

# SIEMENS

## SIMATIC

### PCS 7/APACS+ OS Setup Guide for V6.1

#### Manual

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## Safety Guidelines

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 to property damage only have no safety alert symbol. The notices shown below are graded according to the degree of danger.



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### Danger

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

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### Warning

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

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### Caution

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

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### Caution

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

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### Notice

indicates that an unintended result or situation can occur if the corresponding notice is not taken into account.

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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 device/system may only be set up and used in conjunction with this documentation. Commissioning and operation of a device/system may only be performed by **qualified personnel**. Within the context of the safety notices in this documentation qualified persons are defined as persons who are authorized to commission, ground and label devices, systems and circuits in accordance with established safety practices and standards.

## Prescribed Usage

Note the following:



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### Warning

This device and its components may only be used for the applications described in the catalog or the technical description, and only in connection with devices or components from other manufacturers which have been approved or recommended by Siemens.

Correct, reliable operation of the product requires proper transport, storage, positioning and assembly as well as careful operation and maintenance.

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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.

# Preface

## Purpose of the Manual

This manual provides information necessary to set up PCS 7/APACS+™ OS for V6.1.

## Required Basic Knowledge

Readers are presumed to be knowledgeable in the use of PCS 7 and APACS+.

## Where is this Manual valid?

This manual is valid for the software package PCS 7/APACS+ OS for V6.1.

## Training Centers

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

On-line information is available: <http://www.sea.siemens.com/sitrain>

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.

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Automation and Drives Service and Support International <a href="http://www.siemens.com/automation/service&amp;support">http://www.siemens.com/automation/service&amp;support</a>		
The languages of the SIMATIC Hotlines and the authorization hotline are generally German and English.		

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# 1 Introduction

The purpose of this document is to outline the steps required to set up a PCS 7 system and a corresponding PCS 7 project that communicate to APACS+ Controllers. Project development is done on an OS Engineering Station using SIMATIC Manager. This document is based on the architectural layout below.

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## Note

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

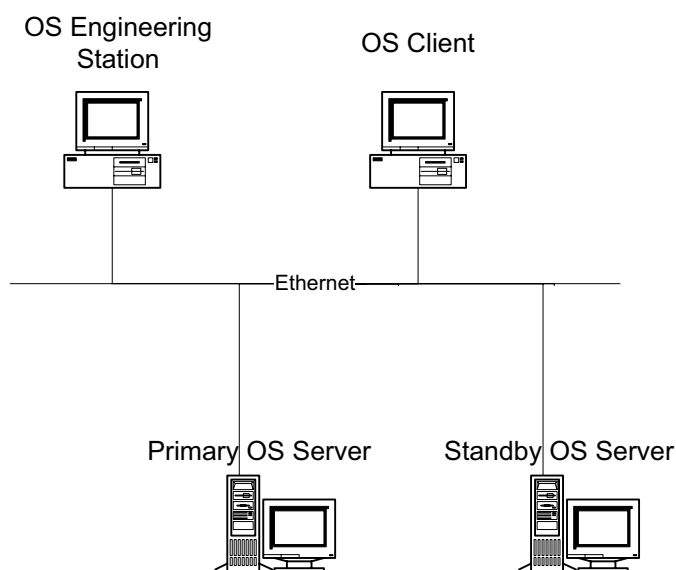
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## Note

Your client and your engineering station may be the same physical computer. The diagram below shows them to be different computers.

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## 1.1 Software Installation Overview

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### Prerequisite Note

For APACS+ ACM systems V2.05 or below, or CCM systems older than V3.30, please refer to the following Service Memos located on the APACS+ Electronic Manuals CD.

- SM39ACM-13 – APACS+™ ACM Operating System Software Version 4.40 or Higher to Correct Rest Problems.
  - SMQLCCM-2 – QUADLOG® Control Module (CCM, ACM+/ACM) System Software Maintenance Issue for Versions 3.03 to 3.23.
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### Note

If you are upgrading an existing project, ensure that you have archived your project and saved the archive to media or another computer before installing software on your stations.

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### Note

Administrator rights are required to install the software. In addition, disable any virus protection software that is currently running.

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### Note

All computers on the network must have the same user accounts and passwords.

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Step	Procedure
1	Install the Operating System
2	Install Third Party Software
3	Install PCS 7 Software
4	Install APACS+ Control CD V6.1
5	Install PCS 7/APACS+ OS Option V6.1
6	Install authorizations and licenses
7	Create a new OS Project
8	Download the OS Project

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### Note

The installation of some components automatically reboots the computer. Following the reboot, log on again as the PCS 7 user.

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## 2 Install the Software

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### Note

If you are updating an existing installation, please review section three prior to installing any software.

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### 2.1 Install the Operating System

Refer to the following references for detailed installation instructions:

From the PCS7 Installation DVD (PCS7 Toolset v6.1 with SP1), find **Manuals > English > PCS 7 – PC Configuration and Authorization.PDF**

Please review installation instructions in **both** readme files:

- From the root directory of the PCS 7 Installation DVD (PCS7 Toolset v6.1 with SP1), find the file **PCS7-Readme.wri**. Note: If the logon name of the user who performed the installation of PCS 7 differs from the operator of the PCS 7 software, pay particular attention to the "OPC - Settings under Windows 2000" section of this document.
- From the PCS 7 Installation DVD (PCS7 Toolset v6.1 with SP1), find **Manuals > English > PCS 7 System Documentation Readme.wri**

Additional information: **Start > Simatic > Information > English**

### 2.2 Install Third Party Software

Third party software (e.g. Microsoft Office, PC Anywhere, Virus software etc...) should be installed prior to installing PCS 7. Refer to the PCS 7-Readme.wri and PC Configuration and Authorization. PDF file for further information.

### 2.3 Install PCS 7 Software

Refer to the following references for detailed installation instructions:

From the PCS7 Installation DVD (PCS7 Toolset v6.1 with SP1), find **Manuals > English > PCS 7 – PC Configuration and Authorization.PDF**

Please review installation instructions in both readme files:

- From the root directory of the PCS 7 Installation DVD (PCS7 Toolset v6.1 with SP1), find the file **PCS7-Readme.wri**
- From the PCS 7 Installation DVD (PCS7 Toolset v6.1 with SP1), find **Manuals > English > PCS 7 System Documentation Readme.wri**

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**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 (All clients must be upgraded to PCS 7 V6.1 SP1 to communicate with PCS 7/APACS+ OS V6.1.)

Batch

Batch Engineering Node - Select PCS 7 Engineering and Batch Engineering

Batch Servers - Select Batch Server

Batch Clients - Select Batch Clients

Archive Server – There are no PCS 7/APACS+ OS V6.1 software components that need to be installed on the Archive Server.  
However, the Archive Server must be at PCS 7 V6.1 SP1.

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## 2.4 Install APACS+ Control CD V6.1

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**Note**

The following procedure is based on a typical installation. Refer to the table in section 9.1 for components to install per node type.

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**Note**

The OPC Device Server needs MS SQL Server. If MS SQL Server is **not** installed, install a copy of the MSDE from the Microsoft folder on this CD.

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**Note**

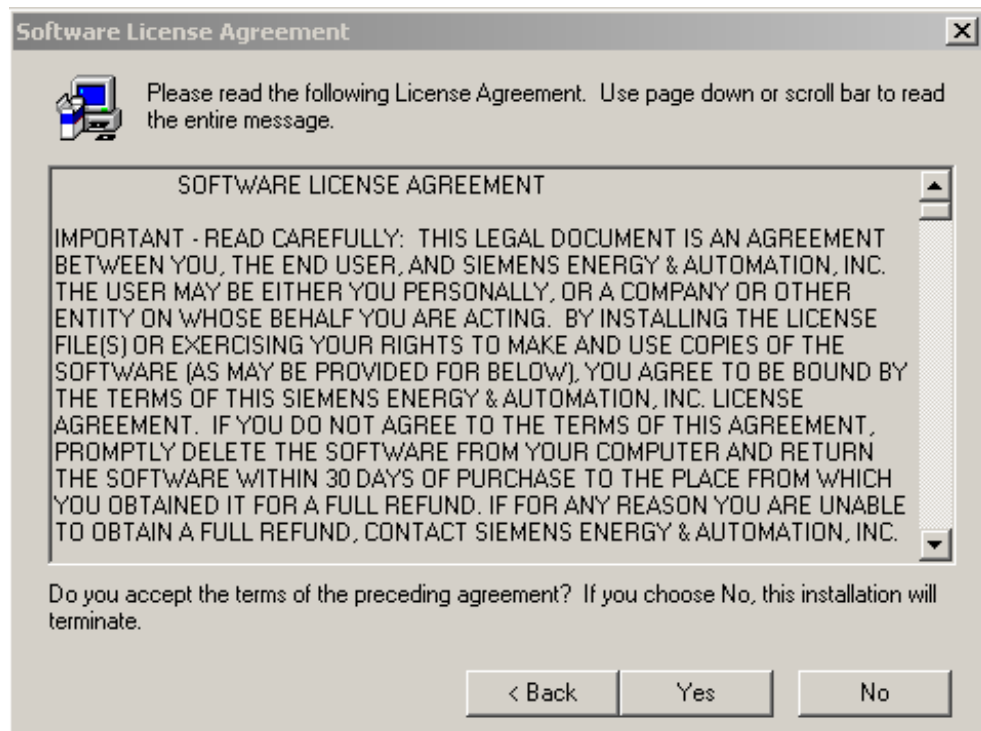
Prior to installing this software, log on with Administrator rights and disable any virus protection software that is currently running.

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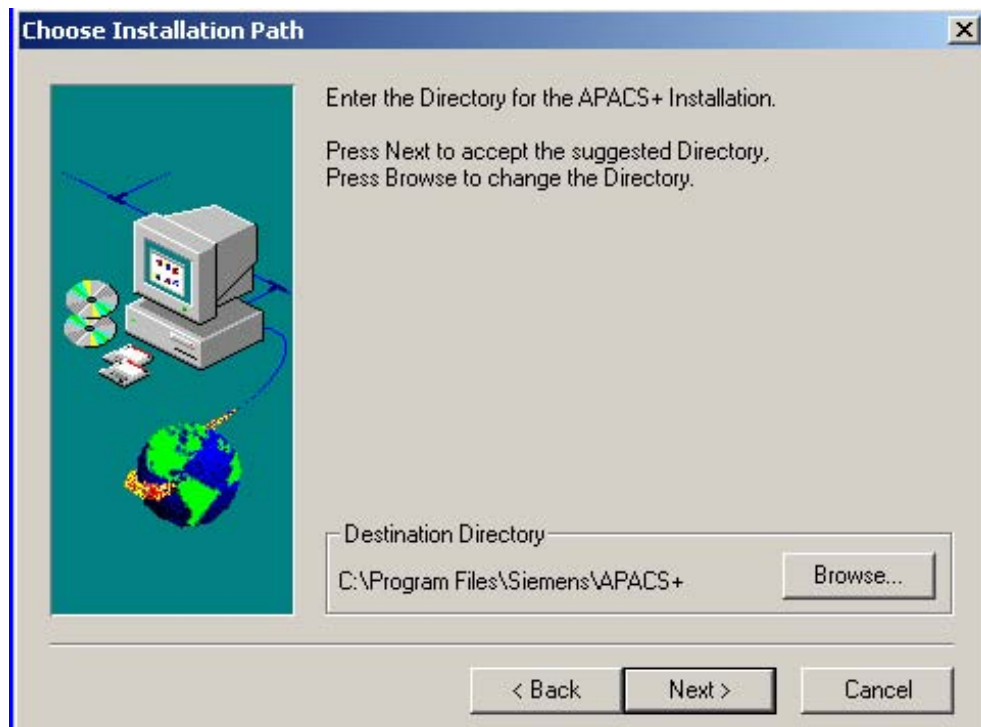
1. Insert the APACS+ Control CD V6.1 into the CD ROM drive.  
The **Welcome to Siemens** window opens.



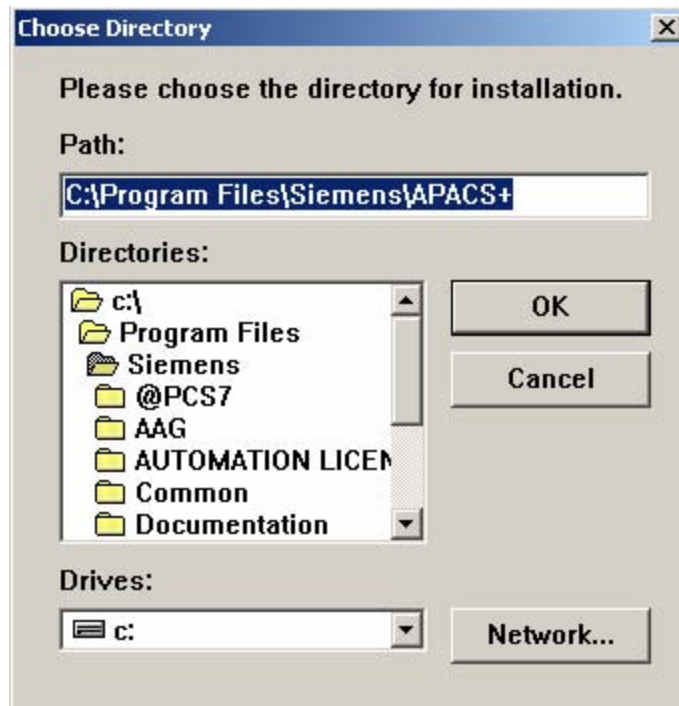
2. Click the **Next** button.  
The **Software License Agreement** window opens.



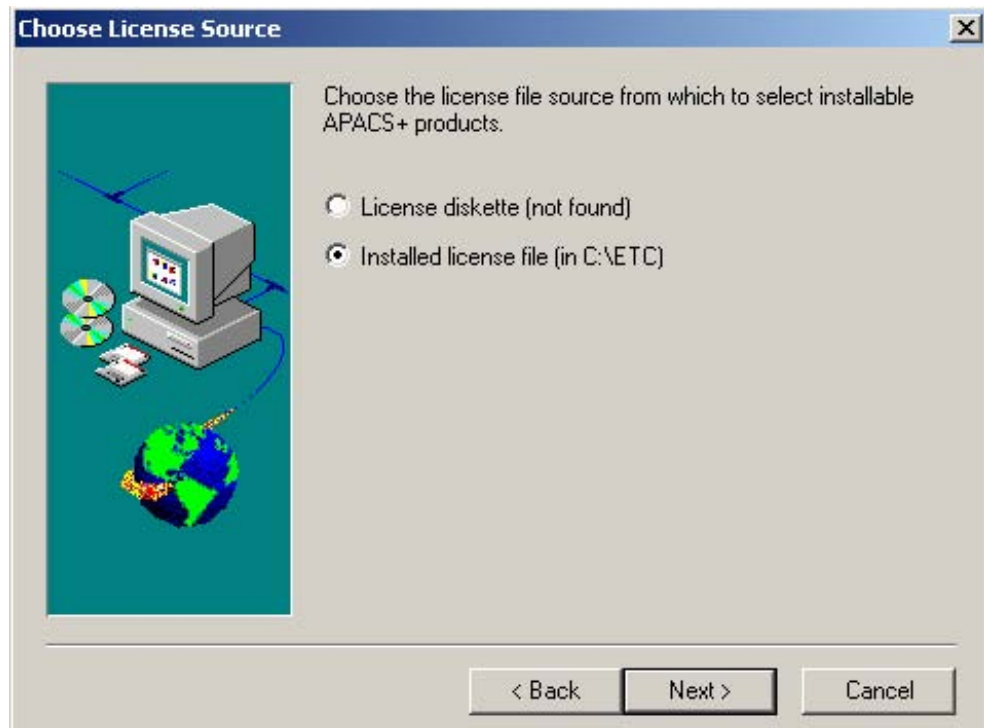
3. Read the Software license agreement.  
Click the **Yes** button to accept the agreement.  
The **Choose Installation Path** dialog box opens.



4. Select an installation path, and click the **Next** button.  
The **Choose Directory** dialog box opens (only if you click on the browse button in the **Choose Installation Path** dialog box.)



5. Click the **OK** button.  
For new installations, the **Choose the License Source** dialog box opens.



For upgrade installations, the **Select Install Type** dialog box opens.

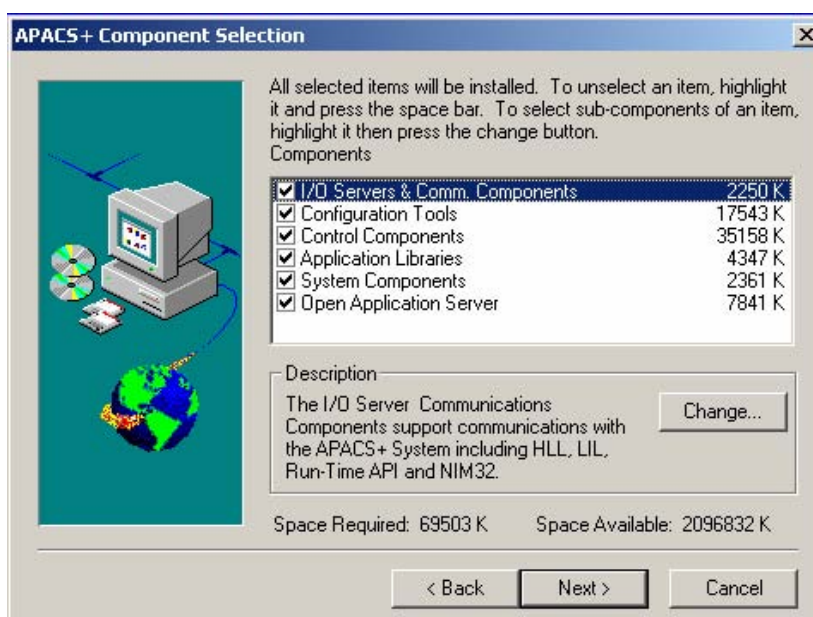


6. Select the license file source. For new installations, the license should be on the diskette.

Click the **Next** button.

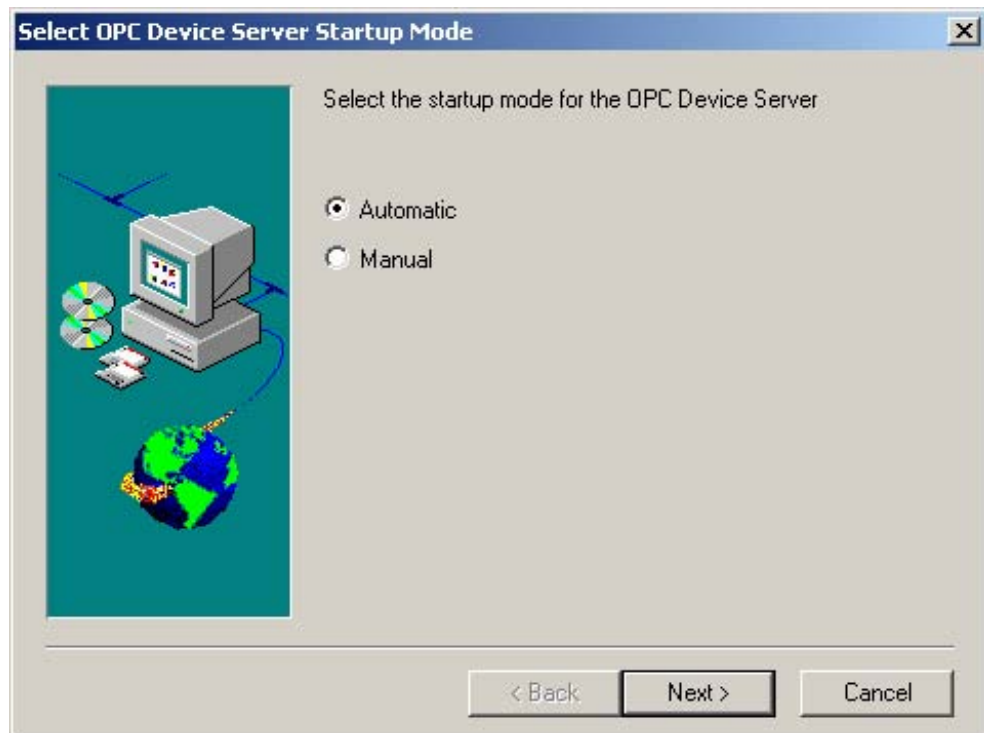
The **APACS+ Component Selection** dialog box opens. Make any changes to the list of components selected for installation by selecting a category, clicking the **Change** button, and selecting the components to install.

Please refer to the table in section 9.1 APACS+ Control CD V6.1 for the appropriate selection. Your choice of components depends on the type of station (server, client, etc...) you are installing.

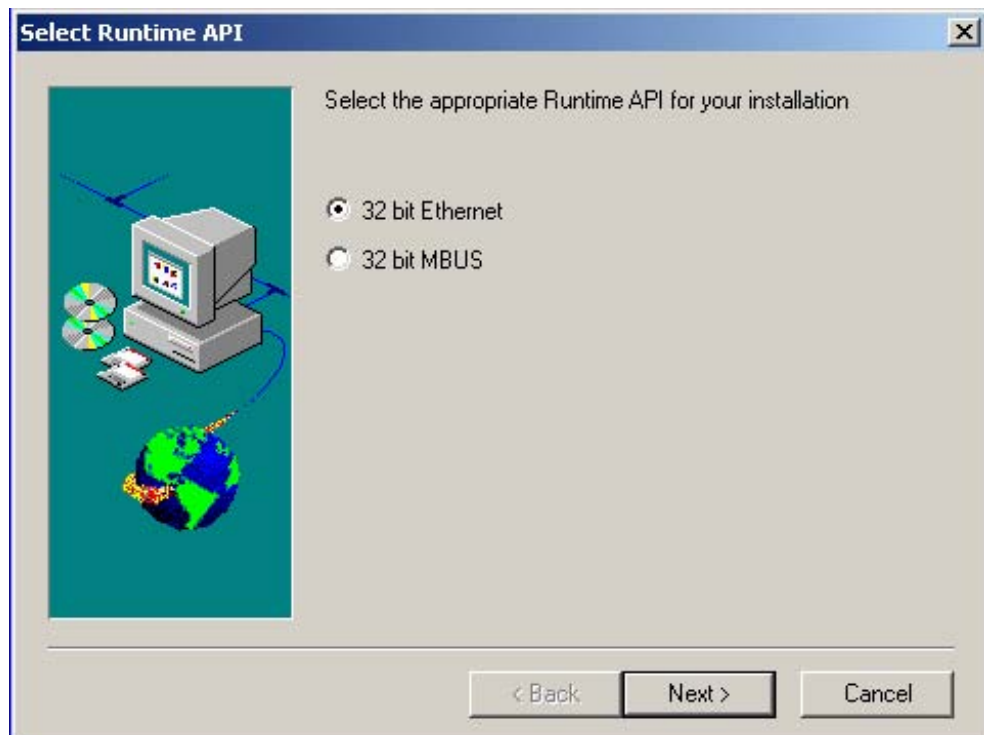




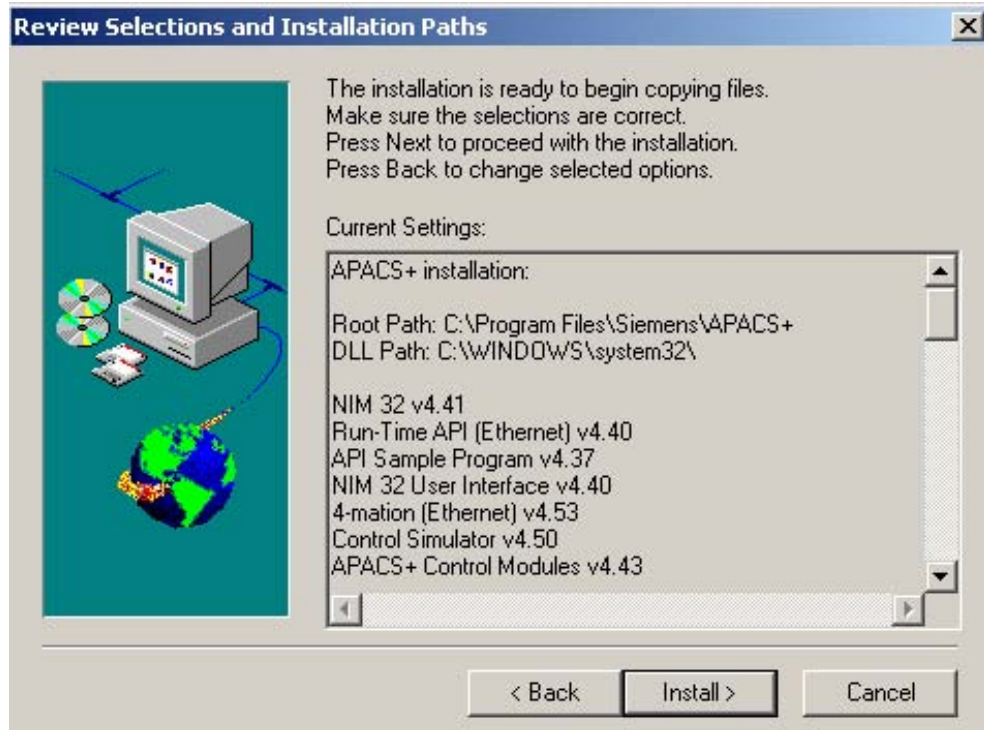
7. Click the **Next** button.  
If this is the first time OPC Server is being installed, the **Select OPC Device Server Startup Mode** dialog box opens.



If OPC Server has been installed before, the **Select Runtime API** dialog box opens.



8. Select the appropriate option for your installation.  
Click the **Next** button.  
The **Review Selections and Installation Paths** dialog box opens.



9. Scroll through the list and verify that the correct components have been selected. If any components are missing or were incorrectly selected, click the **Back** button to return to the screen to reselect the appropriate components. When you are satisfied that the list is correct, click the **Install** button.

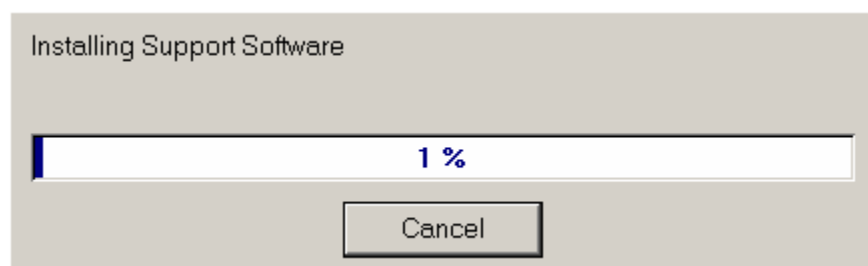
The installation begins copying the files.  
The **Installing Support Software** progress bar opens.

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#### Note

If you are installing on Windows XP or Windows 2003, the installation will inform you that the software has not undergone Windows Logo testing. Click **OK** to acknowledge, and continue the installation. The Windows operating system will again warn you that the software has not undergone Windows Logo testing. Click the **Continue Anyway** button to continue the installation. Windows Logo testing does not affect the installation or operation of the software.

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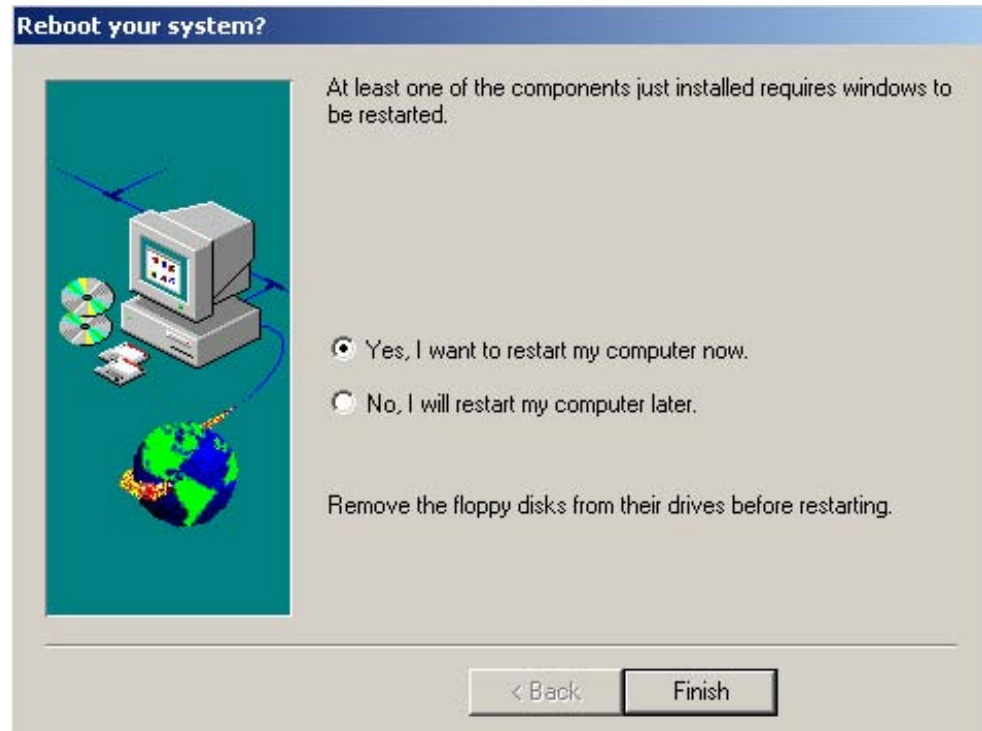


10. The **Reboot your System?** dialog box opens.

If you had a license diskette in the floppy drive, remove it. Take the Install CD out of the CD drive.

Select the **Yes, I want to restart my computer now.** radio button, and click the **Finish** button.

The installation is complete.



## 2.5 Install APACS+ OS Option V6.1

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### Note

The following procedure is based on a typical installation. Refer to the table in section 9.2 for packages/components to install per node type.

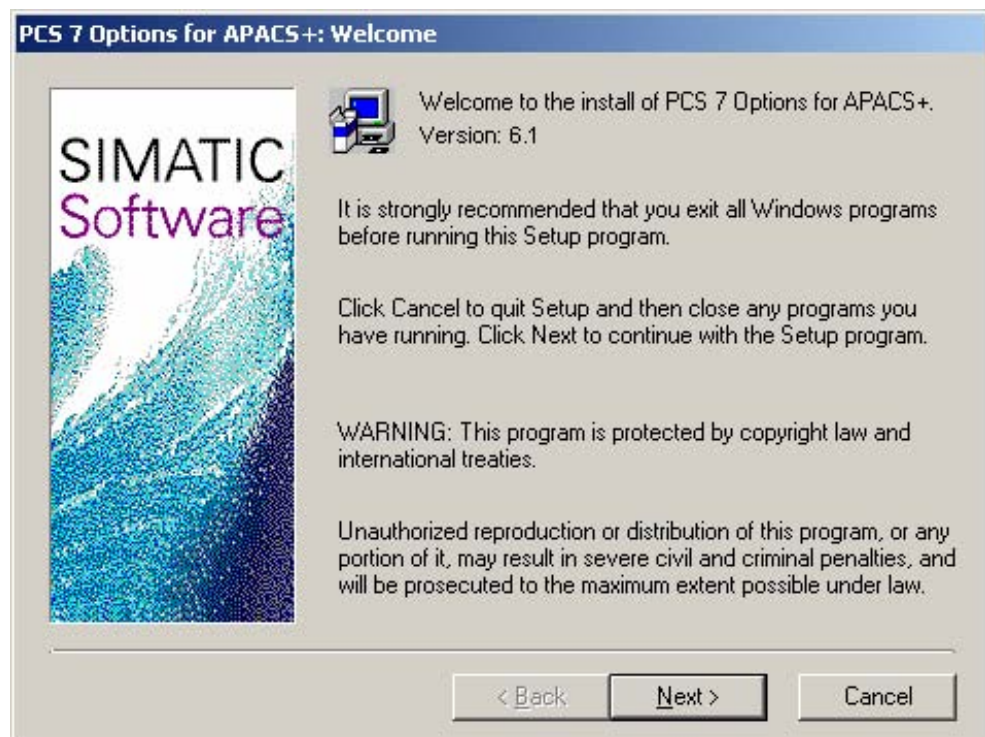
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### Note

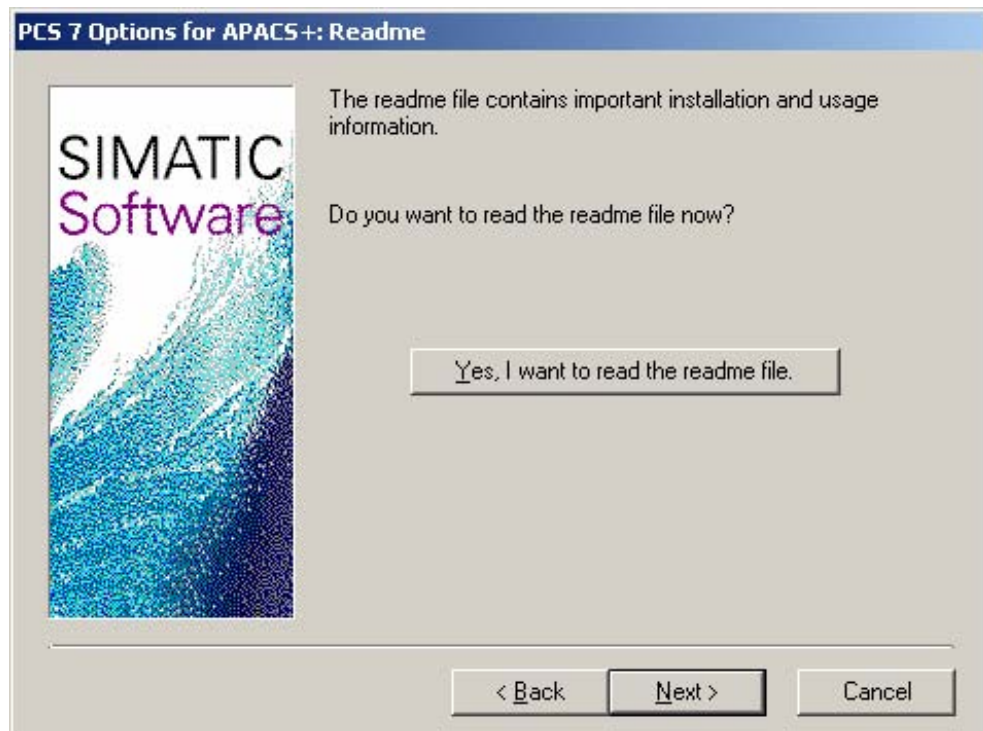
Prior to installing this software, log on with Administrator rights and disable any virus protection software that is currently running. In addition, this software should be installed after all other PCS 7 software has been installed. Ensure that all PCS 7 log on activity is complete. Refer to the Readme.wri file on the installation CD for more information.

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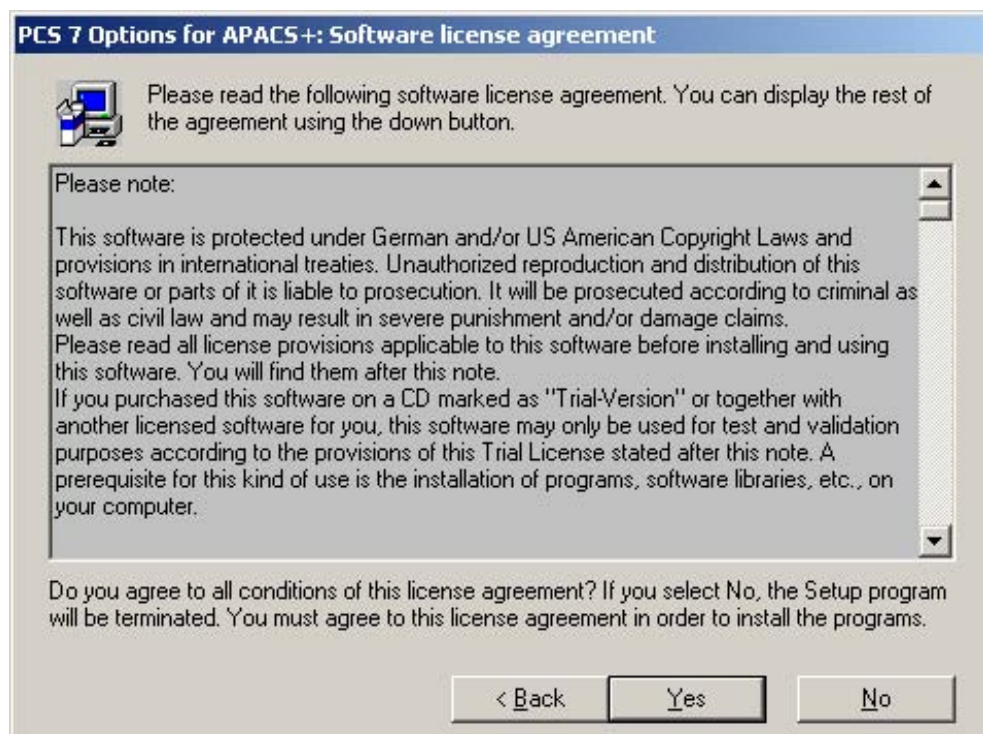
1. Insert the **PCS 7 APACS+ OS V6.1 CD 1** into the CD-ROM drive.  
The setup program automatically opens.  
The **Welcome** dialog box opens.



2. Click the **Next** button to continue. The **Readme** dialog box opens.




3. To view the readme file, click the **I want to read the readme file** button. Click the **Next** button to continue. The **Software License Agreement** dialog box opens.



4. Read the **Software license agreement**. Click the **Yes** button to continue. The **User registration** dialog box opens.





**PCS 7 Options for APACS+: User registration**

Please enter your name, your company name and the ID number. The ID number valid for your product can be found on your software product certificate.

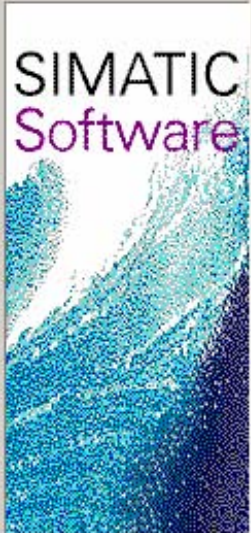
Name:

Company:

ID no:

< Back   Next >   Cancel

5. Enter **Name**, **Company** and **ID no**. The ID number can be found on the Certificate of License that comes with the software or on the Authorization disk. Click the **Next** button to continue.  
The **Target drive** dialog box opens.



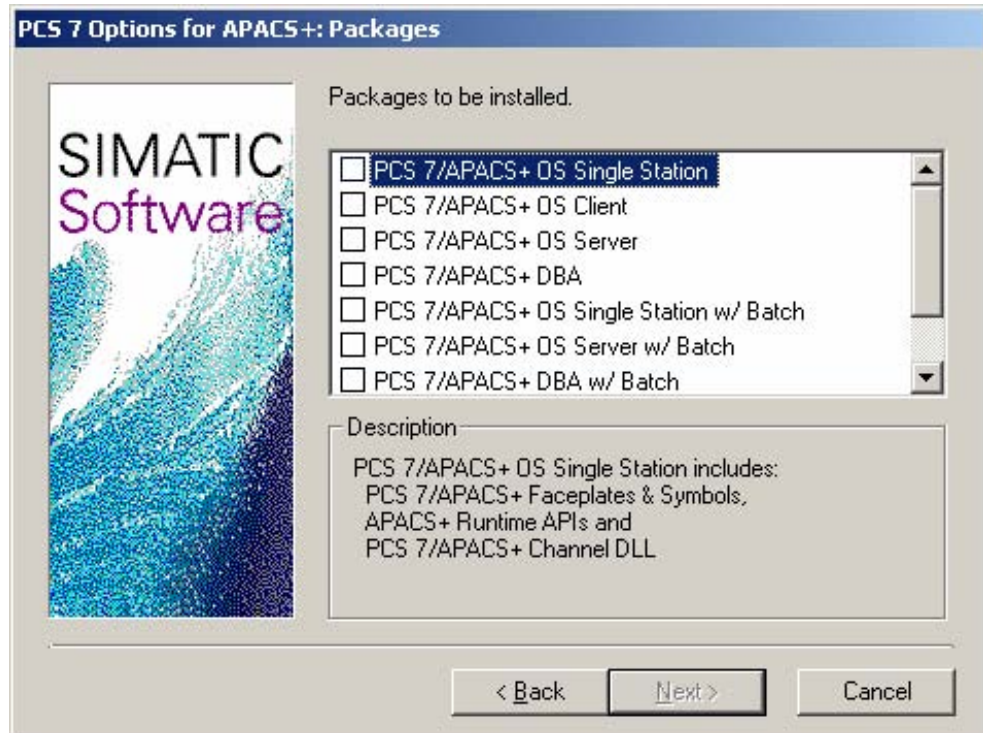
**PCS 7 Options for APACS+: Target drive**

Select the drive on which you wish to install the programs. (You will later have the opportunity of selecting different drives for certain programs.)

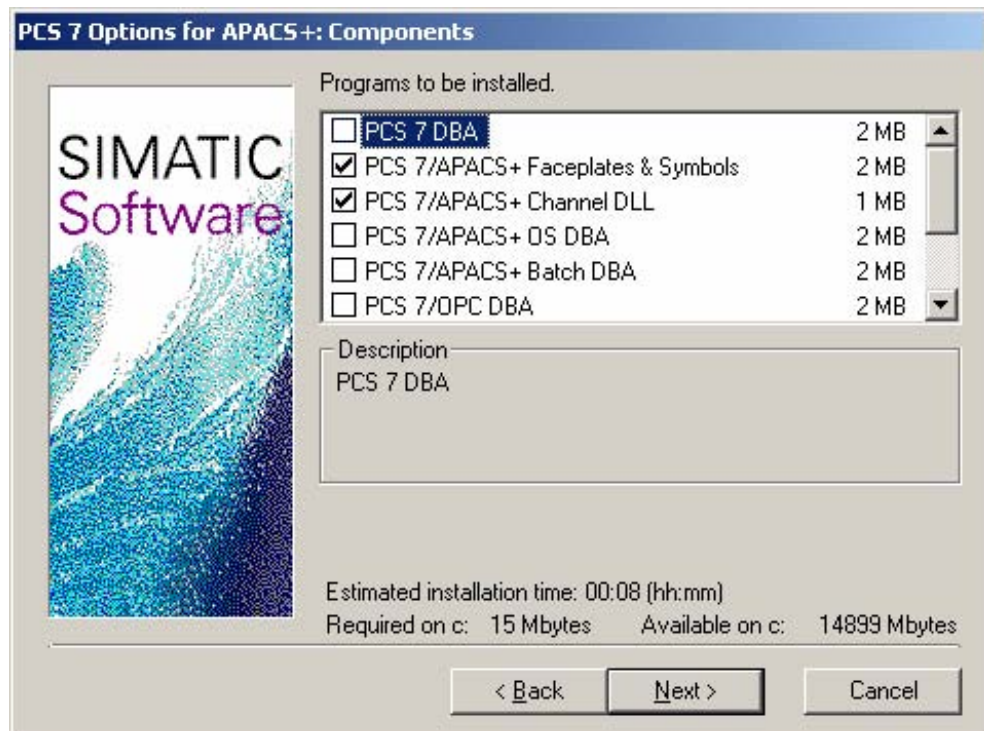
Target drive:

< Back   Next >   Cancel

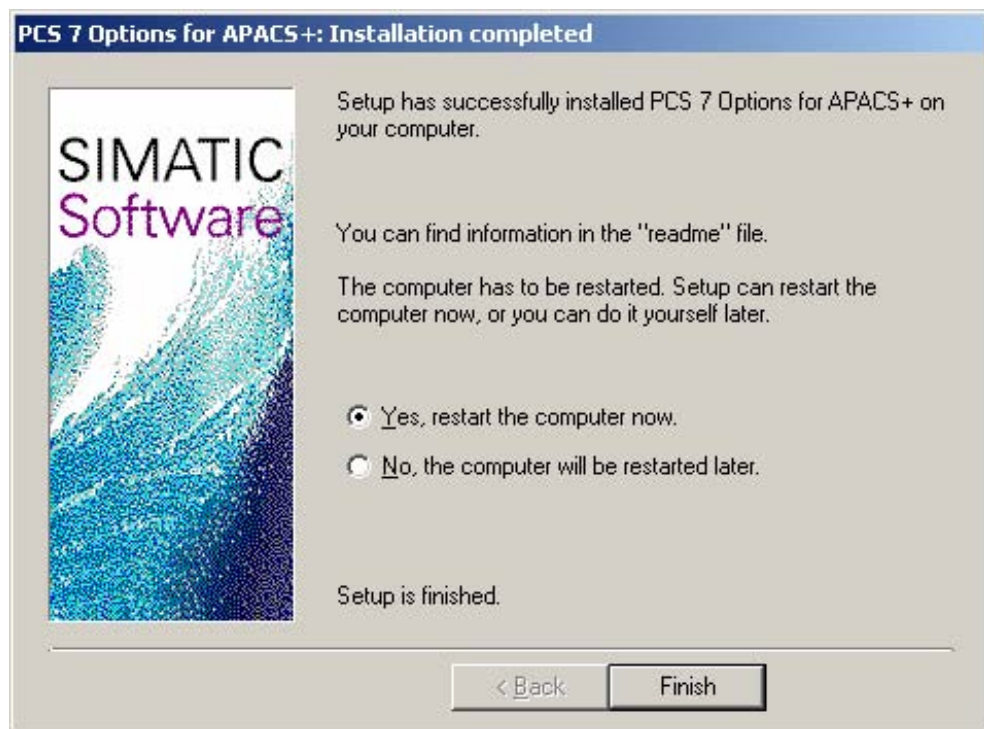
6. Select the Target drive. This is the drive where PCS 7 Options for APACS+ will be installed. It should be on the same drive as the PCS 7 product.  
Click the **Next** button to continue.  
The **Packages** dialog box opens.



7. Select the packages to install. Please refer to the table in section 9.2 PCS 7 APACS+ OS Option V6.1 for the appropriate packages to install for your system.  
Click the **Next** button to continue.  
The **PCS 7 Options for APACS+ Components** dialog box opens.  
Please refer to the table in section 9.2 PCS 7 APACS+ OS Option V6.1 for the appropriate components to install on a station. The choice here depends on the type of station you are installing (client, server, etc...).



8. Scroll through the list and add or delete any components as appropriate. Click the **Next** button to continue. After the appropriate software components are installed, the **PCS 7 Options for APACS+: Installation completed** dialog box opens.



9. Remove the CD from the CD-ROM drive.
10. Select the **Yes, restart the computer now** radio button, and click the **Finish** button to reboot the PC.



## 2.6 Install authorizations and licenses

1. Insert the Authorization floppy disk that came with your software into drive 'A'.
2. From the Windows taskbar, click **Start button>SIMATIC>License Management>Automation License Manager**.
3. Double-click the 'A' drive.
4. Select all of the authorizations.
5. Transfer the authorizations from the floppy to the target drive.
6. Remove the floppy disk from drive 'A'.

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### Note

Please refer to the following link for the most current information regarding product updates:

<http://support.automation.siemens.com /WW/View/en/14905487/133100>

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## 2.7 Enhanced Trend Control

Several enhancements to the standard PCS 7 Trend Control are available as an add-on. See the EnhancedTrendControl folder on the APACS+ OS Option V6.1 CD for further details.

Install the Enhanced Trend Control to each node type:

- Engineering Station
- Servers
- Clients



## 3 Update a project from V6.0 to V6.1

### Note

OS Project development is done on the OS Engineering Station using SIMATIC Manager. This project will be downloaded to the system's single server or redundant server pair and the clients. The sample project below assumes a single project with a redundant server pair and one client.

### 3.1 Create a new project in SIMATIC Manager

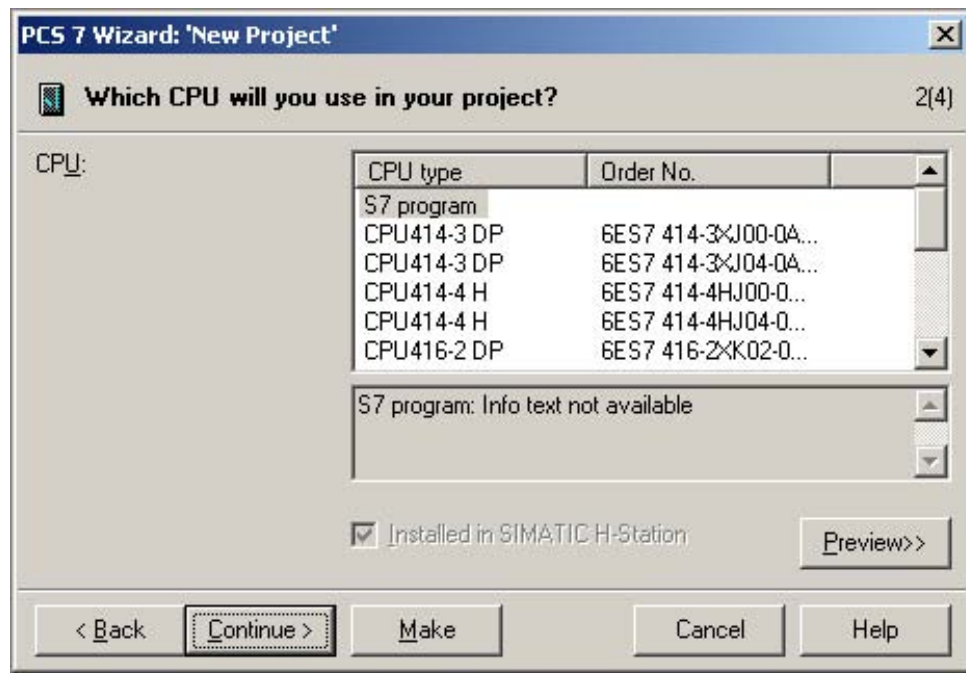
1. Open SIMATIC Manager, Start > SIMATIC > SIMATIC Manager  
The PCS 7 Wizard: 'New Project' dialog box opens.

### Note

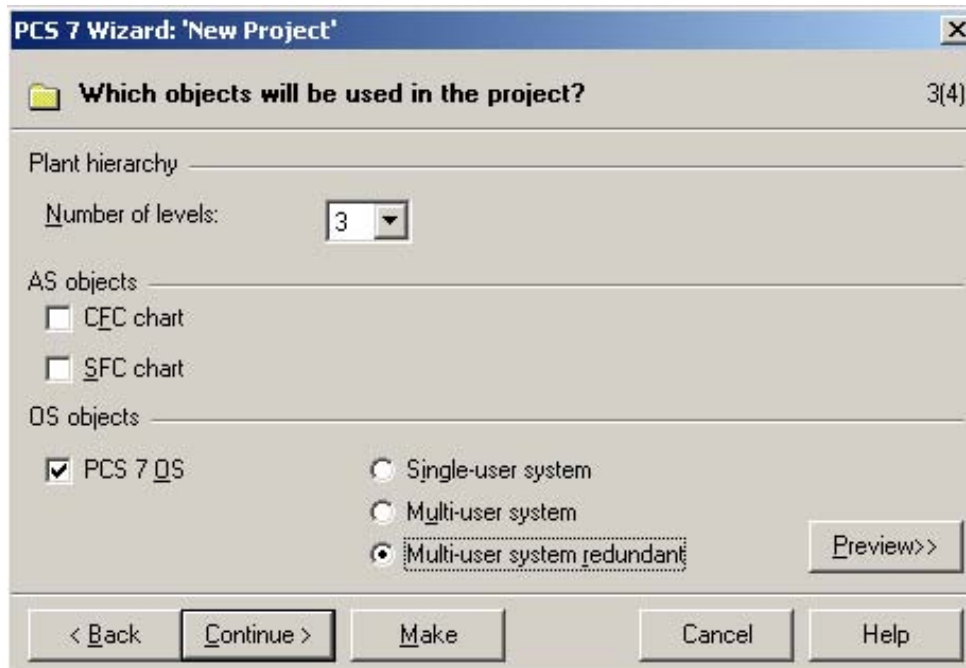
Press the **F1** function key for help on each screen of the PCS 7 New Project Wizard, or press the Help button.



2. Select a project type. For example, select the **Single Project** radio button.  
**Multiproject with project and master data library** – select this option if you want to distribute project engineering across multiple engineering stations.  
**Single Project** – select this option when project engineering will be performed from a single engineering station.
3. Click the Continue button.  
The Which CPU will you use in your project? dialog box opens.



4. Click the **Continue** button to accept the default. (Choices here are only relevant to S7 projects.)  
The **Which objects will be used in the project?** dialog box opens.



- In the **Plant Hierarchy** area, the **Number of levels** should be configured when using S7-400 controllers in the same OS project as APACS controllers. It should be set to the same value used in DBA.
- In the **AS objects** area, clear **CFC chart** and **SFC chart** check boxes. These are only relevant to S7 projects.
- In the **OS objects** area, select the **PCS 7 OS** check box, and the appropriate system type.

**Single-user System** – a single PC station will be created with an OS project.

**Multi-user System** – two PC stations will be created, an OS server project, and an OS client project.

**Multi-user system redundant** – three PC stations will be created, two OS server projects and an OS client project.

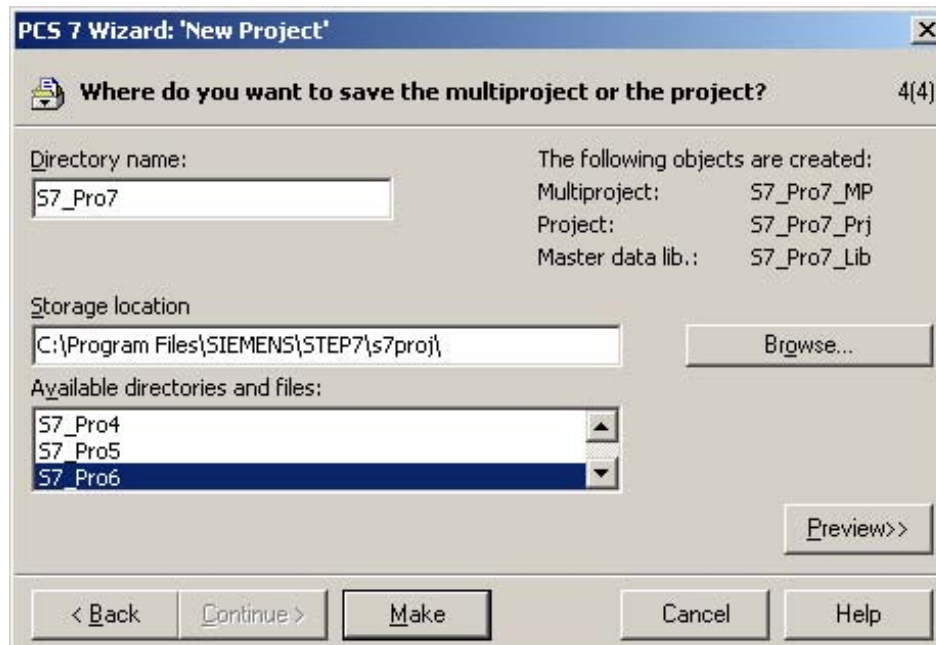
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#### Note

For SIMATIC Batch options, a SIMATIC Batch check box will also appear in the OS Objects area. It is not necessary to check this box for SIMATIC Batch, even if you are installing the Batch option.

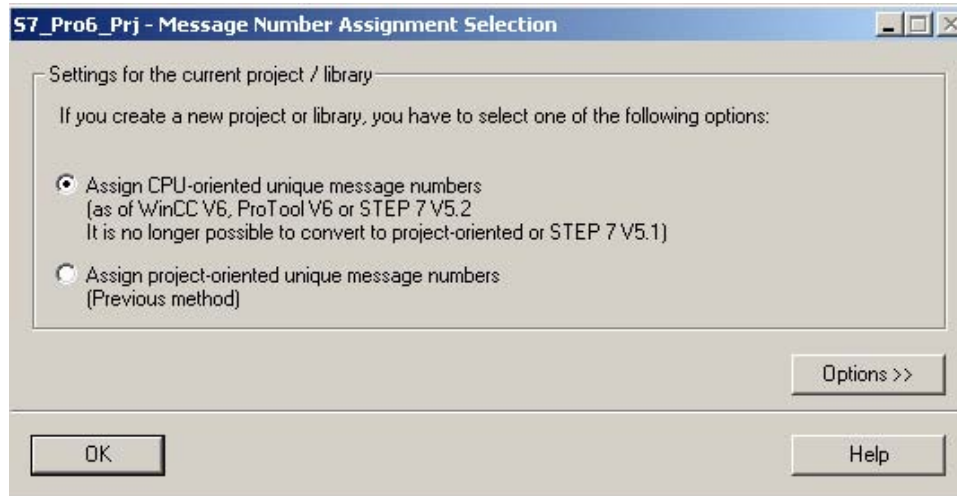
---

5. Click the Continue button.  
The Where do you want to save the multiproject or the project? dialog box 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. Do not use the same directory as the existing project.
- 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.

6. Click the **Make** button.  
The **Message Number Assignment Selection** dialog box opens.

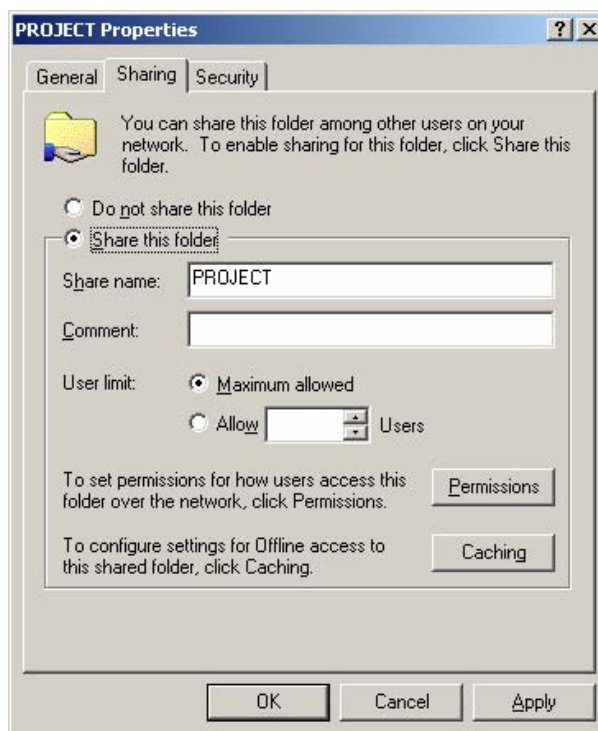


7. Accept the default. Click the **OK** button. The project is created. This setting applies to projects that include S7-400 controllers and does not apply to messages created by DBA.

## 3.2 Create New Folders on the Primary and Standby Servers and All Clients

Shared folders on the servers and 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.

1. Using Windows Explorer, create a new folder such as 'PROJECT' on one of the drives of the Primary and Standby servers, as well as all clients. The client and server projects created on the Engineering Station shall be downloaded to this folder on each node. If desired, you may create a 'Projects' folder under **\Program Files\Siemens\Step7\proj\** for your projects. However, the name of the folder and where you place it is up to you.
2. Setup sharing on the newly created PROJECT folder. Right-click the **PROJECT** folder and select **Sharing...** The **PROJECT properties** dialog box opens.



3. Select the **Sharing** tab, select the **Share this folder** radio button.
4. Click the **Permissions** button. The **Permissions** window opens. Select **Everyone**, and then click the **Full Control** check box in the **Allow** column.
5. Click **OK** to close the **Permissions** window.
6. Click the **OK** button to close the **Project Properties** dialog box.



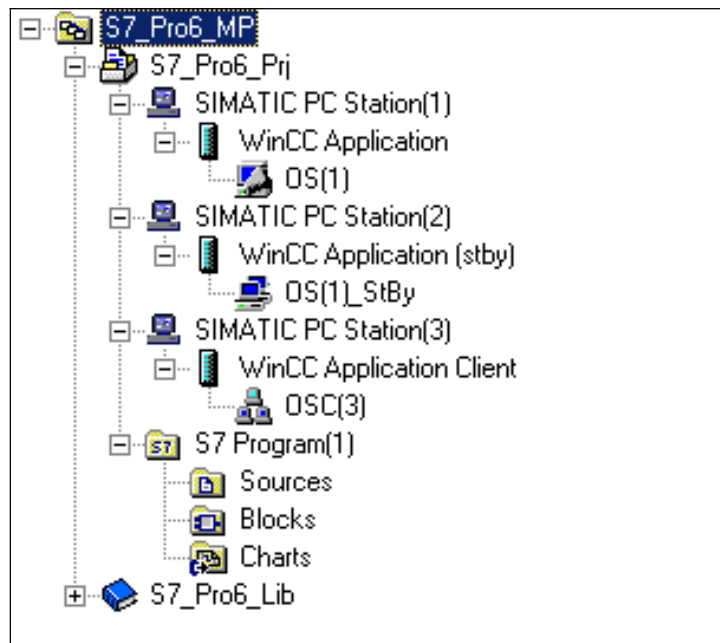
### 3.2.1 Configure the Stations

Configuring the stations identifies which computers are the server or client stations, and the path to which the project will be downloaded.

The following stations are shown in the SIMATIC Manager component view:

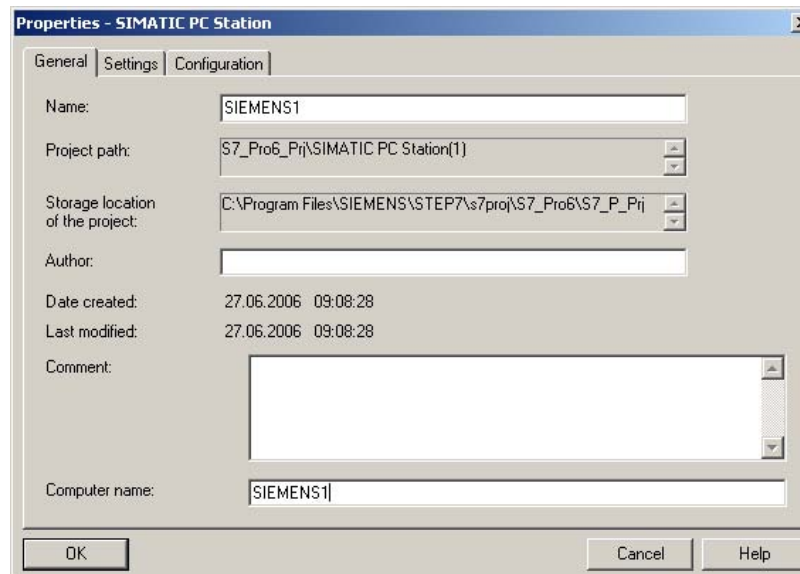
- SIMATIC PC Station (1) – Primary OS server
- SIMATIC PC Station (2) – Standby OS server
- SIMATIC PC Station (3) – Client

1. Close the plant view.
2. Expand the tree view for each station in the Component view.



### 3.2.1.1 Primary Server

1. In the Component view, right-click **SIMATIC PC Station(1)**, and select **Object Properties**. The **Properties – SIMATIC PC Station** dialog box opens.



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. In the Component view, below the WinCC Application, right-click **OS(1)**, and select **Object Properties**. The **Properties** dialog box opens.

The image shows a 'Properties - OS: OS(1)' dialog box. It has two tabs: 'General' and 'Target OS and Standby OS Computer'. The 'General' tab is active. It contains the following fields:

- Name: Your Project Name
- Path: S7\_Pro6\_Pri\OS(1)
- Plant path: .
- Storage location of the project: C:\Program Files\SIEMENS\STEP7\s7proj\S7\_Pro6\S7\_P\_Pri
- Author: Your Engineering Station Name
- Created: 6/27/2006 9:09:05 AM
- Last changed on: 6/27/2006 9:09:07 AM
- Comment: (empty text area)

At the bottom, there are three buttons: OK, Apply, and Cancel.

4. From the **General** tab, in the **Name** field, rename the **OS(1)** to the existing Server Project Name.  
**Important Note:** If the OS name is not the same, two mcp files will be created in the new project.  
In the **Author** field, enter your Engineering Station Name.
5. Click the Target OS and Standby OS Computer tab

The screenshot shows a dialog box titled "Properties - OS: OS(1)". It has two tabs: "General" and "Target OS and Standby OS Computer". The "Target OS and Standby OS Computer" tab is selected. Inside this tab, there are several fields and checkboxes:

- "Path to the Target OS Computer": A text input field with a "Search ..." button to its right.
- "Symbolic computer name": A text input field containing the text "S7\_Pro6\_Prj\_OS(1)".
- "Standby-OS": A dropdown menu showing "OS(1)\_StBy".
- Two checkboxes: ☒ "Create/update archive tags" and ☐ "Transfer to central archive server".

At the bottom of the dialog box are three buttons: "OK", "Apply", and "Cancel".

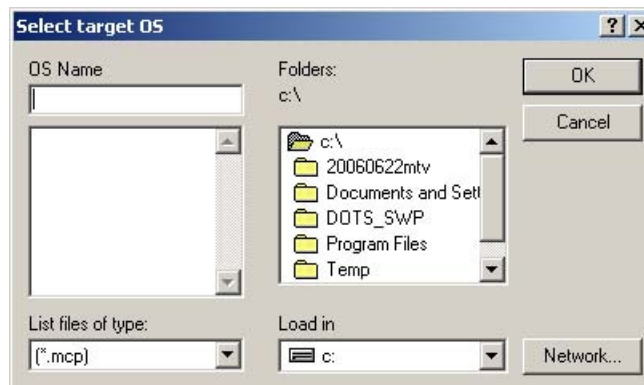
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**Note**

This step can be deferred until the OS servers and clients are actually set up and connected to the network. This must be completed before starting Download the Projects.

---

- Press the **Search** button. The **Select target OS** dialog box opens.



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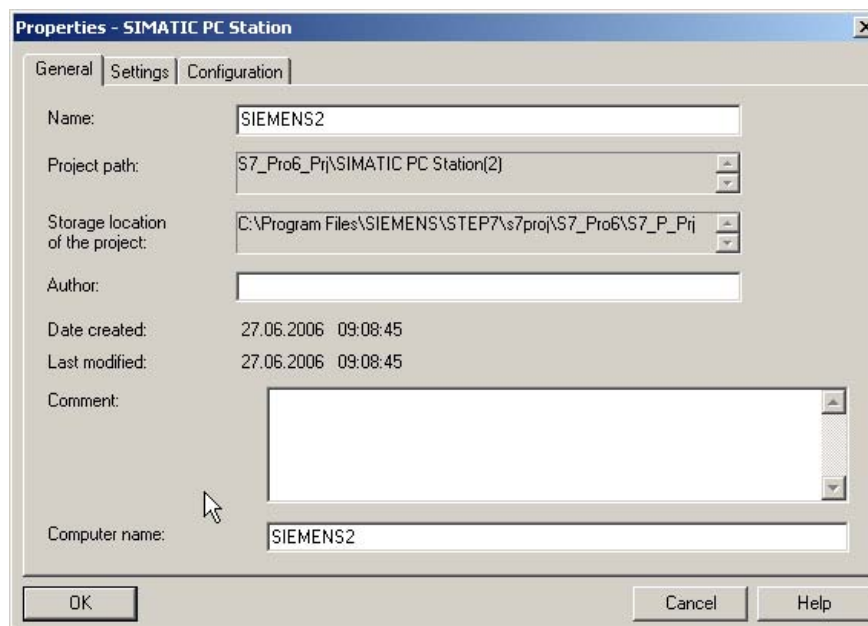
**Note**

It is important to have only one mapped drive to any target directory. Multiple mapped drives to the same location can cause download errors.

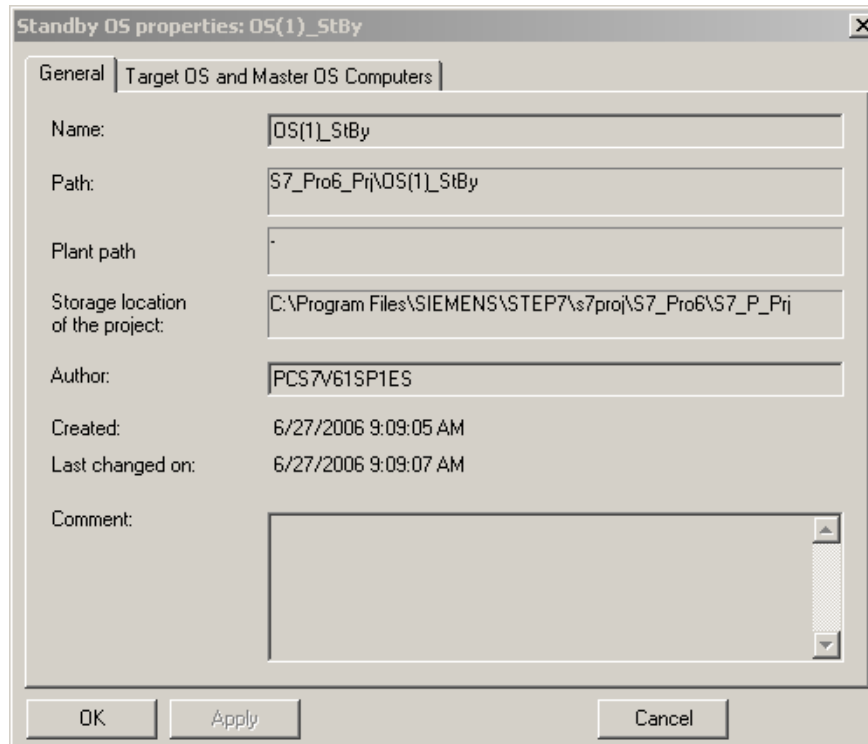
- Click the **Network** button to browse and map to the shared project folder on OS Server. If a mapped drive already exists, select it from the available drives listed in the **Load In** list box. This is the path to the folder on your primary server where you will store and operate the project. This 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. Click the **OK** button.
- Click the **OK** button.

### 3.2.1.2 Standby Server

1. In the Component view, right-click **SIMATIC PC Station(2)**, and select **Object Properties**.
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.



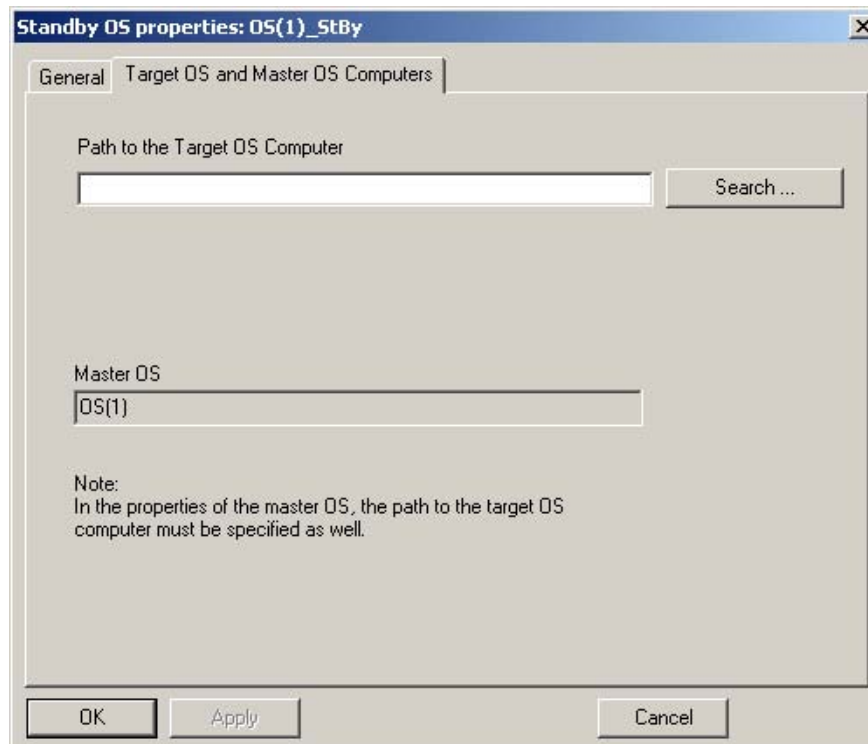
3. In the Component view, below the WinCC Application, right-click **OS(1)\_StBy**, and select **Object Properties**. The default project name of Primary Server/Project Name\_StBy must be used.  
The **Properties** dialog box opens.



The image shows a Windows-style dialog box titled "Standby OS properties: OS(1)\_StBy". It has two tabs: "General" and "Target OS and Master OS Computers". The "General" tab is active. The dialog contains several text input fields and two date/time labels. At the bottom are three buttons: "OK", "Apply", and "Cancel".

Field	Value
Name:	OS(1)_StBy
Path:	S7_Pro6_Pri\OS(1)_StBy
Plant path	-
Storage location of the project:	C:\Program Files\SIEMENS\STEP7\s7proj\S7_Pro6\S7_P_Pri
Author:	PCS7V61SP1ES
Created:	6/27/2006 9:09:05 AM
Last changed on:	6/27/2006 9:09:07 AM
Comment:	

- Click the Target OS and Standby OS Computers tab.



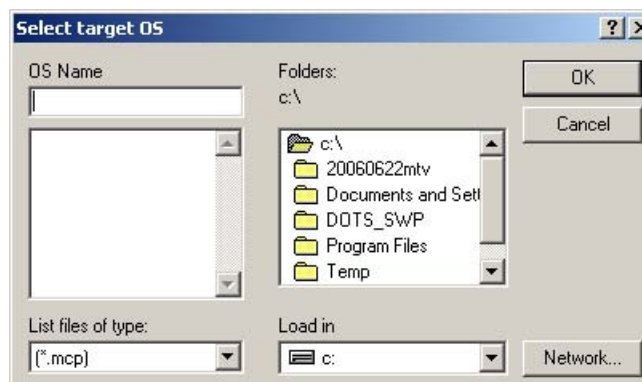
---

#### Note

This step can be deferred until the OS servers and clients are actually set up and connected to the network. This must be completed before starting Download the Projects.

---

- Press the **Search** button. The **Select target OS** dialog box opens.





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**Note**

It is important to have only one mapped drive to any target directory. Multiple mapped drives to the same location can cause download errors.

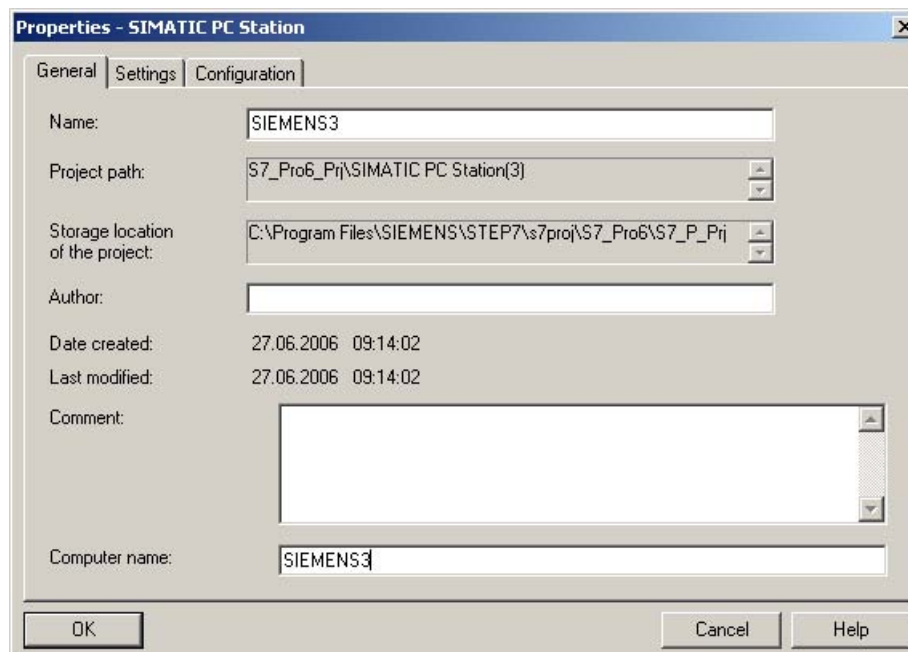
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6. Click the **Network** button to browse and map to the shared project folder on OS Server. If a mapped drive already exists, select it from the available drives listed in the **Load In** list box. This is the path to the folder on your standby server 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. Click the **OK** button.
7. Click the **OK** button.

### 3.2.1.3 Client Station

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

1. In the Component view, right-click **SIMATIC PC Station(3)**, and select **Object Properties**.
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. In the Component view, below the WinCC Application, right-click **OSC(3)**, and select **Object Properties**. The **Properties** dialog box opens.

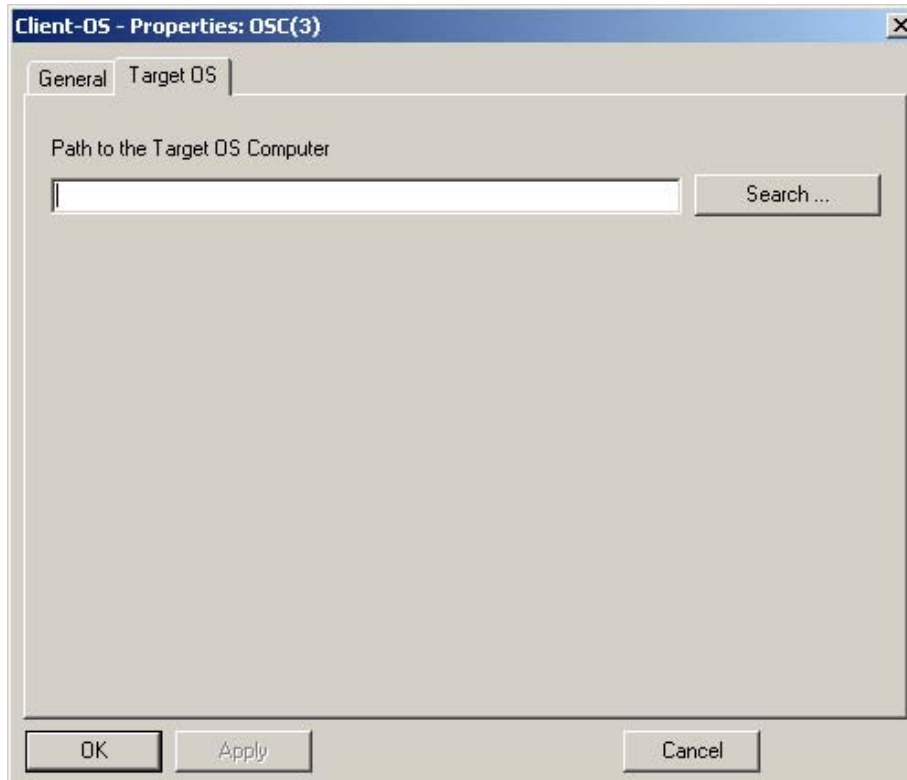
4. From the **General** tab, in the **Name** field, rename the OSC(3) to the existing client project name.  
**Important Note:** If the OS name is not the same, two mcp files will be created in the new project.

The screenshot shows a Windows-style dialog box titled "Client-OS - Properties: OSC(3)". It has two tabs: "General" (selected) and "Target OS". The "General" tab contains the following fields and values:

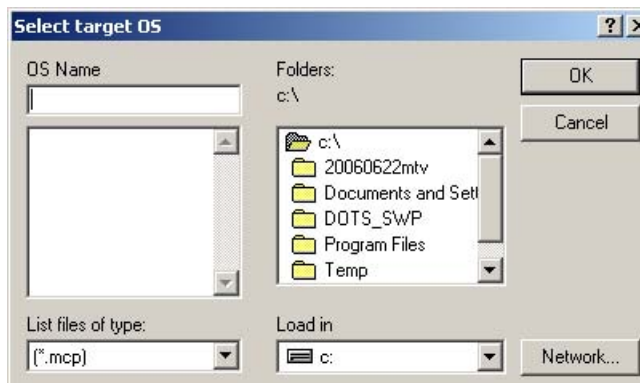
Field	Value
Name:	OSC(3)
Path:	S7_Pro6_Pri\OSC(3)
Plant path	-
Storage location of the project:	C:\Program Files\SIEMENS\STEP7\s7proj\S7_Pro6\S7_P_Pri
Author:	PCS7V61SP1ES
Created:	6/27/2006 9:14:24 AM
Last changed on:	6/27/2006 9:14:25 AM
Comment:	(Empty text area)

At the bottom of the dialog are three buttons: "OK", "Apply", and "Cancel".

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



6. Press the **Search** button. The **Select target OS** dialog box opens.



---

#### Note

This step can be deferred until the OS servers and clients are actually set up and connected to the network. This must be completed before starting Download the Projects.

---

---

#### Note

It is important to have only one mapped drive to any target directory. Multiple mapped drives to the same location can cause download errors.

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7. Click 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 client 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. 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.

### 3.3 Update a project from V6.0 to V6.1

The procedure below is based on a project developed using the symbols and faceplates provided with PCS 7/APACS OS V6.0 or V6.0 SP1.

PCS 7 V6.1 added new functionality to the standard symbols/block icons and faceplates. The PCS 7/APACS OS V6.1 standard symbols/block icons and faceplates were updated to include this new functionality. If you have custom symbols/block icons and faceplates in your V6.0 project, you may want to modify these to include this new functionality. This should be completed before updating your project with DBA. Below is a list of the new functionality:

#### Symbols/Block Icons

- Block icon full name field is back lit when navigating to a picture from Loop-In-Alarm.
- The Alarm Group Display was replaced to support Alarm Lock.
- A new attribute was added to define where the faceplate opens.

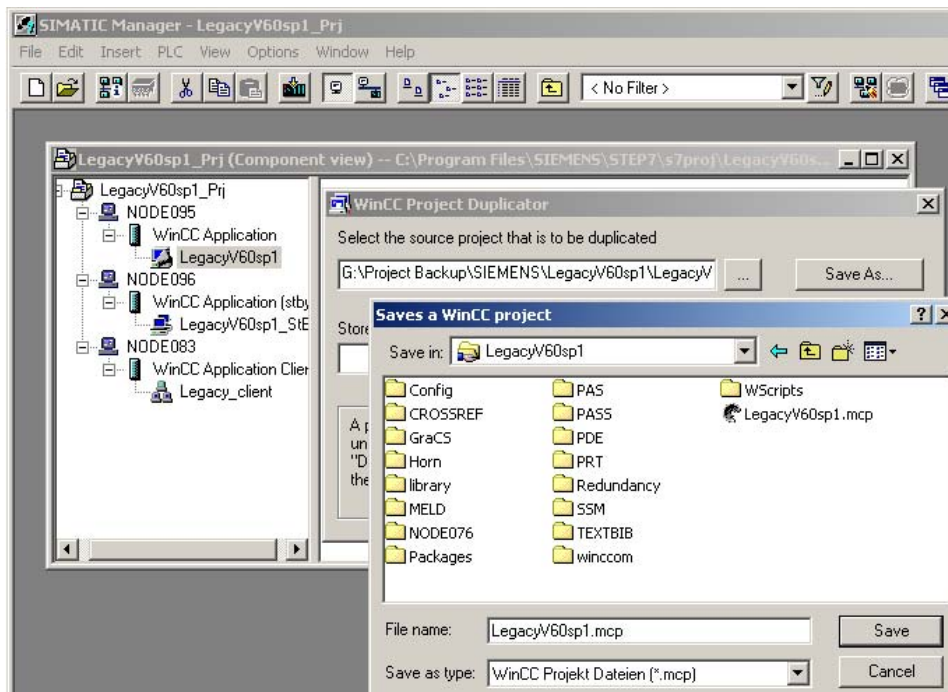
#### Faceplates

- The Alarm Group Display was replaced to support Alarm Lock.
- The Alarm Lock icon was added.
- Increase/decrease buttons added for Controller Output and Setpoint changes.
- New attributes were added to define faceplate operation as 1-step or 2-step. 1-Step does not provide a confirmation dialog box.
- The Push Pin icon was added to keep the faceplate open when a new picture is opened.

Contact Siemens for guidance on whether your custom symbols/block icons and faceplates can support the new V6.1 functionality and how to make the necessary modifications.

### 3.3.1 Import a current WinCC project into SIMATIC Manager

1. Using the SIMATIC Manager project created in Section 3.1, verify that the name of the Server OS is the same name as the OS in your existing WinCC project.
2. From the Windows start menu, select Start > Simatic > WinCC > Tools > Project Duplicator. The WinCC Project Duplicator dialog box opens.
3. Browse to existing server or client WinCC project in the **Select the source project that is to be duplicated** field.
4. Click the **Save As** button. The **Saves a WinCC project** window opens.



5. Browse to the new SIMATIC Manager OS project folder, and enter the same file name as your current WinCC project name. Click the **Save** button.
6. The message "The 'project' already exists. Do you want to replace it?" opens. Click the **Yes** button.
7. The message "The project already exists! Do you want to overwrite the project?" opens. Click the **Yes** button.
8. Confirm file replace, click **yes to all**.
9. Confirm folder replace, click **yes to all**. The **Copying** progress bar opens. When the copy is complete, the former WinCC project will be embedded in a SIMATIC Manager project.
10. Repeat steps 4 through 9 for all primary server and client projects.
11. Open the new OS project and re-run the OS project editor for server and client projects.
12. Select **START > SIMATIC > DBA > PCS 7 DBA**
13. Select **File > Open**. Browse to the existing V6.0 DBA project and **Open**.

14. The following dialog is displayed, "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?" Click **OK**.
15. Select the **PC Station View** tab in the lower window.
16. Select the Server OS, right-click, and **Edit Object Properties**.
17. For the Offline MCP file, browse to the new Server OS, and click **OK**.
18. Recompile DBA.
19. Select **File > Save Project As**, and browse to the new project folder. You will be prompted that the file already exists, do you want to replace. Click **OK**.
20. Update the block icons.
  - From WinCC Explorer, open Graphic Designer on the ES station.
  - Open any PDL file in the project.
  - In the Dynamic Wizard section, select the '**Picture Functions**' tab and double click on '**Update of the picture objects**'.  
**Note:** Template Picture and Control File fields should not exceed 256 characters when running the '**Update of the picture objects**' wizard.
  - Follow the prompts to update all pictures in the project or the active picture. In this case, select the '**yes, all pictures**' radio button. Click the **Next** button to continue.
  - The Options dialog box is displayed. In the '**Please specify the name of the template picture**' field, click the ellipse (...) button and select @@APACSTypicals.pdl.
  - Do not change the '**Please specify a name for the control file**' field.
  - Click the **Next** button, then the **Finish** button to continue.
  - All graphic windows that contain the modified block icons should be updated.
  - If problems occur, refer to the **ChangeObjects.log** file.
  - Close WinCC.

---

#### Note

##### Additional recommendations

- Make a copy of the @@APACSTypicals.pdl file (and/or other project specific typical files) and place it in a separate directory on the hard drive. This eliminates the possibility of @@APACSTypicals.pdl being overwritten if you upgrade to a new version of the PCS 7/APACS OS Options down the road. Currently, you have to manually create the @@APACSTypicals.pdl. This may not be the case in the future.
  - Copy the @@APACSTypicals.pdl to the \Program Files\SIEMENS\WINCC\options\pd\faceplatedesigner\_v6 directory. In doing so, whenever a new project is created, the @@APACSTypicals.pdl file is automatically copied to the GraCS file of the new project.
-



21. Return to SIMATIC Manager, Component view. Right-click on WinCC Application > Primary Server project, and select **Generate Server Data**. After an hourglass is displayed, a message box appears to report **Server data are generated successfully**. Click **OK**.
22. Right-click on each client project, and select **Assign OS Server**. Select the appropriate project check box. Click **OK**. The **Assigning OS Server to...** progress message box appears. When the procedure is completed, click **OK**.

---

**Note**

If the selected project is reported as unknown, clear the unknown project check box. Click **OK**. Select Assign OS Server to select the appropriate project data check box.

---

23. Download the project to your servers and client using SIMATIC Manager. Any further changes to the project can be downloaded using SIMATIC Manager.



## 4 Create a New OS Project

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### Note

OS Project development is done on the OS Engineering Station using SIMATIC Manager. This project will be downloaded to the system's single server or redundant server pair and the clients. The sample project below assumes a single project with a redundant server pair and one client.

---

### 4.1 Create a new project in SIMATIC Manager

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

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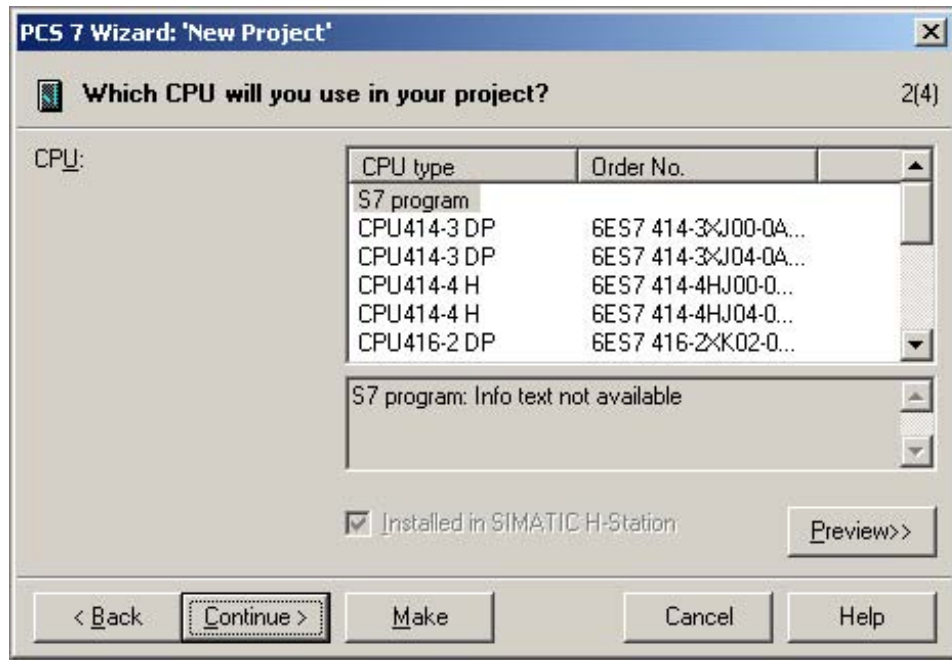
### Note

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

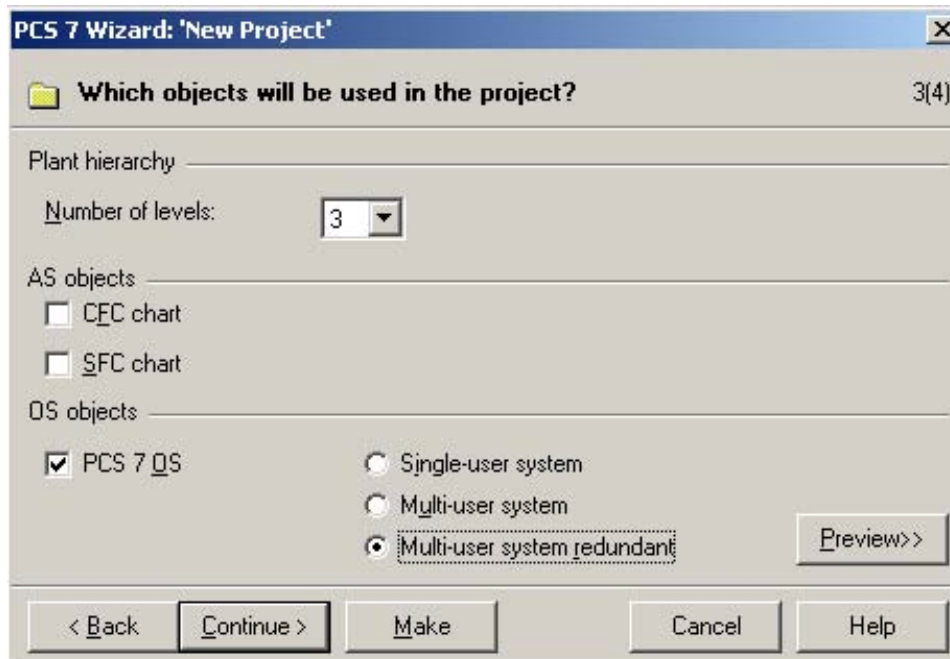
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2. Select a project type. For example, select the **Single Project** radio button.  
**Multiproject with project and master data library** – select this option if you want to distribute project engineering across multiple engineering stations.  
**Single Project** – select this option when project engineering will be performed from a single engineering station.
3. Click the **Continue** button.  
The **Which CPU will you use in your project?** dialog box opens.



4. Click the **Continue** button to accept the default. (Choices here are only relevant to S7 projects.)  
The **Which objects will be used in the project?** dialog box opens.



- In the **Plant Hierarchy** area, the **Number of levels** should be configured when using S7-400 controllers in the same OS project as ACM/CCM controllers. It should be set to the same value used in DBA.
- In the **AS objects** area, clear **CFC chart** and **SFC chart** check boxes. These are only relevant to S7 projects.
- In the **OS objects** area, select the **PCS 7 OS** check box, and the appropriate system type.

**Single-user System** – a single PC station will be created with an OS project.

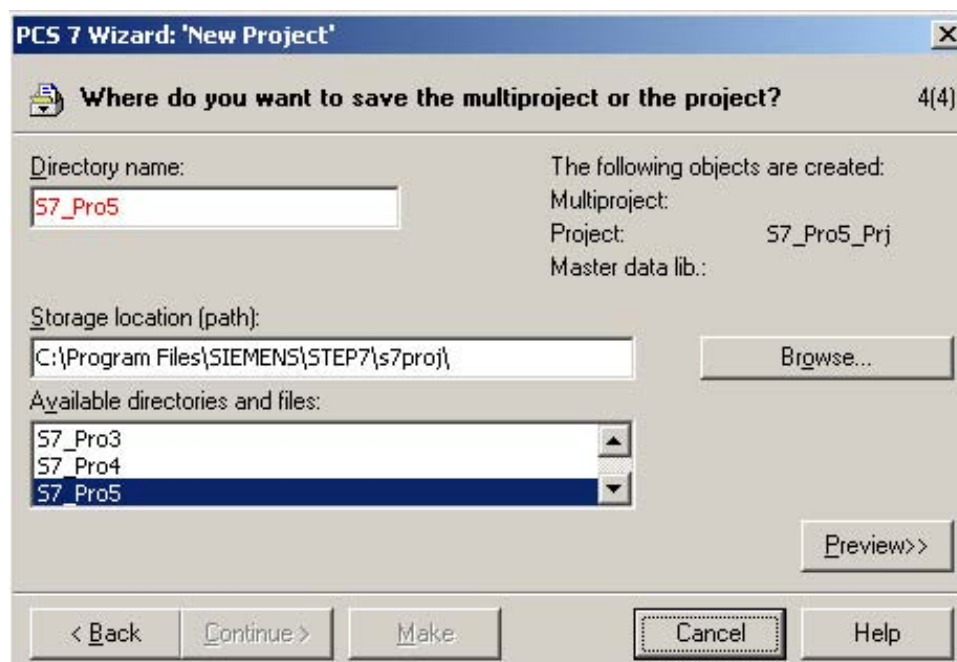
**Multi-user System** – two PC stations will be created, an OS server project, and an OS client project.

**Multi-user system redundant** – three PC stations will be created, two OS server projects and an OS client project.

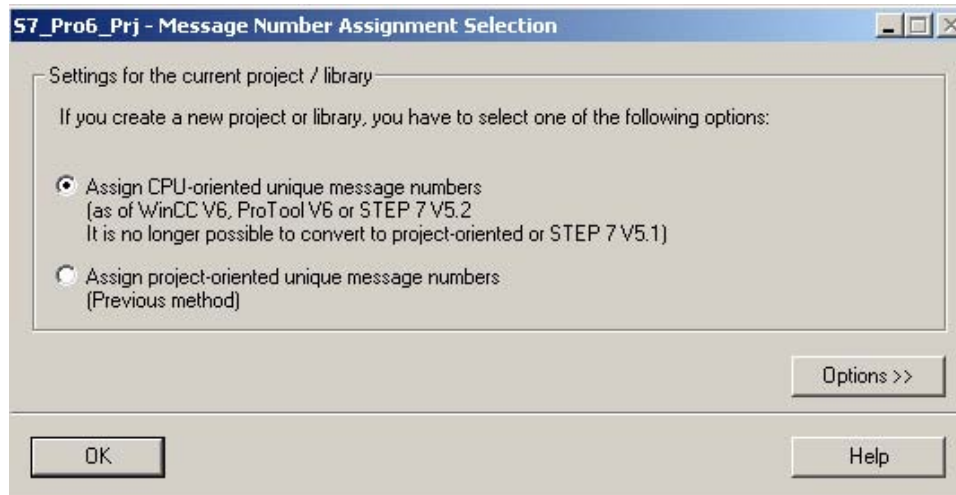
#### Note

For SIMATIC Batch options, a SIMATIC Batch check box will also appear in the OS Objects area. It is not necessary to check this box for SIMATIC Batch, even if you are installing the Batch option.

5. Click the **Continue** button.  
The **Where do you want to save the multiproject or the project?** dialog box 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.
6. Click the **Make** button.  
The **Message Number Assignment Selection** dialog box opens.

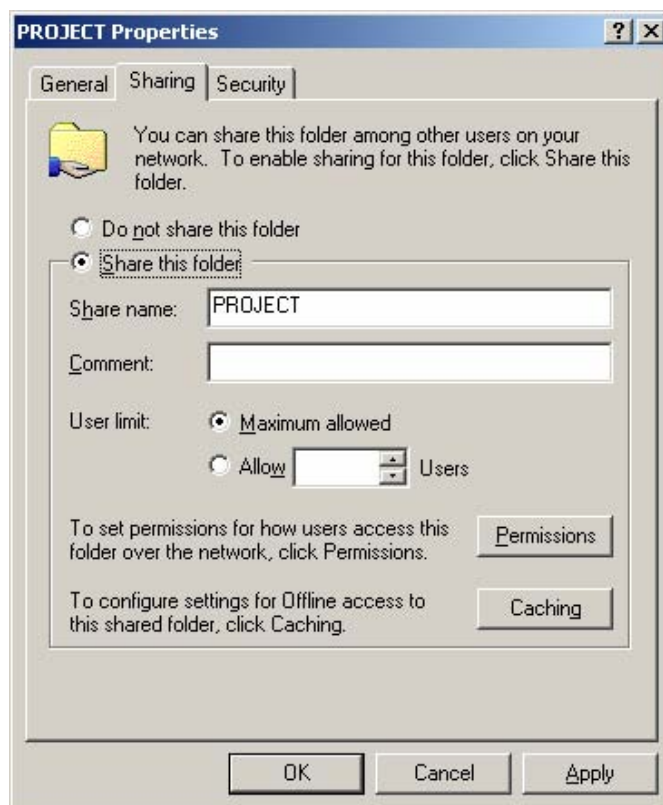


7. Accept the default. Click the **OK** button. The project is created. This setting applies to projects that include S7-400 controllers and does not apply to messages created by DBA.

## 4.2 Create New Folders on the Primary and Standby Servers and All Clients

Shared folders on the servers and 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.

1. Using Windows Explorer, create a new folder such as 'PROJECT' on one of the drives of the Primary and Standby servers, as well as all clients. The client and server projects created on the Engineering Station shall be downloaded to this folder on each node. If desired, you may create a 'Projects' folder under **\Program Files\Siemens\Step7\sjproj\** for your projects. However, the name of the folder and where you place it is up to you.
2. Setup sharing on the newly created PROJECT folder. Right-click the **PROJECT** folder and select **Sharing...** The **PROJECT properties** dialog box opens.



3. Select the **Sharing** tab, select the **Share this folder** radio button.
4. Click the **Permissions** button. The **Permissions** window opens. Select **Everyone**, and then click the **Full Control** check box in the **Allow** column.
5. Click **OK** to close the **Permissions** window.
6. Click the **OK** button to close the **Project Properties** dialog box.



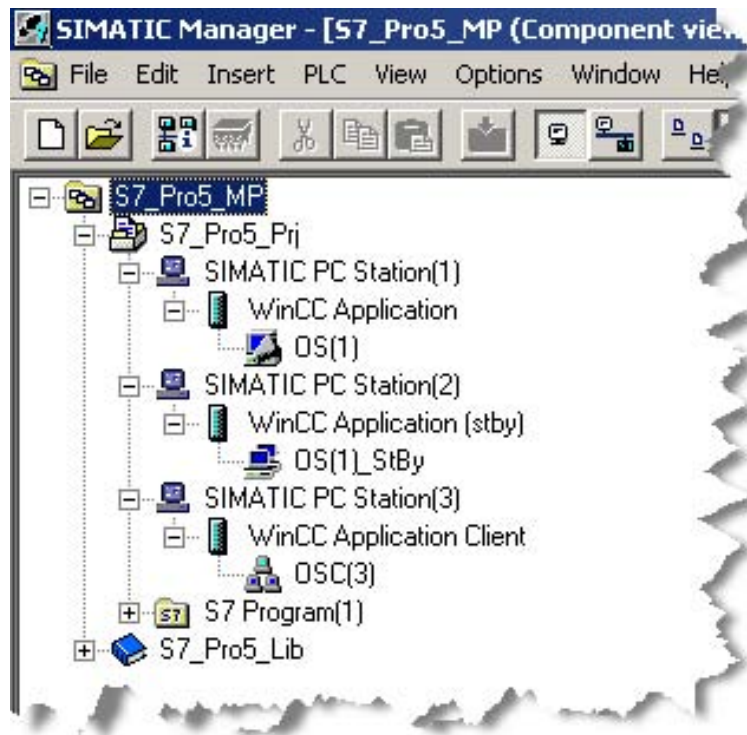
### 4.2.1 Configure the Stations

Configuring the stations identifies which computers are the server or client stations, and the path to which the project will be downloaded.

The following stations are shown in the SIMATIC Manager component view:

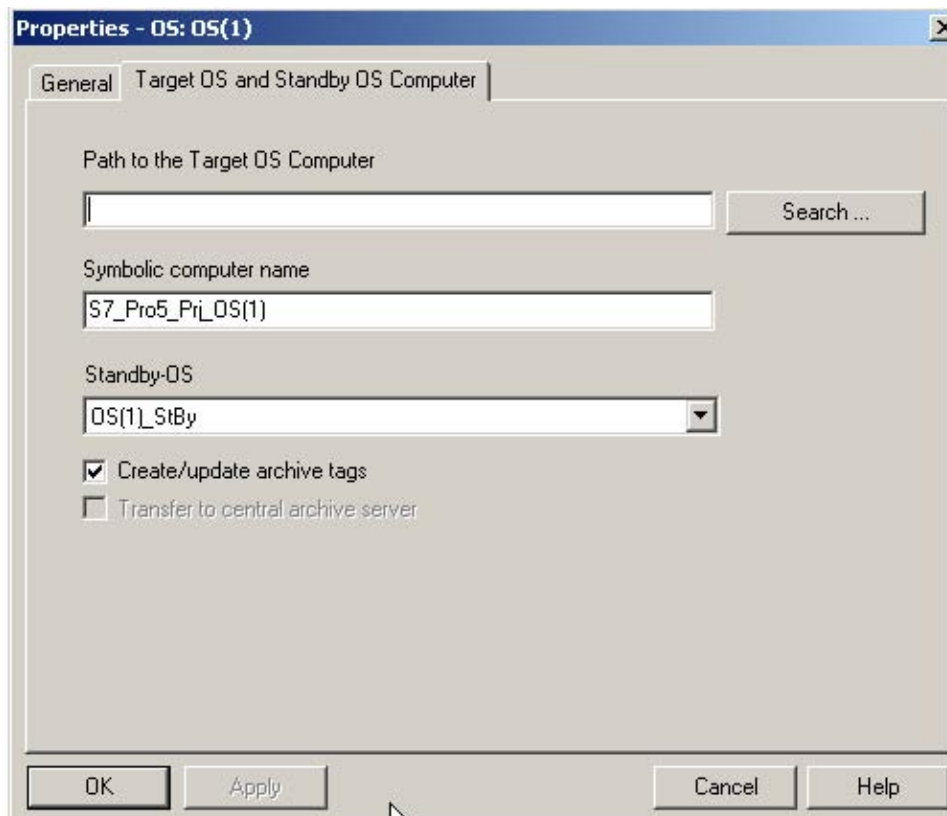
- SIMATIC PC Station (1) – Primary OS server
- SIMATIC PC Station (2) – Standby OS server
- SIMATIC PC Station (3) – Client

1. Close the plant view.
2. Expand the tree view for each station in the Component view.



#### 4.2.1.1 Primary Server

1. In the Component view, right-click **SIMATIC PC Station(1)**, and select **Object Properties**.
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.

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#### Note

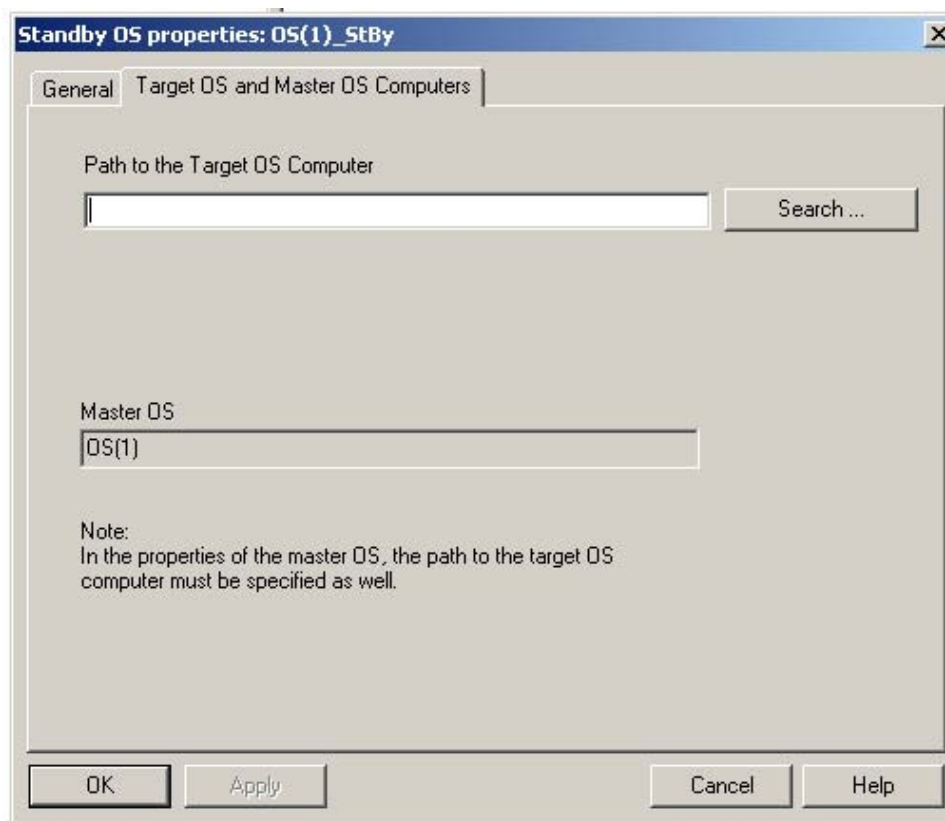
This step can be deferred until the OS servers and clients are actually set up and connected to the network. This must be completed before section Download the Projects.

---

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.

#### 4.2.1.2 Standby Server

1. In the Component view, right-click **SIMATIC PC Station(2)**, and select **Object Properties**.
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.



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#### Note

This step can be deferred until the OS servers and clients are actually set up and connected to the network. This must be completed before section Download the Projects.

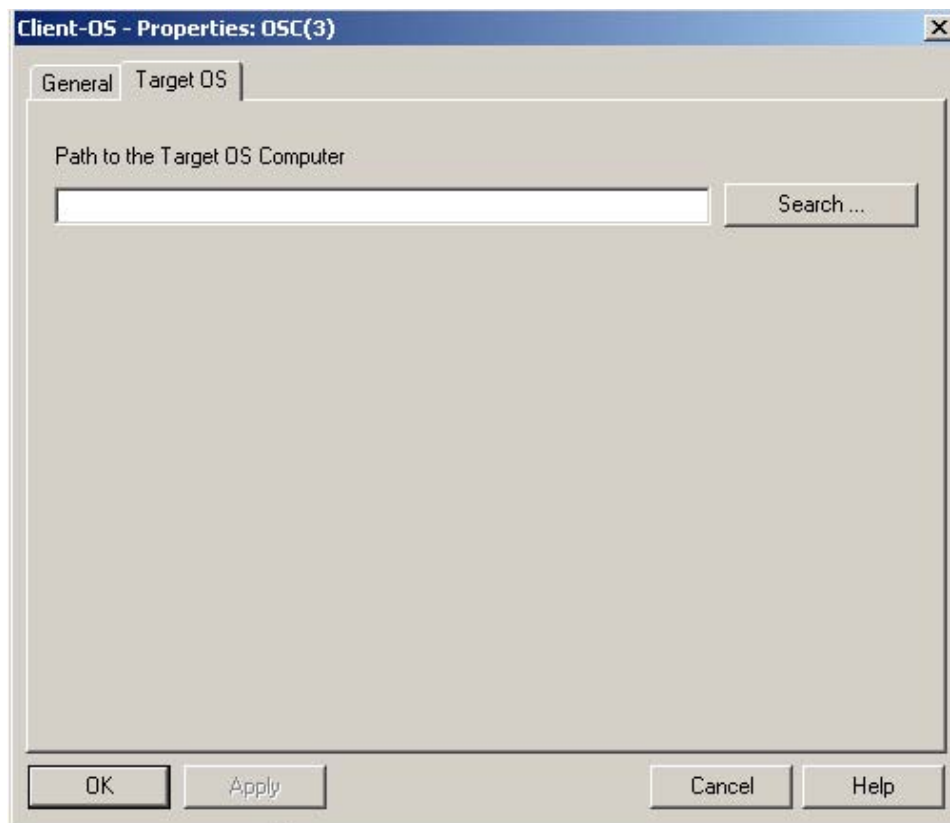
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5. Select the **Network** button to browse and map to the shared project folder on OS Server. If a mapped drive already exists, select it from the available drives listed in the **Load In** list box. This is the path to the folder on your primary server 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.

### 4.2.1.3 Client Station

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

1. In the Component view, right-click **SIMATIC PC Station(3)**, and select **Object Properties**.
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.



---

**Note**

This step can be deferred until the OS servers and clients are actually set up and connected to the network. This must be completed before section Download the Projects.

---

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. Click the **OK** button.
7. 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.

## 4.3 Start DBA for new projects

Define the following (refer to the DBA help or PDF file for details **Start > SIMATIC > Documentation > English > PCS 7 APACS+ DBA Help or PCS 7 APACS+ DBA PDF**, section **Creating or Opening a DBA project**).

The following steps summarize the actions to be performed within DBA:

- In the **AS View** of the DBA, define the AS (4-mation configurations)
- In the **PC Station View**, add a PC Station(s) and add the application(s) (OS Server)
- Configure your **Plant View** (Picture Tree)
  - define your areas
  - define which pictures belong to which area
  - edit properties of the project in the hierarchy tab from **File > Properties > Project Options**
  - define which controller objects belong to a specific picture
  - define Alarm priorities for each controller object
  - modify symbol definitions on a per-instance basis (optional)
  - assign each upper-level Plant View Folder to the proper OS application
  - save the DBA project file. Save in the project folder to ensure it will be backed up with your project.
- Compile to the OS Server project(s)

## 4.4 Run 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. When configuring servers that will not be used as clients, it is recommended to use the SIMATIC server layout.

## 4.5 Edit Each Graphic

Customize the graphics for your process including the addition of Trend Objects to graphics.



## 4.6 Lifebeat Monitoring Setup

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### Important Note

Integration of the PCS 7 Options Lifebeat Monitoring Symbols with SIMATIC PCS 7 Version 6.1 requires a one-time manual procedure. This step is performed after installing (or reinstalling) PCS 7 Options software.

---

1. Open the OS server project in SIMATIC Manager. From the Component view, right-click on the **Primary OS Server** and select **Open Object**. Your project opens in **WinCC Explorer**.
2. Click the **Graphics Designer** icon in the left pane of the **WinCC Explorer** window.  
In the right pane, a list of picture files (with .PDL filename extensions) appears. In the right pane, select and right-click the file **@@APACSCfgTypicals.PDL**. From the drop-down menu, select **Open picture**. The Graphics Designer program opens the picture for editing.
3. Select all the symbols on the @@APACSCfgTypicals.pdl. From the program menu bar, select:  
**Edit > Select All**  
**Edit > Copy**
4. Close the graphic. If asked whether to save changes, select **No**. The file closes.
5. Open the @@ConfigTypicals.pdl. **Paste** the APACS symbols onto the @@ConfigTypicals.pdl by clicking on the blank space to the right of the PCS7 symbols and selecting **Edit > Paste**. While the symbols remain selected, move the entire selection to the right if necessary so that they are distinct from the original PCS7 symbols.

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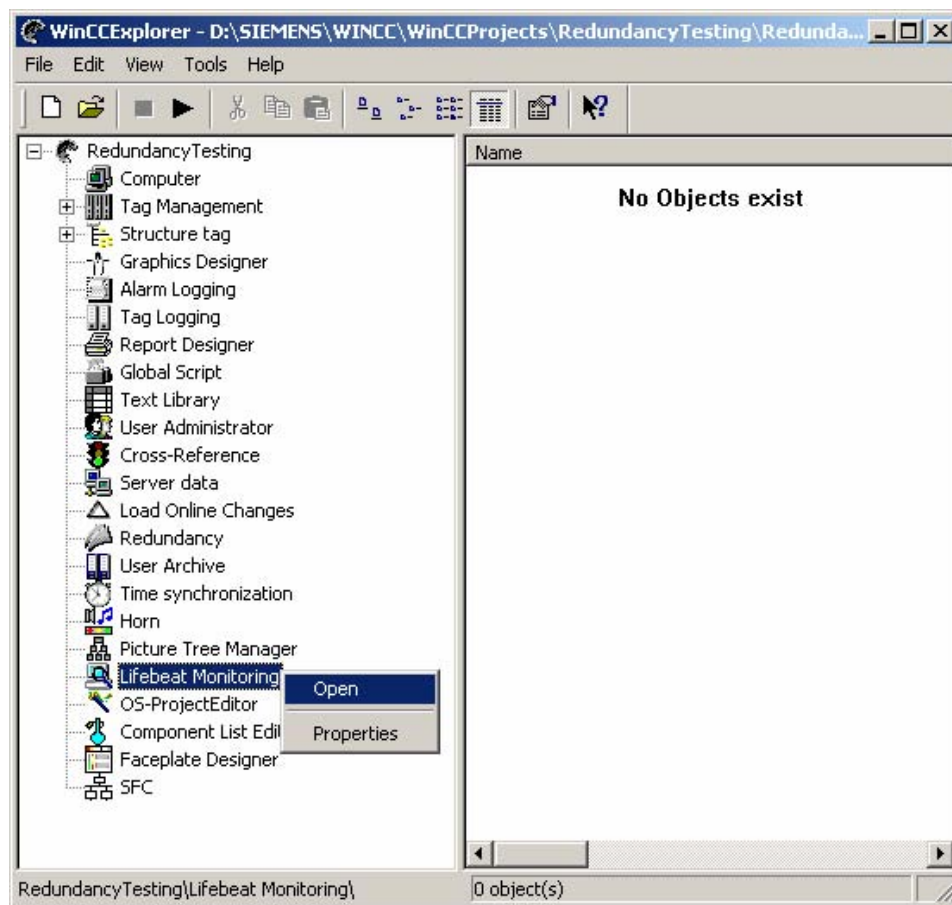
### Note

If you intend to create future projects (such as client stations), at the same time, you should also copy the APACS Symbols from the @@APACSCfgTypicals.pdl and paste them into the **ProgramFiles\SIEMENS\WINCC\options\pdl\base\_Data\_Pool\@@ConfigTypicals.PDL**.

---

6. Select **File > Close**, then **Save**. A **Performance Warning** dialog box opens, cautioning you that the file contains cyclic triggers. You can safely ignore this warning and click the **OK** button. Close Graphic Designer.

7. In the left pane of WinCC Explorer, right-click **Lifebeat Monitoring**. Click **Open**.



The **Lifebeat Monitoring** window opens.

The screenshot shows the 'Lifebeat Monitoring - [RedundancyTesting.MCP]' window. It features a 'Device List' table with columns 'Device Name', 'Device Type', and 'Connection'. The table has five rows, with the first row selected. To the right of the table are buttons for 'Close', 'Update', 'Add', 'Delete', 'Print', 'View', 'Printer Setup', and 'Edit Screen'. Below the table is a 'System Configuration' section with a large empty box. At the bottom, there are two groups of radio buttons: 'Device positioning in the system configuration' (with 'automatic' selected) and 'Monitoring Cycle' (with '10 s' selected).

...	Device Name	Device Type	Connection
1			
2			
3			
4			
5			

- In row one, double-click the cell under **Device Name**. Enter the name of the controller that you want monitored, make sure this is the name of the controller defined in your DBA project.

This screenshot shows the same 'Lifebeat Monitoring' window after the first row of the 'Device List' table has been updated. The 'Device Name' for the first row is now 'PLANT\_TEST5A'. All other elements, including the 'System Configuration' section and the bottom radio buttons, remain the same as in the previous screenshot.

...	Device Name	Device Type	Connection
1	PLANT_TEST5A		
2			
3			
4			
5			



9. Double-click the cell under **Device Type**, and select the controller type from the drop-down list.

The screenshot shows the 'Lifebeat Monitoring - [RedundancyTesting.MCP]' window. The 'Device List' table has the following data:

...	Device Name	Device Type	Connection
1	PLANT_TEST5A	[Dropdown Menu]	
2		ACM	
3		AS	
4		AS-2xx	
5		AS-3xx	

The dropdown menu for 'Device Type' is open, showing options: ACM, AS, AS-2xx, and AS-3xx. The 'System Configuration' section is empty. The 'Monitoring Cycle' is set to 10 s. The 'Device positioning in the system configuration' is set to automatic.

10. Double-click the cell under **Connection**, and select **APACS+**.

The screenshot shows the 'Lifebeat Monitoring - [RedundancyTesting.MCP]' window. The 'Device List' table has the following data:

...	Device Name	Device Type	Connection
1	PLANT_TEST5A	ACM	APACS+
2			
3			
4			
5			

The 'Connection' column for the first row is now 'APACS+'. The 'System Configuration' section is empty. The 'Monitoring Cycle' is set to 10 s. The 'Device positioning in the system configuration' is set to automatic.

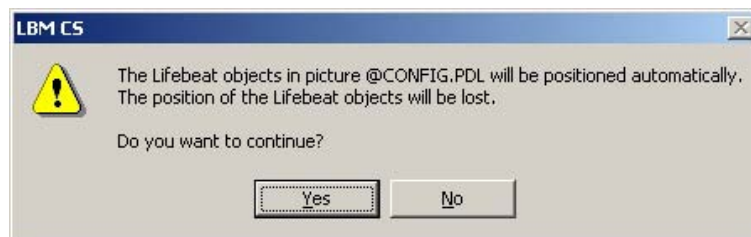
- 11.Repeat steps 8-11 for each controller that you want monitored.
- 12.Under the Device positioning in the system configuration section, select automatic.
- 13.Select a **Monitoring Cycle time**. The default is 10 seconds.
- 14.When complete, select the **Update** button. The following dialog box is displayed.



- 15.Click the **Yes** button. When complete, the **Lifebeat Monitoring** dialog box may appear indicating that the CCLBMRTServer.exe could not be entered into the start up list of the server computer <computername>.



- 16.This message can be safely ignored. Click the **OK** button to continue.
- 17.Click the **Close** button to close the Lifebeat Monitoring window.
- 18.The system may respond with the following message "The process picture has not been updated, do you want to update before closing?" Click **Yes**.
- 19.The following dialog box may be displayed. Click **Yes**.



- 20.The following dialog box is displayed. Click **OK**.



- 21.To configure Lifebeat Monitoring to view the health of other system resources such as computers, for example OS Servers and the Archive Server, refer to **Start > SIMATIC > WinCC > WinCC Information System > Options > Options for Process Control > Lifebeat Monitoring > How to configure lifebeat monitoring with OPC connection**.

---

#### **Note**

The following steps should only be done by opening your project in WinCC Explorer via SIMATIC Manager as described in the Lifebeat Monitoring section. You only need to do this for the Primary Server OS project. When you have finished, close WinCC Explorer.

---

## **4.7 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**

### **For APACS+/QUADLOG Controllers:**

Refer to the user documentation APACS+ System Time Synchronization (SG39-13).

## **4.8 Configure Alarm Logging**

For further information, please refer to the help file **Start > SIMATIC > WinCC > WinCC Information System > Working with WinCC > Setting Up an Alarm System > Alarm Logging**

## **4.9 Configure Tag Logging**

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

## **4.10 Create Trends (if adding the Trend Object to a Graphic)**

For further information, please refer to the help file **Start > SIMATIC > WinCC > WinCC Information System > Working with WnCC > Archiving Process Values > Output of Process Values > Process Value Output in Process Screens**

## **4.11 Configure User Administrator**

For further information, please refer to the help file **Start > SIMATIC > WinCC > WinCC Information System > Working with WinCC > Setting up User Administration**

## 4.12 Generate Server Data

From the Component view in SIMATIC Manager, right-click the primary OS server project, and select **Generate Server Data**.

When the procedure is complete, **The server data are generated successfully** dialog box opens.

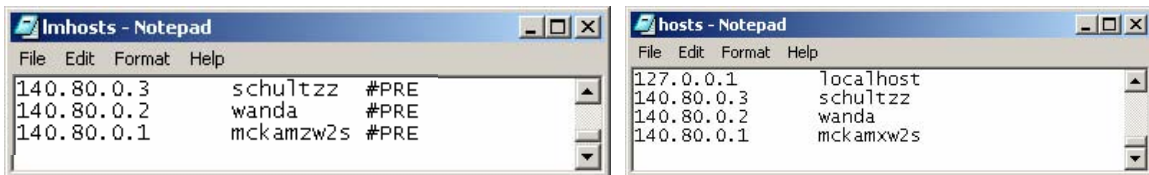
Perform this procedure for each primary OS server.

## 4.13 Configure lmhosts and hosts Files

All PCS 7 stations should be entered in the LMHOSTS and HOSTS files (in %windir%\system32\drivers\etc directory). These files should be copied to each of the PCS 7 station computers.

For additional information, the following URL is accurate for NT/Win2k, but not for XP or Win2k3:

<http://www.microsoft.com/resources/documentation/windowsnt/4/workstation/reskit/en-us/lmhw.msp>

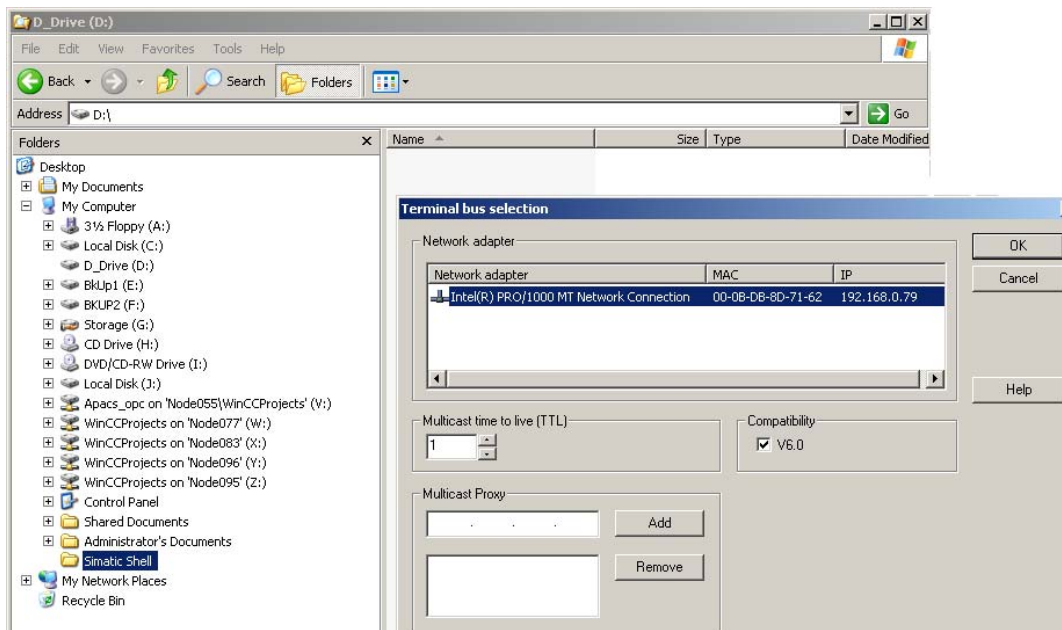




## 4.14 Configure WinCC Project Network Settings

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. Click **Yes**.

The WinCC Communications Configurator configures WinCC to use different network speeds (e.g. for dial-up or radio)

- 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.

## 4.15 Client Project Setup

### 4.15.1 Assign 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 **OK**. A progress bar indicating the status opens. When the procedure is complete, **The Procedure was complete without error** message is displayed.
3. Click the **OK** button.

### 4.15.2 Configure 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 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.

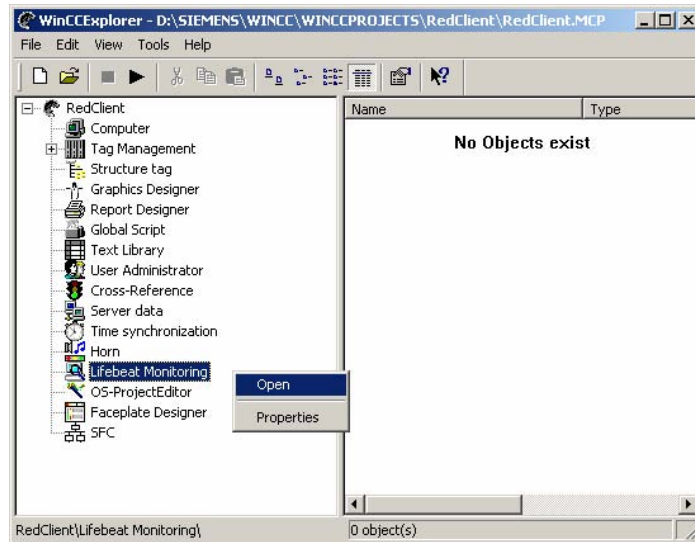
### 4.15.3 Configure Preferred Server

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

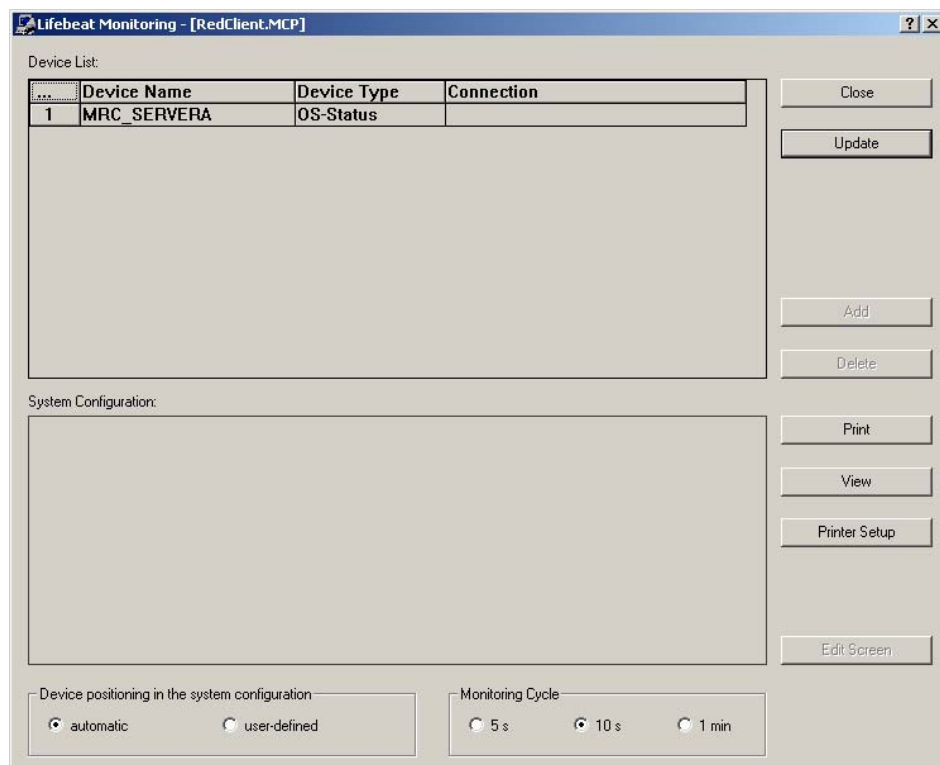
This step can also be performed on the client after downloading the project to customize the preferred server connection for a particular client station. This customization will be overwritten during a subsequent download.

#### 4.15.4 Lifebeat Monitoring Setup

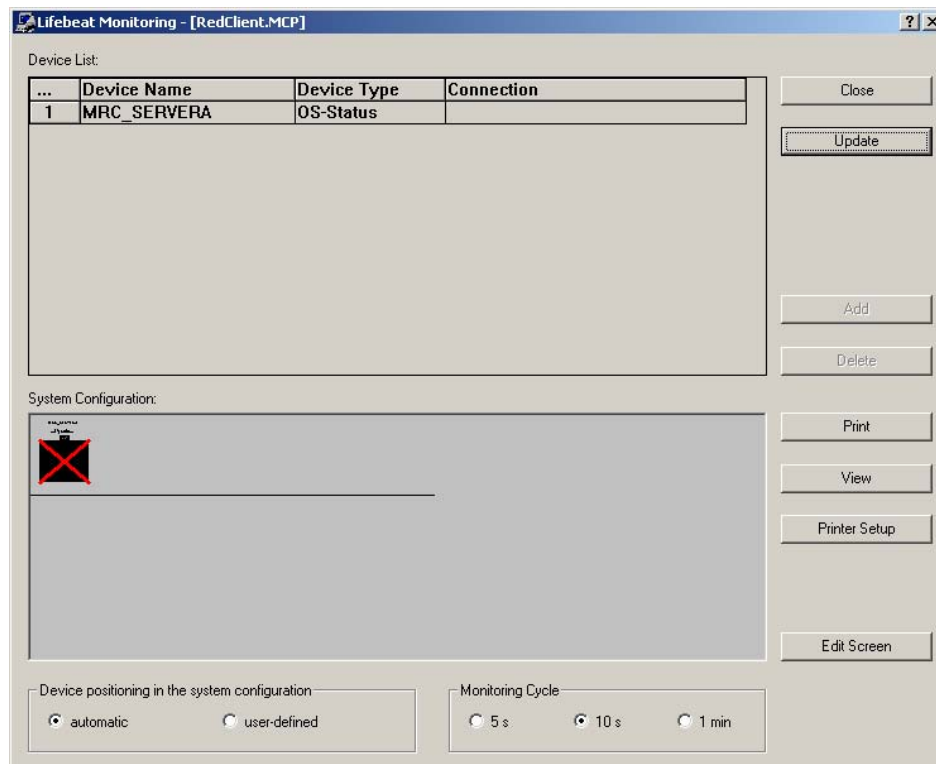
1. Open the client project. From the Component view in SIMATIC Manager, right-click on the OS client project and select **Open Object**. The project opens in WinCC Explorer.



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



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



5. Lifebeat Monitor setup on the client is complete. Click the **Close** button to close Lifebeat Monitoring.

#### 4.15.5 Configure Area Display in Runtime

For further information, please refer to the help file **Start > SIMATIC > WinCC > WinCC Information System > Options > Options for Process Control > OS Project Editor > The Areas Tab**

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

#### 4.15.6 Configure User Administrator

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

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

#### 4.15.7 Create Runtime Trends (archive or online trends)

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

This step can be performed on the client after downloading the project.

---

##### **Note**

This customization will not be overwritten during a subsequent duplication. It is important to note that Runtime Trends created from a client application are not viewable from a server being used as a client. Any Runtime Trends created on the OS Server being used as a client are not viewable from a client connected to the OS server.

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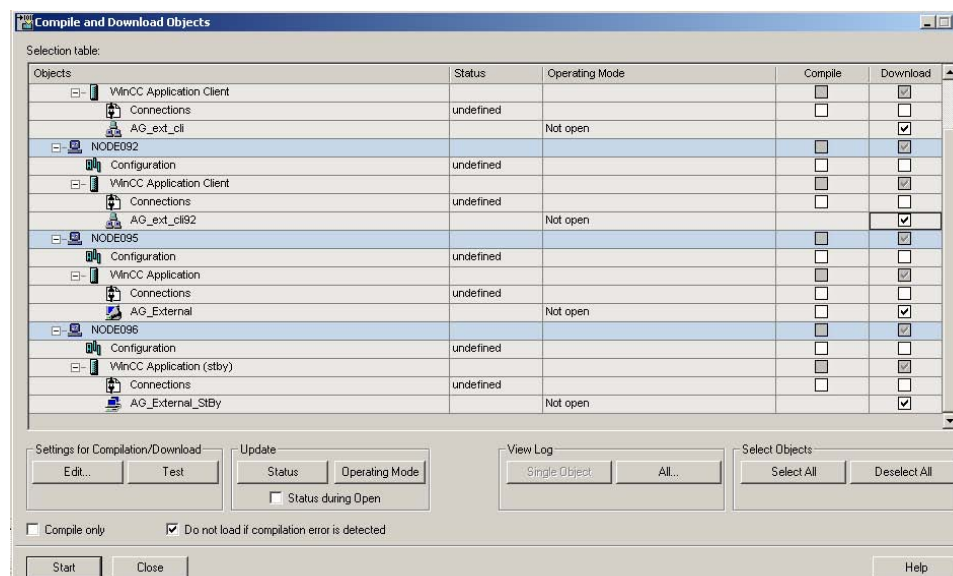
## 4.16 Download the Projects

### Note

Only download the project to the client if the client is not the same computer as your OS Engineering Station. All stations to which you will download the project must have WinCC shut down.

### 4.16.1 Download all projects at the same time

1. From Component view, right-click the project name and select **PLC > Compile and Download Objects....** The **Compile and Download Objects** window opens.



2. Check the **Download** check box for each client and server project name.
3. Select each project, and click **Edit**. Ensure that the Entire WinCC Project radio button is selected for each project.

### Note

Do not check any Compile check boxes. Doing so will overwrite your DBA compile with incorrect data. The compile check boxes only apply to S7 projects.

4. Click the **Test** button, to ensure that all settings are valid.
5. Click the **Start** button.

**Download each project separately:**

#### **4.16.2 Download 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.

#### **4.16.3 Download 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.

#### **4.16.4 Download 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.

## 4.17 Project Activation Sequence

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### 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](#)

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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.

## 4.18 Restarting an OS Server

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



## 5 Download the Changes

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:

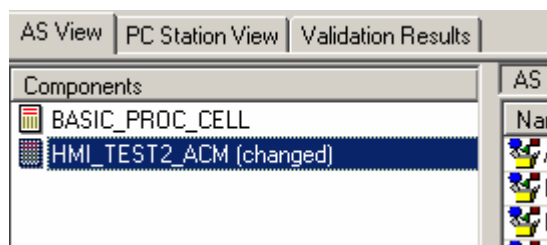
- Making changes to a Controller program.
- Making changes to the plant view in DBA.
- Making changes to the project in SIMATIC Manager.
- Making changes to the project in WinCC.

### 5.1 Overall Steps

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

### 5.2 Making Changes to the Controller Configuration

1. Make any required changes to controller programs. Anytime you make changes to an existing controller configuration, DBA detects the changes and shows the AS Source Node that represents the controller as “(changed)”:



2. Right-click the changed AS Source Node and select **Update Controller Objects** from the menu.

The AS Objects panel in the lower-right quadrant of DBA is updated to reflect the changes made from the controller. The Status column indicates which objects have been added, deleted or modified since the last time the controller objects were updated.

AS View   PC Station View   Validation Results					
Components		AS Objects: 19			
<div><div>BASIC_PROC_CELL</div><div>HMI_TEST2_ACM</div></div>					

## Note

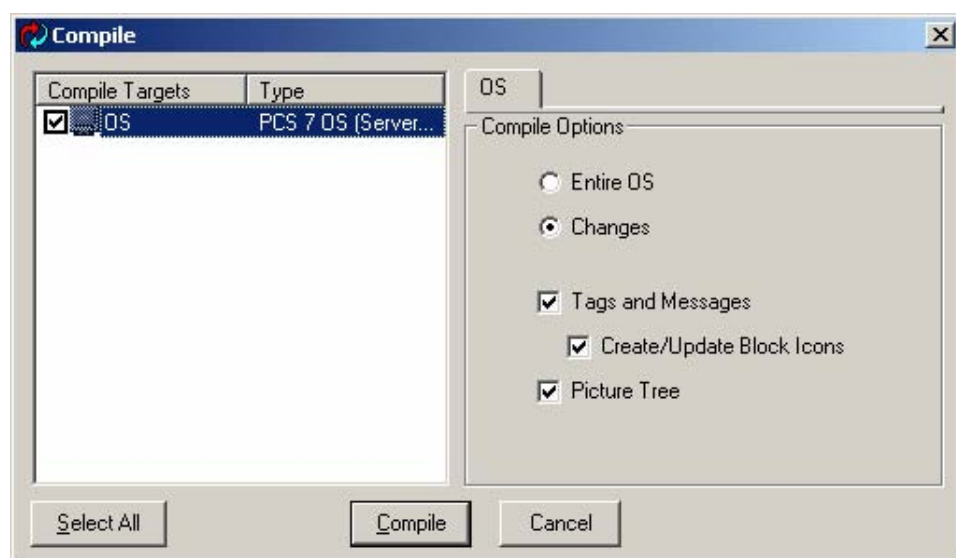
**Update Controller Objects** changes the status column in the details pane to indicate which AS Objects have been modified since the last update. This is a visual status indication of what has changed in the controller. This column reflects the status information from the current Update Controller Objects when run multiple times between DBA compiles to the OS project. To ensure the accuracy of the OS compile, DBA retains the status of all changed objects no matter how many times Update Controller Objects is run.

Use DBA to modify the Plant View to reflect the new AS object changes:

- AS objects marked as **Deleted** should be Unassigned from the currently assigned folder in the Plant View.
- AS Objects marked as **Add** should be assigned to a folder in the Plant View. You may wish to make additional changes to the attributes of the new objects, such as Alarm Priority. See Object Attributes section of the DBA Help File for more details.
- For AS Objects marked as **Modified**, no action is required. The changes will be made automatically in the PCS 7 OS Project the next time you perform a “Compile”. Note that DBA color codes all modified AS Objects as green in the Plant View, indicating that there has been a change to the object that has not been compiled to the WinCC project.

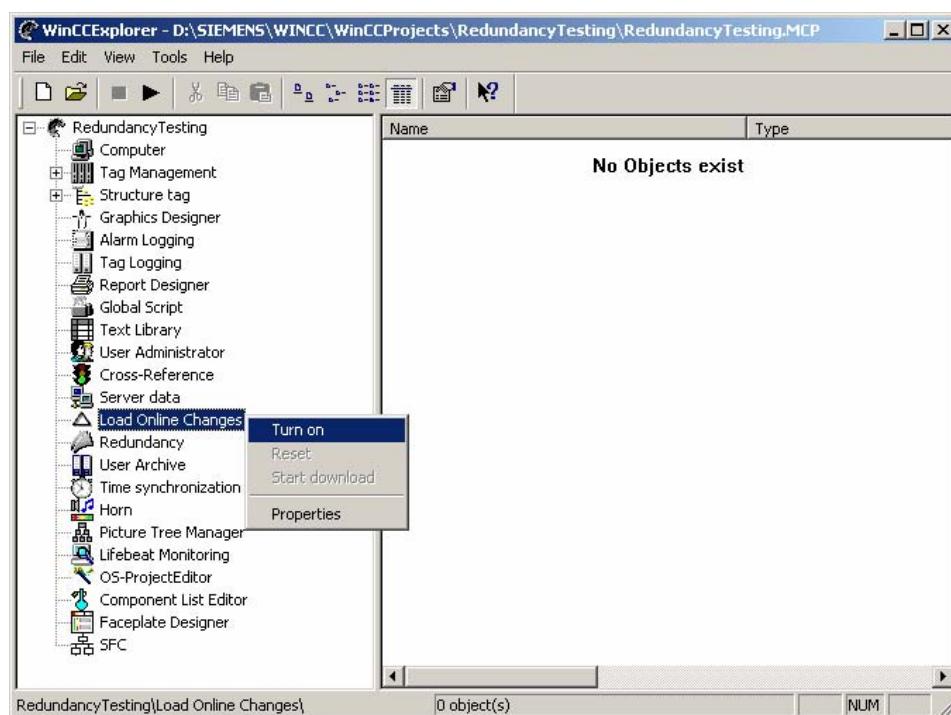
### 5.3 Making additional Changes to the DBA Configuration

1. 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)
2. The server project that you are compiling to must not be in runtime on this station.
3. From DBA, select Compile and choose the **Changes** option on the compile dialog box:



## 5.4 Modify the project in WinCC

On the OS Engineering Station, start WinCC Explorer and open the OS Server project.



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.

## 5.5 Download changes

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, this download is done in the background.

If the scope of changes made is restricted to:

- picture changes within Graphics Designer.
- addition of new object instances within the controller configuration using *4-mation* and then assigned to an existing area/folder/picture in the plant view.
- deletion of object instances from *4-mation*/DBA.

then perform steps one through six.

If the scope of changes is greater than those listed above (such as changes to an existing instance in *4-mation* or DBA, or the renaming/moving of hierarchical folders in the plant view of DBA), then perform steps one through fifteen.

1. From SIMATIC Manager component view, right-click the **Primary Server OS** (PC Station 1), and select **PLC > Download**.
2. Ensure that the **Changes** radio button is selected.
3. Click **OK** to download the project.
4. A success window is displayed indicating a successful download to the Primary Server. Click **OK** to acknowledge that the download has completed.
5. The project is now automatically downloaded to the Standby Server.
6. A success window is displayed indicating a successful download to the Standby Server. Click **OK** to acknowledge that the download has completed.
7. Deactivate PCS 7 on the Primary Server.
8. Wait five minutes.
9. Reactivate PCS 7 on the Primary Server.
10. After fifteen minutes, look in the Process Alarms screen on the Primary Server for the "Sync Start/Finish" message. If the message is not there, continue checking the process alarms screen until the message appears.
11. Once the synchronization has completed, deactivate PCS 7 on the Standby Server.
12. Wait five minutes.
13. Reactivate PCS 7 on the Standby Server.
14. After fifteen minutes, look in the Process Alarms screen on the Primary Server for the "Sync Start/Finish" message. If the message is not there, continue checking the process alarms screen until the message appears.
15. The changes are now fully downloaded.



## 6 Modify Faceplates and Symbols

The following exercise provides the recommended steps to create PCS 7 customized faceplates and symbols based on those delivered in the standard PCS 7/ APACS+ Option product.

The procedure essentially clones an existing faceplate and symbol.

**The PCS 7 Faceplate Designer utility should not be used.**

1. Select a standard faceplate that is most like the one you wish to create

Note: This exercise assumes you have selected the SINGLE\_LOOP\_AFB faceplate and symbol, and that you want to create a CUSTOM1\_AFB faceplate and symbol from it.

2. If the new CUSTOM1\_AFB faceplate is for a specific WinCC project, select the PDL files from the GraCS folder of the WinCC project.

If the modifications are to be global for all WinCC projects, select the files from the **SIEMENS\WINCC\options\pdl\FaceplateDesigner\_V6** folder. Any newly created WinCC project initially gets its files from the **SIEMENS\WINCC\options\pdl\FaceplateDesigner\_V6** folder.

### 6.1 Faceplate Procedure

1. Using the WinCC Graphics Designer, open up the following PDL files, and use the **File > Save As..** menu option to save a copy of the file under a new name.

Original File Name	New Customized File Name
@PG_SINGLE_LOOP_AFB.pdl	@PG_CUSTOM1_AFB.pdl
@PG_SINGLE_LOOP_AFB_OVERVIEW.pdl	@PG_CUSTOM1_AFB_OVERVIEW.pdl
@PG_SINGLE_LOOP_AFB_STANDARD.pdl	@PG_CUSTOM1_AFB_STANDARD.pdl
@PG_SINGLE_LOOP_AFB_VIEWLIST.pdl	@PG_CUSTOM1_AFB_VIEWLIST.pdl
@PL_SINGLE_LOOP_AFB.PDL	@PL_CUSTOM1_AFB.PDL

2. All references to the old SINGLE\_LOOP\_AFB type need to be changed to reference the new CUSTOM1\_AFB type. These changes are made in WinCC Graphics Designer by opening the PDL file, and modifying the reference using the object's property dialog box.

The following table lists all of the references that must be changed.

PDL FileName	Object Name	Property Name
@PG_SINGLE_LOOP_AFB.pdl	@Faceplate	FirstView
@PG_SINGLE_LOOP_AFB.pdl	ViewList	Picture Name
@PG_SINGLE_LOOP_AFB.pdl	BlockType	Output Value
@PL_SINGLE_LOOP_AFB.pdl	OverviewWindow	Picture Name
@PL_SINGLE_LOOP_AFB.pdl	View1	Picture Name
@PL_SINGLE_LOOP_AFB.pdl	BlockType	Output Value

The result is a copy of the SINGLE\_LOOP\_AFB faceplate that supports the new CUSTOM1\_AFB type.

The objects on the new PDL files can now be added/deleted/modified. How to modify the PDL files is now up to the user, and is beyond the scope of this document.

## 6.2 Symbol Procedure

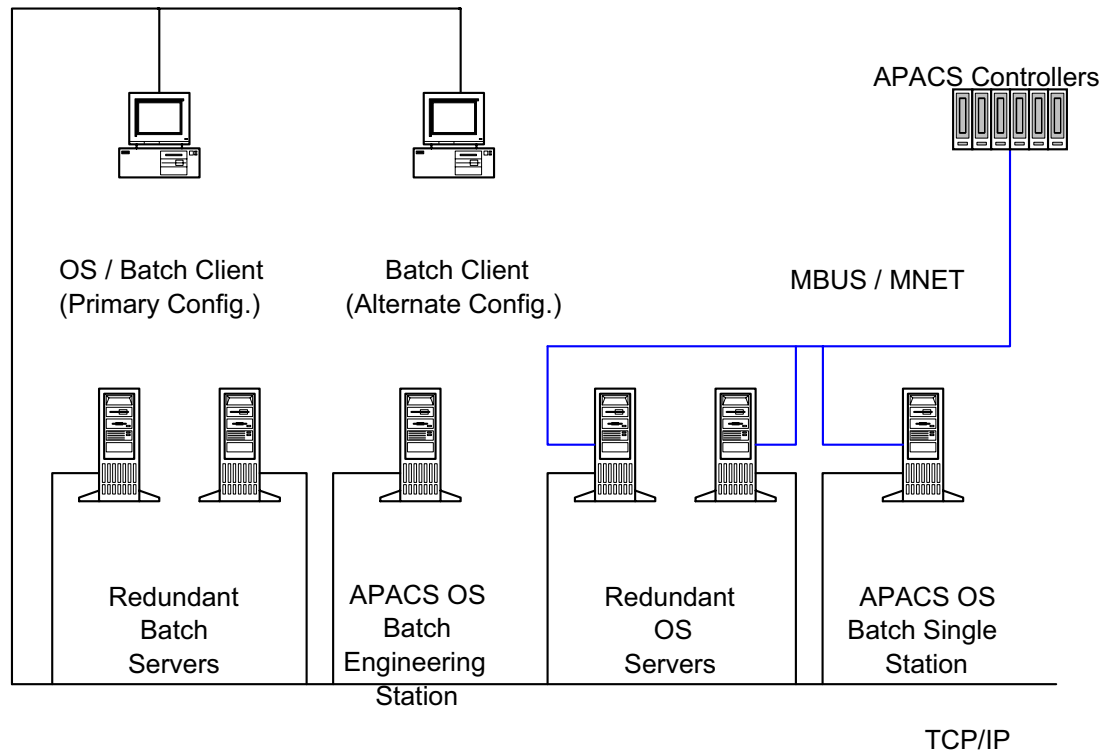
1. Using the WinCC Graphics Designer, open up the @@APACSTypicals.PDL file.
2. Save this under the new name @APACSTypicals.PDL.
3. Make a copy of the @SINGLE\_LOOP\_AFB/2 object and name it @CUSTOM1\_AFB/1.
4. Using the property dialog box for the new @CUSTOM1\_AFB/1 object, change all references to the old SINGLE\_LOOP\_AFB type to reference the new CUSTOM1\_AFB type.
5. The following properties must be changed:
  - type
  - Servername

The result is a new symbol that will be used for the new CUSTOM1\_AFB type.



# 7      **Software Installation for SIMATIC BATCH on APACS**

## 7.1      **Batch Architecture**



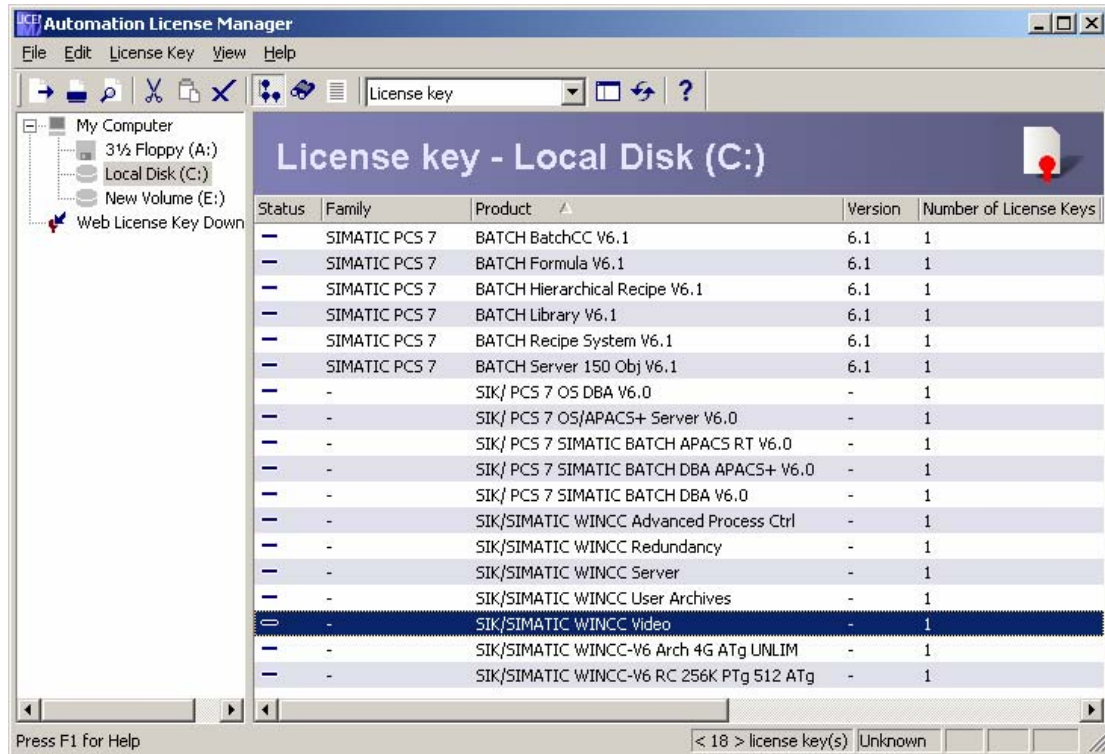
## 7.2 Batch Authorizations

The following authorizations need to be installed on the Engineering Station (ES) in order to configure SIMATIC BATCH on APACS solutions.

- SIK/ PCS 7 SIMATIC BATCH DBA APACS+ V6.0
- SIK/ PCS 7 SIMATIC BATCH DBA V6.0

On the OS the following authorization is needed:

- SIK/ PCS 7 SIMATIC BATCH APACS RT V6.0

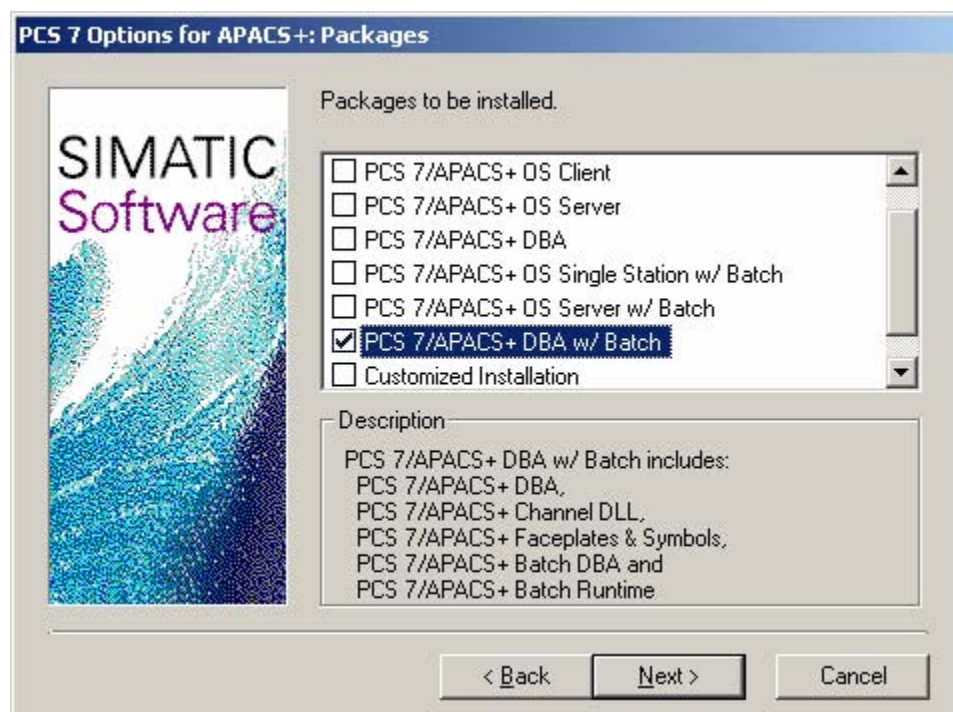


## 7.3 Installation sequence

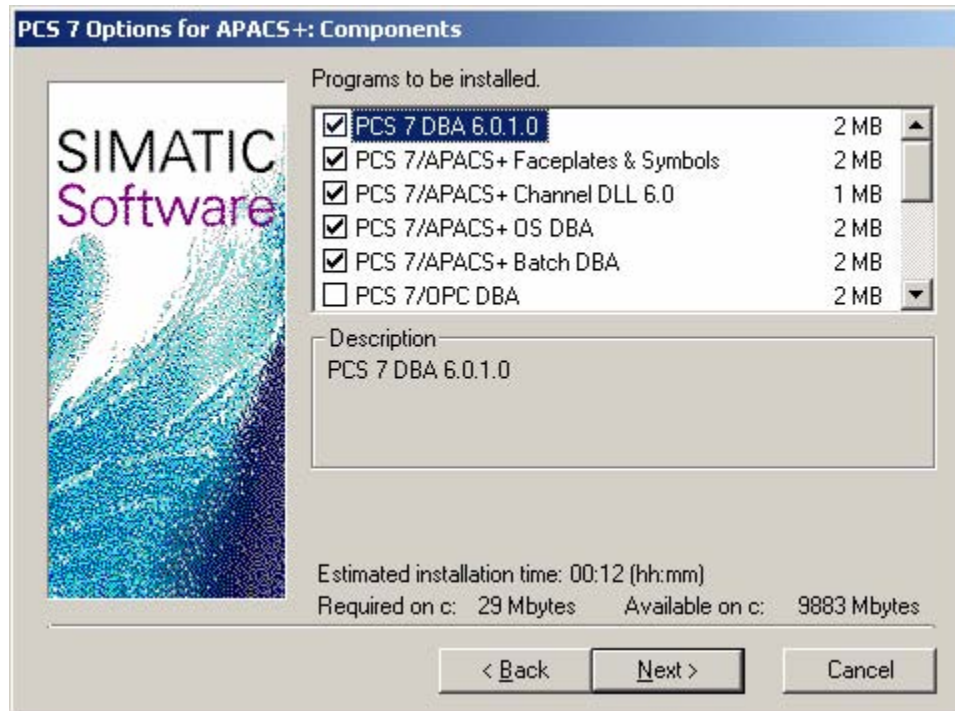
Before the SIMATIC BATCH on APACS option is installed, all appropriate PCS7, APACS+, and PCS 7 Options for APACS+ software must be installed. Refer to section 1 in this manual for an installation overview.

Follow sections 2.1 through 2.5 step 5 in this manual, then proceed with the following:

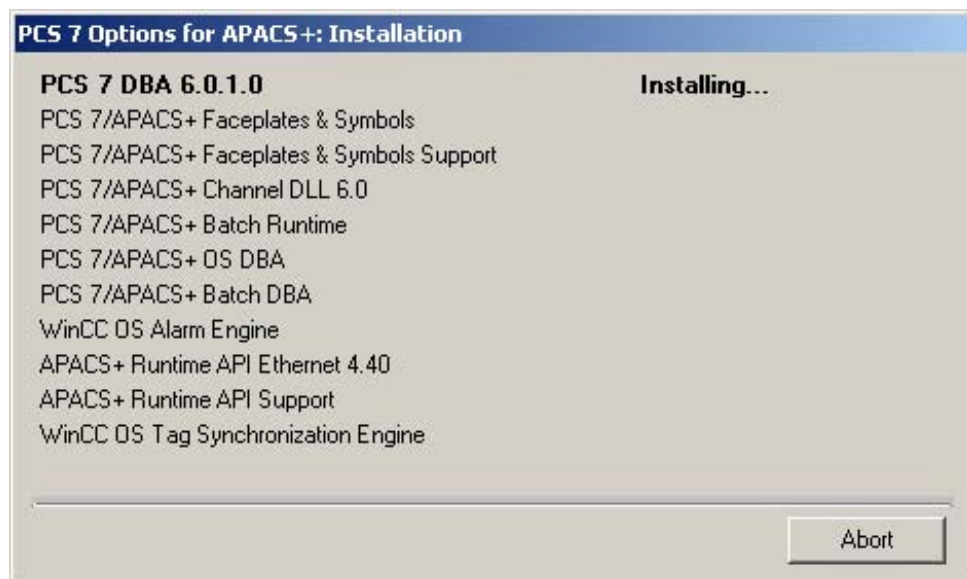
1. Select the packages to be installed:
  - For installation on ES, select "PCS 7/APACS+ DBA w/ Batch".
  - For installation on OS server, select "PCS 7/APACS+ OS Server w/ Batch".
  - For installation on Batch Single Station, select "PCS 7/APACS+ OS Single Station w/ Batch".



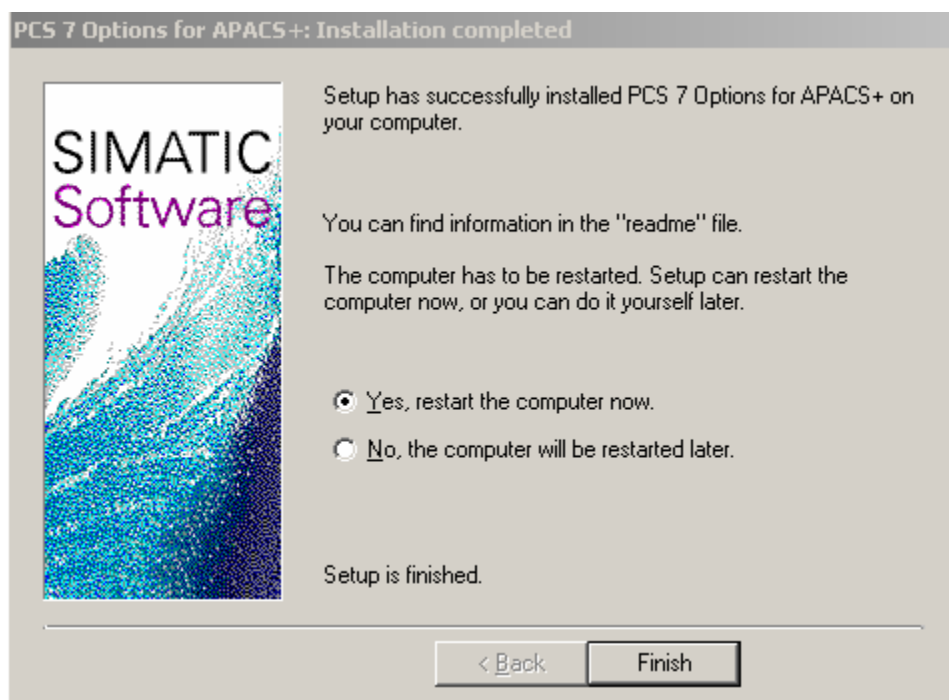
2. Click the **Next** button. The **PCS 7 Options for APACS+: Components** dialog box opens.



3. Select the packages to install. Please refer to the table in section 9.2 PCS 7 APACS+ OS Option V6.1 for the appropriate packages to install for your system.  
Click the **Next** button to continue. The options begin installing.



The **Installation completed** dialog box opens.



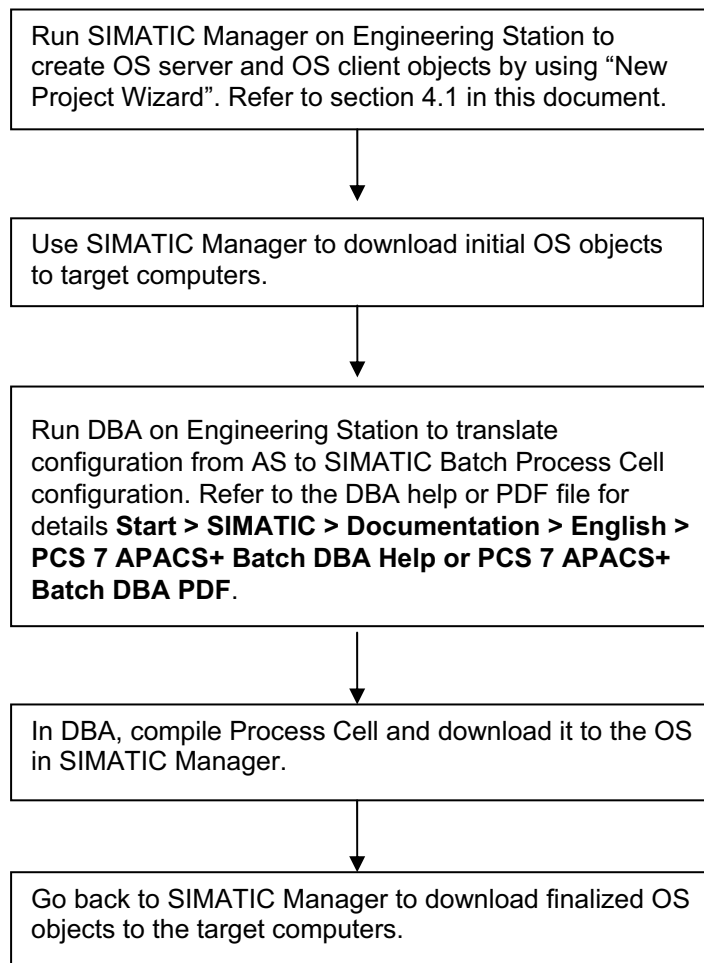


## 8 Create a SIMATIC BATCH project

In SIMATIC BATCH on APACS option, SIMATIC BATCH project is created and edited with DBA on Engineering Station.

The pre-requirement for DBA to create a new SIMATIC BATCH project is that all OS objects (WinCC projects) have to be created and downloaded to target OS nodes by SIMATIC Manager.

The working flow of creating a SIMATIC BATCH project is shown below







## 9 Product Installation Guidance Tables

The following tables for APACS+ Control CD V6.1 and PCS 7/APACS+ OS Option V6.1 provide installation guidance for installing components and packages.

Install from: APACS+ Control CD V6.1									
	Engineering Station	OS Server	OS Client	OS Single Station	Batch Eng. Station	Batch OS Server	Batch Client	Batch Single Station	
<b>APACS + Communications Components from Control CD</b>									
A message may appear requesting third party components to be installed (e.g MDAC, MSDE, etc.). Install the applicable components upon completion of the Control CD install.	X Note 1	X Note 1		X Note 1	X Note 1			X Note 1	
Dialog boxes stating the lack of a Windows Logo Test may appear during installation (Control CD V6.1). "Continue anyway" with installation.	X	X		X	X			X	
Run-time API (Ethernet)	O Note 2	O Note 2		O Note 2	O Note 2			O Note 2	
Run-time API (MBUS)	O Note 2	O Note 2		O Note 2	O Note 2			O Note 2	
API Sample Program									
NIM 32	X	O		O	X			O	
NIM32 User Interface	X	O		O	X			O	
APACS + OPC Device Server. Select the OPC Device Server startup mode. Select either Automatic or Manual (Automatic preferred).		O		O				O	
<b>Configuration Tools from Control CD</b>									
4_Mation (Ethernet)	O				O				
4_Mation (MBUS)	O				O				
Control Simulator	X				X				

Key

Selection	Description
X	Recommended
O	Optional, determine based on Node
Note 1	If installing the APACS+ OPC server, do not install MSDE.
Note 2	This is a required component. APACS+ Runtime API defaults to Ethernet. Install the proper choice based on the hardware installed, MBUS or Ethernet.

Note

4-mation™ and associated libraries can be installed on any node. Online engineering functionality will be based on having connectivity to MBUS.

Continued on next page⇒

Install from:		Engineering Station	OS Server	OS Client	OS Single Station	Batch Eng. Station	Batch OS Server	Batch Client	Batch Single Station
<b>APACS+ Control CD V6.1</b>									
<b>Control Components from Control CD</b>									
APACS+ Control Modules		O				O			
ACMx APACS+ Control Modules		O				O			
QUADLOG Control Modules		O				O			
CCM x Control Modules		O				O			
Control Engine		O				O			
Link Interface Module (LIM)		O				O			
MODBUS Master & Slave FB Library		O				O			
LIL FB Library		O				O			
Motor and Valve FB Library		O				O			
Sequence of Events Recorder FB Library		O				O			
DIREKTOR FB library		O				O			
Industrial Ethernet Module FB Library		O				O			
PS Batch Communication FB Library		O				X			
QUADLOG Control FB Library		O				O			
IO Simulation FB Library		X				X			
Safety Matrix FB Library for CCMx only		O				O			
<b>Application Libraries from Control CD</b>									
BASIC Application Library		X				X			
AGA Application Library		O				O			
Advanced Regulatory Control Library		O				O			
Hydrostatic Tank Gauging Library		O				O			
Industrial Boiler Library		O				O			
Motorized Valve Library		O				O			
Heat Recovery Steam Generator Library		O				O			
Paper Stock Refiner Library		O				O			
Batch Basic Process Cell Library		O				X			
<b>System Components from Control CD</b>									
Diagnostic Logger		X	X		X	X			X
Time Sync Utility			O		O				O
Sequence of Events Viewer Utility			O		O				O

## 9.2

### PCS 7/APACS+ OS V6.1

Install from: PCS7/APACS OS Option V6.1										
Packages	Eng. Station	OS Server	OS Client	OS Single Station	Batch Eng. Station	Batch OS Server	Batch Client	Batch Single Station		
PCS 7/APACS+ OS Single Station				X						
PCS 7/APACS+ OS Client			X Note 2				O Note 3			
PCS 7/APACS+ OS Server		O Note 1								
PCS 7/APACS+ DBA	X									
PCS 7/APACS+ OS Single Station w/Batch										X
PCS 7/APACS+ OS Server w/Batch		O Note 1								
PCS 7/APACS+ DBA w/Batch					X					
Customized Installation										
Components (defaults depending on packages installed)										
PCS 7 DBA	X				X					
PCS 7/APACS+ Faceplates and Symbols	X	X	X	X	X		O Note 3	X		
PCS 7/APACS+ Channel DLL	X	X		X	X			X		
PCS 7/APACS+OS DBA	X				X					
PCS7/APACS+ Batch DBA					X					
PCS7/OPC DBA	O				O					
APACS+ Runtime API Ethernet	O Note 4	O Note 4		O Note 4	O Note 4			O Note 4		
APACS+ Runtime API MBUS	O Note 4	O Note 4		O Note 4	O Note 4			O Note 4		

## Key

Selection	Description
X	Recommended
O	Optional, determine based on Node
Note 1	Install the proper choice depending on whether the OS server will be used with or without Batch.
Note 2	Install APACS+ OS Faceplates & Symbols only. Refer to section 2.3 for installing/upgrading OS clients to PCS 7 V6.1SP1. All clients must be upgraded to communicate with PCS 7/APACS+ OS V6.1.
Note 3	If the node has a Batch Client and an OS Client application installed - install the APACS+ OS Faceplates & Symbols. If the node only has Batch Client installed, do not install any additional applications.
Note 4	This is a required component. APACS+ Runtime API defaults to Ethernet. Install the proper choice based on the hardware installed. MBUS or Ethernet.