SIEMENS

SIMATIC

PCS 7/Open OS
PCS 7/Open OS Setup Guide

Equipment Manual

11/2021
A5E51387645-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.

⚠ DANGER

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

⚠ WARNING

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

⚠ CAUTION

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

NOTICE

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

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

Qualified Personnel

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

Proper use of Siemens products

Note the following:

⚠ WARNING

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

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Disclaimer of Liability

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

Siemens AG
Digital Industries
Postfach 48 48
90026 NÜRNBERG
GERMANY

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Preface

Purpose of this Document

Purpose of this Document

This document provides information necessary to setup PCS 7 Open OS for 9.0.

Required Basic Knowledge

Readers are presumed to be expert in the use of PCS 7 and the target system.

Where is this Manual valid?

This manual is valid for the software package PCS 7 Open OS for 9.0.

Training Centers

Siemens Technical Training Centers provides extensive training for all levels of plant personnel to ensure optimal performance from PCS 7 control systems. Classes include extensive hands-on activities using appropriate equipment, making the training directly and immediately applicable.

Information is available online (http://www.sitrain.com).

Siemens also offers a number of training courses to familiarize you with the SIMATIC S7 automation system. Please contact your regional training center or our central training center in D 90327 Nuremberg, Germany, for details:

Telephone: +49 (911) 895-3200 or see the Internet site (http://www.sea.siemens.com/sitrain).

A&D Technical Support

Worldwide, available 24 hours a day:

United States: Johnson City, TN	**Worldwide: Nürnberg**	**Asia / Australia: Beijing**
Technical Support and Authorization Local time: Monday to Friday 8:00 AM to 5:00 PM Telephone:+1 (423) 262 2522 or +1 (800) 333-7421 (USA only) Fax:+1 (423) 262 2289 An Internet site is available for support requests (http://www.siemens.com/automation/support-request).	Technical Support 24 hours a day, 365 days a year Phone:+49 (180) 5050-222 Fax:+49 (180) 5050-223 Email for technical support (mailto:ad.support@siemens.com). GMT:+1:00	Technical Support and Authorization Local time: Monday to Friday 8:00 AM to 5:00 PM Phone:+86 10 64 75 75 75 Fax:+86 10 64 74 74 74 Email for technical support (mailto:ad.support.asia@siemens.com). GMT:+8:00
Automation and Drives Service and Support International (http://www.siemens.com/automation/service&support)		
The languages of the SIMATIC Hotlines and the authorization hotline are generally German and English.		

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Security information

1

Siemens provides products and solutions with industrial security 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 security 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 security measures that may be implemented, please visit
https://www.siemens.com/industrialsecurity.

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 Security RSS Feed under
https://www.siemens.com/industrialsecurity.

Introduction

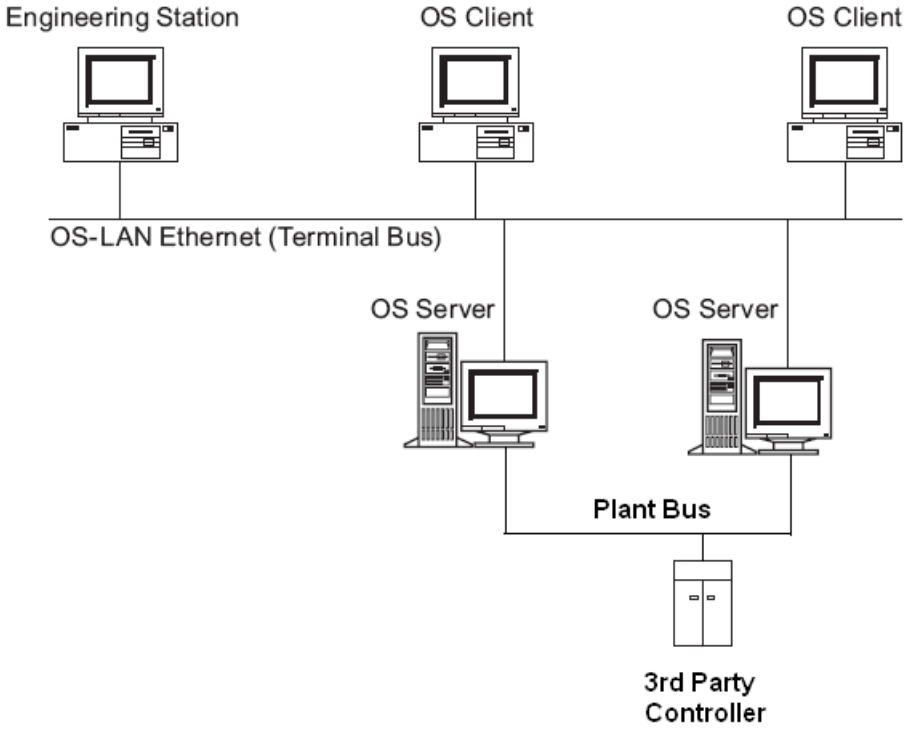
2

2.1 Scope of this Document

This document outlines the steps required to set up a PCS 7 system and a corresponding PCS 7 project that is integrated with third-party devices. Project development is done on an OS Engineering Station using SIMATIC Manager. This document is based on the architectural layout below. A client and your engineering station may be the same physical computer. The diagram below shows them to be on different computers.

Note

For further information on a specific topic in this document, refer to the documentation on the PCS 7 V8.2 DVD set, the WinCC Information System or in the documentation folder **Start >Siemens >Documentation >English** on the hard drive.



2.2 Security

2.2.1 Security Concept

The security concept of SIMATIC PCS 7 should be considered as a set of recommendations and is intended to support SIMATIC customers in creating a network for production plants fulfilling higher security requirements. The recommendations are based on the latest technology, current standards and the features of the employed products.

Since the threat to security is constantly changing, even a complete implementation of the security concept cannot permanently guarantee complete and one hundred percent protection. We therefore recommend a regular evaluation of the measures implemented as part of the security concept.

PCS 7 Security Concept Recommendations and Notes:

http://support.automation.siemens.com/WW/view/en/22229786 (http://support.automation.siemens.com/WW/view/en/22229786)

2.2.2 PCS 7/Open OS Example

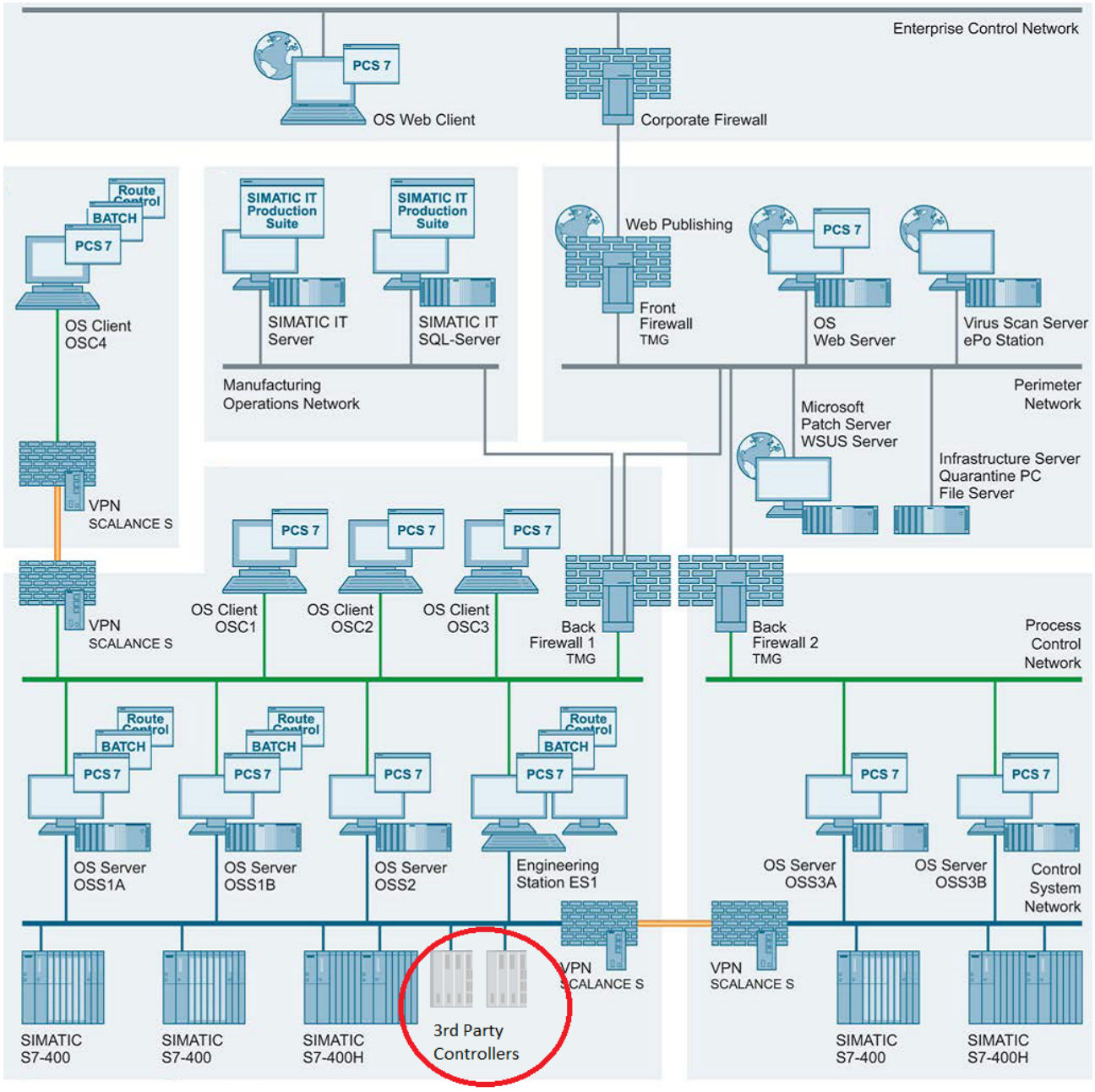


Figure 2-1 Security Picture_Open OS

2.2.3 General Security Information

Siemens offers IT security mechanisms for its automation and drive product portfolio in order to support the safe operation of the plant/machine. Our products are also continuously developed further with regard to IT security. We therefore recommend that you keep yourself informed about updates and upgrades for our products and always use the latest version of each product. You can find information on this at:

http://support.automation.siemens.com

You can register for a product-specific newsletter here.

For the safe operation of a plant/machine, however, it is also necessary to integrate the automation components into an overall IT security concept for the entire plant/machine, which corresponds to the state-of-the-art IT technology.

You can find information on this at:

http://www.siemens.com/industrialsecurity

Products used from other manufacturers should also be considered here.

Below you'll find a list of special attention points towards security when installing and using PCS 7/Open OS:

- Ensure integrity of the files exchanged between systems. It is crucial that enough measures are taken to ensure that the data in those files cannot be tampered with. Examples are external files from other systems that are read by PCS 7/Open OS, such as CSV files that contain configuration data. Other examples include xml, CSV and ZIP files delivered from the PCS 7/Open OS system like DBA archive files and exports from DBA. Consider using a password protected container when exchanging such files between systems.
- Do not adapt the PCS 7/Open OS installation / upgrade files. To install / upgrade the PCS 7/Open OS system properly with all the required build in security, it is important that these files are not changed. Therefore, it is the responsibility of the customer to ensure that the person in charge of this process understands this measure. In some exceptional cases the installation documentation may request some files to be changed manually. The instructions for manual changes must be strictly applied.All other changes are not allowed. In case of issues with certain files always contact Siemens support.
- When establishing connections to third-party systems, follow the security recommendations of the third-party vendor.
- PCS 7/Open OS supports secure OPC connections for data access to OPC Unified Architecture (UA) Servers. For alarm and event data, if secure connections are required, it is necessary to configure alarms to be triggered from tag changes originating from an OPC UA server, since secure connections to OPC Alarm & Events servers are not possible.

2.3 Software Installation Overview

PCS 7/Open OS can be installed as a PCS 7 Single Station or in single or redundant client server architectures. The table below describes the various components that need to be installed. Depending on the architecture of your system, these components may need to be installed on the different computer nodes in the architecture.

Note

Note that all steps might not be required:

- If your computers have been pre-installed with the correct version of the Operating System, the installation of the Operating System is not required and Step 1 can be skipped.
- If you require no third-party software, Step 2 can be skipped.

Step	Procedure	Section
1	Installing the Operating System (Page 15)	2.3.1
2	Installing Third-Party Software (Page 15)	2.3.2
3	Installing PCS 7 Software (Page 16)	2.3.3
4	Installing PCS 7/Open OS Software (Page 16)	2.3.4
5	Installing Authorizations and Licenses (Page 26)	2.3.5

2.3.1 Installing the Operating System

The following operating systems are supported by PCS 7/Open OS OS V9.1:

- Windows 10 Enterprise LTSC 2019
- Windows Server 2019 Standard Edition
- Windows Server 2019 Datacenter Edition

For detailed installation instructions regarding the installation of the operating system,

- *pcs7-offlinereadme.mht* in the root directory of the PCS 7 Installation media (PCS7 V9.1)
- *SIMATIC PCS 7* installation path in the folder _Manuals\English *PCS 7 PC-Configuration.pdf*

2.3.2 Installing Third-Party Software

Third-party software (for example, Microsoft Office, PC Anywhere, Virus softwar) should be installed prior to installing PCS 7. Refer to the *PCS 7 Readme* and *PCS 7 PC-Configuration* PDF file for further information.

Third-party OPC Servers or WinCC Channel drivers may also need to be installed.

2.3.3 Installing PCS 7 Software

For detailed installation instructions, refer to

- pcs7-readme.mht in the root directory of the PCS 7 Installation media (PCS 7 V9.1)
- SIMATIC PCS 7 installation path in the folder _Manuals\English *PCS 7 PC-Configuration.pdf*

Note

Select the appropriate software packages during PCS 7 software installation. Use the following as a guide:

- Engineering Node - Select PCS 7 Engineering
- OS Servers - Select OS Server
- OS Clients - Select OS Client
- Process Historian – There are no software components that need to be installed on the Process Historian.

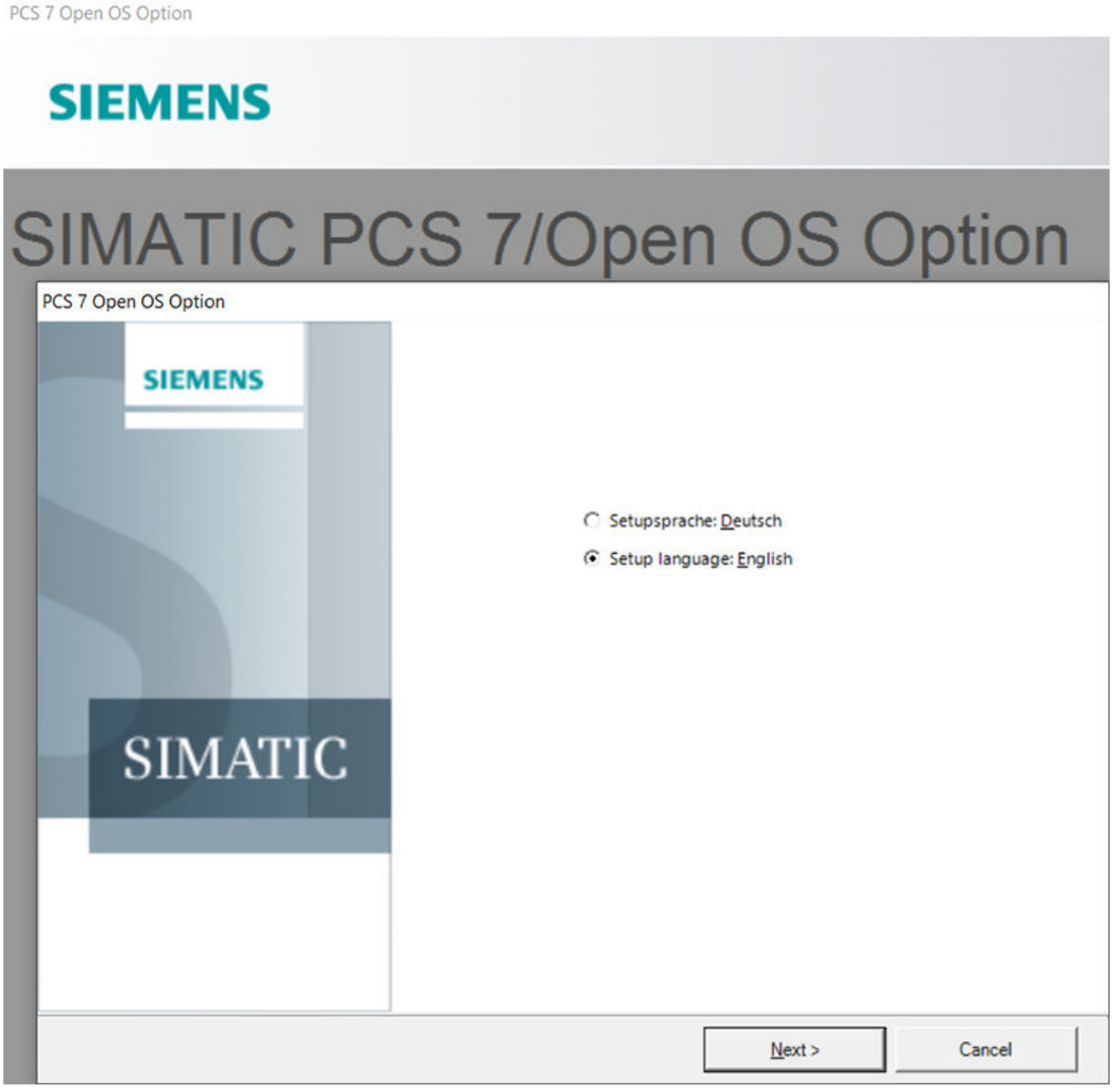
However, the Archive Server must be at PCS 7 9.1

2.3.4 Installing PCS 7/Open OS Software

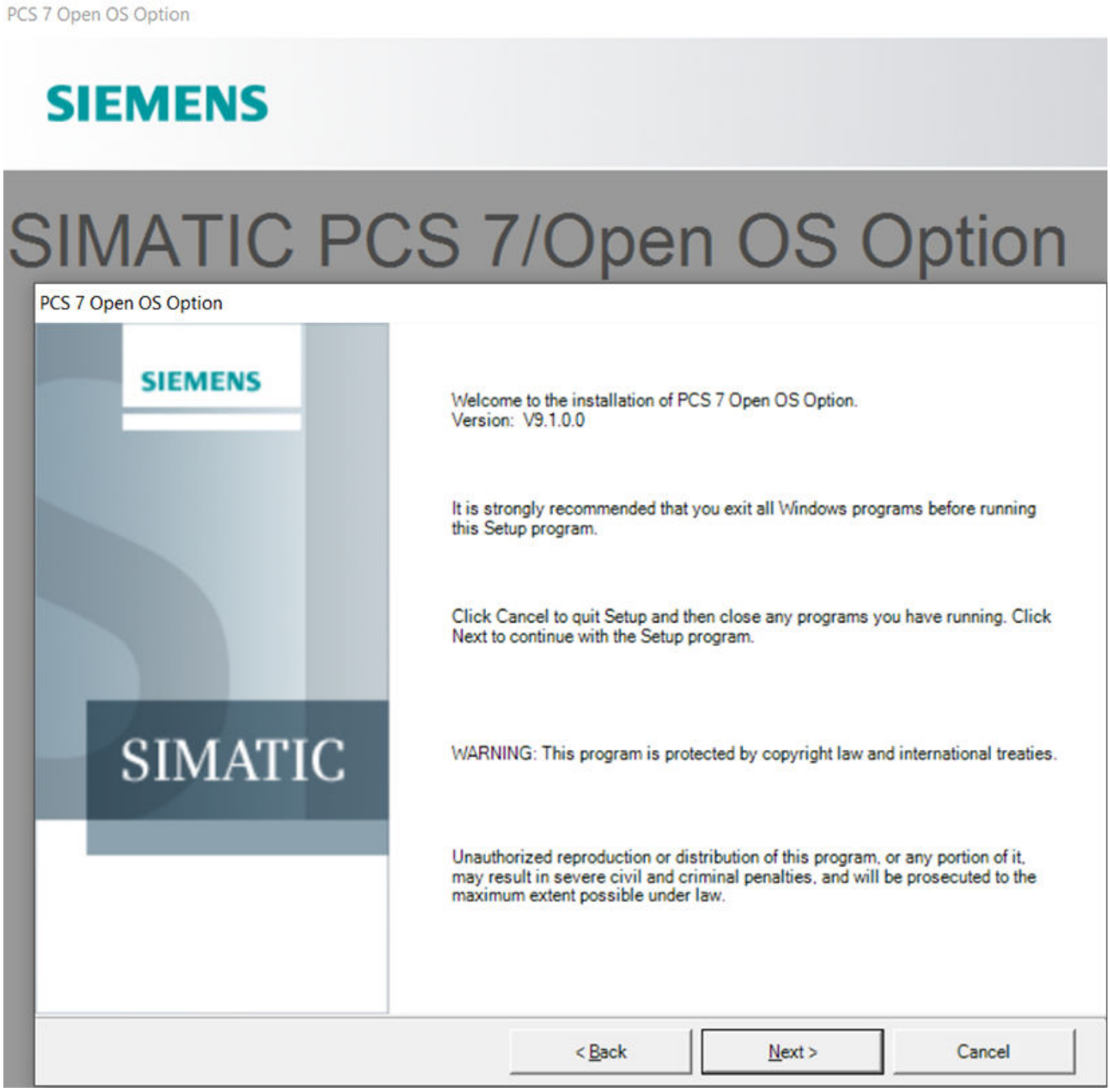
Note

Prior to installation of this software, login with Administrator rights and disable any virus protection software that is currently running. In addition, this software should be installed after all other PCS 7 software has been installed. Ensure that all PCS 7 log on activity is complete. Refer to the *PCS7_Open_OS.RTF* (readme file) on the installation media for more information.

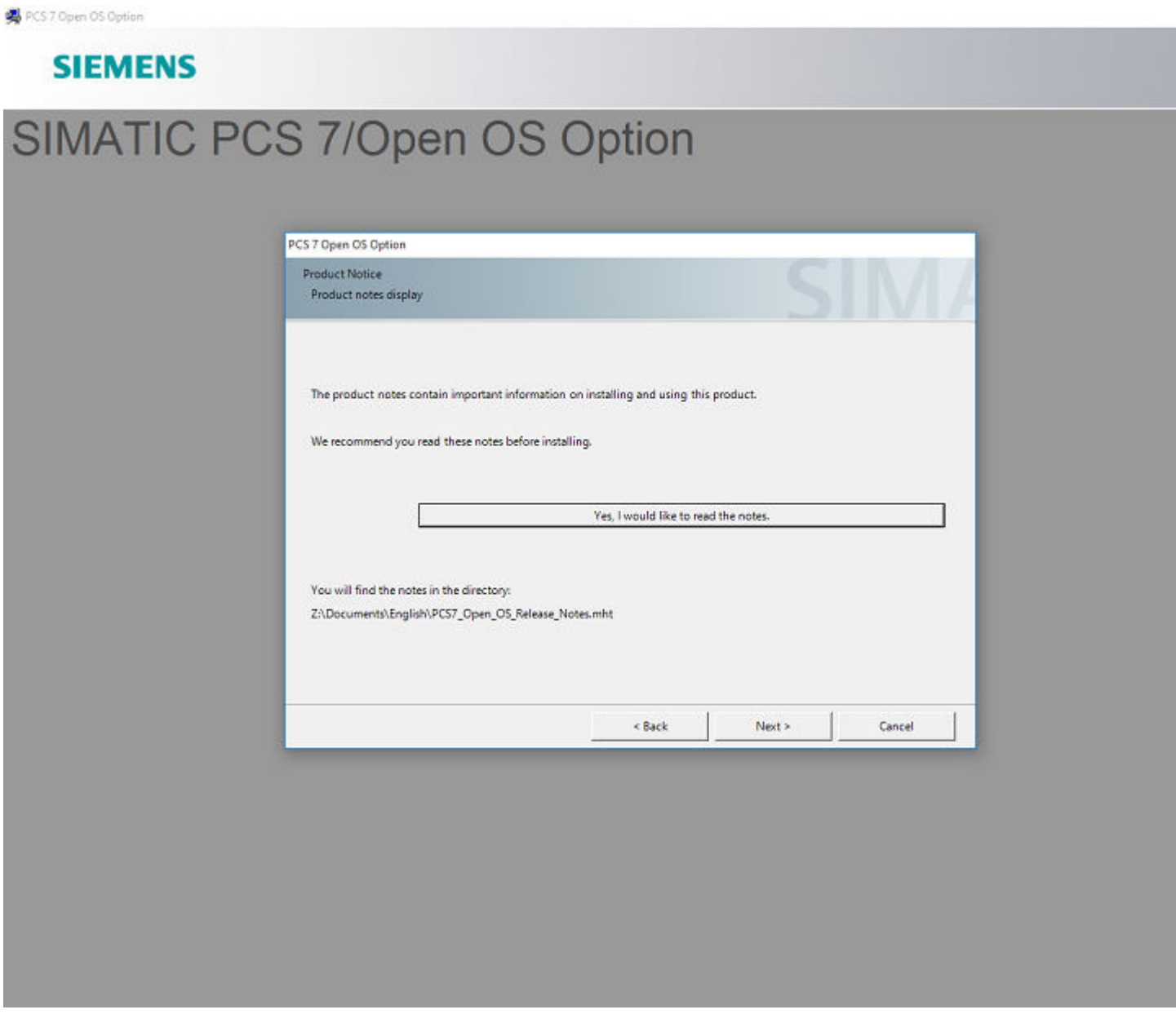
1. Insert the PCS 7 Open OS USB stick into USB drive.
   The setup program automatically starts and a language selection dialog box opens.



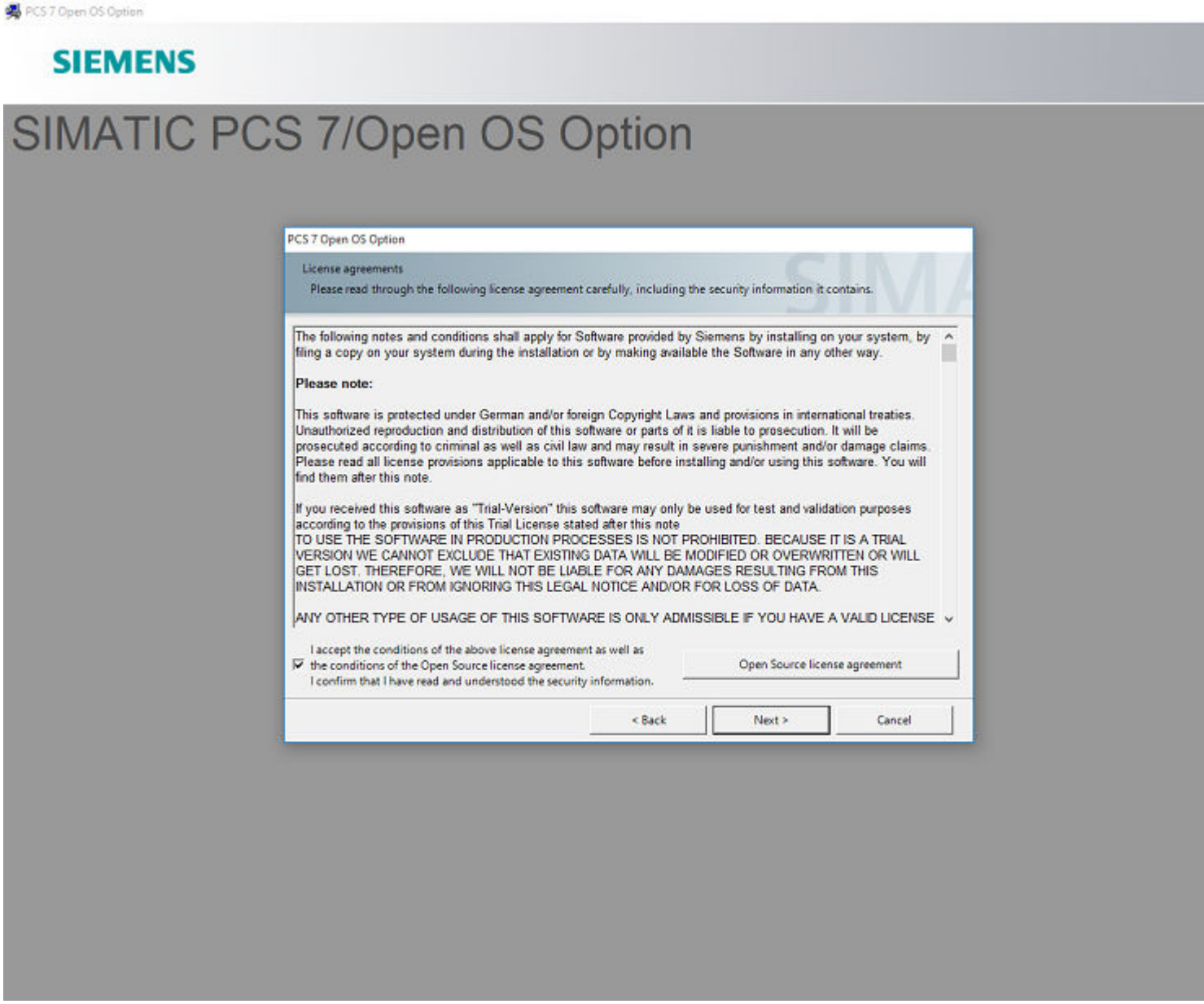
Select the installation language (English or German) of your choice.
The Welcome dialog box opens.



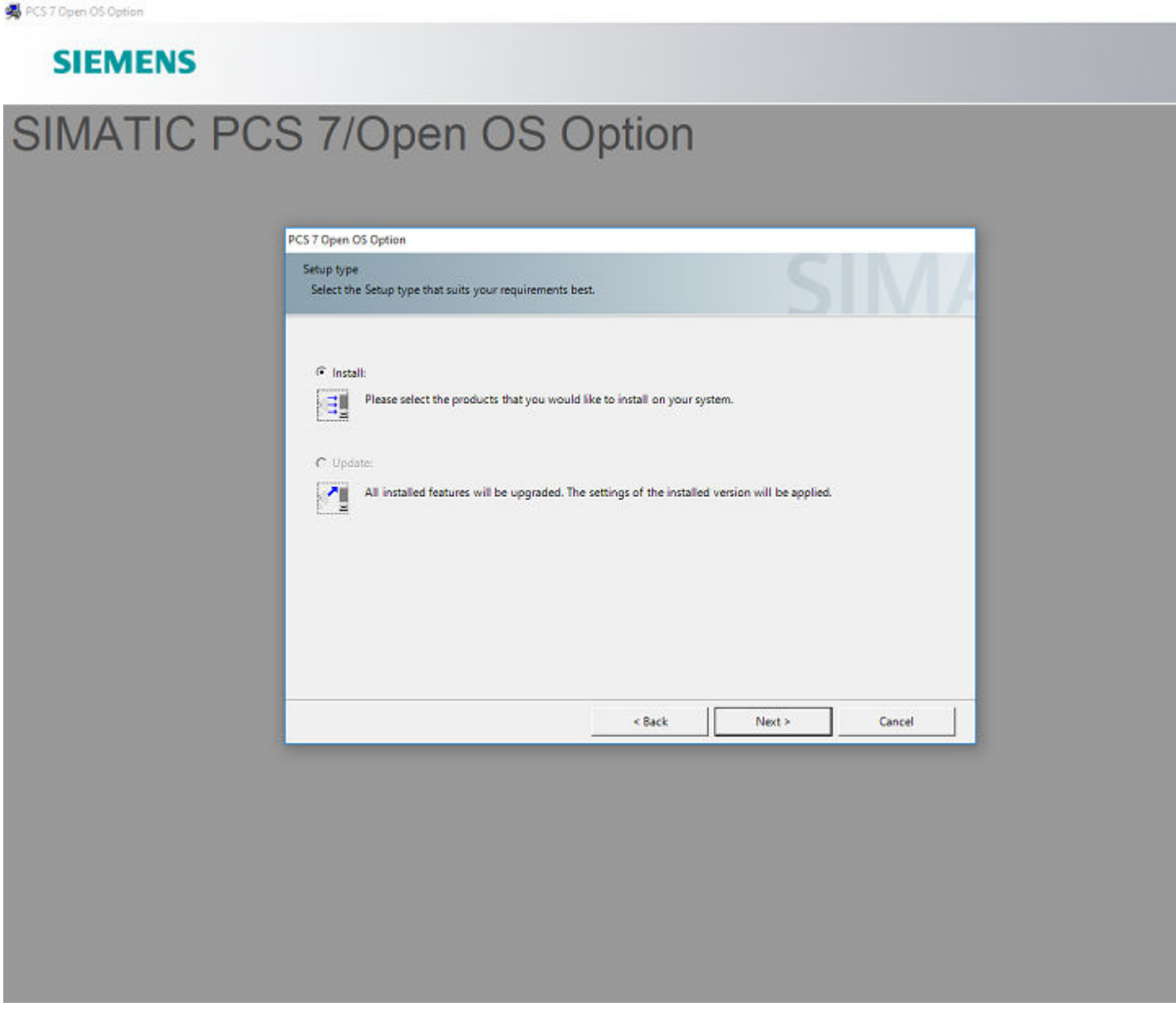
2. Click the "Next" button to continue.
   The Product Notice dialog box opens.


PCS 7 Open OS Option
SIEMENS
SIMATIC PCS 7/Open OS Option
PCS 7 Open OS Option
Product Notice
Product notes display
The product notes contain important information on installing and using this product.
We recommend you read these notes before installing.
Yes, I would like to read the notes.
You will find the notes in the directory:
Z:\Documents\English\PCS7_Open_OS_Release_Notes.mht
< Back
Next >
Cancel

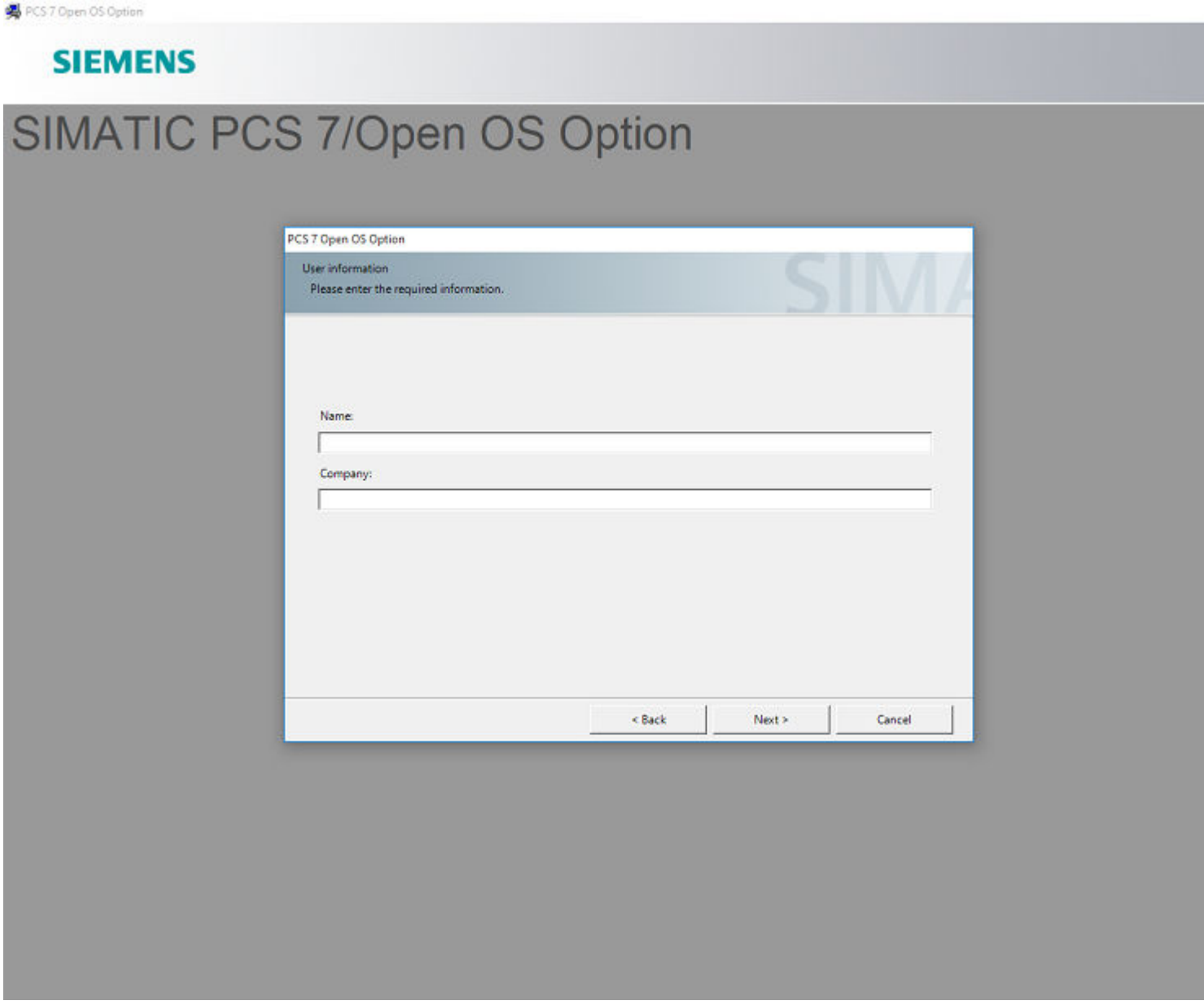
3. To view the release notes, click the button labeled "Yes, I would like to read the notes button". Click the "Next" button to continue.
   The License Agreement dialog box opens.



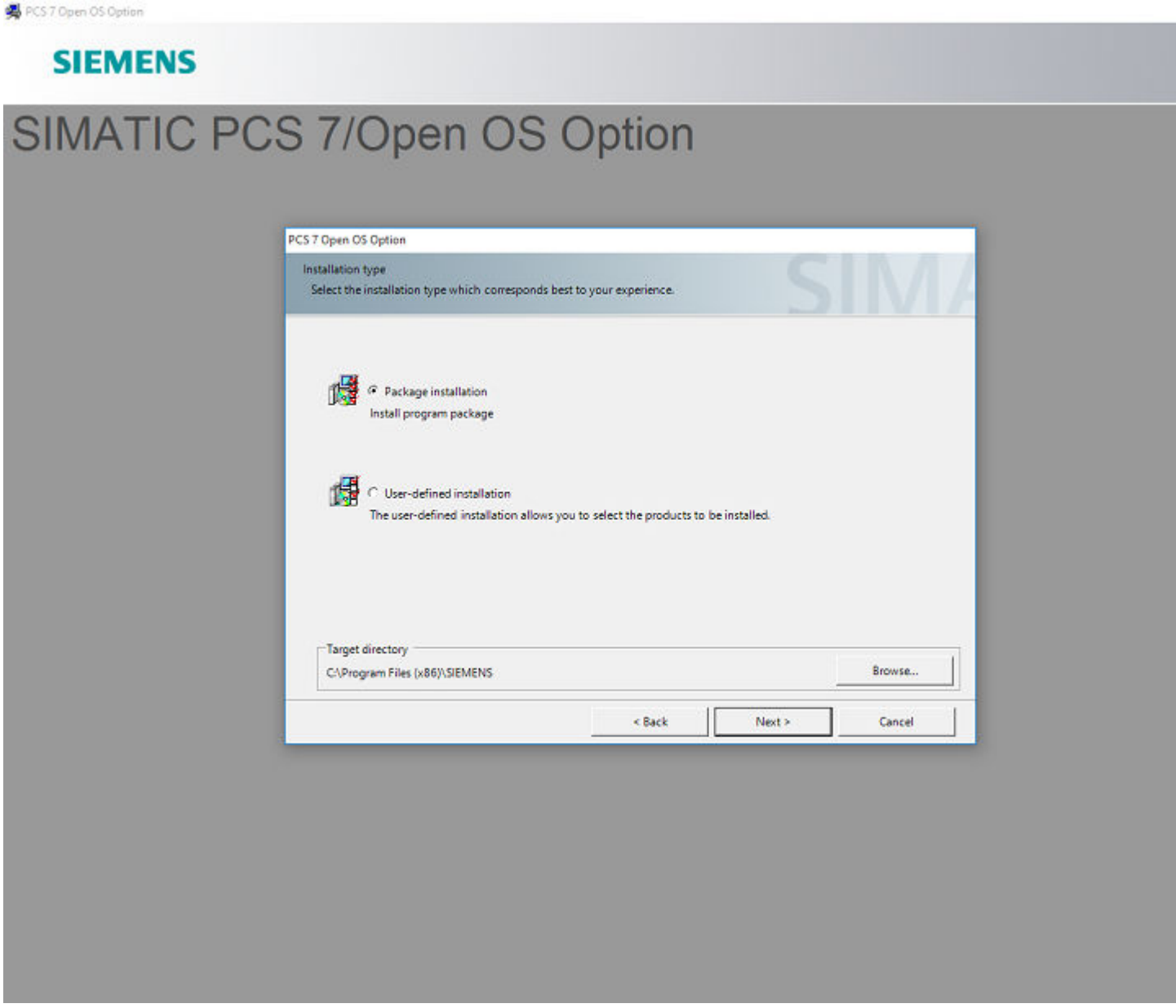
4. Read the license agreement. Select the button labeled "I accept the conditions of this license agreement".
   Click the "Next" button to continue.
   The Setup type window opens.



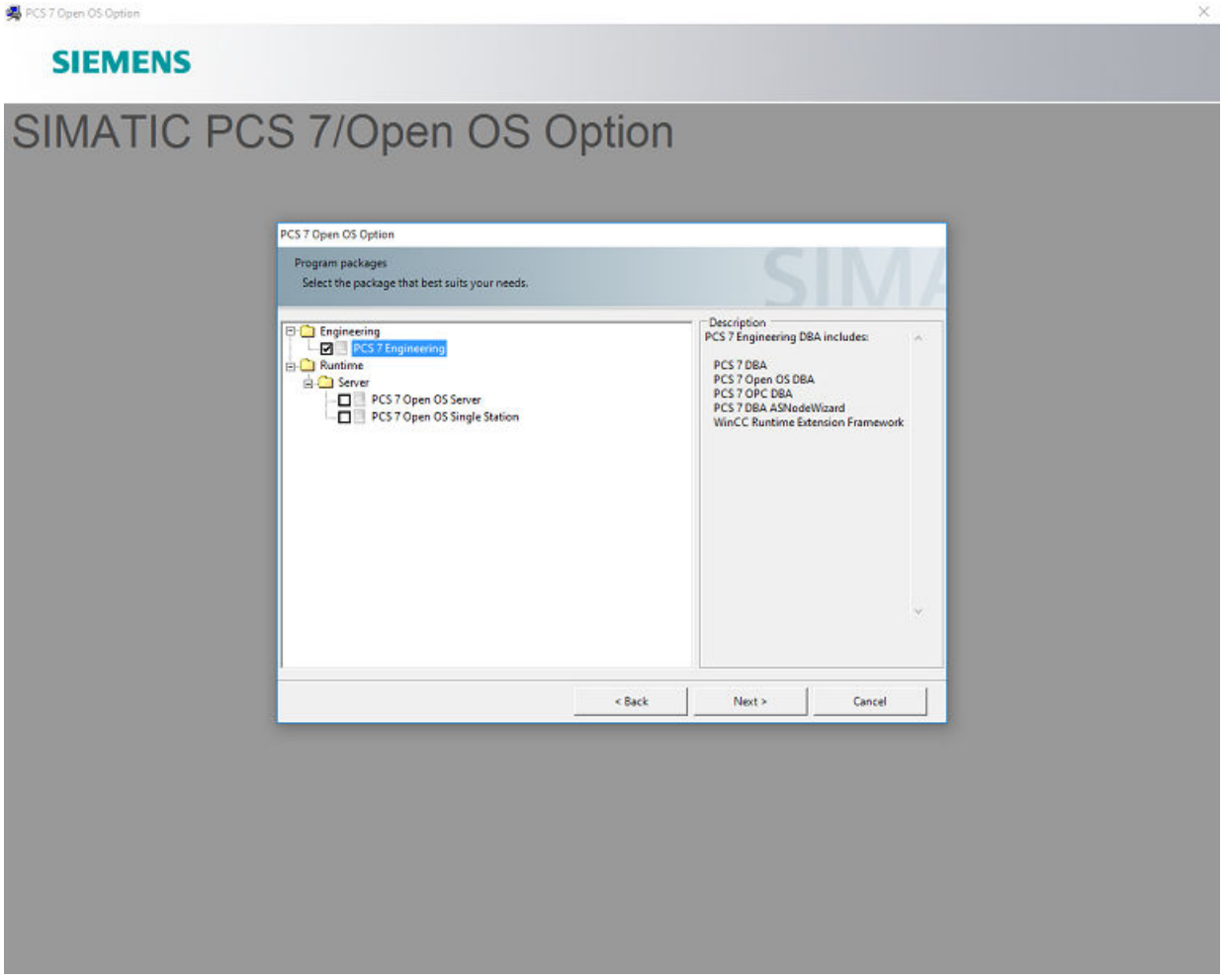
5. Select the setup type. Click the "Next" button to continue.
   The User information dialog box opens.



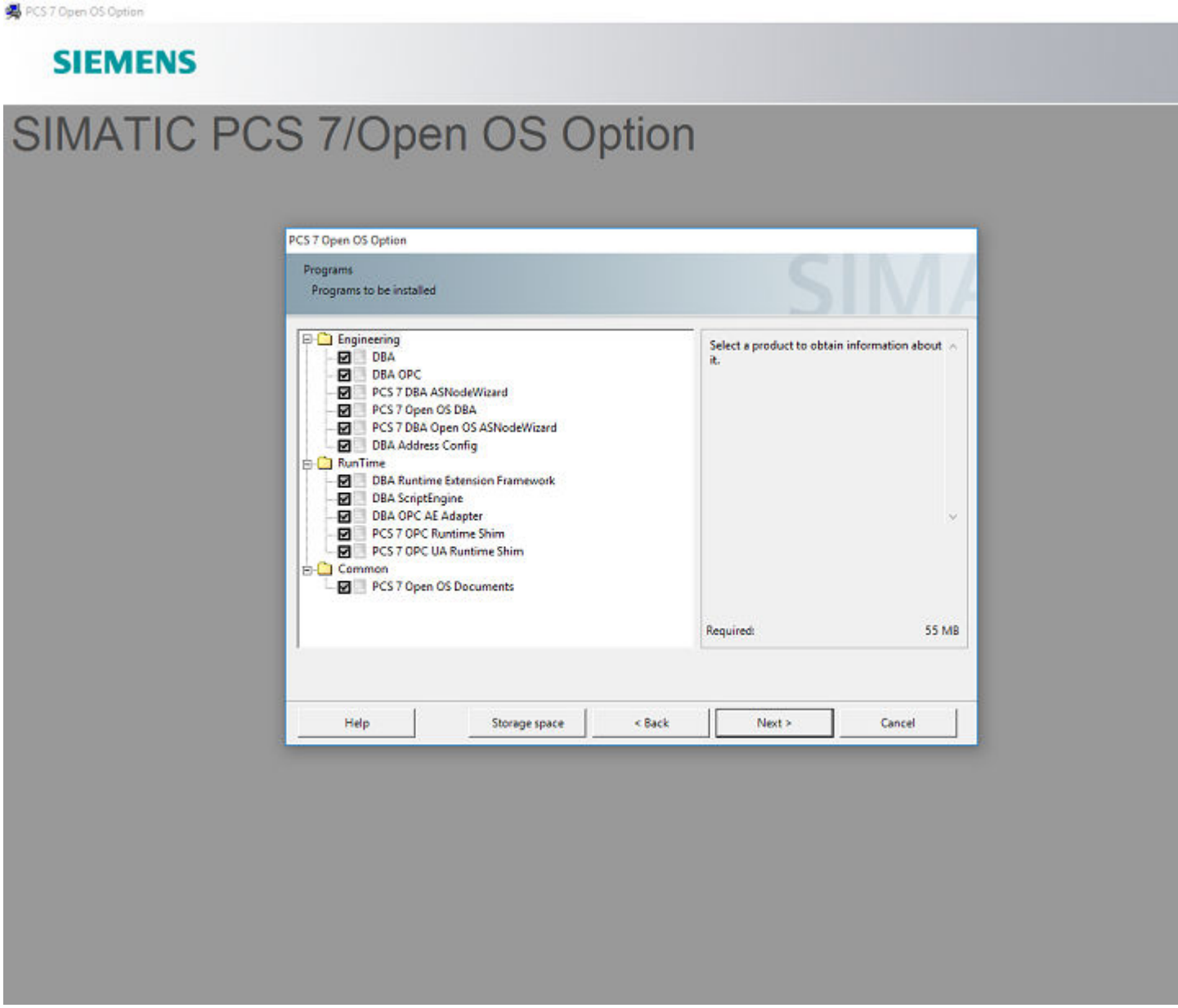
6. Enter "Name" and "Company". Click the "Next" button to continue.
   The Installation type dialog box opens.



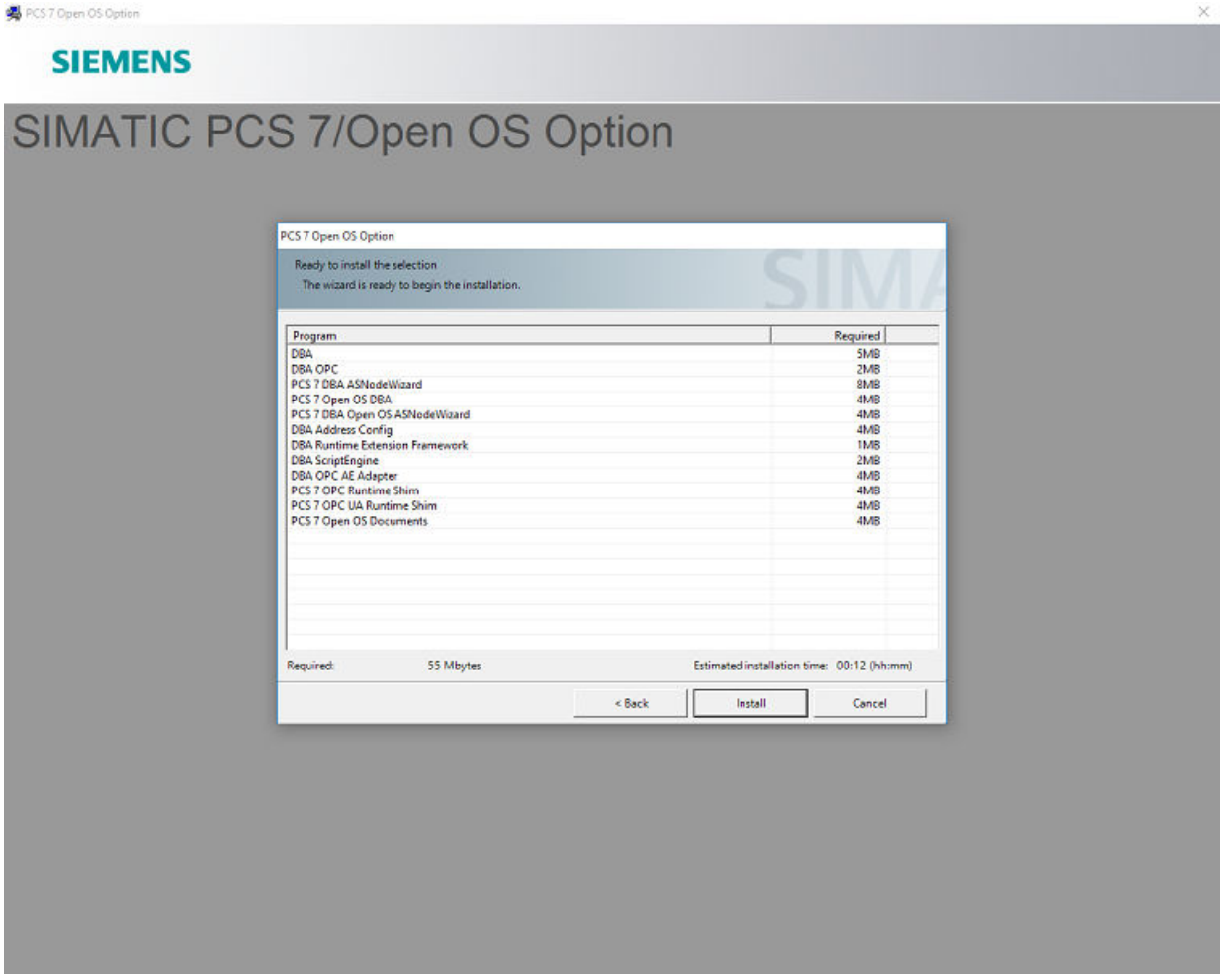
7. Select the installation type and click the Next button. If Package Installation is selected, the Program packages dialog box opens. If User-defined installation is selected, the install program proceeds directly to the Programs dialog box (step 8).



8. Select a suitable package for the computer on which this installation is occurring by clicking the appropriate check box.
   The Programs dialog box opens.



9. Click the "Next" button to accept the programs to be installed.
   The Ready to install the selection dialog box opens.



10. Click the "Install" button to begin the installation.
    The package installation begins. The installation runs to completion. At the end of the installation you may be asked to reboot the computer. Remove the USB stick from the USB drive and reboot the computer if asked.

2.3.5 Installing Authorizations and Licenses

Note

Each PCS 7/90 OS Software package may include a License Key memory stick. As you install the various packages, be sure to install the license disk with that package.

1. Insert the License Key memory stick that came with your software into USB port.
2. From the Windows taskbar, click "Start" button and navigate to **SIMATIC > License Management > Automation License Manager**.

3. Double-click the USB drive containing the License Key memory stick.
4. Select all of the authorizations.
5. Transfer the authorizations from the USB drive to the target drive.
6. Remove the License Key memory stick from the USB port.

Updating a Project from V8.2.1 and V9.0 to V9.1 3

3.1 Updating WinCC OS Projects

Procedure

Note

This procedure is not necessary when upgrading a project from PCS 7/Open V8.0.

1. Run the Project Migration Wizard, particularly for OS projects created prior to WinCC V6.2. Do this by selecting **Start > SIMATIC > WinCC > Tools > Project Migrator**.
2. Navigate to the path of the .MCP file for this OS project (for example, the file *OS(1).mcp* in folder C:\Program Files\Siemens\Step7\S7proj\OPEN_1\OPEN_Prj\wincproj).
3. Accept defaults for all options.

3.2 Updating Basic Data of an OS Project

Backing up System Files

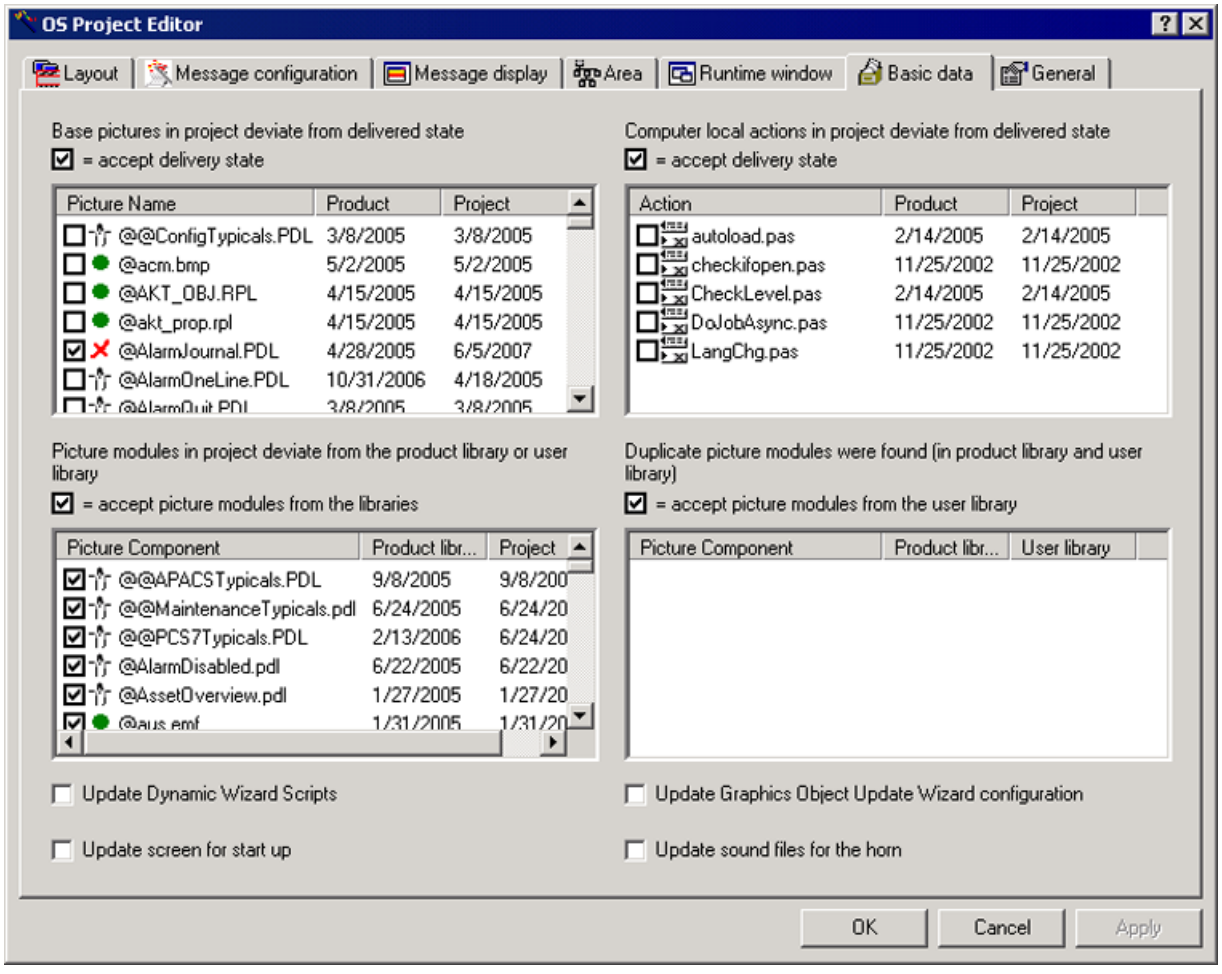
In this step, the OS Project Editor copies newly installed pictures, faceplates, and action scripts into your existing project. This operation ensures that your project has the latest features and that the files are consistent for correct runtime operation.

However, the copy operation can also overwrite any system files that you have changed. To avoid loss of your work follow the steps below carefully and observe the following precautions:

- Copy any changed files in the OS project's GraCS folder and save them in another folder. In particular, save a copy of @@MyProjectTypicals.pdl and/or any other project-specific typicals files.
- Archive the project as described in Section 1, before doing this step.
- Use the "Cancel" button to exit the OS Project Editor if you are unsure which files will be overwritten. If you exit by clicking the "OK" button, the file copying and overwriting proceeds.

Procedure

1. Open the OS Project Editor: in the SIMATIC Manager project component view right-click the OS and select **Open Object** to open WinCC Explorer to this project. In the left pane of WinCC right-click the **OS Project Editor** and choose **Open**.
2. Open the **General** tab and in the **Activities** frame at the top select the option **Complete Configuration (loss of support for online DeltaLoading)**.
3. Open the **Basic Data** tab. The four panes show lists of the files that differ in timestamps between the newly installed files (from the "Product") and those in your existing files (from the "Project"). A checkmark in the box means that the project file will be overwritten by the newly installed ("delivered") file. You should accept the defaults unless you are sure you want to retain a project file, in which case you may clear the box. Note that checked entries that are marked with a red cross may not be cleared (to preserve runtime consistency). These project files will be overwritten; therefore, you must copy them elsewhere if you want to preserve them. For further details, select any control on the dialog and press the F1 keyboard key for help, and click the link at the bottom for help on the Basic Data Tab. Refer to the illustration of the **Basic data** Tab below.



4. Click the "OK" button to exit the dialog and update the OS project, or click the "Cancel" button to exit with no changes.

3.3 Updating the Block Icons (Symbols) in Project Pictures

When the newly installed block icons differ from those in existing OS project pictures, if you wish to use the new ones, follow this procedure to replace the block icons in these pictures.

Procedure

1. On the ES station, open the OS project in WinCC Explorer, then select the **Graphics Designer** editor in the left pane.
2. In the right pane double-click any PDL file of the project to open **Graphics Designer**.
3. In the **Dynamic Wizard** toolbar select the **Picture Functions** tab, then double-click the function **Update of the picture objects**. If the toolbar is not visible, choose the menu command **View > Toolbars...**, and select **Dynamic Wizard**.

   Note

   When running the Update of the picture objects wizard, Template Picture and Control File fields in the dialog that appears should not exceed 256 characters.

4. Follow the prompts to update the active picture or select the option **Yes, all pictures** to update all pictures in the project. Then click the "Next" button to continue.
5. In the Options dialog that appears, in the field labeled **Please specify the name of the template picture**, click the ellipsis (**...**) button and select the picture file @@MyProjectTypicals.pdl (or @MyProjectTypicals.pdl if you have created this file as a copy of @@MyProjectTypicals.pdl and added modifications to it).
6. Do not change the field labeled **Please specify a name for the control file** field.
7. Click the "Next" button, then the "Finish" button to continue. The wizard updates all the graphic windows containing the modified block icons.
8. If problems occur, refer to the *ChangeObjects.log* file.
9. Close WinCC.

3.4 Updating the DBA Project

Procedure

1. Open the DBA Utility (DBA) by selecting **Start > SIMATIC > DBA > PCS 7 DBA**.
2. Select **File > Open**.
3. Navigate to the existing DBA project and open it.
   The following message appears:
   "This DBA project was not created with the same version of the DBA Utility that you are using. Do you want to convert the DBA project to current version?"

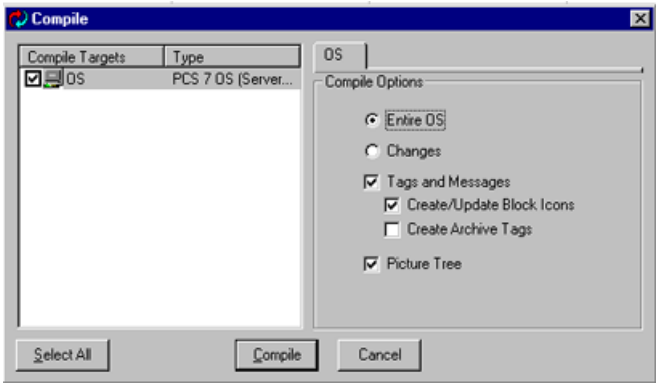
4. Click the "OK" button.

Note

During the update process, DBA compares existing Extended Attributes with their default values to determine if there is a significant enough change to the type definition to warrant discarding all Extended Attributes and replacing them with their default values. This may introduce unintended changes for some customers who have made significant Extended Attribute changes in their DBA project. In order to make sure that all customized Extended Attributes are preserved during the upgrade the following steps should be performed.

1. Export the Attributes from the AS View for each AS Source Node (Immediately before Step 5 below)
2. Perform Update Controller Objects (Step 5 below)
3. Import the Attributes from the AS View for each AS Source Node (Immediately after Step 5 below)

5. In DBA, right-click anywhere in the AS View pane (lower left) and select **Update All Controller Objects**.
6. Examine any warnings and resolve any errors (there should be none) in the **Command Status** dialog that follows.
7. Compile the DBA project to the PCS 7 OS by clicking the "Compile**"** toolbar button or selecting the menu command **Run > Start Compilation**. The **Compile** window opens.
8. Configure the options as follows:
   - Select **Entire OS**
   - Select **Tags and Messages**
   - Select **Create/Update Block Icons**
   - Select **Picture Tree**
   - Clear **Create Archive Tags**



9. Start OS compilation by clicking the "Compile**"** button.
10. Resolve any Validation or Compilation errors (none should occur).

3.5 Updating the AS Nodes

Once a project is migrated to PCS 7/Open OS V9.1, follow the steps as given below:

1. Run the AS Node Wizard and build all the Nodes again without changing the configuration.
2. Update the Nodes in DBA Project.

Project Engineering Overview

4

Engineering a PCS 7/Open OS project can be divided into the following high level tasks.

Task	Description	Section
1	Creating a PCS 7/Open OS Project (Page 35)	4.1
2	Third-Party Controller/Device Configuration/Programming (Page 35)	4.2
3	Integrating Controllers/Devices into PCS 7/Open OS (Page 35)	4.3
4	Configuring PCS 7/Open OS Stations (Page 35)	4.4

4.1 Creating a PCS 7/Open OS Project

A PCS 7/Open OS project is created using SIMATIC Manager. The process is described in detail in Creating a SIMATIC Manager Project (Page 37). This includes descriptions of how to configure all of the PC Stations in your system. Once these steps have been completed, the framework for additional engineering and maintaining your system is in place.

4.2 Third-Party Controller/Device Configuration/Programming

Controllers and other devices to be integrated with PCS 7/Open OS must be configured and/or programmed using the appropriate engineering tools, as provided by the vendor of the third party controller or device.

4.3 Integrating Controllers/Devices into PCS 7/Open OS

Integrating third-party devices or controller also may require the following:

- Providing and configuring network connections to the devices
- Providing and configuring gateway software to communicate with the devices, such as the configuration of an OPC Server

The scope of this effort depends on the devices being integrated and is dependent on the nature of the devices and mechanisms that are available for communicating with the device.

4.4 Configuring PCS 7/Open OS Stations

Once a Simatic Manager has been created, the objects of the Bailey system must be made accessible in PCS 7/90 OS stations. To do this, a tool is provided, PCS 7/90 OS DBA, that simplifies this process.

DBA provides:

- Automatic generation of the PCS 7/90 OS OS database including display hierarchy, needed variables, alarms, alarm-messages and priorities as well as function block symbols and faceplates.
- Automatic placing of type specific function block symbols and automatic assignment with faceplate.

The details of using DBA are provided in the *PCS 7/90 OS DBA User's Guide*. This document includes step-by-step instructions for defining and directing the process.

4.4.1 Completing the PCS 7 OS Database Configuration

Once the PCS 7 OS database has been generated by DBA, the following additional configuration steps complete the PCS 7 OS database configuration.

4.4.1.1 Completing Graphic Displays

Based on the system hierarchy configured in DBA, and the placement of AS objects within this hierarchy, DBA automatically creates the dynamic portion of all graphic displays. Symbols for each object are automatically placed, in a tiled manner, in each picture.

Procedure:

To complete the graphic displays, create the appropriate static elements (pipes, tanks and so on) and move the already-created dynamic symbols to the desired position on the graphic.

4.4.1.2 User Administration

PCS 7 allows user rights to be established based on the layout of the system hierarchy. The highest level of this hierarchy is divided into Areas. This hierarchy, once configured in DBA, is automatically created in the PCS 7 database.

For more details on configuring Area-based User Administration, refer to the help file:
Start > Simatic > WinCC > WinCC Information System > Working With WinCC > Setting up User Administration

4.4.1.3 Downloading OS Databases

In a client/server architecture, all PCS 7 OS databases (both client and server) need to be downloaded to the OS stations.

The process of downloading PCS 7 OS projects to PC Stations is described in detail in Chapter Downloading and Activating PCS 7 OS Stations (Page 65).

Creating a SIMATIC Manager Project

5

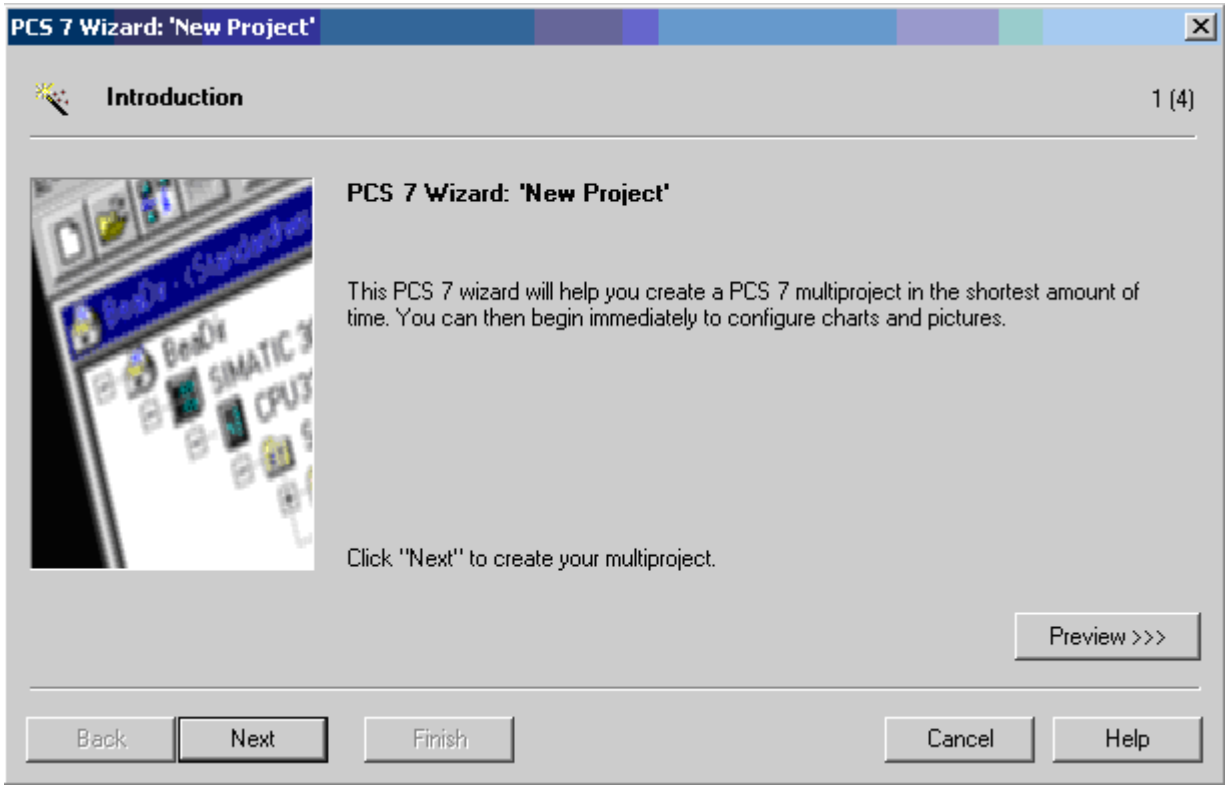
If you are integrating third-party controllers or other devices to an already existing SIMATIC Manager project, the steps outlined in this chapter are not required. Otherwise, this chapter provides step-by-step guidance to create a SIMATIC Manager project.

5.1 Creating a New Project in SIMATIC Manager

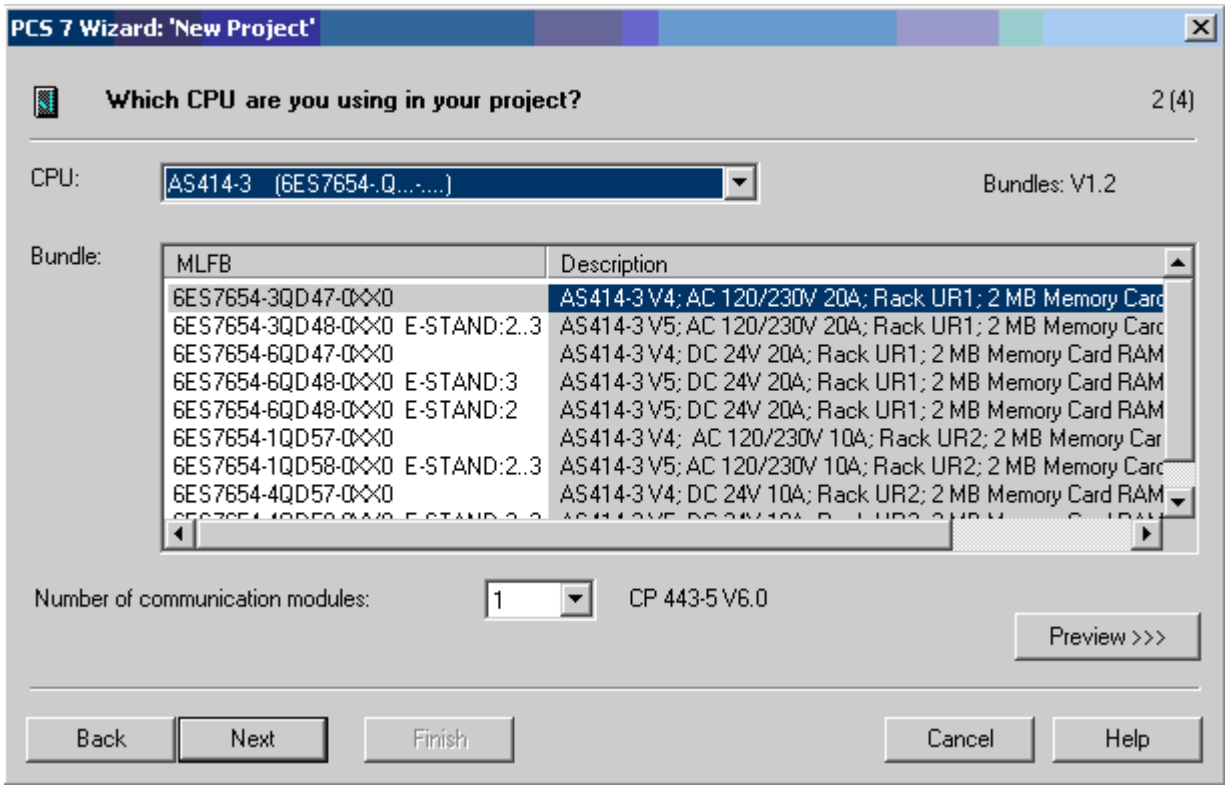
1. Open SIMATIC Manager, **Start > SIMATIC > SIMATIC Manager**
   The PCS 7 Wizard 'New Project' dialog box opens.

Note

Press the "F1" function key for help on each screen of the PCS 7 New Project Wizard.

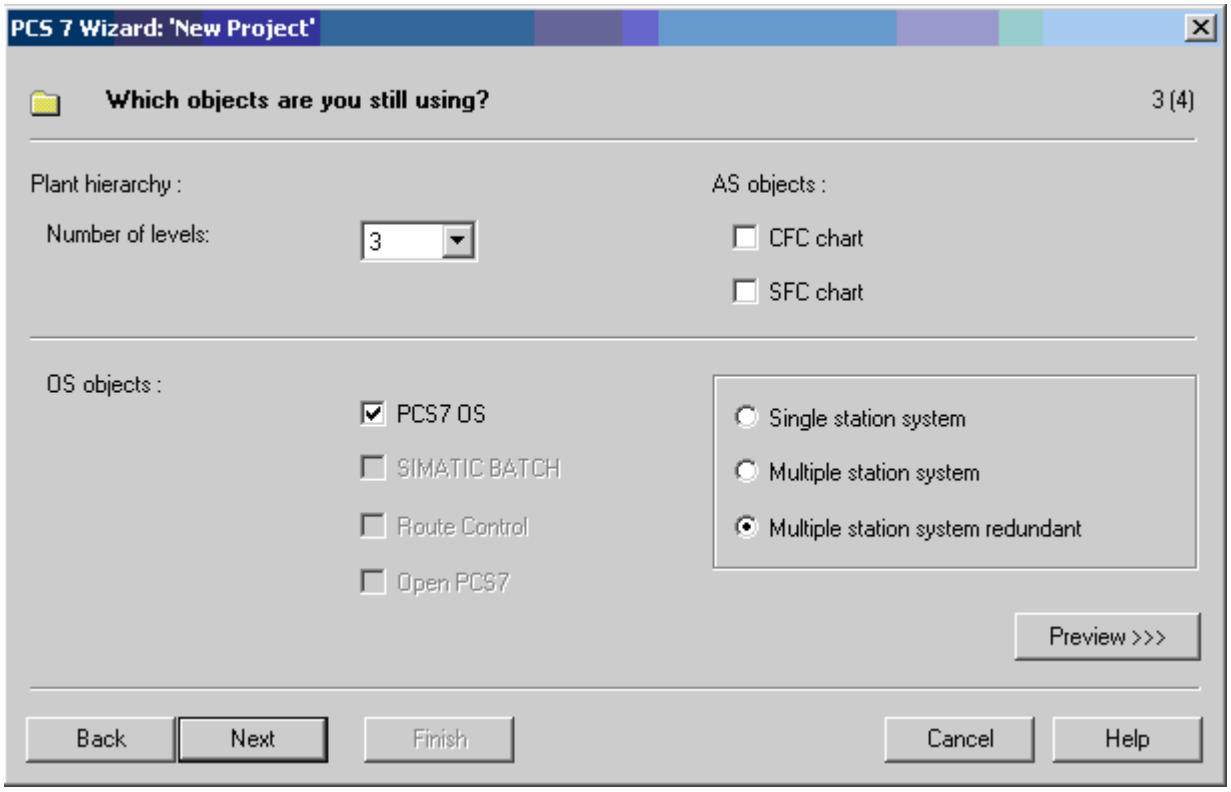


2. Click the "Next" button.
   The "Which CPU are you using in your project?" dialog box opens.



The selections on this page are only relevant for dual-leg projects (which include S7 controllers configured in SIMATIC Manager in addition to AS nodes configured with DBA). For projects that do not include S7 controllers, accept the default settings. For projects that do include S7 controllers refer to the S7 user documentation or press the "Help" button for more details.

3. Click the "Next" button to accept the default.
   The dialog box labeled "Which objects are you still using?" opens.

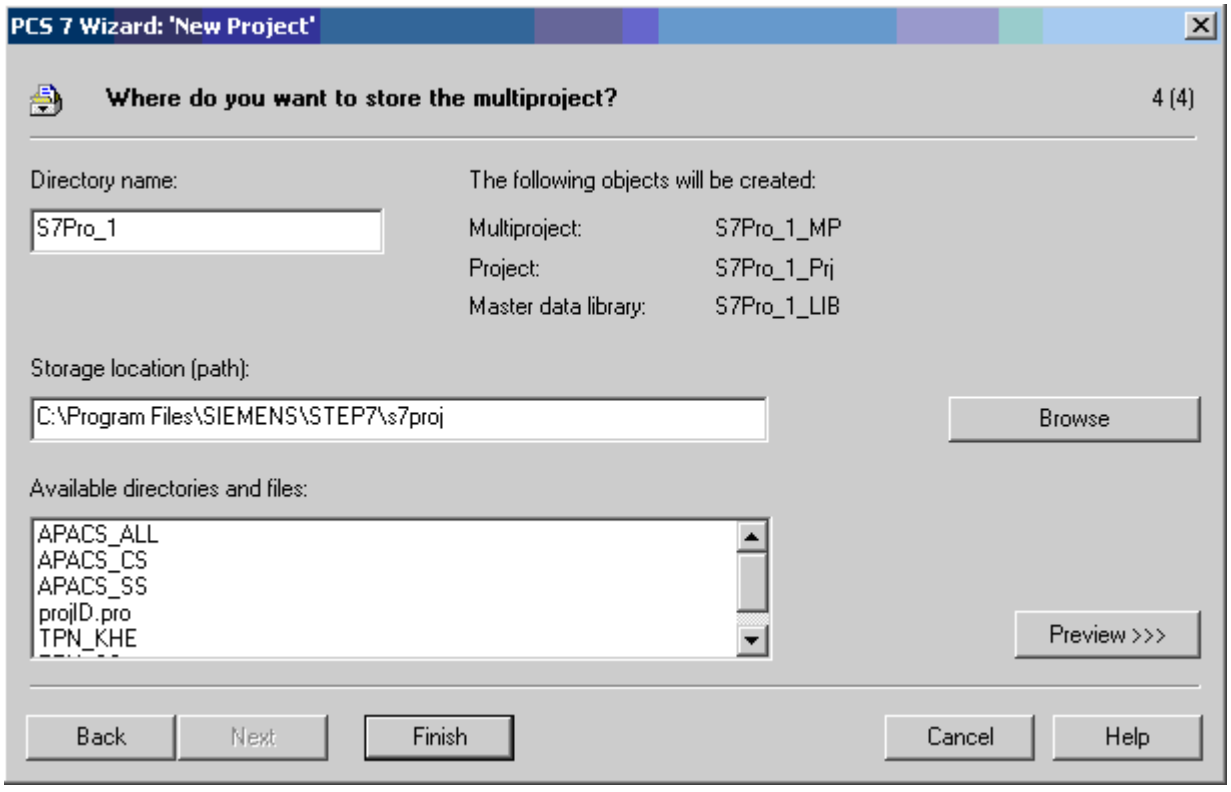


- In the **Plant Hierarchy** area, the "Number of levels**"** should be configured when using S7-400 controllers in the same OS project as DBA-configured AS Nodes. It should be set to the same value used in DBA.
- In the **AS objects** area, clear "CFC chart" and "SFC chart" check boxes. The CFC and SFC selections on this page are only relevant for S7 projects. For S7 projects refer to the S7 user documentation or press the "Help**"** button for assistance.
- In the **OS objects** area, select the "PCS7 OS" check box, and the appropriate system type.
  Single station system – a single PC station will be created with an OS project.
  Multiple station system – two PC stations will be created, an OS server project, and an OS client project.
  Multiple station system redundant – three PC stations will be created, two OS server projects and an OS client project.

Note

If your project requires additional server or client stations, they can be added once the wizard steps have completed. Refer to *Process Control System PCS 7 Engineering System Configuration Manual* for details regarding adding additional PC Stations.

4. Click the "Next" button.
   The dialog box labeled "Where do you want to store the project?" (or "multiproject") opens.



   - In the **Directory name** box, enter a directory folder name or accept the default. This is the folder name for the directory under which the client/server projects will be created.
   - In the **Storage location (path)** box, enter a path or accept the default. This path is where the directory folder will be located. This is the path for the master project on the engineering station.

5. Click the "Finish" button.
6. Accept the default. Click the "OK" button.
   The project is created. This setting applies to projects that include S7-400 controllers and does not apply to messages created by DBA.

5.2 Server Project Setup

The following steps are required to configure a PCS 7 OS Server project in SIMATIC Manager:

Step	Section
Creating Shared Folders (Page 42)	5.2.1
Configuring Primary Station (Page 42)	5.2.2
Configuring Standby Station (Page 44)	5.2.3
Running OS Project Editor (Page 46)	5.2.4

Step	Section
Generating Server Data (Page 48)	5.2.5
Configuring Alarm Logging (Page 48)	5.2.6
Configuring Tag Logging (Page 48)	5.2.7

Note

PCS 7 OS stations must also be configured under PC Stations in your corresponding DBA Project. Refer to Chapter 5 of the *PCS 7/90 OS DBA User's Guide* for details concerning the configuration of PC Stations in DBA.

5.2.1 Creating Shared Folders

Shared folders on the servers are needed to store the project created on the Engineering Station. When the project is downloaded, it will be transferred from the Engineering Station to these folders. You cannot configure your stations in SIMATIC Manager until these folders are created and properly set up. Follow these steps to create and set up these folders, if they don't already exist.

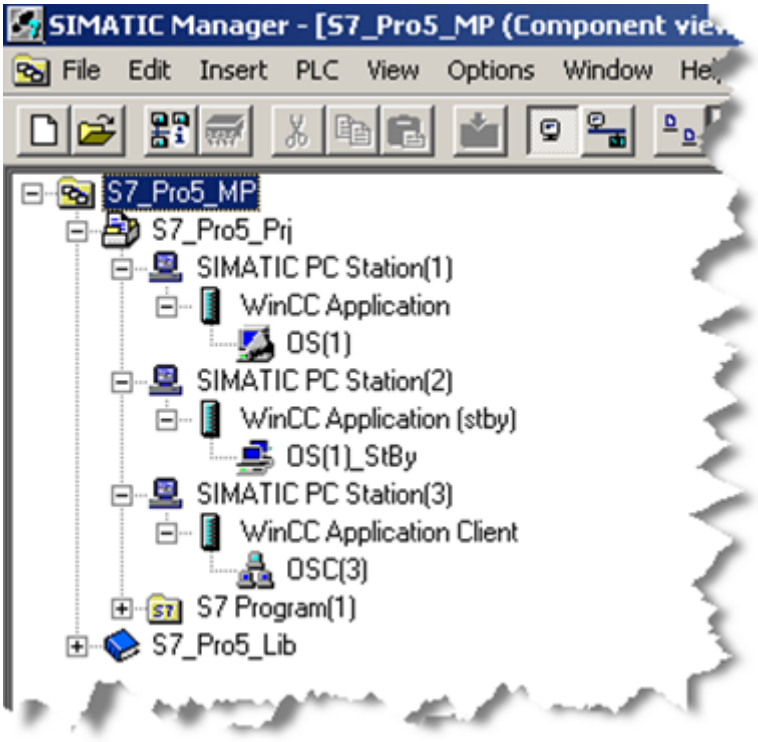
Shared folders must be created for both Primary and Standby Servers.

5.2.2 Configuring Primary Station

Identify the path to which the project will be downloaded on the Primary Server.

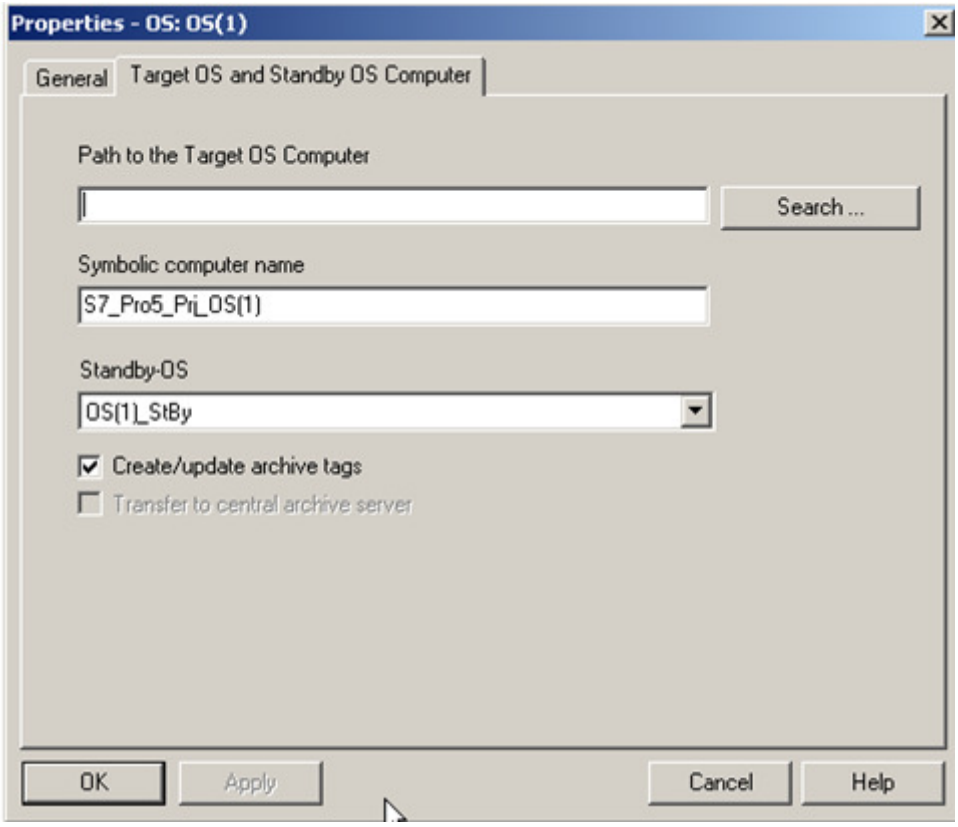
Follow these steps:

1. In the Component View of SIMATIC Manager, right-click the PC Station that is the Primary Server and select "Object Properties". For example, if your Primary Server PC Station is SIMATIC PC Station(1) in the figure below, right-click on "SIMATIC PC Station(1)".



2. In the **General** tab, enter the computer name of the primary computer in both the "Name" and "Computer name" fields. These names must be entered in ALL CAPS. Click the "OK" button.
3. Right-click "OS(1)", and select "Object Properties".
4. The "Properties" dialog box opens.

5. Rename, as desired, the "OS(1)" to the Server Project name.



6. Click the **Target OS and Standby OS Computer** tab.
7. Select the "Network" button to browse and map to the shared project folder on OS Server. If a mapped drive already exists, select it from the available drives listed in the "Load In" list box. This is the path to the folder on your primary server where you will store and operate the project. This path must include the network name of the target computer.

   Note

   This folder must already exist on the primary and standby servers and be shared. This folder's permissions should be set to "Full Control" for "Everyone". Refer to section *Create New Folders on the Primary and Standby Servers and All Clients* in this document.

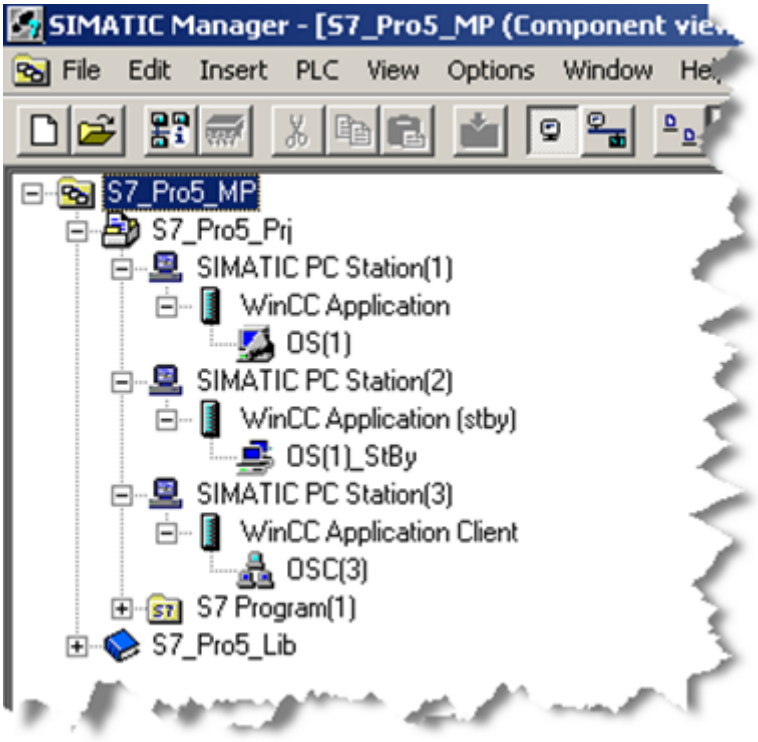
8. Click the "OK" button.

5.2.3 Configuring Standby Station

Identify the path to which the project will be downloaded on the Standby Server.

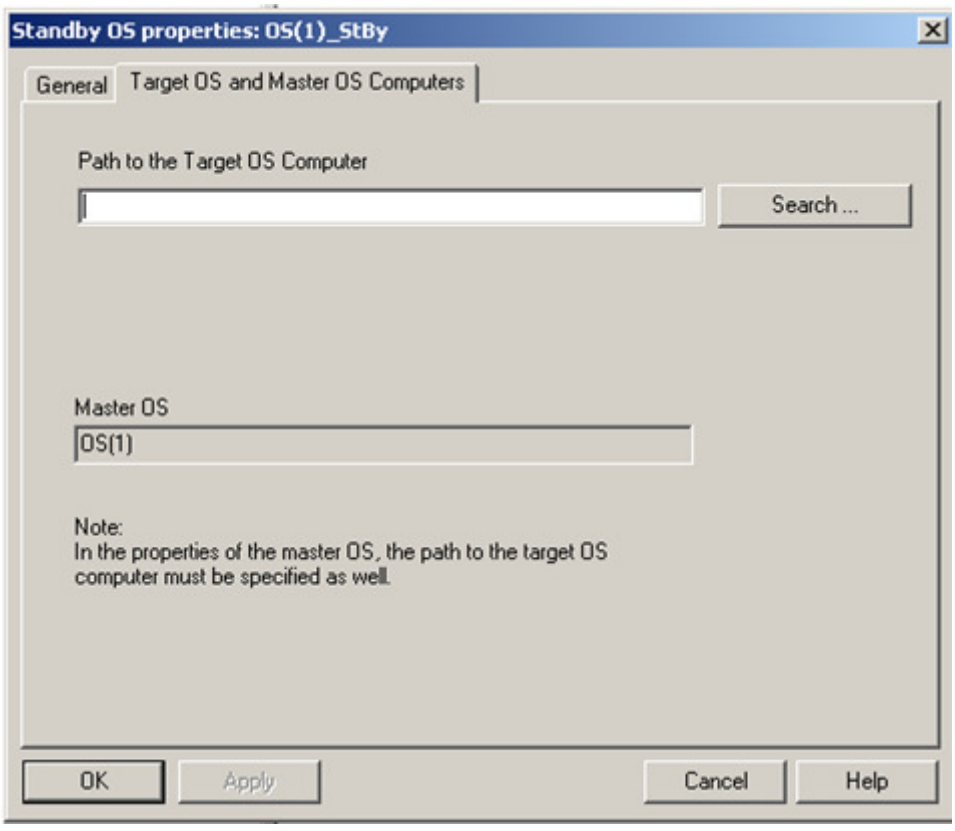
Follow these steps:

1. In the Component View of SIMATIC Manager, right-click the PC Station that is the Standby Server and select "Object Properties". For example, if your Standby Server PC Stations is SIMATIC PC Station(2) in the figure below, right-click on "SIMATIC PC Station(2)".



2. In the **General** tab, enter the computer name of the standby computer in both the "Name" and "Computer name" fields. These names must be entered in ALL CAPS. Click the "OK" button.
3. Right-click "OS(1)_StBy", and select "Object Properties". The default project name of Primary Server/Project Name_StBy must be used.
   The "Properties" dialog box opens.

4. Click the **Target OS and Standby OS Computers** tab.



5. Select the "Network" button to browse and map to the shared project folder on OS Server. If a mapped drive already exists, select it from the available drives listed in the "Load In" list box. This is the path to the folder on your primary server where you will store and operate the project. This path must include the network name of the target computer.

   Note

   This folder must already exist on the primary and standby servers and be shared. This folder's permissions should be set to "Full Control" for "Everyone". Refer to section *Create New Folders on the Primary and Standby Servers and All Clients* in this document.

6. Click the "OK" button.

5.2.4 Running OS Project Editor

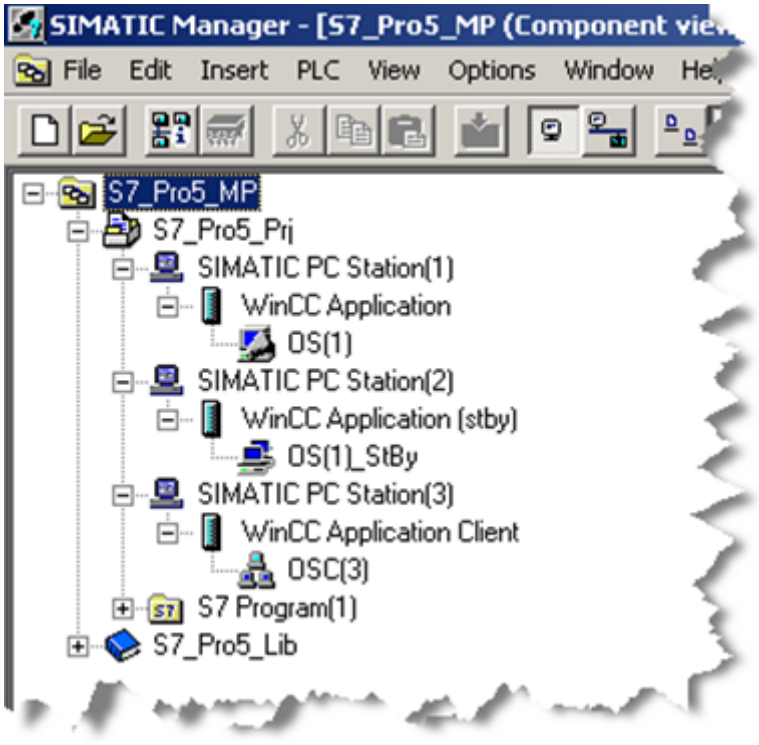
Note

While this step allows some customization of the screen layout, etc., it is required even if no customizations are to be configured, since this edtior also creates configuration data that is required for building DBA projects. If no customizations are required, simply select all defaults.

If you want to change your layout, screen resolution, monitor configuration, message configuration, message display, area, runtime window, or basic data, run the OS Project Editor from WinCC Explorer. When configuring servers that will not be used as clients, it is recommended to use the SIMATIC server layout.

To run the OS Project Editor:

1. In the Component view of SIMATIC Manager, right-click the WinCC OS application and select "Open Object". For example, if you want to run the OS Project Editor on the application OS(1) in the figure below, right-click on "OS(1)". This will open the application using WinCC Explorer.



2. Select the OS Project Editor and make any desired changes. Refer to online help as you are running the OS Project Editor for more details.

5.2.5 Generating Server Data

1. From the Component view in SIMATIC Manager, right-click the primary OS server project, and select "Generate Server Data**".**
   When the procedure is complete, a window opens containing the message, "The server data are generated successfully".
2. Perform this procedure for each primary OS server.

5.2.6 Configuring Alarm Logging

For further information, refer to the help file **Start > SIMATIC > WinCC > WinCC Information System > Working with WinCC > Setting Up a Message System**.

5.2.7 Configuring Tag Logging

For further information, refer to the help file **Start > SIMATIC > WinCC > WinCC Information System > Working with WinCC > Archiving Process Values**.

Note

When using the Tag Logging Wizard, it is recommended that you name the archive SystemArchive for compatibility with PCS 7 trending faceplates.

5.3 Client Project Setup

For every client in the system, the following configuration steps are required:

Step	Section
Creating Shared Folders (Page 49)	5.3.1
Configuring Client Station (Page 49)	5.3.2
Assigning OS Server (Page 51)	5.3.3
Configuring a Standard Server (Page 52)	5.3.4
Configuring a Preferred Server (Page 52)	5.3.5
Running OS Project Editor (optional) (Page 52)	5.3.6
Lifebeat Monitoring Setup (Page 54)	5.3.7

5.3.1 Creating Shared Folders

Shared folders on the clients are needed to store the project created on the Engineering Station. When the project is downloaded, it will be transferred from the Engineering Station to these folders. You cannot configure your stations in SIMATIC Manager until these folders are created and properly set up. Follow these steps to create and set up these folders, if they don't already exist.

Shared folders must be created for all Clients.

See also

Creating Shared Folders (Page 42)

5.3.2 Configuring Client Station

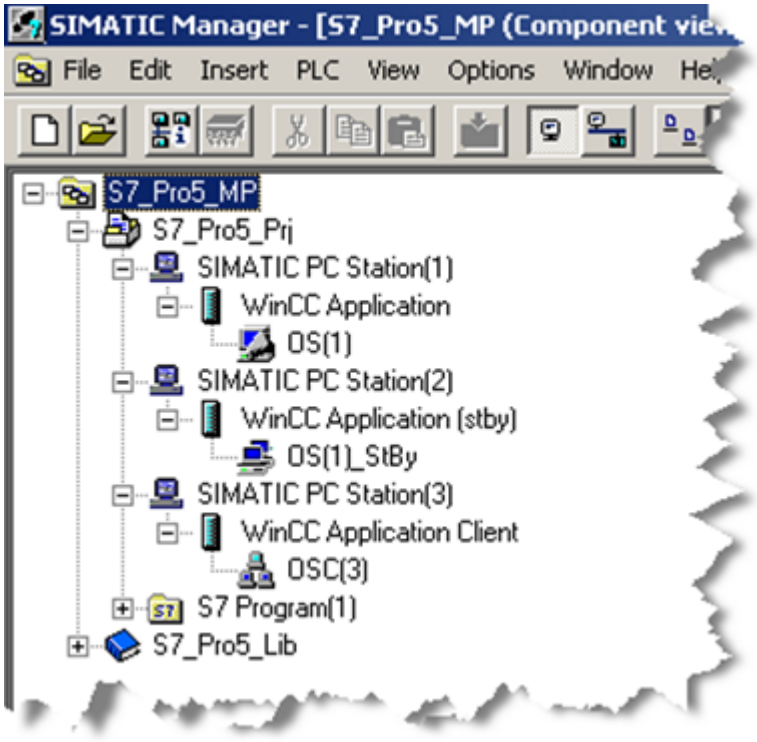
Identify the path to which the project will be downloaded on the Client.

Note

If your client is not the same computer as your OS Engineering Station, then perform the following steps.

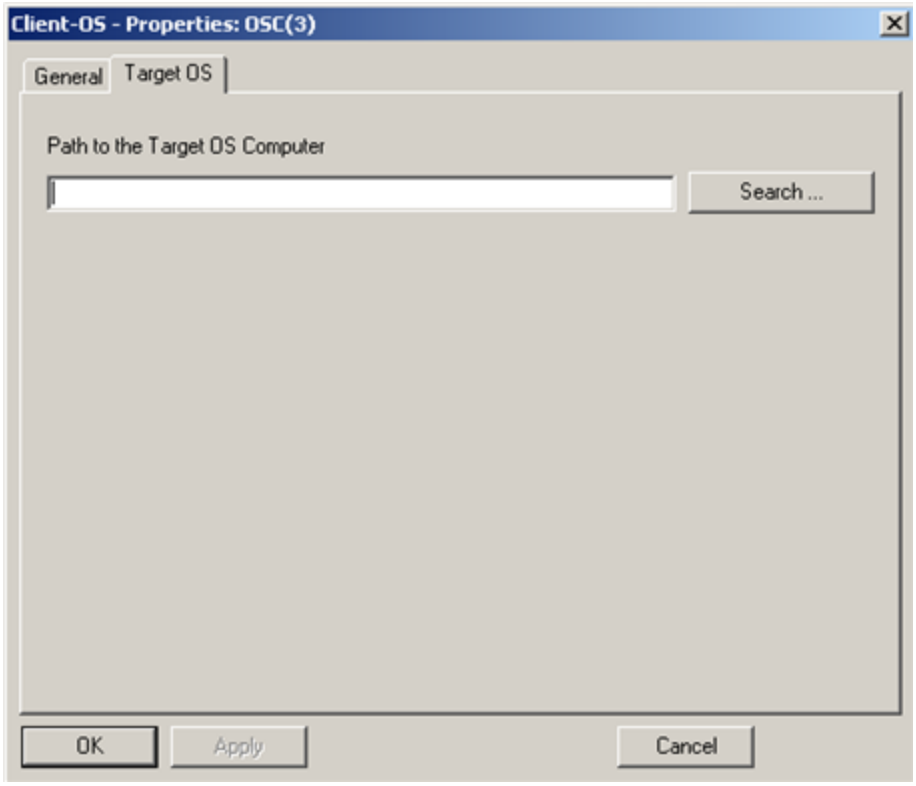
Follow these steps:

1. In the Component View of SIMATIC Manager, right-click the PC Station that is the Client to be configured and select "Object Properties". For example, if your Client Server PC Stations is SIMATIC PC Station (3) in the figure below, right-click on "SIMATIC PC Station(3)".



2. In the **General** tab, enter the computer name of the client computer in both the Name and Computer name fields. These names must be entered in ALL CAPS. Click the "OK" button.
3. Right-click "OSC(3)", and select "Object Properties".
   The "Properties" dialog box opens.
4. Rename, as desired, the OSC(3) to the client project name.

5. Click the **Target OS** tab.



6. Select the "Network" button to browse and map to the shared project folder on OS Server. If a mapped drive already exists, select it from the available drives listed in the "Load In" list box. This is the path to the folder on your primary server where you will store and operate the project. This path must include the network name of the target computer.

Note

This folder must already exist on the primary and standby servers and be shared. This folder's permissions should be set to "Full Control**"** for "Everyone". Refer to section *Create New Folders on the Primary and Standby Servers and All Clients* in this document.

7. Click the "OK" button.
8. From the Component view, add and configure additional clients, servers, and server pairs as needed. You can add up to a total of 32 clients and 12 server pairs.

5.3.3 Assigning OS Server

1. From the Component view in SIMATIC Manager, right-click OS Client and select "Assign OS server..." The OS server assignment window opens.
2. Check the Project check box for each server as needed, and click the "OK" button. A progress bar indicating the status opens. When the procedure is complete, a window opens with the message, "The Procedure was complete without error".
3. Click the "OK" button.

5.3.4 Configuring a Standard Server

Note

The "Standard Server" represents the Server or Server pair that will store all operator actions and Runtime Trends. If a Standard Server is not configured, operator actions will be stored on the local machine instead of on the "Server". In addition, any Runtime Trends created will only be viewable from the client on which they are created.

On the OS Engineering Station, open the OS client project from SIMATIC Manager. Set up a standard server for Alarms and Split Screen Manager (SSM).

1. Right-click on "Server Data".
2. Select "Standard Server".
3. Click on the "Symb. Computer Name" field next to the "Alarms" Component. From the drop-down list, select the package that is the server for this client and is providing alarms for the client you are currently configuring.
4. Repeat step 3 for the "SSM" component.
5. Click the "OK" button.

This step can also be performed on the client after downloading the project to redefine the standard server for a particular client station. This customization will be overwritten during a subsequent download.

5.3.5 Configuring a Preferred Server

For further information, please refer to the help file **Start > SIMATIC > WinCC > WinCC Information System > Options > Options for Process Control > Preferred Server**.

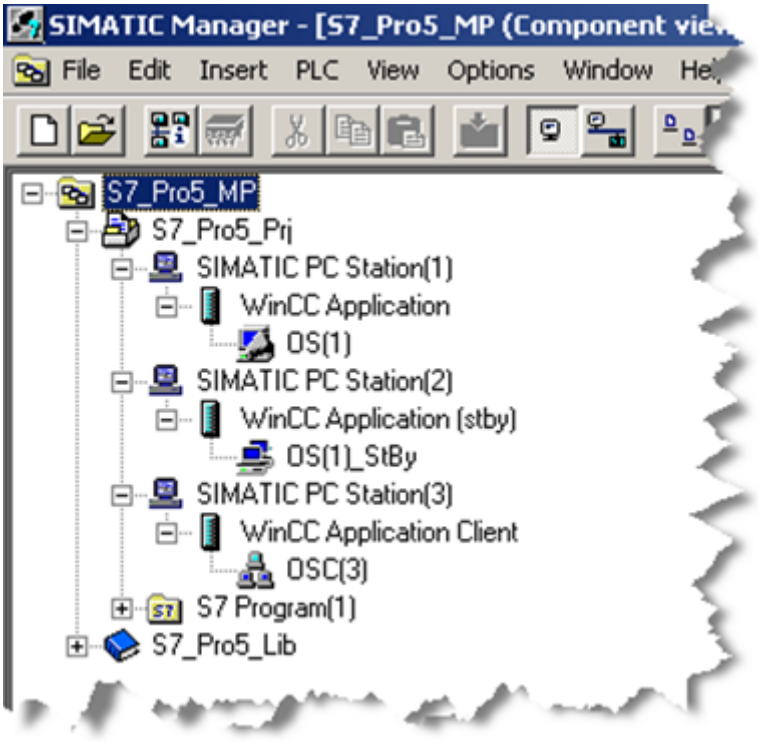
This step can also be performed on the client after downloading the project to customize the preferred server connection for a particular client station. This customization will be overwritten during a subsequent download.

5.3.6 Running OS Project Editor (optional)

If you want to change your layout, screen resolution, monitor configuration, message configuration, message display, area, runtime window, or basic data, run the OS project editor from WinCC Explorer.

To run the OS Project Editor:

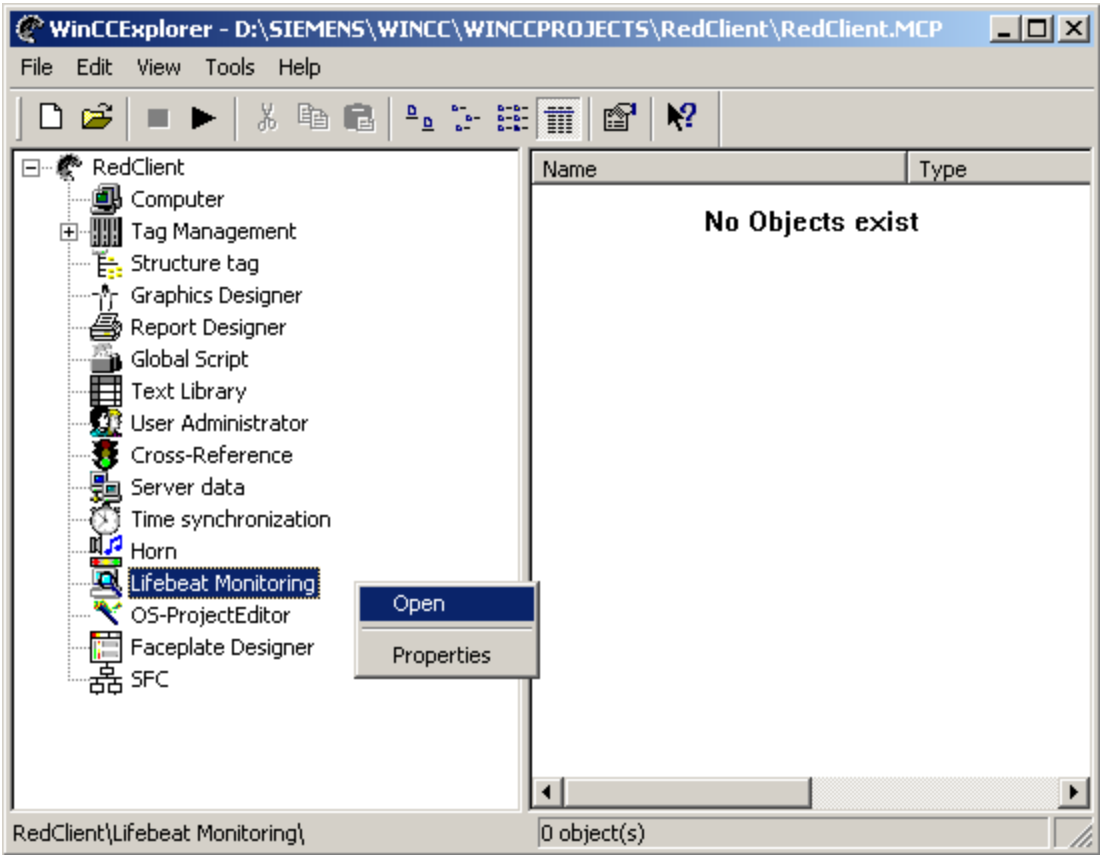
1. In the Component view of SIMATIC Manager, right-click the WinCC OS application and select "Open Object". For example, if you want to run the OS Project Editor on the application OSC(3) in the figure below, right-click on "OSC(3)". This will open the application using WinCC Explorer.



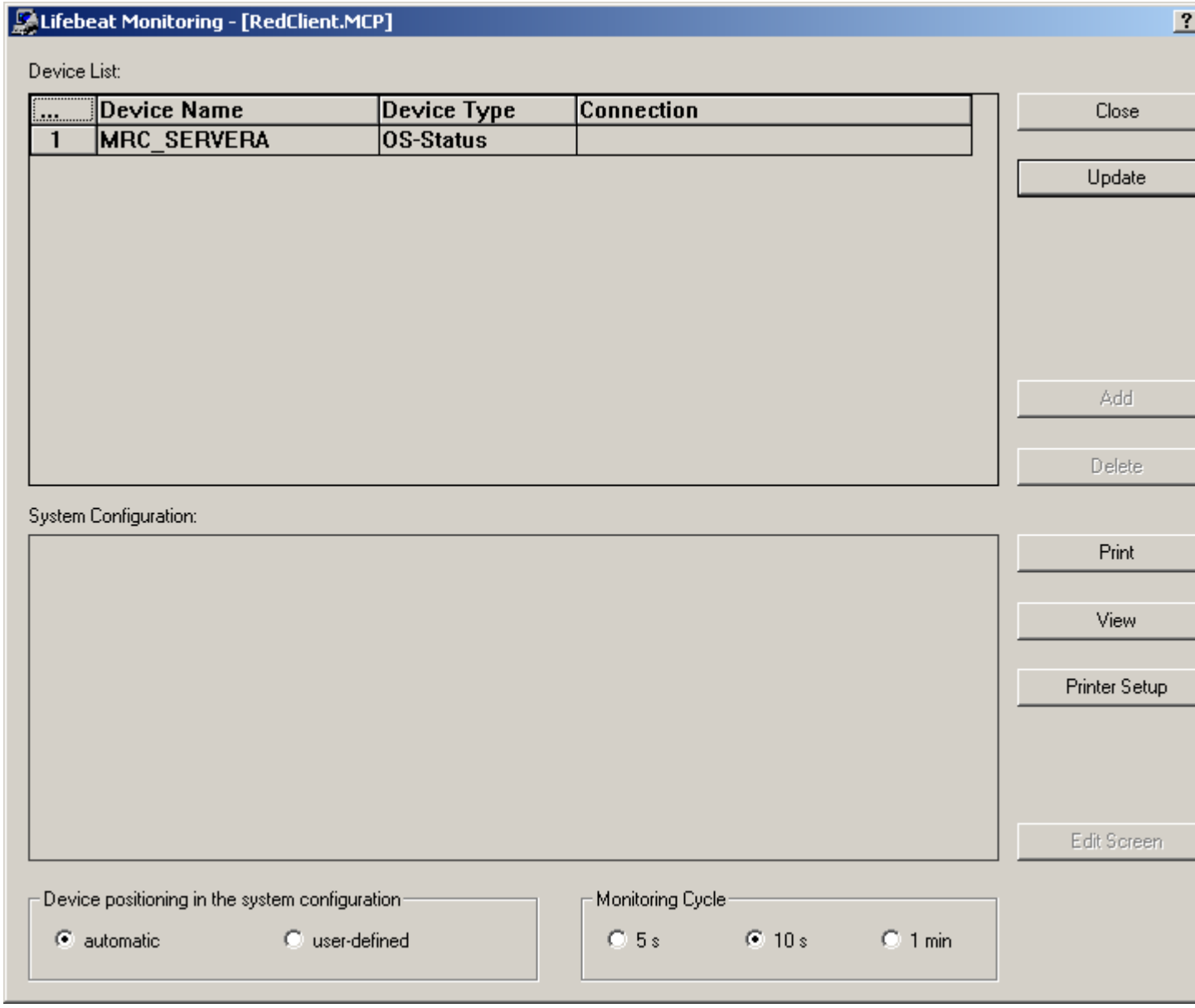
2. Select the OS Project Editor and make any desired changes. Refer to online help as you are running the OS Project Editor for more details.

5.3.7 Lifebeat Monitoring Setup

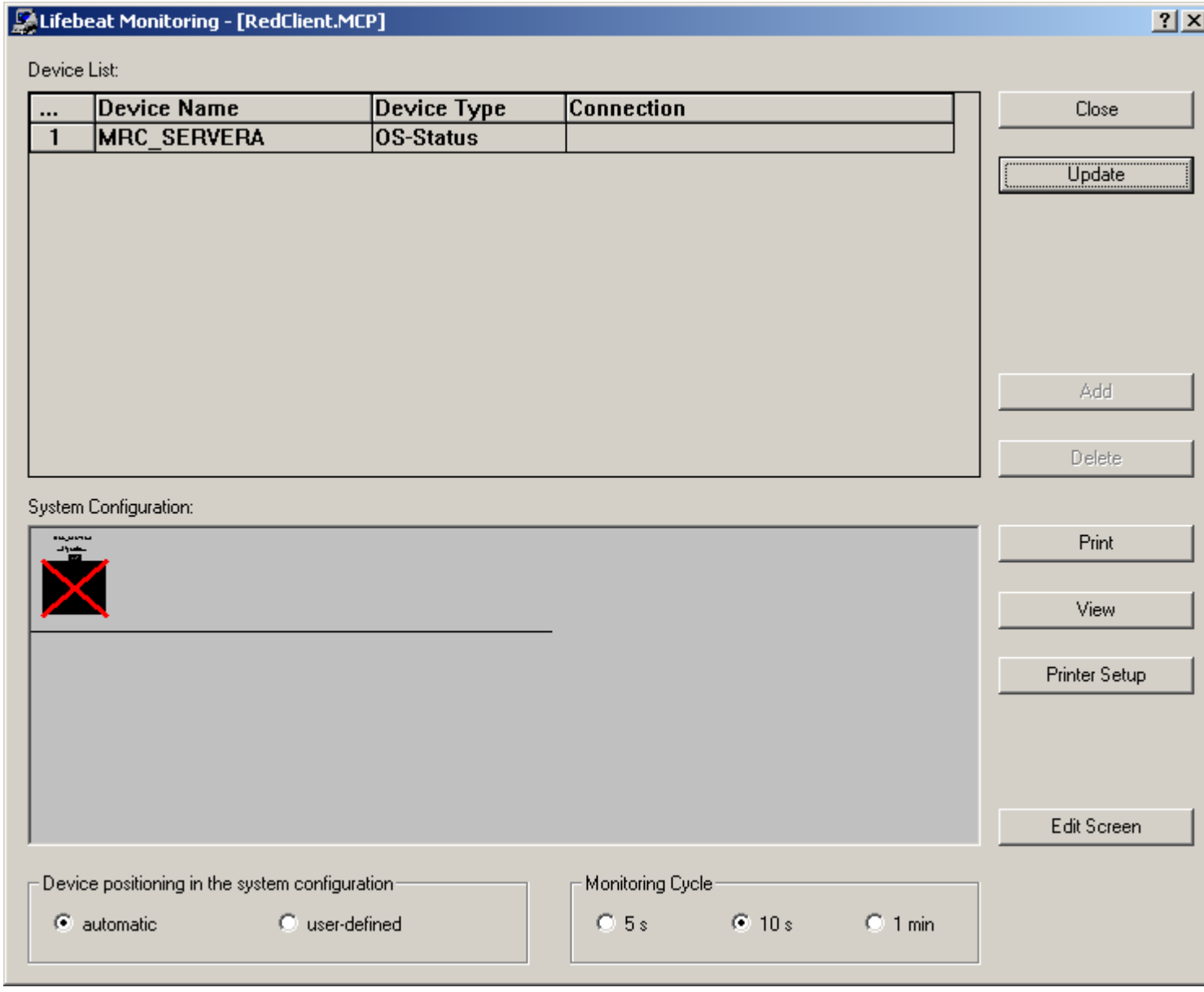
1. Open the client project. From the Component view in SIMATIC Manager, right-click on the OS client project and select "Open Object".
   The project opens in WinCC Explorer.



2. Right-click "Lifebeat Monitoring" and select "Open".
   The "Lifebeat Monitoring" window is displayed.


Lifebeat Monitoring - [RedClient.MCP]
Device List:
...
Device Name
Device Type
Connection
1
MRC_SERVERA
OS-Status
Close
Update
Add
Delete
System Configuration:
Print
View
Printer Setup
Edit Screen
Device positioning in the system configuration
automatic
user-defined
Monitoring Cycle
5 s
10 s
1 min

3. Set the Device positioning in the system configuration to automatic. Select a Monitoring Cycle time, and then click the "Update" button.
   When complete, the system configuration section will update. See the Lifebeat Monitoring window below.



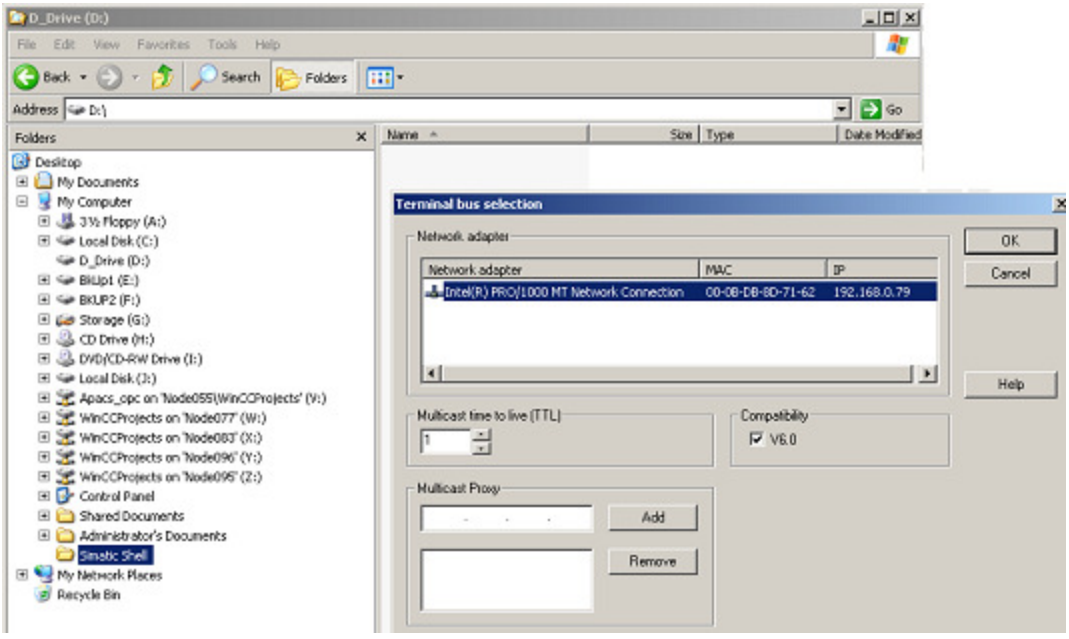
4. Lifebeat Monitor setup on the client is complete. Click the "Close" button to close Lifebeat Monitoring.

5.4 Configuring the Terminal Bus

For Engineering Station, Central Archive Server and Client and Server PCs:

If the PC (computer) has more than one network adapter, configure WinCC for the network adapter it will be using.

1. Open Windows Explorer and select **My Computer > SIMATIC Shell > Settings.**
   The "Terminal bus selection" window opens.



2. Select the appropriate network adapter. Click "OK".
   The message box "Network communications need to be initialized" opens.
3. Click "Yes".

WinCC Communications Configurator

The WinCC Communications Configurator configures WinCC to use different network speeds (for example, for dial-up or radio)

1. To start, click **Start > Simatic > WinCC > Tools > Communication Configurator**.
   - Slide bar should be set to reflect network speed.
   - "Server Pings Client" should be set unless there are dial-up clients.
   - Settings should only be changed if CCAgent, CCClient, and CCServer processes have been (manually) stopped.

   Note

   Refer to WinCC Help for additional details regarding WinCC Communication Configurator.

5.5 Time Synchronization Setup

For Clients and Server PCs:

For further information, please refer to the help file **Start > SIMATIC > WinCC > WinCC Information System > Options > Options for Process Control > Time Synchronization**.

5.6 User Administration

It is possible to configure all user accounts. For more details on configuring user accounts, refer to the help file:

Start > Simatic > WinCC > WinCC Information System > Working With WinCC > Setting up User Administration

5.7 Data Security and Backup

Recommendation

Save the various project states.

Create a backup in the following situations:

- After configuration changes
- Before and after system component upgrades
- Before and after the software update of the configuration software

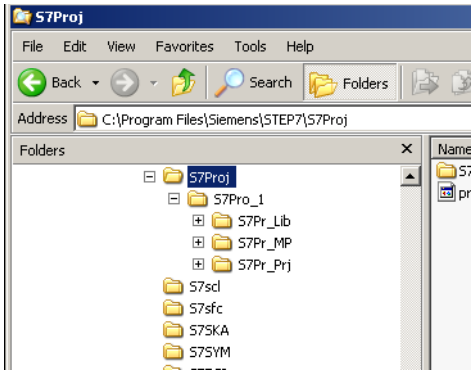
Additional Information

You will find a step-by-step description of saving and backing up ES and OS project data in the *Process Control System PCS 7* and *PCS 7 Service Support and Diagnostics* manuals.

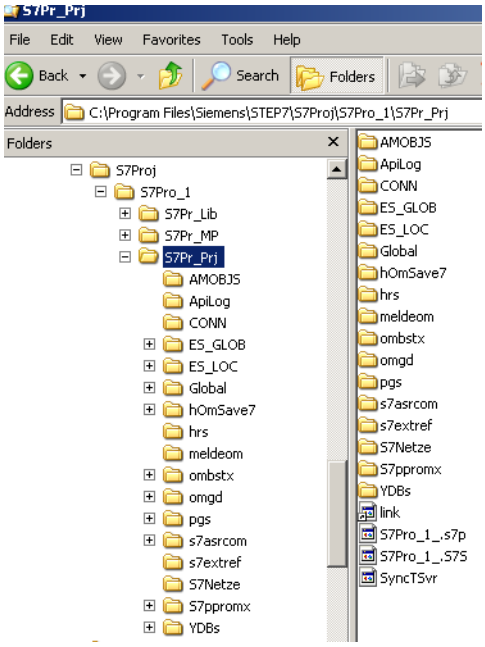
Important

It is recommended that your DBA Project also be stored in a folder within your SIMATIC Manager project folder, so that archiving the SIMATIC Manager project will include all project data.

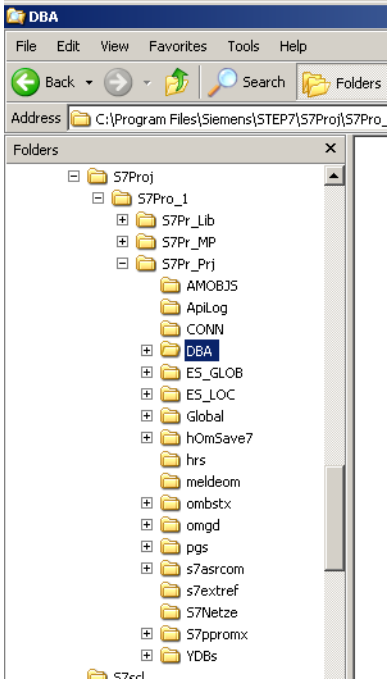
For example, if you create a SIMATIC Manager project called S7Pro_1, a folder hierarchy is automatically created:



Expanding the S7Pr_Prj directory shows many additional subfolders that are created automatically.



Create a new folder called DBA in the S7Pr_Prj subdirectory:



Your DBA project should be created in this subdirectory. This ensures that the DBA project will be automatically backed up and restored using the standard backup and restore procedures described in *Process Control System PCS 7* and *PCS 7 Service Support and Diagnostics* manuals.

Connection Monitoring

6

6.1 Overview

PCS 7 provides a concept of Lifebeat Monitoring to offer some capabilities to monitor the health of the connection between PCS 7 OS. You can find a detailed description of the configuration under "Lifebeat Monitoring" in the *WinCC Information System Online Help*.

While Lifebeat Monitoring may provide rudimentary information regarding connectivity with a third-party device or controller, in some cases more sophisticated diagnostic capabilities may be desired and can be implemented on a per project basis.

The sections below describe some common enhancements that might be applied to achieve more advanced diagnostic capabilities.

In the case of native WinCC Channels (non-OPC), connection diagnostic data that is available may be tag data available in a controller or other device, or special "system tags" that the channel provides that offers additional diagnostic data, such as connection status or a lifebeat. Refer to documentation for the channel being used to determine what diagnostic data might be available.

In the case of OPC connections, connection diagnostic data that is available may be data available in a controller or other device, or special "system tags" that the OPC Server provides that offers additional diagnostic data, such as connection status or a lifebeat. Refer to the documentation provided by the vendor of the OPC Server to determine what diagnostic data might be available.

6.2 Common Project Enhancements

Common Project Enhancements

Common project enhancements include the following:

1. The user may want to provide a visual indication of the health of the connection to the controller and/or its WinCC Channel or OPC Server even if the lifebeat monitoring screen is not currently displayed.
2. The user may want to trigger alarm messages based on the health of the connection to the controller and/or its WinCC Channel or OPC Server.
3. In a redundant server architecture, the user may want to shut down one of the servers based (in part) on the health of the connection to the controller and/or its WinCC Channel or OPC Server. Clients could then automatically switch to the other redundant server if it is available.
4. In a redundant server architecture, the user may choose to leave all servers running, but force clients to switch servers based (in part) on the health of the connection to the controller and/or its WinCC Channel or OPC Server.

This section will provide an overview of methods that can be used to monitor the health of the connection to the controller and/or its WinCC Channel or OPC Server, and methods to provide the desired system response. Implementation details are left to the user since each system is unique.

6.3 Monitoring Options

Monitoring the health of the connection to the controller and/or its WinCC Channel or OPC Server

This section will provide an overview of methods that can be used to monitor the health of the connection to the controller and/or its WinCC Channel or OPC Server, and methods to provide the desired system response. Implementation details are left to the user since each system is unique.

6.3.1 Monitoring Option 1: Constantly Changing Tag Value

A convenient way to monitor the connection to a controller and/or its WinCC Channel or OPC Server is to monitor a tag whose value is constantly changing such as "time of day", "scan cycle", or "heartbeat" type of tags. If the controller itself does not provide such a tag (and the user is not able to add one to the controller configuration), then it is possible that the WinCC Channel or OPC Server provides a similar tag. The timestamp of each tag value change can be recorded, and if the value does not change by a user determined timeout period (for example, 10 seconds), then the connection can be marked as bad. This can be implemented in C-Script through the use of the GetTagDWord() (or similar) function to read the tag value, and the time() function to read the current time.

6.3.2 Monitoring Option 2: Fixed Tag Value

If a tag whose value is constantly changing is not available in the controller or WinCC Channel or OPC Server, then it is possible that the controller or WinCC Channel or OPC Server provides a dedicated tag to indicate health based on its value (for example, a .STATUS tag is available where 0 means "Good" and 1 means "Bad"). This can be implemented in C-Script through the use of the GetTagDWord() (or similar) function to read the tag value.

6.3.3 Monitoring Option 3: Tag State and Quality Code

If neither of the above two methods are appropriate for a given system, then the user can choose to monitor the tag state or tag quality code of any tag in the system. This can be implemented in C-Script through the use of the GetTagDWordState() or GetTagDWordStateQC() (or similar) function to read the tag state or quality code.

Regardless of which of the above three approaches are used, the user will need to create internal PCS 7 OS tags to store tag value, tag status, tag quality code, tag read time, and the result of the health determination.

6.4 Providing Appropriate System Response

Providing the appropriate system response based on the health of the connection to the controller and/or its WinCC Channel or OPC Server

Once the result of the health determination is available as an internal PCS 7 OS tag, it can be used to drive the appropriate system response. For illustration purposes, this tag will be referred to as ConnectionStatus, but the user is free to choose any appropriate tag name.

System Response Option 1: Provide a Visual Indication

You may want to use ConnectionStatus to drive an indicator on the *overview1.pdl* file. Placing the indicator on the *overview1.pdl* file means it will always be visible to the operator regardless of which user graphic is being displayed in the working window. This might be similar to the RedundancyStateIndicator, whose color changes based on the redundancy state (green for good, and red for bad).

System Response Option 2: Provide an Alarm Message

You may want to use ConnectionStatus to trigger one or more alarm messages. The user would configure this using the existing PCS 7 Alarm Logging Editor.

System Response Option 3: Server Shutdown

In a redundant server architecture, the user may want to use ConnectionStatus to take a server out of runtime. Clients could then automatically switch to the other redundant server if it was available. ConnectionStatus should probably not be the only triggering factor since you probably would not want to shut down the server if it is providing other services (like communicating to other controllers) or if the redundant server was not available. This can be implemented in C-Script through the use of the DeactivateRTProject() function.

6.4.1 System Response Option 4: Client Switchover

System Response Option 4: Client Switchover

In a redundant server architecture, the user may want to use ConnectionStatus to force a client to switch to the other server. This can be implemented in C-Script through the use of the SetTagBit("@RM_MASTER", 0) function. This forces the current server into standby mode. The redundant server will take over the master server role if it was previously in the standby role. Clients who do not have a preferred server configured, will automatically switch to the new master server.

Downloading and Activating PCS 7 OS Stations 7

Downloading

Procedures vary depending upon the target of the download.

Activating and Reactivating

Perform activation and reactivation in the prescribed order.

7.1 Downloading the Project to the Primary Server

1. From SIMATIC Manager component view, right-click the Primary Server OS (PC Station 1), and select **PLC > Download**.
2. Ensure that "The Entire WinCC Project" radio button is selected.
3. Click "OK" to download the project.
4. A success window is displayed. Click "OK" to acknowledge that the download has completed.
5. Reload the Rovisys OPC90 Server on the Primary Server. Refer to the section Bailey Engineering Database Change Management below for details concerning the steps required to reload the OPC90 Server on a Server station.

7.2 Downloading the Project to the Standby Server

1. From SIMATIC Manager component view, right-click the Standby Server OS (PC Station 2), and select **PLC > Download**.
2. Ensure that "The Entire WinCC Project" radio button is selected.
3. Click "OK" to download the project.
4. A success window is displayed. Click "OK" to acknowledge that the download has completed.
5. Reload the Rovisys OPC90 Server on the Standby Server. Refer to the section Bailey Engineering Database Change Management below for details concerning the steps required to reload the OPC90 Server on a Server station.

7.3 Downloading the Project to the Client Station

1. From SIMATIC Manager component view, right-click the Client Station OS (PC Station 3), and select **PLC > Download**.
2. Ensure that "The Entire WinCC Project" radio button is selected.

3. Click "OK" to download the project.
4. A success window is displayed. Click "OK" to acknowledge that the download has completed.

7.4 Activating Server Projects

Note

Projects can be automatically activated when the operating system starts using the AutoStart Utility. For more information, refer to the help file within WinCC Explorer, or to FAQ ID: 19249315

1. Activate the project on the primary server.
2. Wait four minutes for the project to fully start.
3. Activate the project on the backup server.
4. Wait four minutes for the project to fully start.
5. Activate the project on the client.

7.5 Restarting an OS Server

Wait five minutes before reactivating the WinCC runtime of an OS Server associated with a redundant pair to ensure that all synchronization activities will start-up properly.

Delta Engineering

8

This section describes how to make changes to an existing project from the Engineering Station, and then downloading those changes into the servers and client. These changes may include:

- Making changes to an AS program
- Adding or removing a station
- Making changes to the plant view in DBA
- Making changes to the project in SIMATIC Manager
- Making changes to the project in WinCC

8.1 Overall Steps

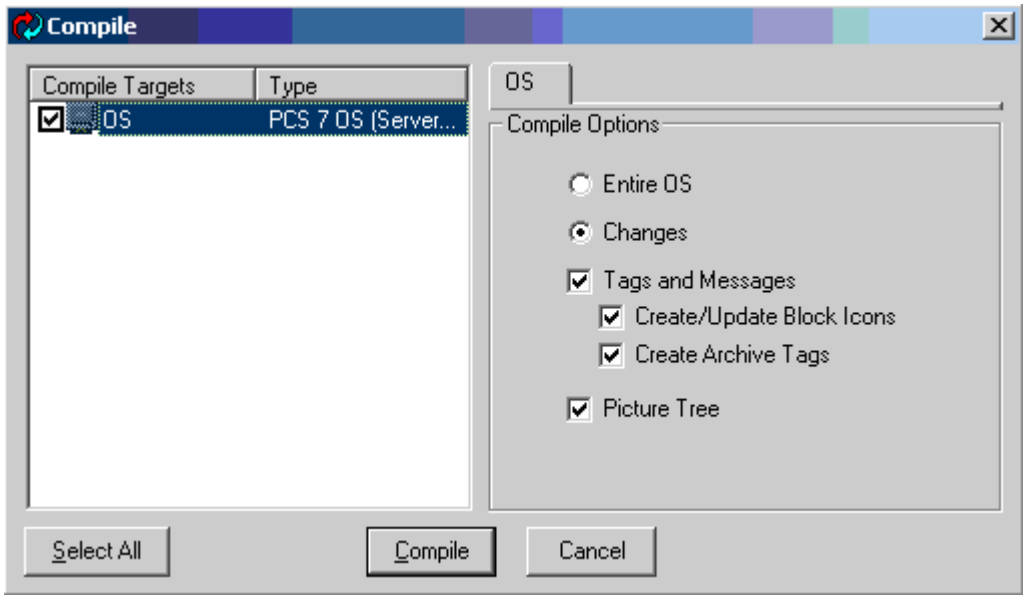
1. Make changes. Ensure that DBA changes have been compiled.
2. Download changes to your stations.

8.2 Making Changes to the AS Configuration

If necessary, use the appropriate Bailey or other third-party tools to make changes to AS Station programs or hardware configurartion.

8.3 Making Changes to the DBA Configuration

1. If you have made changes to your AS programs or hardware configuration, make any necessary corresponding changes to your DBA project (efor example, adding new object instances).
2. Use DBA to make any additional changes desired, such as
   - Fine-tuning of the Plant View assignments
   - Renaming folders or graphic files assigned to folders
   - Editing of AS Object attributes such as Symbol Names and Alarm Priorities (see DBA Help File, section Object Attributes, for more details)
3. From DBA, select Compile. If you have made changes to any DBA Types using the Type Editor, choose the "Entire OS" option. Otherwise, you may choose the Changes option on the compile dialog box:



8.4 Modifying the Project in WinCC

1. On the OS Engineering Station, start WinCC Explorer and open the OS Server project.
2. Make any new changes to the project that you need (for example, create new graphics, modify existing graphics, etc.).

Note

All changes must be made on the OS Engineering Station to preserve the **Changes Only** download. Changes made on another station cannot be downloaded to the other stations via SIMATIC Manager. These changes would have to be downloaded manually. Changes made on any station other than the Engineering Station will require a full download when future changes are made.

8.5 Downloading Changes

There are two methods to download changes:

- Load Online Changes (Delta Download)

  Note

  Important

  If you have removed objects from the Plant View in DBA and loaded online changes, and later re-added the same object back to the Plant View in DBA, do not use Load Online Changes to download these changes. In order for these objects to operate correctly in runtime, it is necessary to download these changes use Full Download.

- Full Download

  Note

  Certain changes made in DBA will require that the Full Compile method be used. You will be warned within DBA when attempting to make such changes that a Full Compile will be required.

8.5.1 Full Download

8.5.1.1 Downloading the Project to the Standby Server

1. If WinCC runtime is activated on the server and you are downloading changes that add, modify or delete any tags that are to be accessed by the OPC90 Server, deactivate the Standby Server.
2. From SIMATIC Manager component view, right-click the Standby Server OS and select **PLC > Download**.
3. Ensure that "The Entire WinCC Project" radio button is selected.
4. Click "OK" to download the project.
5. A success window is displayed. Click "OK" to acknowledge that the download has completed.
6. If you have downloaded changes that add, modify or delete any tags that are to be accessed by the Rovisys OPC90 Server, reload the Rovisys OPC90 Server on the Standy Server. Refer to the section Bailey Engineering Database Change Management below for details concerning the steps required to reload the Rovisys OPC90 Server on a Server station.
7. If the download was started with the WinCC Runtime deactivated, reactivate the WinCC runtime.

8.5.1.2 Downloading the Project to the Primary Server

1. If you are downloading changes that add, modify or delete any tags that are to be accessed by the OPC90 Server, deactivate the Primary Server.
2. From SIMATIC Manager component view, right-click the Primary Server OS (PC Station 1), and select **PLC > Download**.
3. Ensure that "The Entire WinCC Project" radio button is selected.
4. Click "OK" to download the project.
5. A success window is displayed. Click "OK" to acknowledge that the download has completed.
6. If you have downloaded changes that add, modify or delete any tags that are to be accessed by the OPC90 Server, reload the OPC90 Server on the Primary Server. Refer to the section Bailey Engineering Database Change Management below for details concerning the steps required to reload the OPC90 Server on a Server station.
7. If the download was started with the WinCC Runtime deactivated, reactivate the WinCC runtime.

8.5.2 Downloading Changes

8.5.2.1 Loading Online Changes

Load Online Changes (Delta Download)

You can only download changes when all stations have PCS 7 activated. Unlike downloading the entire project, you do not need to explicitly request a download to the Standby Server. The download to the Primary Server will automatically include the Standby Server. You will not explicitly see the changes downloaded to the Client, as this download is done in the background.

1. From SIMATIC Manager component view, right-click the "Primary Server OS" (PC Station and select **PLC > Download**.
2. Ensure that "Changes" radio button is selected.
   (**Note** : In a redundant system, this choice is only available if both the Master and Standby are both online.)
3. Click "OK" to download the changes. When downloading to redundant servers, the configured Standby will be downloaded first).
4. A success window is displayed. Click "OK" to acknowledge that the download has completed.
5. In a redundant system, the configured Master will then be downloaded and the "OK" button will again become available once this download is complete. Select "OK" to acknowledge the download.

For more details concerning Loading Online Changes, refer to *SIMATIC Process Control System PCS 7 V9.1* documentation.

Product Installation Guidance Tables

9

9.1 PCS 7/Open OS Option V9.1

Component	Station			
	Eng. Station	OS Server	OS Client	OS Single Station
PCS 7/Open OS Single Station				X
PCS 7/Open OS Client			X	
PCS 7/Open OS Server		X		
PCS 7/Open DBA	X			
Customized Installation				
PCS 7 DBA	X			
PCS 7/Open Faceplates and Symbols	X	X	X	X
PCS 7/Open OS DBA	X			
PCS7/OPC DBA	X			