box	Select the default website that appears in Internet Explorer after selecting the web server on the web clients: - If you select "MainControl.asp" (default setting), operator control and monitoring within process pictures will be enabled. A menu bar will also be displayed in Internet Explorer on each Web client. You can use the menu bar to select and install the components required by the Web client. If you do not want the menu bar (navigation bar) to be displayed to Web client users once the plug-ins have been downloaded, run the Web Configurator again, but this time select the "Webclient.asp" setting. To redisplay the menu bar, a user with administrative rights can call the project start page by entering the following address in Internet Explorer: http://<serveraddress>/maincontrol.asp - If you select "Webclient.asp", operator control and monitoring within process pictures will be enabled. However, no menu bar will be made available.

9.3 Setting up the website

Setting option	Meaning
Reconnection interval	Use this option to enter the time interval that should elapse before the Web clients attempt to reconnect automatically following a connection fault. Set the value to 0, if you wish to deactivate the "Reconnect automatically" function.
Launch website following configuration	Select this option to launch the web page automatically after configuration. If you do not select the check box, you can only start the website and the IIS manually via the Windows Management.

9.3.4 How to set the default website for the Web clients

Requirements for a multiple-station project

- The Web server is installed on the OS client.
- The project has been downloaded from the ES to the OS client (Web server).
- The OS settings must have been fully checked and the pictures published.
- The user logged on to the Web server has the rights to configure the Internet Information Service (IIS).

Requirements for an OS single-station system

- The Web server is installed on the OS single-station system.
- With an OS single-station system (OS single-station), the project must have been downloaded from the ES onto the OS single-station system.
- The OS settings must have been fully checked and the pictures published.
- The user logged on to the Web server has the rights to configure the Internet Information Service (IIS).

Procedure

1. Open the project on the Web server in the WinCC Explorer.
2. Select the "Web Navigator" editor.
3. Select the **Web Configurator** shortcut menu command.
The "WinCC Web Configurator" dialog box is opened.
4. Click "Next".
5. Select one of the following options:
 - Activate the "Create a new standard Web site (stand-alone)" check box.
 - Activate the "Add to an existing Web site (virtual folder)" check box.

6. If you have activated the "Create a new standard Web site (stand-alone)" check box, continue with Step 9.
7. If you have activated the "Add to an existing Web site (virtual folder)" check box, use the "Browse" button to select the active web page in which the virtual folder is to be inserted.
8. Click "OK".
9. Click "Next".
10. Enter the name of the website in the "Name of the website:" text box.
11. Enter the port in the "Port:" text box.
12. Select the IP address from the "IP Address:" drop-down list.
13. Select the default website from the "Default Web-Page:" drop-down list.
14. Enter the reconnection interval in the "Reconnect Interval:" text box.
15. Activate the "Start the web-site after being configured." check box.
16. If you have not activated the Windows Firewall, continue with Step 18.
17. If you have activated the Windows Firewall, proceed as follows:
 - Click "Windows Firewall".
This button is only displayed when the firewall is enabled.
The "Windows Firewall" dialog box opens.
Set up the desired access options (HTTP; HTTPS).
18. Click "Finish".
19. Click "OK".

Result

The IIS is restarted. The created web page is activated.

Installation and settings for the Web client

10.1 Preparations

Preparations

In order to use the Web client for process control purposes, you will first need to carry out the following preparations on the PC:

- Check the Internet Explorer settings to see whether the plug-ins can be installed.
- Install the "Web client" application on the PC that you want to serve as a Web client.
- You must download the needed plug-ins from the Web server.

10.2 Overview of installation steps

Installation steps

To install and configure the Web Client, you will need to carry out the steps below. These steps are described in detail in the sections that follow.

Where?	What?
Internet Explorer on Web Client	Setting in the Internet Explorer (Page 52)
Internet Explorer on Web Client	Installing the Web client on your PC (Page 54)
Internet Explorer on Web Client	Install plug-ins (Page 56)
Internet Explorer on Web Client	Starting process control on the Web client (Page 58)
Internet Explorer on Web Client	Setting the language for the navigation bar (Page 58)
Control Panel on Web Client	Removing and modifying / updating plug-ins on the Web client (Page 60)

Note

Software update

Note the following:

- You update the software in the Web client.
 - You will have to uninstall and then reinstall the software in the Web Diagnosis Client.
-

10.3 Internet Explorer settings

10.3.1 Configuring the enhanced security for the Internet Explorer

If a Web client is installed on a server operating system, you have to check the IE ESC configuration in the Server Manager.

Procedure

1. Open the Server Manager with the menu command **Start > Server Manager**.
The "Server Manager" dialog box opens.
2. In the detailed information of the computer, open the section "Server overview".
3. Open the "Safety information" section.
4. Click the "Configure enhanced security configuration for IE" option.
The "Enhanced security configuration for Internet Explorer" dialog opens.
5. Ensure that the "OFF" option is activated for administrators and users.

10.3.2 Setting the Web content zone

Web content zones

In Internet Explorer, you need to make or verify the settings for the Web content zone in order to later be able to install the plug-ins for the Web client from the Web server.

10.3.3 How to set the "Internet" or "Local Intranet" Web content zones

Requirement

Internet Explorer must be installed.

Procedure

1. Open Internet Explorer.
2. Select **Tools > Internet Options**.
3. Select the "Security" tab.
4. Select the Web content zone in which the Web server is located (either "Internet" or "Local intranet").
5. Click the "Custom Level" button.

6. Under "Script ActiveX controls marked safe for scripting" and "Download signed ActiveX controls", click "Enable".
7. Click "OK" to close the "Security Settings" dialog box.
8. Click "OK" to close the "Internet Options" dialog box.

Result

The requirements for a connection from the Web client to the Web server are now fulfilled.

10.3.4 How to set the "Trusted Sites" Web content zone

Introduction

In Internet Explorer, you need to make or verify the following settings in order to later be able to install the plug-ins for the Web client from the Web server.

Requirement

Internet Explorer must be installed.

Procedure

1. Open Internet Explorer.
2. Select **Tools > Internet Options**.
3. Select the "Security" tab.
4. Select the "Trusted sites" icon.
5. Click the "Sites" button.
The "Trusted sites" dialog box opens.
6. Enter the address of the Web server in the "Add this website to the zone" input box.
Possible formats and wildcards are *://157.54.100 – 200, ftp://157.54.23.41 or http://*.microsoft.com, for example.
7. Deactivate the "Require server verification (https:) for all sites in this zone" box.
8. Click "Add".
This enters the address of the Web server.
9. Click "OK".
10. Select the "Trusted sites" icon.
11. Click the "Standard level" button.
12. Click the "Custom Level" button.
13. In the "Security Settings" dialog box, select "Enable" under "Initialize and script ActiveX controls not marked as safe".

14. Click "OK".

15. Click "OK" to close the "Internet Options" dialog box.

Result

The requirements for a connection from the Web client to the Web server are now fulfilled.

10.4 How to install the Web client on your PC

Installation options

You have two options when installing the "Web client" software package:

- Remote installation via the intranet/Internet of the Web server
- Local installation on the Web client using the Windows Installer Package:

Client type	Remote installation method	Local installation method
Web client on OS multiple-station system	X	X
Web client on OS single-station system	X	X
Web diagnostics client on OS single-station system		X

Note

The certificates for the installation files are checked when you install the Web client or the plug-ins. Read the FAQ 62370805 (<https://support.industry.siemens.com/cs/ww/en/view/62370805>) for more on this.

Remote installation

The following instructions explain the remote installation method.

Requirements

- The project is loaded on the Web server.
The corresponding OS (WinCC Explorer) is open.
- The PC that will be used as a Web client has access to the Web server.
The corresponding OS (WinCC Explorer) is open.
- The <server address> of the Web server is known to you.
- You must know the domain, a user name and the associated password.

- You as a user have the permission for the Web option in the User Administrator on the Web server.
- You are logged on to the PC as an Administrator.

Procedure

1. Open Internet Explorer.
2. Enter `http://<server address>` in the "Address" text box.
You can find information on the server address in the section "Setting options for calling up the default website (Page 47)".
3. Enter your WinCC user name and password in the "Enter network password" dialog box.
If you want to save your password, select the "Save password" check box.
The "Security Warning" dialog box appears the first time a connection is made to the Web server.
4. Click "Install" in the "Security prompt" dialog box.
The home page of the Web server is shown in Internet Explorer.
The home page varies depending on the setting of the default website.
You can find additional information on this in the section "Setting options for calling up the default website (Page 47)".
5. In the main window, select "Click here to install".
The installation wizard starts. This will then guide you through the process of installing the "Web Client" application on your PC.
6. In the "File download" dialog box, click "Run" to start the installation wizard.
7. Follow the instructions of the installation wizard.

Result

Once the "Web client" application has been installed, a dialog box will be displayed in Internet Explorer that lists all the components that have been installed, along with details of their size and version.

Do not click "Process pictures" yet, as you will first need to install the plug-ins.

Local installation of the "PCS 7 Client" software package

Perform the installation on the Web client using the system setup from the *Process Control System*; *SIMATIC PCS 7* DVD.

Local installation of the "PCS 7 Web diagnostics client" software package

Perform the installation on the Web diagnostics client using the system setup from the *Process Control System*; *SIMATIC PCS 7* DVD.

10.5 How to install the plug-ins

Introduction

To enable operator control and monitoring of faceplates in process pictures on the Web client or the Web diagnostics client, you first need to install the plug-ins that will make the faceplates operable over the Internet.

Requirements

- The Web client or Web diagnostics client must be installed on your PC.
- The WinCC project is opened on the Web server.
- In Internet Explorer, either the start page of the Web server is displayed or the results page from the installation of the Web client software.
- To set the default website for the Web clients, "MainControl.asp" needs to be selected in the default website selection box.

Procedure

1. In Internet Explorer, hover your mouse over the left-hand edge of the window to access the navigation bar and display the main menus.
2. Click on the "double arrow" icon in the main menu next to the name or IP address of the Web server to display the submenus.
3. Click the "Download area" submenu to access the download area.
4. Click "Download plug-ins" in the download area.
All the plug-ins that are available for the Web client will be displayed on the right-hand side of the Internet Explorer window. In addition, the size and status information will be provided along with buttons for installing them.

5. Click in the "Install" column on the version information arrow to install the following plug-ins one after the other:

- WinCC Basic Process Control
- WinCC Advanced Process Control
- PCS 7 Basic Faceplates
- PCS 7 Advanced Faceplates

Note: The "WinCC Basic Process Control" plug-in has to be installed prior to the "WinCC Advanced Process Control" plug-in.

Installing these plug-ins provides you with the basic functions for operator control and monitoring without SIMATIC BATCH, SFC and SIMATIC Route Control.

6. Click on the arrow with the specified version in the "Install" column to install the following plug-ins one after the other.

The following plug-ins provide you additionally with image modules for SIMATIC BATCH, SIMATIC Route Control and SFC visualization if they are installed.

- Microsoft MSXML 6.0
- SIMATIC BATCH WinCC Options
- SIMATIC ES Common Services
- SIMATIC SFC Common Displays
- SIMATIC SFC Visualization
- SIMATIC Route Control

Note**Operating faceplates of SIMATIC BATCH**

With the Web option for OS, the following SIMATIC BATCH blocks can be operated when the "SIMATIC BATCH WinCC Options" plug-in is installed:

- Faceplates of the unit blocks
- Faceplates of the EPH blocks

You can open BatchCC and the recipe editor on the BATCH operator station (BATCH client).

Result

The Web client installation process is now complete. Close Internet Explorer and reopen it in order to log on to the Web server for the process control. Once you have started Runtime (process mode) on the Web server, you can open the process pictures on the Web client.

10.6 How to start process control on the Web client

Introduction

Once you have installed all the necessary plug-ins on your Web client, you can start process control.

Requirement

The OS on the Web server is started for process mode.

Procedure

1. Open Internet Explorer.
2. Enter `http://<server address>` in the "Address" input box.
You can find information on the server address in the section "Setting options for calling the Web Navigator start screen (Page 47)".

Result

The start screen, which was specified in the User Administrator on the Web server, is displayed in the Internet Explorer.

If the "MainControl.asp" option has been selected in the default website selection box for the Web client default website setting, the navigation bar will be displayed. The navigation bar is minimized to provide the maximum amount of space for the start screen display area.

You can find additional information about the displaying the navigation bar in the section "Setting options for calling the Web Navigator start screen (Page 47)".

10.7 How to set the language for the navigation bar on the Web client

Introduction

To adapt the navigation bar language setting in Internet Explorer for the Web client, proceed as described below.

Requirements

- The WinCC project is opened on the Web server.
- To set the default website for the Web clients, "MainControl.asp" needs to be selected in the default website selection box.

Procedure

1. Open the navigation bar in Internet Explorer.
2. In the main menu, select **Language > <Flag>**.

Result

The navigation bar is switched over to the desired language.

10.8 Using secure, certified connections

You can use secure connections in PCS 7 for communication between Web servers and Web clients.

In addition to establishing secure connections (HTTPS), you can configure the authentication of the Web client based on a user certificate as a requirement for establishing a connection. Standard procedures are used to secure the connection and authenticate Web clients. These are components of the employed operating systems. Below, you can find information on basic procedures, as well as the settings specific to PCS 7.

Certification authority

In order for the applications to be able to check the validity of the certificates without additional user interaction, the certification authority for the certificates used must be known on the Web server and the Web client.

Reaction on the Web server by unknown certification authority for the client certificates

The validity of the client certificate cannot be checked at an unknown certification authority.

Depending on the operating system and the associated IIS Version, the reaction of the IIS will change with the SSL-Setting "Client Certificate Accepted".

- Reaction on the Web server with Windows Server 2008 R2:
The connection is permitted.
- Reaction on the Web server with Windows Server 2012 R2:
The connection is declined.

Setting up a secure connection on the Web server (HTTPS connection)

Requirement

A certificate is in the certificate store of the Web server (computer account). The certificate can be used for the HTTPS connection.

Procedure

Configure the Internet Information Service (IIS) so that the Web server supports communication over HTTPS.

Setting up authentication of a Web client with a client certificate

Requirements

- The "Set up secure connection on the Web server (HTTPS connection)" is configured.
- A certificate that meets the following conditions must be stored on the Web client for each user:
 - The certificate is in the certificate store of the user (user account).
 - "WebNavigator Client" must be entered for the "Friendly name" option in the certificate.

Procedure

Configure the Internet Information Service (IIS) in such a way that the client certificates of the connecting Web clients can be evaluated.

10.9 Removing and modifying / updating including plug-ins on the Web client

10.9.1 Removing and modifying / updating including plug-ins on the Web client

Notes on removing and modifying installed products

The web client and plug-ins can only be uninstalled via Windows.

The process for modifying/updating products is similar to the one for installing them for the first time:

- After logging onto the Web server in Internet Explorer, the versions of all installed components of the Web client are compared to the versions on the Web server. If there is a newer version of the Web server, the Web client is offered an update.
- You can install new plug-ins at any time via the Web download menu.
For additional information, please refer to the section "How to install plug-ins (Page 56)".

10.10 Web client functions in process mode

10.10.1 Web client user interface

User interface

The layout configured on the Web server is always used and displayed on a Web client. Operator control and monitoring of the process pictures displayed on the Web client is exactly

the same as with an operating station (OS), provided that the operator who is logged on has been assigned the relevant rights.

The Web client user interface is structured in exactly the same way as on an operating station (OS). It is made up of an overview area, a workspace and a button set area. The main difference is that the user interface is displayed in Internet Explorer. Also, some of the functions associated with button sets 1 and 2 that would normally be accessible on an operating station (OS) are not available.

Note

If the WinCC Picture Tree is derived from the SIMATIC Manager plant hierarchy, or if the names of the OS areas in the plant hierarchy and WinCC Picture Tree are consistent, you will be able to use process pictures.

10.10.2 Functionality on the web client

Introduction

In process mode, the Web client offers functions in the following areas of the OS screen:

- Overview area
- Workspace and process picture area
- Button sets

Overview area

The following functions are available in the overview area:

- Select process pictures from the Picture Tree Navigator
- "Loop-in-alarm" function using group displays
- "Screen printout" function

Note

Select the menu command **View > Update** in the Internet Explorer in the following cases.

- Display the area selection buttons and message line
If the message line and area selection keys fail to display correctly in the overview area when you connect to the process control start screen for the first time. Use this menu command to update the representation in the Internet Explorer.
 - Area selection without picture change
If you click an area selection button but the picture does not change in the work area. This menu item requests and displays the latest data from the OS Web server.
-

Button set

- "OnlineTrendControl" function
This function can only be configured for trends from the template picture @TRG_Standard.pdl .
- The button sets offer message system and navigation functions. The navigation functions for browsing through the picture hierarchy will still be visible even if no process picture can be selected.
- The "SFC Visualization" button is not displayed because the function of the SFC browser is not supported.

Workspace and process picture area

- For the purpose of controlling and monitoring the process, you can use all of the objects that have been configured on the PCS 7 OS (PCS 7 faceplates and standard/smart and Windows objects).
- The SFC Visualization function on the Web client is implemented for the SFC charts and SFC instances.
- The SFC control only supports the faceplate display mode on the Web client. This is used independently of the configuration.
- If you open an active SFC instance on a Web client, it is the "Prepared values" view that will be displayed and not the "Current values" view, which is the one that would be displayed in the case of an OS Client. You can select the desired view from a drop-down list box.
- You can use all of the SIMATIC BATCH faceplates apart from the "BATCH control center" button.
- The following buttons are not available with the SIMATIC Route Control faceplate:
 - "BCC", "SFC", "RCC", "Close" and "Help"
- Within the workspace, you can check which area is currently active by looking to see which process picture is being displayed.
- The following functions cannot be executed in the "Diagnostics" OS area:
 - Filtering on the complete export
 - Call up the message correction
 - Calling up the hardware project (HW Config)
 - Call up the configuration data
 - Printing from the "Maintenance" view
 - Calling the "DiagMonitor" diagnostic tool
 - Calling SIMATIC PDM
- The Web client does not support operation via hotkeys configured in WinCC, because Internet Explorer is not capable of distinguishing between its own internal operating objects (e.g., the "Refresh" button) and those of WinCC.

"Highest priority messages" message list

The presence of messages with the highest priority can be neither signaled nor displayed in the separate (highest priority) message list on the Web client.

Access with Web clients

Web clients can access Web servers with different versions (Web Cross Connectivity). You can find information on setting up and installing Web Cross Connectivity and on the current compatibilities of the clients with the servers on the Internet (<http://support.industry.siemens.com/cs>) using the key word "Web Cross Connectivity pcs 7 web option".

Additional information

- Section titled ""BPC" and "APC" Supported Functions" (Page 69)
- Section titled "Supported Functions" in the online help *Web Navigator Information System*
- Section titled "Non-supported functions" in the online help *Web Navigator Information System*

Time of day

11.1 Time displays on the Web client

Introduction

If Web clients and Web servers are in different time zones, the different times are displayed on the Web clients.

The Web client time of day is not synchronized on a PCS 7 system.

Times of day displayed on the Web client without time-of-day synchronization

If a Web client is in a different time zone than the Web server, the following times are displayed:

- The time of day in the overview area corresponds to the local Web client time.
- The time of trend values corresponds to the local time from the Web server.
- The time of messages corresponds to the local time from the Web server.
- The time of acknowledgements corresponds to the local time from the Web server.
The time of the acknowledgement message corresponds to the local time from the Web server.
- The time of process value operations corresponds to the local time from the Web server.
The time of the operating message corresponds to the local time from the Web server.

11.2 Web Client time-of-day synchronization

Time displays on the Web client

If Web clients and Web servers are in different time zones, the different times are displayed on the Web clients.

You can find additional information on this in the section "Time displays on the Web client (Page 65)".

Time synchronization on the Web client

To ensure that the time stamps are correct, operate the Web client:

- In a domain
- With UTC (Coordinated Universal Time)

Time synchronization in a domain using a domain controller

If the Web client is in the same domain as the Web server, the time is synchronized by the domain controller of the domain.

Web client relies on UTC

Internally, the PCS 7 system relies on UTC. Time information that is to be displayed for the operator in process mode can be converted into the local geographical time by UTC.

Open the status information

12.1 Status information about Web servers and Web clients

Status information

You can retrieve status information about Web servers and Web clients from any computer that has access to the Web server. Status information gives you information about which users have access to the Web server via which Web clients.

The status information is displayed on the HTML page in blocks: There is an information block for the Web server and an information block to every connected Web client.

The following information is displayed:

- Software version of the installed Web server
- Number of Web clients that can access the Web server
- User and log-in details for each user plus information about which Web client they are logged onto

The information blocks can only be displayed in English. To be able to call the status pages, you must be set up as a user in the WinCC User Administrator.

12.2 How to open the status information

Requirement

- The user must be set up in the User Administrator.

Procedure

1. Open Internet Explorer on a Web server or Web client.
2. Enter `http://<Server address>/status.html` in the "Address" text box.
You can find information on the server address in the section "Setting options for calling up the default website (Page 47)".
3. Enter your logon name and your password in the "Establish connection to <Computer name>" dialog box.

Note

If the Web client is installed, you can also call the status bar via the navigation bar by selecting "<PC name> > Diagnostics > Status".

Result

The status information will be displayed for you on the website.

Appendix

13.1 Supported "BPC" and "APC" functions

Introduction

The following table lists the functions that are supported by the Web Option for OS, if you have installed the following plug-ins on the Web Client:

- WinCC Basic Process Control (BPC)
- WinCC Advanced Process Control (APC)

Note

The "WinCC Basic Process Control" plug-in has to be installed prior to the "WinCC Advanced Process Control" plug-in.

Supported functions

The following list of supported functions tells you how to configure your project on the ES so that it can be run as a web project on the Web client.

Certain functions are marked with an "*". These functions are included to ensure error-free compilation on the Web client. These functions are not supported by the Web client.

No.	Functions in SIMATIC PCS 7	Plug-in
	Instrumentation and control option standard functions:	
1	GetCSigPicture	BPC Plug-In
2	GetSignificantMask	BPC Plug-In
3	PASSCheckAreaLevelPermission	BPC Plug-In
4	PASSCheckAreaPermission	BPC Plug-In
5	PASSCheckLevelPermission	BPC Plug-In
6	PASSLoginDialog (*)	BPC Plug-In
7	SFCOpen (*)	BPC Plug-In
8	LockAreaMessages	BPC Plug-In
9	LoopInAlarm	BPC Plug-In
10	void GetServerTagPrefix(char** ppszServerPrefix, char** ppszTagPrefix);	Web Navigator Basic
	Split screen manager standard functions:	
11	AcknowledgeAllPicture (*)	BPC Plug-In

13.1 Supported "BPC" and "APC" functions

No.	Functions in SIMATIC PCS 7	Plug-in
12	ALGAcxAddPermissionFilter	BPC Plug-In
13	ALGAcxAddPermissionFilterShow	BPC Plug-In
14	PTN_CSIG_Ldown	BPC Plug-In
15	PTN_CSIG_RDOWN	BPC Plug-In
16	PTN_CSIG_RUP	BPC Plug-In
17	PTN_NODE_LDOWN	BPC Plug-In
18	PTN_NODE_RDOWN	BPC Plug-In
19	PTN_OpenPath	BPC Plug-In
20	PTN_PICT_CHANGE	BPC Plug-In
21	PTN_PICT_LDOWN	BPC Plug-In
22	RemovePrefix	BPC Plug-In
23	SSMChangeButtonField	BPC Plug-In
24	SSMChangeOverviewField	BPC Plug-In
25	SSMChangeWorkField	BPC Plug-In
26	SSMCheckAreaLevelPermission	BPC Plug-In
27	SSMCheckWorkFieldDown	BPC Plug-In
28	SSMCheckWorkFieldLeft	BPC Plug-In
29	SSMCheckWorkFieldRight	BPC Plug-In
30	SSMCheckWorkFieldUp	BPC Plug-In
31	SSMChgWorkFieldDown	BPC Plug-In
32	SSMChgWorkFieldLeft	BPC Plug-In
33	SSMChgWorkFieldRight	BPC Plug-In
34	SSMChgWorkFieldUp	BPC Plug-In
35	SSMGetAreaFromIndex	BPC Plug-In
36	SSMGetAreaFromPath	BPC Plug-In
37	SSMGetAreaFromWorkField	BPC Plug-In
38	SSMGetButtonColor	BPC Plug-In
39	SSMGetContainer	BPC Plug-In
40	SSMGetContainerIDToPicture	BPC Plug-In
41	SSMGetContainerToPicture	BPC Plug-In
42	SSMGetContPict	BPC Plug-In
43	SSMGetIndexFromObject	BPC Plug-In
44	SSMGetIndexObjectName	BPC Plug-In
45	SSMGetRegistryString	BPC Plug-In
46	SSMGetRootToPicture	BPC Plug-In
47	SSMGetSAPictureNameEx	BPC Plug-In
48	SSMGetScreen	BPC Plug-In
49	SSMGetWorkFieldCoordinates	BPC Plug-In
50	SSMGetWorkFieldPath	BPC Plug-In
51	SSMGetWorkFieldPicture	BPC Plug-In
52	SSMHardCopy	BPC Plug-In
53	SSMIsUserNameEnable	BPC Plug-In
54	SSMIsVariableValid	BPC Plug-In

13.1 Supported "BPC" and "APC" functions

No.	Functions in SIMATIC PCS 7	Plug-in
55	SSMLinkCSIG	BPC Plug-In
56	SSMOpenSpecField	BPC Plug-In
57	SSMOpenTopField	BPC Plug-In
58	SSMOpenTopFieldFixedSize	BPC Plug-In
59	SSMSetAreaNameToPicture	BPC Plug-In
60	SSMShowAreaButtonEx	BPC Plug-In
61	SSMShowTreeEx	BPC Plug-In
62	SSMProgramStart	BPC Plug-In
63	SSMProgramExecute	BPC Plug-In
64	SSMGetSAPictureName	BPC Plug-In
65	GetCountPicture	BPC Plug-In
66	SSMPictureStoreSet	BPC Plug-In
67	SSMPictureStoreNum	BPC Plug-In
68	SSMPictureStoreGet	BPC Plug-In
69	SSMPictureMemoryNum	BPC Plug-In
70	SSMPictureMemoryRestore	BPC Plug-In
71	SSMPictureMemoryInquire	BPC Plug-In
72	SSMGetServerEx	BPC Plug-In
73	SSMMCActualButtonEx	BPC Plug-In
74	SSMMCCalcCSIGEx	BPC Plug-In
75	SSMMCCChangeAreaEx	BPC Plug-In
76	SSMMCCChangeServer	BPC Plug-In
77	SSMMCShowTreeEx	BPC Plug-In
78	SSMShowAreaTextMCEEx	BPC Plug-In
79	SSMGetSAPictureAndObjectNameEx	BPC Plug-In
80	SSMScrollPictureToObject	BPC Plug-In
81	GetPictObj	BPC Plug-In
	Functions of the SSMAreaStore.dll:	
82	Init	BPC Plug-In
83	SetAreaToWorkField	BPC Plug-In
84	GetAreaFromWorkField	BPC Plug-In
85	SetAreaToTopField	BPC Plug-In
86	GetAreaFromTopField	BPC Plug-In
87	SetStyleToTopField	BPC Plug-In
88	GetStyleFromTopField	BPC Plug-In
89	SetPictureToTopField	BPC Plug-In
90	GetPictureFromTopField	BPC Plug-In
91	GetAvailableTopField	BPC Plug-In
92	SetPictureToWorkField	BPC Plug-In
93	GetPictureFromWorkField	BPC Plug-In

13.1 Supported "BPC" and "APC" functions

No.	Functions in SIMATIC PCS 7	Plug-in
94	GetMaxTopfieldNo	BPC Plug-In
	Functions of the ssmrt.dll:	
95	SSMRTGetAreaFromPicturePath	BPC Plug-In
96	SSMRTGetConfigLong	BPC Plug-In
97	SSMRTSetConfigLong	BPC Plug-In
98	SSMRTGetConfigString	BPC Plug-In
99	SSMRTSetConfigString	BPC Plug-In
100	SSMRTGetAreaButtonByIndex	BPC Plug-In
101	SSMRTGetALGFilter	BPC Plug-In
102	SSMRTGetALGAdmimFilterLevel	BPC Plug-In
103	SSMRTGetALGViewFilterLevel	BPC Plug-In
104	SSMRTGetNoAreaEntry	BPC Plug-In
105	SSMRTGetAlarmpageConf	BPC Plug-In
106	SSMRTGetAvailableTopFieldNo	BPC Plug-In
107	SSMRTGetBaseNames	BPC Plug-In
108	SSMRTGetWorkFieldCoordinates	BPC Plug-In
109	SSMRTGetPicturePathInfo	BPC Plug-In
110	SSMRTGetRegistryString	BPC Plug-In
	Functions of the ptm_api.dll:	
111	PTMRTGetRootNode	BPC Plug-In
112	PTMRTGetParentNode	BPC Plug-In
113	PTMRTGetFirstChildNode	BPC Plug-In
114	PTMRTGetLeftBrotherNode	BPC Plug-In
115	PTMRTGetRightBrotherNode	BPC Plug-In
116	PTMRTGetAreaNode	BPC Plug-In
117	PTMRTGetNode	BPC Plug-In
118	PTMRTGetNodeIndex	BPC Plug-In
119	PTMRTGetNodeEx	BPC Plug-In
120	PTMRTGetAreaNodeEx	BPC Plug-In
	Functions of the tagtable.dll:	
121	TAGTABLEReadVar	APC Plug-In
122	TAGTABLEReadVarEx	APC Plug-In
123	CSigAPIGetCountPicture	APC Plug-In
124	CSigAPIAcknowledgePicture	APC Plug-In

No.	Functions in SIMATIC PCS 7	Plug-in
125	CSigAPILockMessage	APC Plug-In
126	CSigAPILockMessages	APC Plug-In
127	CSigAPIGetCountPicture	APC Plug-In
128	TAGTABLEReadVar	APC Plug-In
129	TAGTABLEReadVarEx	APC Plug-In
	Functions of the CsigAPI.dll:	
130	CSigAPIGetCountPictureAndObject	APC Plug-In
131	CSigAPIAcknowledgeTagAndCreateLTM	APC Plug-In

Additional information

For additional information about the functions refer to the section "Supported functions" and to the section "Non-supported functions" in the *Web Navigator Information System* Online Help.

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