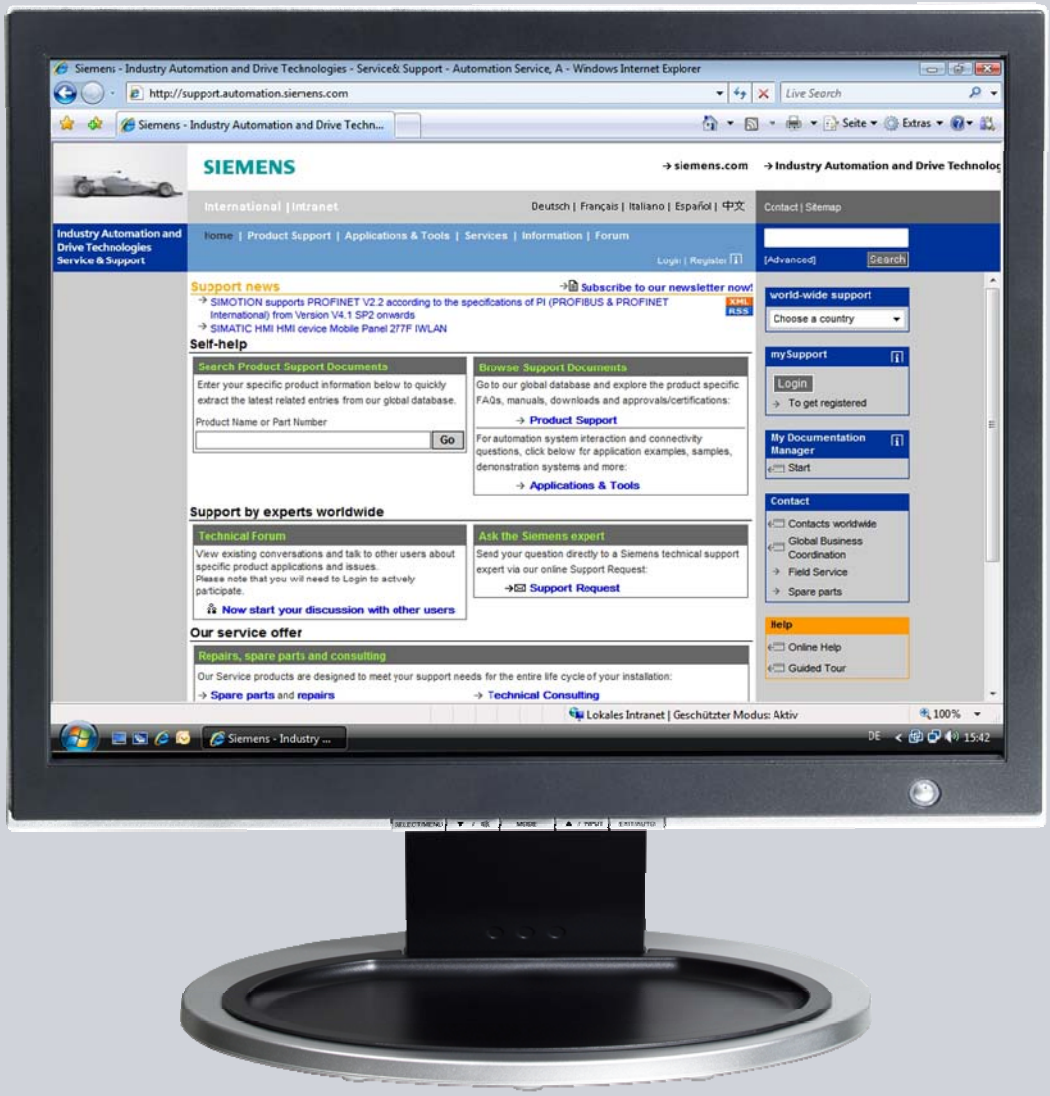
Software Update from PCS 7 V7.1 SP2 to PCS 7 V7.1 SP3

SIMATIC PCS 7

FAQ • July 2011



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Question

How do you update from PCS 7 V7.1 SP2 to PCS 7 V7.1 SP3?

Answer

This document gives a brief description of how to update from PCS 7 V7.1 SP2 to PCS 7 V7.1 SP3.

Requirements

Please read the notes in the "PCS 7 Readme" file carefully.

The following sections are particularly important:

- 2.4.16 Changing the internal authentication mechanism in the OS
- 2.4.17 Remote access to OS projects
- 3.9 DataMonitor

There is further information available about the software update in the delivery release:
http://support.automation.siemens.com/WW/view/de/50721458

Contents

1 Preparation

Proceed as shown in the table below to prepare for updating.

Table 1-1

Step	Procedure
1.	**Backup** It is recommended you back up the partitions of all the computers concerned before starting this task. You can use the "SIMATIC Image & Partition Creator" software for this. http://support.automation.siemens.com/WW/view/de/38400496
2.	**Saving the project** Save the project and own libraries before starting the update.
3.	**Saving licenses** Updating does not delete the licenses installed on the system. Save all existing licenses before making a complete reinstallation.
4.	**PDM data** Updating does not delete the PDM devices installed on the system. You can continue to use them after the update. Save all the installation files of the PDM devices before making a complete reinstallation.
5.	**Disabling WinCC Autostart** If being used, you must disable the "WinCC Autostart" function before the software update. • OS client: "Start > SIMATIC > WinCC > Autostart" • OS server: "Start > SIMATIC > WinCC > Autostart" or "Start > SIMATIC > SIMATIC Net > Set PC station > Applications > Autostart" After disabling WinCC Autostart, restart the PC station.

2 Starting the PCS 7 Update Installation

WARNING **Before you install PCS 7 V7.1 SP3, read the instructions concerning system and software requirements in the PCS 7 Readme.**

Notes

You can find more information on updating PCS 7 in the following manuals:

- "PCS 7 – Software Updates With Utilization Of New Functions"
- "PCS 7 – Software Updates Without Utilization Of New Functions"

Table 2-1

Step	Procedure
1.	**Installing the PCS 7 update** Start the basic setup of PCS 7 V7.1 SP3. Select the "Update" option for the setup type.

Notes

If you are using a **DHCP server on the plant bus**, the SIMATIC Miniport Adapter on the CP1613 and CP1623 has to be updated once the installation has been completed and the computer has been restarted.

- Open the device manager via "Start > Settings > Control Panel > Administrative Tools > Computer Management > Device Manager“.
- Switch to the "Network adapters" folder.
- Select the command "Update drivers..." in the context menu for the CP1613 / CP1623.

3 Updating the Project

3.1 Updating Blocks

With Master Data Library

Proceed as follows.

Table 3-1

Step	Procedure
1.	**Copying blocks** Copy all the blocks used in the project from the new libraries into the master data library. **Notes** The existing blocks are overwritten. If you have made changes to the original blocks, then you must change the new blocks accordingly.
2.	**Updating block types** Select the block folder in the master data library of the multiproject and then select the menu command "Options > Charts > Update block types". In the dialog that opens you can select or deselect all the programs (and sample solutions). Click on the "Continue" button. All the block types are displayed for selection/deselection. Select the blocks for system updating from the "List of changed system blocks". Click on the "Finish" button.

This procedure replaces all the block types in the block containers of the project and does a block type import in all the chart containers of the project.

Without Master Data Library

Proceed as follows for each library used.

Table 3-2

Step	Procedure
1.	**Opening the library** Open the library from which you use blocks in your projects.
2.	**Updating block types** Select the blocks used and then select the menu command "Options > Charts > Update block types". In the dialog that opens you can select or deselect all the programs (and sample solutions). Click on the "Continue" button. All the block types are displayed for selection/deselection. Select the blocks for system updating from the "List of changed system blocks". Click on the "Finish" button.

This procedure replaces all the block types in the block containers of the project and does a block type import in all the chart containers of the project.

Updating the block for the operating mode logic of the SFC charts

In this version the block for the SFC operating mode logic @SFC_BZL (FB 245) is not updated by way of the "Apply Format" in the CFC charts, as was the case in the previous versions. This has to be done manually.

Table 3-3

Step	Procedure
1.	**SFC types/instances** Copy the block "@SFC_BZL" (FB 245) from the SFC library to the block folder for all the AS programs.

3.2 Compiling Configuration Data for the AS

Execute the "Save and Compile" function in the HW Config and in NetPro for all ASs.

3.3 Compiling Charts for the S7 Programs

Proceed as follows.

Table 3-4

Step	Procedure
1.	**Compiling an S7 program** Compile the program of each AS with these settings: • Entire program • Generate module drivers

3.4 Compiling Configuration Data of the OS

Execute the "Save and Compile" function in the HW Config and in NetPro for all PC stations.

3.5 Updating OS Projects

Open the projects of all the OS servers and OS clients one after the other and proceed as follows.

Table 3-5

Step	Procedure
1.	**Generating a header** Open the Global Script C editor and select the "Tools > Regenerate Header" menu command.
2.	Start the OS project editor Start the OS project editor with the option "Complete Configuration (loss of support for online delta loading capability)" in the "General" tab. **Notes** Further system messages have been added in the new version. This is why it is necessary to start the OS project with the "Complete Configuration" option. This updates the faceplates and integrates new functions in the project.

3.6 Delta Compilation of the OS Server

Proceed as follows.

Table 3-6

Step	Procedure
1.	**Compiling the OS server** Start compilation for all OS servers with these options: • Amendments • Tags and messages • Picture Tree • SFC Visualization

3.7 Loading Target Systems

Update the PCS 7 software on the PC stations concerned before uploading the OS servers/OS clients.

Perform uploading in the following order.

Table 3-7

Step	Procedure
1.	**OS servers** • Start overall loading of all OS servers. • Start the OS Runtime of the servers.
2.	**OS clients** • Start overall loading of all OS clients. • Start the OS Runtime of the clients.
3.	**AS program** Start delta loading of the S7 programs of all ASs. **Warning** An AS STOP is required when using the RC Lib (route control). In this case, you have to do a complete AS load.

Notes Sequencers of SFC charts are not aborted during the software update (AS delta load) as long as no changes have been made in the sequencers concerned.

4 Updating Redundant Systems in Runtime

Proceed as follows to update redundant systems.

Table 4-1

Step	Procedure
1.	Update the standby servers and all clients.
2.	Do a complete download of the OS projects to the standby servers and the clients.
3.	Start the standby servers and clients. -> Wait for the redundancy calibration.
4.	Download the control program into the AS.
5.	Update the master servers.
6.	Do a complete download of the OS projects to the master servers.
7.	Start the master servers. -> Wait for the redundancy calibration.

Notes More information on updating redundant systems is available in the manual "Fault-tolerant Process Control Systems", in the section entitled "Instructions for updating a redundant OS in Runtime".

5 Options

Table 5-1

Option	Description
Route Control	Start the "Route Control Wizard" in projects with Route Control. Then run through the "ToDos" displayed in the log files of the "Route Control Wizard". New functions have been implemented with the new RC library. An AS STOP is required in order to use the new RC library. A list of the changed blocks is included in the attachment. The local data areas have been increased for various blocks of the RC library. This might cause warnings or failures when loading CFC. Increase the local data areas of the priority levels displayed accordingly (CPU properties) and then repeat the loading procedure. **Notes** You can find more information about the changes in the RC library in the documents "SIMATIC Route Control – Readme" and "SIMATIC Route Control – What's New".
SIMATIC BATCH	Regenerate and repropagate the "BATCH types" and group all the batch instances together. Then reload all the components. Execute the "Transfer messages" function. In this way, all the batch message texts are transferred to the OS. Execute the "PCell update / Update plant data" function in the Batch Control Center.
Web option	Web servers are to be seen as OS clients. You must also start the "Web View Publisher" and the "Web Configurator". When you restart the Internet Explorer on the web clients, you are prompted to install an update of the web client. You can retrieve the installation files from the web server. After installing the web client, update the plugins.
CAS	The CAS (Central Archive Server) is the first computer taken from the computer network and the last to be put back into operation. The CAS failure time must not exceed the shortest circular log time of the OS servers. You must disconnect any connected backup databases from the CAS before updating the software. The error message "Error when disconnecting backup databases from the SQL server!" might be displayed when updating the software. You can ignore this message as long as there are no backup databases connected. You can reconnect the disconnected databases after the software update. The same procedure applies for CAS as for OS servers. Refer also to the information on "Updating archive servers" in the PCS 7 readme.

6 List of Changed Blocks

The following tables list all the changed system blocks compared with PCS 7 V7.1 SP2.

WARNING **Even if you have been using PCS 7 V7.1 SP2 up to now, there may still be older versions of blocks present in your automation program. In this case you have to determine for yourself whether a software updated can be performed without a CPU STOP.**

6.1 PCS 7 Basis Library V71

Table 6-1

Library	Block no.	Block name	Version	Supports delta loading
PCS 7 Basis Library V71	FB81	PDM_MS	6.0	New!
	FB93	MOD_D1	6.13	✓
	FB97	MOD_HA	6.13	✓
	FB124	FF_MOD32	6.0	New!
	FB126	FM_CNT	6.13	✓
	FB134	MOD_D3	6.14	✓
	FB137	MOD_64	6.10	✓
	FB139	FFDP_L1	6.0	New!
	FB145	FFD_CIF	6.0	New!
	FB146	OB_DIAGF	6.0	New!

Notes The new PCS 7 Basis Library replaces the existing library when you update PCS 7.

6.2 PCS 7 Library V71

Table 6-2

Library	Block no.	Block name	Version	Supports delta loading
PCS 7 Library V71	FB51	PT1_P	6.10	✓
	FB127	CH_CNT	6.10	✓

Notes The new PCS 7 Library replaces the existing library when you update PCS 7.

6.3 Advanced Process Library (APL)

The delta compilation and delta load are retained for the update from APL V7.1 SP4 to V7.1 SP5.

More information on changing the blocks is available in the document "PCS 7 Advanced Process Library V7.1 – Readme".

The table below gives you an overview of the blocks that have been changed compared with the previous version.

Changing the Blocks of the APL

Table 6-3

Library	Block no.	Block name	Version	Supports delta loading
APL V7.1 SP5	FB1804	Average	1.2	✓
	FB1805	ConPerMon	1.3	✓
	FB1806	CountScL	1.3	✓
	FB1808	Derivative	1.2	✓
	FB1809	DoseL	1.3	✓
	FB1810	TimerP	1.1	✓
	FB1811	Event	1.2	✓
	FB1812	EventTs	1.3	✓
	FB1813	FbAnIn	6.3	✓
	FB1814	FbAnOu	6.2	✓
	FB1818	FmCont	6.4	✓
	FB1819	FmTemp	6.4	✓
	FB1823	Integral	1.3	✓
	FB1824	Intlk02	1.3	✓

Library	Block no.	Block name	Version	Supports delta loading
	FB1825	Intlk04	1.3	✓
	FB1826	Intlk08	1.3	✓
	FB1829	Limit	1.1	✓
	FB1843	ModPreCon	1.3	✓
	FB1845	MonAnL	1.3	✓
	FB1847	MonDi08	1.4	✓
	FB1848	MonDiL	1.4	✓
	FB1850	MotL	1.4	✓
	FB1851	MotRevL	1.4	✓
	FB1854	MotSpdCL	1.4	✓
	FB1856	MotSpdL	1.4	✓
	FB1864	CountOh	1.3	✓
	FB1865	OpAnL	1.3	✓
	FB1866	OpDi01	1.3	✓
	FB1867	OpDi03	1.3	✓
	FB1868	OpTrig	1.2	✓
	FB1869	Pcs7AnIn	6.3	✓
	FB1870	Pcs7AnOu	6.2	✓
	FB1874	PIDConL	1.3	✓
	FB1875	PIDConR	1.3	✓
	FB1877	PIDKernR	1.1	✓
	FB1878	PIDStepL	1.3	✓
	FB1883	Ratio	1.3	✓
	FB1888	SelA16In	1.2	✓
	FB1896	VlvAnL	1.3	✓
	FB1897	Vlv2WayL	1.4	✓
	FB1899	VlvL	1.4	✓
	FB1900	VlvMotL	1.4	✓
	FB1903	AV	1.3	✓
	FB1904	EventNck	1.2	✓
	FB1906	TotalL	1.0	New!
	FB1910	MotS	1.0	New!
	FB1911	VlvS	1.0	New!
	FB1912	MonAnS	1.0	New!
	FB1913	MonDiS	1.0	New!
	FB1914	ShrdResS	1.0	New!
	FC351	Add04	1.2	✓

Library	Block no.	Block name	Version	Supports delta loading
	FC352	Add08	1.2	✓
	FC358	Div02	1.2	✓
	FC360	Mul04	1.2	✓
	FC361	Mul08	1.2	✓
	FC381	Sub02	1.2	✓
	FC385	RedAn02	1.0	New!
	FC386	RedDi02	1.0	New!
	FC387	CompAn02	1.0	New!
	FC388	XOr04	1.0	New!
	FC389	FlipFlop	1.0	New!
	FC391	SelD02In	1.0	New!

Changing the Faceplates of the APL

With the new "Advanced Process Library V7.1 SP5", all of the block icons and faceplates have been changed. For additional information about the changes, refer to the "APL Faceplate Readme", sections 5.13 to 5.15.

6.4 SFC Library

Table 6-4

Library	Block no.	Block name	Version	Supports delta loading
SFC Library	FB245	@SFC_BZL	7.0	✓

6.5 RC Library V7.1 SP2

Table 6-5

Library	Block no.	Block name	Version	Supports delta loading
RC Library V7.1 SP2	FB800	RC_IF_ROUTE	7.1	✓
	FB801	RC_ROUTE	7.1	✓
	FB803	RC_ROUTE_RCE_ON	7.1	✓
	FB804	RC_ROUTE_RCE_OFF	7.1	✓

Library	Block no.	Block name	Version	Supports delta loading
	FB805	RC_ROUTE_TIME	7.1	✓
	FB806	RC_ROUTE_XC_SEND	7.1	✓
	FB807	RC_ROUTE_STATE_OS	7.1	✓
	FB809	RC_ROUTE_STATES	7.1	✓
	FB810	RC_TIME_RCE	7.1	✓
	FB812	RC_TG34_TG36	7.1	✓
	FB813	RC_TG36	7.1	✓
	FB815	RC_ResPosV5	7.1	New!
	FB816	RC_ROUTE_XC_SND_ORDER	7.1	✓
	FB817	RC_ROUTE_XC_PE_ACTV	7.1	✓
	FB818	RC_ROUTE_GET_EXT_PE	7.1	✓
	FB821	RC_IF_REMOTE_CE	7.1	✓
	FB827	RC_CE_COMMON	7.1	✓
	FB828	RC_IF_LE	7.1	✓
	FB832	RC_XC_REMOTE_SEND	7.1	✓
	FB834	RC_XC_REMOTE_RECV	7.1	✓
	FB843	RC_IF_REMOTE_PE	7.1	✓
	FB845	RC_IF_SENSOR	7.1	✓
	FB846	RC_IF_CONDUCT	7.1	✓
	FB847	RC_SE_COMMON	7.1	✓
	FB850	RC_IF_CFG	7.1	✓
	FB852	RC_MASTER_FUNC	7.1	✓
	FB854	RC_ROUTEMASTER	7.1	✓
	FB856	RC_MASTER_BUFFER	7.1	✓
	FB858	RC_MASTER_XC_SND	7.1	✓
	FB879	RC_TIME_DELTA	7.1	✓
	FC804	RC_KERNEL_CALL	7.1	✓
	FC810	RC_PE_COMMON	7.1	✓
	FC811	RC_TG34_03	7.1	✓
	FC836	RC_MAT	7.1	✓
	DB100	RC_CFG	7.1	✗