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Brief instructions software update from PCS 7 V9.1 to V9.1 SP1

SIMATIC PCS 7

<https://support.industry.siemens.com/cs/ww/en/view/39980937>

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1 Preparation

To prepare for the update, perform the following steps:

1. Backup

We recommend that you back up the partitions of all affected machines before starting the update.

For this requirement the software "SIMATIC Image & Partition Creator" can be used: <https://support.industry.siemens.com/cs/ww/en/view/109766855>

2. Archive project

Before starting the update, archive the project and your own libraries.

3. Back up licenses

Licenses installed on the system are not deleted by the update.

If you want to perform a new installation, back up all existing licenses.

4. PDM data

Save the device descriptions of the PDM devices.

Updating PCS 7 removes the SIMATIC PDM device catalog. The device descriptions used must be reinstalled after the update.

5. Disabling WinCC auto start

When using the "WinCC AutoStart" function, it must be deactivated before updating the software.

- OS client:
"Start > Siemens Automation > Autostart"
- OS server:
"Start > Siemens Automation > Autostart"
or
"Start > Siemens Automation > Communication Settings > SIMATIC NET Configuration > Autostart"

After deactivating WinCC Autostart, restart the PC station.

6. Removing password protection for projects

Any existing password protection must be deactivated before updating the software.

Note

If you use the SIMATIC Management Console to perform the installation, the Autostart functions are automatically disabled by the SIMATIC Management Console during the installation. Do not start the runtime until you have loaded the project. Reconfigure the "WinCC autostart" function.

2 Start PCS 7 update installation

CAUTION**Delta loading capacity**

The AS projects can be delta loaded as long as no blocks (FB, FC) with interface changes are used in the CFC.

Be aware, there are interface changes in PCS 7 V9.1 SP1.

The list of changed blocks can be found in the corresponding online readme of the libraries.

Note

Before installing PCS 7 V9.1 SP1, please refer to the system and software requirements in the PCS 7 Readme (online).

<https://support.industry.siemens.com/cs/ww/en/view/109801032>

Note

Detailed information about updating PCS 7 can be found in the following manuals:

- "Software update with utilization of new functions V9.1 SP1"
<https://support.industry.siemens.com/cs/ww/en/view/109805393>
- "Software update without utilization of new functions V9.1 SP1"
<https://support.industry.siemens.com/cs/ww/en/view/109805400>

1. Start the setup of PCS 7 V9.1 SP1. Select "Update" as the setup type.
2. Install any used libraries and faceplates from the DVD2/Additional Products.

3 Update project

3.1 Update blocks

Via master data library

Perform the following steps:

1. **Copy blocks**

Copy all blocks used in the project from the new libraries (e. g. PCS 7 APL V9.1 SP1) into the master data library.

Note

When copying the blocks, a dialog opens with the message whether you want to overwrite the blocks. Here you can use the "Adjust attributes..." button to display different attribute values in the source and target and to adjust your project-specific changes.

2. **Update block types**

Select the block folder in the master data library of the multi-project and select the menu command "Tools > Plans > Update block types".

In the following dialog all programs can be selected or deselected. Click on "Continue".

All block types are offered for selection or deselection. Select the blocks from the "List of changed system blocks" for the system update. Click on the "Finish" pushbutton.

You are then asked whether you want to convert the format of the CFC plans to the current version. Confirm the dialog with "Yes".

Without master data library

Perform the following steps for all S7 programs and for each library you use:

1. Open a library

Open the new library e. g. PCS 7 APL V9.1 SP1, if you have used blocks from PCS 7 APL V9.1 library in your projects.

2. Update block types

Select the block folder of the library and select the menu command "Tools > Plans > Update block types".

In the following dialog you can select the project and select or deselect the programs to update. Click on "Continue".

All block types are offered for selection or deselection. Select the blocks from the "List of changed system blocks" for the system update. Click on "Finish".

You are then asked whether you want to convert the format of the CFC plans to the current version. Confirm the dialog with "Yes".

Note

You can convert the format of the CFC plans as follows if you do not update the block types, for example, because you want to continue using the already configured block versions:

- Open any CFC plan.
- Move any block.
- Confirm the dialog for converting the CFC plans.

Note

With both procedures, all block types in the block folders of the project are replaced and a block type import is carried out in all plan folders of the project.

3.2 Compile configuration data of the automation system

Execute the function "Save and compile" in the HW Config and in NetPro for all AS.

3.3 Compile S7 program plans

Compile the program of each AS with the settings:

- Full Compile
- Generating module drivers

Note

If necessary, you can only compile the AS program with the option "Entire program". However, this does not affect the delta loading capability.

3.4 Compile OS configuration data

For all PC stations, execute the "Save and compile" function in the HW configuration and in NetPro.

3.5 Update OS projects

Open the projects of all OS servers, OS single stations and OS clients on the ES one after the other and carry out the following steps:

1. **Generate header**
Open the Global Script C Editor and select the menu command "Options > Generate Header".
2. **Start OS Project Editor**
Start the OS Project Editor with the option "Complete project planning (loss of online change load capability)" (tab "General").

Note

If you use the template images for the APL block symbols of PCS 7 V7.1 SP3 please refer to the function manuals "Software Update with Use of New Functions" / "Software Update without Use of New Functions".

<https://support.industry.siemens.com/cs/ww/en/view/109805393>

<https://support.industry.siemens.com/cs/ww/en/view/109805400>

3.6 Compile OS server / OS single stations

Start the compilation for all OS servers or all OS single stations with the following options:

- Tags and messages
- SFC visualization
- Picture Tree
- With interconnection partner (SFC option)
- Entire OS, with memory reset

3.7 Downloading target systems

Before you load the OS, update the PCS 7 software on the corresponding PC stations.

Perform the charging operations in the following order:

1. **OS server / OS single stations**
 - a. Start the complete download of all OS server / OS single stations.
 - b. Start the OS runtime of the server/single stations.
2. **OS clients**
 - a. Start the complete download of all OS clients.
 - b. Start the OS runtime of the clients.
3. **AS program**

Start the change loading of the S7 programs of all AS.

Note

The AS projects can be delta loaded as long as no blocks (FB, FC) with interface changes are used in CFC.

Be aware, there are interface changes in PCS 7 V9.1 SP1.

The list of changed blocks can be found in the corresponding online readme of the libraries.

Since in PCS 7 V9.1 SP1 block interface changes have been made, delta loading is not possible unless you use a CPU 410-5H with TCiR. If not, a complete AS download with CPU Stop must be done.

Step chains of SFC plans are not stopped during the software update unless changes have been made within the step chain.

4 Update redundant systems in normal operation

To update redundant systems, proceed in the following order:

1. Update the standby servers.
2. Update the clients that have the standby server as their preferred server.
3. Execute the complete downloading of the OS projects on the standby servers and the clients.
4. Start the standby servers and clients. Wait for the redundancy adjustment.
5. Load the updated program into the AS.
6. Update the master servers.
7. Update the clients that have the master server as their preferred server.
8. Execute the complete downloading of OS projects on the master servers and clients.
9. Start the master server. Wait for the redundancy adjustment.

Note

If a Process Historian is used in the plant, it must be updated and in "Active" state before the OS server update is started.

Additional information

Further information on updating redundant systems can be found in the manual "Process control system PCS 7; High Availability Process Control Systems" in the chapter "Guide to updating a redundant OS in runtime".

<https://support.industry.siemens.com/cs/ww/en/view/109794373/142993038475>

5 Options

SIMATIC Route Control

1. Start the "Route Control Wizard" in projects with Route Control and follow the instructions.
2. Load the RC applications and update the RC server.

Note

Further information on the SIMATIC Route Control library can be found in the documents "SIMATIC Route Control - Read Me" and "SIMATIC Route Control - What's New".

SIMATIC BATCH

1. Generate and propagate the "BATCH types" and merge all batch instances.
2. Download all components.
3. Execute the function "Transfer messages". This transfers all batch message texts to the OS project.
4. Load the OS.
5. In the Batch Control Center, execute the function "Update Process Cell".

Web Option

Web servers are like OS clients. In addition, the "Web View Publisher" and the "Web Configurator" must be started.

When you restart Internet Explorer on the Web Clients, you are prompted to install an update to the Web client. The installation files can be obtained from the Web server.

After installing the Web client, update the plugins.

Process Historian (PH)

After a new installation/update installation of the servers (OS servers, OS single stations, ...), it is necessary to perform the "PH-Ready Configuration" again before activating the process operation.

The Process Historian must be in "Active" mode during operation before the updated servers are started for the first time. If necessary, restart the process operation of the OS servers to establish the connection to the PH.

Maintenance Station

After you have translated your automation system, execute the function "Generate/update diagnostic images".

The Maintenance Station must be recompiled and reloaded.

PDM

When using the PDM Server function, you must perform the "PDM Server Configuration" and activate the firewall rules for the HTTP protocol used.

6 Changed blocks

The list of changed blocks can be found in the corresponding online readme of the libraries.

7 Previous libraries and updates

The predecessor libraries and current updates of the SIMATIC PCS 7 libraries are available on the following download entry:

<https://support.industry.siemens.com/cs/ww/en/view/109480136>