

CODESYS 3.5 project update

[Update of a CODESYS project to a higher device version]

Detailed description

This HowTo document explains the necessary steps to update an existing CODESYS v3.5 project to a new device version. In this case here the CODESYS runtime on the device has been updated to a newer Service Pack version. That requires of course also a new CODESYS Package and a new CODESYS programming environment version.



Keywords

CODESYS, Package, DeviceDescription, Project update, Migration, new Version

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1. General information

1.1 Revision history and changes

Revision	Date	Author	Changes
0.10	07.03.2018	M. Ingenerf	Initial version
0.20	08.03.2018	M. Ingenerf	Feedback added, changes in chapter 2
1.00	27.03.2018	M. Ingenerf	Further feedback added, final version

1.2 Specifications

1.2.1 Hardware

List of used Hardware and their firmware versions.

Part no.	Type	Revision	Comment
6827393	BL20-PG-EN-V3	v1.1.5.0	This is the firmware version with the new CODESYS runtime

1.2.2 Software

- CODESYS Programming environment v3.5.8.10 (SP8 Patch1)
- CODESYS Programming environment v3.5.12.10 (SP12 Patch1)
- PG-V3 Package "BLxx-PG-EN-V3_V1.0.5.0.package"
- PG-V3 Package "BLxx-PG-EN-V3_V1.1.5.0.package"

2. Update process description

2.1 Introduction

This HowTo describes the project update of an existing CODESYS 3.5.8.10 project to the new CODESYS version 3.5.12.10. using the example of the BL20-PG-EN-V3. In case of the BL20-PG-EN-V3 the Package has changed from version 1.0.5.0 (firmware v1.0.7.0) to version 1.1.5.0.

Here is a general firmware version overview:

Material	Type	old FW SP6/SP8	new FW SP11/SP12
6814018	TBEN-L5-PLC-10	v1.0.3.0	V1.1.4.0
100000272	TBEN-L5-PLC-11	v1.0.3.0	V1.1.4.0
6814019	TBEN-L4-PLC-10	v1.0.3.0	V1.1.4.0
100000273	TBEN-L4-PLC-11	v1.0.3.0	V1.1.4.0
6827394	BL67-PG-EN-V3	v1.0.7.0	V1.1.5.0
100000041	BL67-PG-EN-V3-WV	v1.0.7.0	V1.1.5.0
6827393	BL20-PG-EN-V3	v1.0.7.0	V1.1.5.0
6827398	BL20-PG-EN-V3-WV	v1.0.7.0	V1.1.5.0
6814120	TBEN-L5-4RFID-8DXP-CDS	v1.0.1.0	V1.1.4.0
6814121	TBEN-L4-4RFID-8DXP-CDS	v1.0.1.0	V1.1.4.0
100000960	TBEN-L5-4RFID-8DXP-CDS-WV	-/-	V1.1.4.0

Turck has prepared a script for the BLxx-PG-EN-V3 gateways for CODESYS which executes the migration in the CODESYS project to the new device and package version within the new CODESYS v3.5.12.10 programming environment. Such a script is not required to update the projects of the TBEN-Lx-PLC or the TBEN-Lx-4RFID CODESYS modules.

2.2 Requirements

These are the requirements to do the project update.

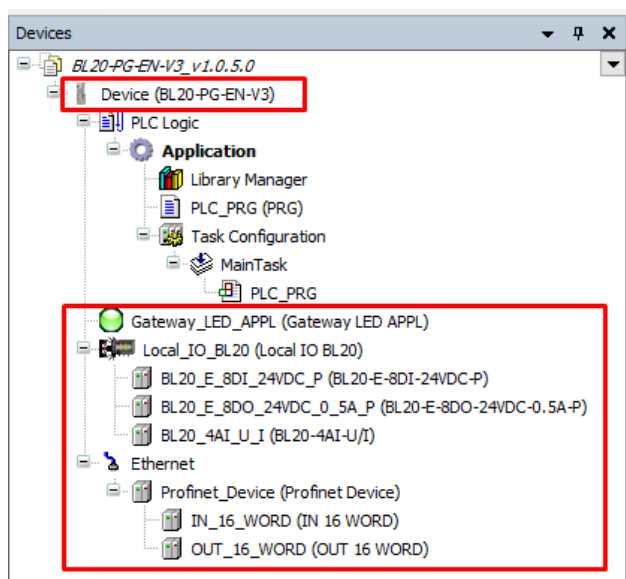
1. The PC has already the CODESYS programming environment version 3.5.8.10 and the PG-V3 package version 1.0.5.0 installed. The old package is only required for the update of PG-V3 projects using a script. It is not necessary for the TBEN-L-PLC or the 4RFID CODESYS module.
2. The new CODESYS programming environment version 3.5.12.10 needs to be installed on the same PC
3. The new CODESYS package v1.1.5.0 must be installed within the Package Manager of the programming environment version 3.5.12.10

4. Optionally:

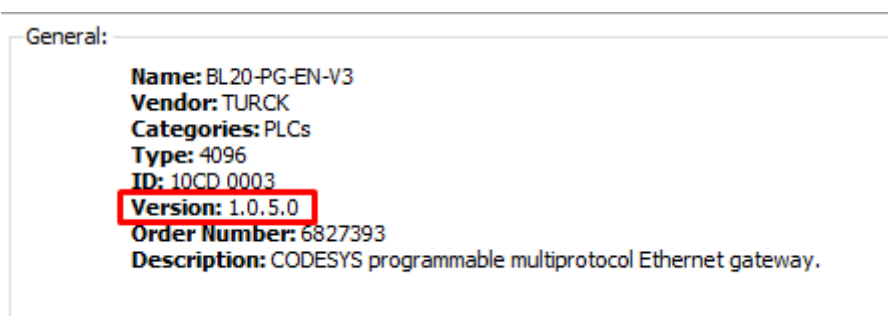
If the CODESYS programming environment version 3.5.8.10 is not installed on this PC, also the PG-V3 package version 1.0.5.0 has to be installed within the Package Manager of the programming environment version 3.5.12.10. The old package is only required for the update of PG-V3 projects using a script. It is not necessary for the TBEN-L-PLC or the 4RFID CODESYS module.

2.3 What needs to be updated?

Most of the nodes in the project tree have an independent version. Each node can and must be updated separately. But not every node gets always a new version with each new package.



To check the current version of a device node double click it to open the device information window. There is always one tab called "Information" which shows among other things the current "Version".



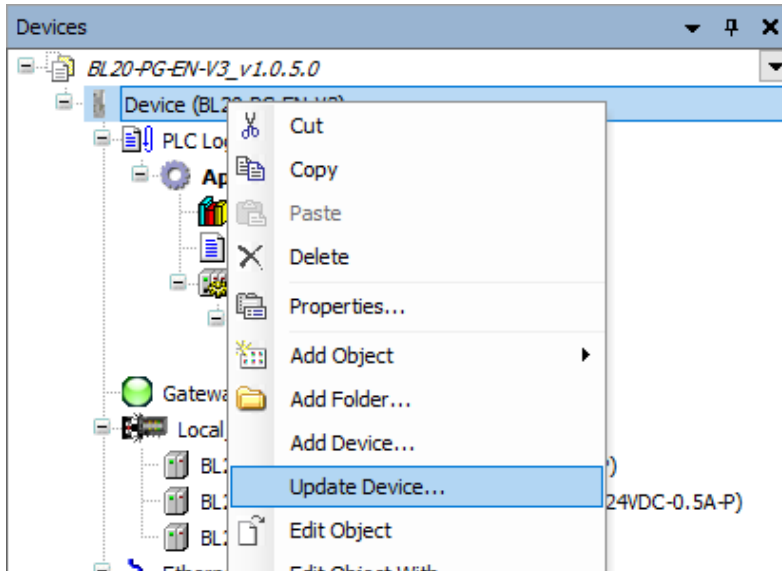
This example shows a part of the "Information" tab of the device itself which is the second node in the project tree shown in the project tree above.

Attention:

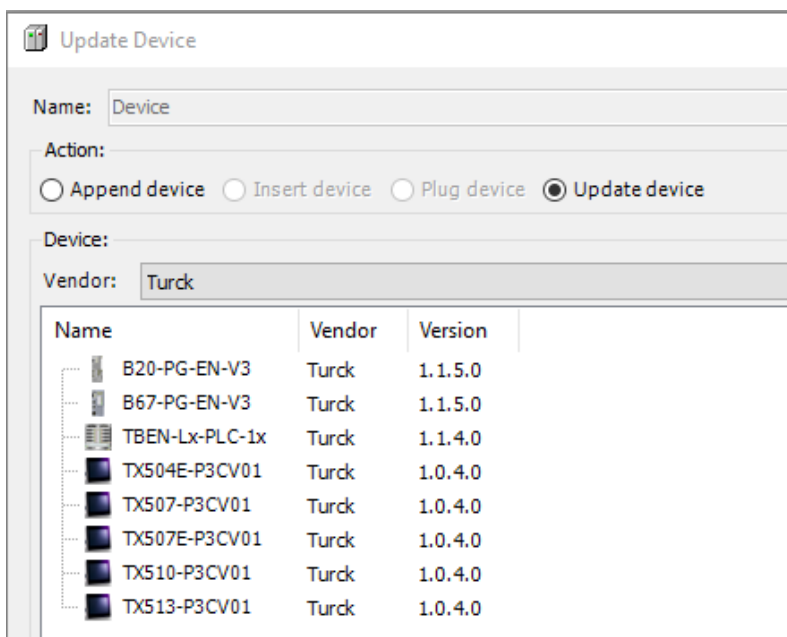
If you start updating the nodes to the new version start always with the PLC device itself. All nodes below may depend on the version of the PLC device!

2.4 How can I update a node/device?

If you do a right mouse click on the node in the project tree there is one option called “Update device...”.



If you execute the “Update device...” property a dialog window with a device list will show up.



This list shows per default always and only the newest version of each device. If you would like to downgrade a device you have to enable the check box “Display all versions (for experts only)” first.

Select the version you would like to change or upgrade to and push the button “Update Device”. This mechanism is also used to convert a project to a different PLC type.

2.5 Update to the new device version

The standard way is to update the nodes manually by using the “Update device...” feature described in the previous chapter. In some cases Turck supports the project update with a CODESYS script. For the PG-V3 devices, the script for the project update should always be used. With an update without a script, project contents (data mapping, fieldbus nodes) can be lost.

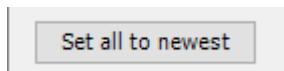
Both ways are described in the following two chapters.

2.5.1 Standard update manually

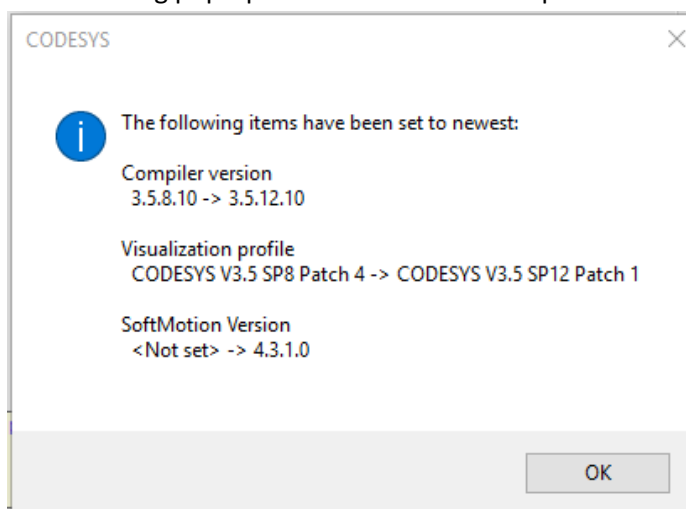
These are the steps to update a CODESYS project to a new device version.

1. Open the existing CODESYS project (in this example v3.5.8.10) with the new programming environment version (here v3.5.12.10).

2. Push the button “Set all to newest”

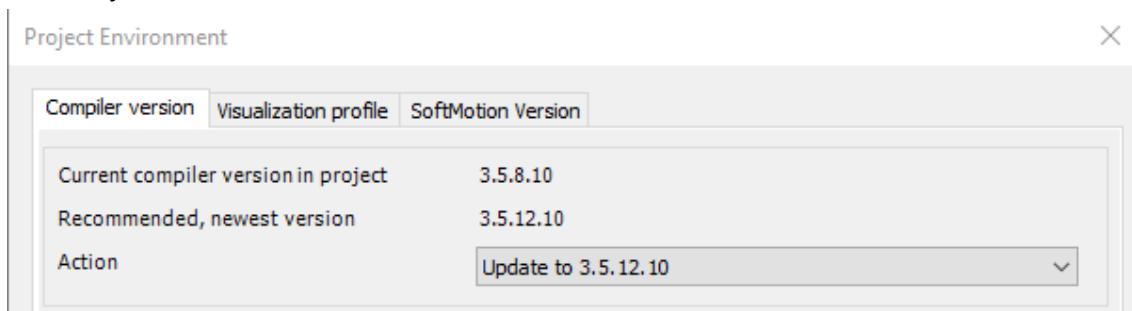


3. The following pop-up window should show up



Confirm with the “OK” button.

4. The “Project Environment” window should now look like this:



Confirm again with the “OK” button.

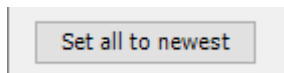
- Now you have to update all nodes manually and top-down to the newest version as described in the previous chapter. Start always with the top level project node "Device". Sub-Nodes are independent and have to be updated separately.

2.5.2 Update with a CODESYS script

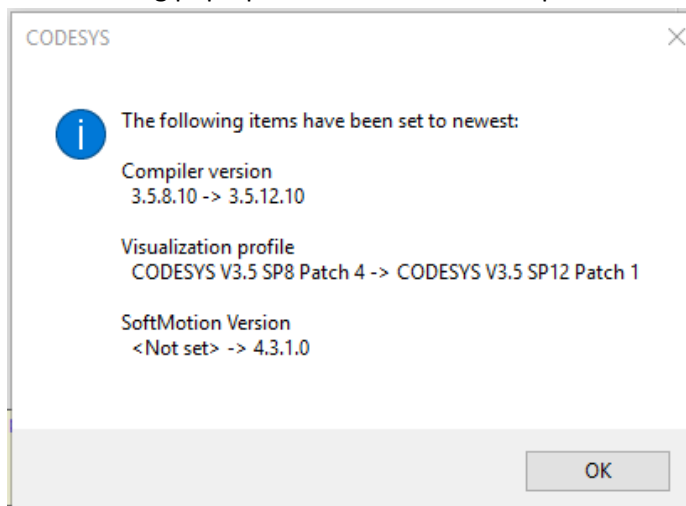
These are the steps to update a CODESYS project to a new device version using a script.

- Open the existing CODESYS project (in this example v3.5.8.10) with the new programming environment version (here v3.5.12.10).

- Push the button "Set all to newest"

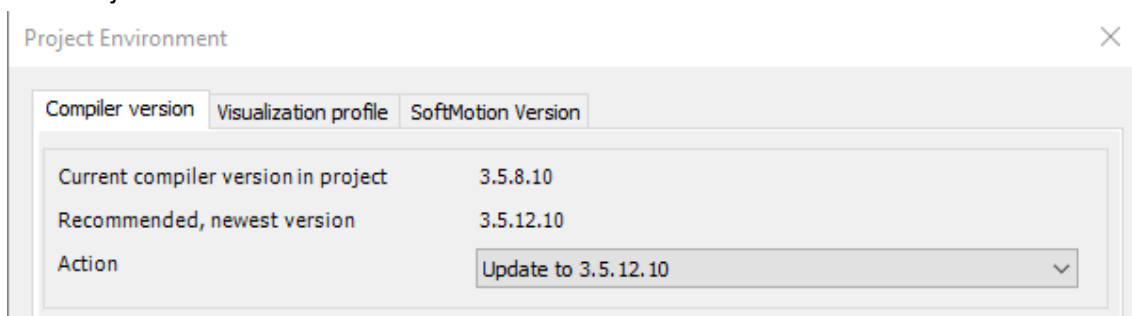


- The following pop-up window should show up



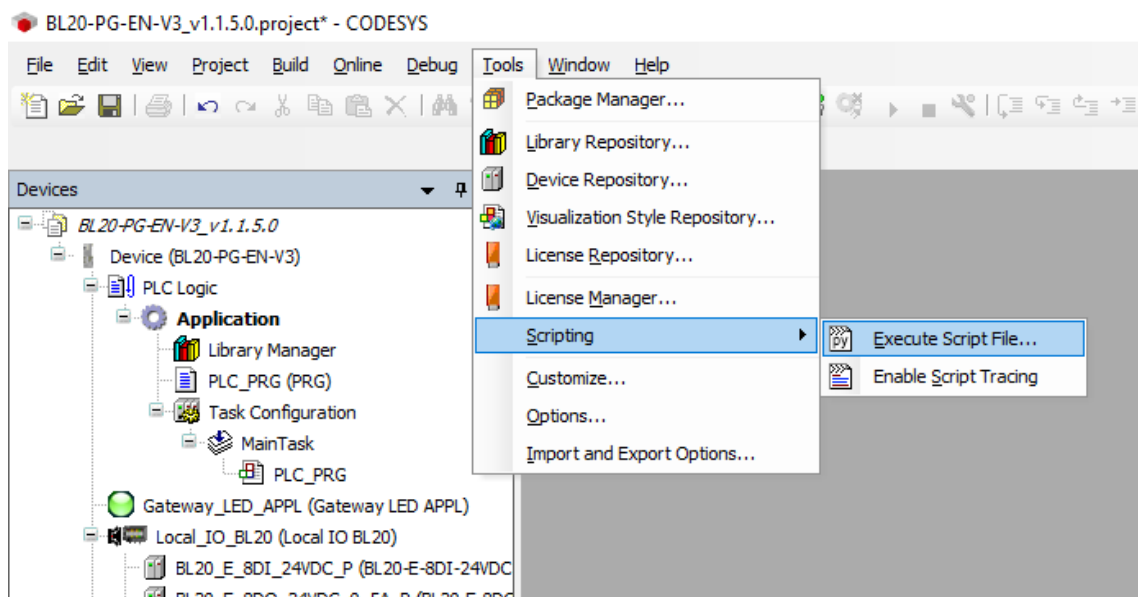
Confirm with the "OK" button.

- The "Project Environment" window should now look like this:

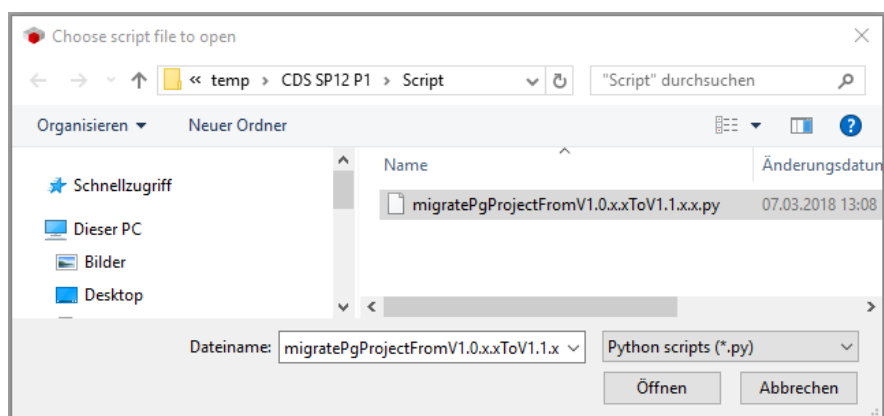


Confirm again with the "OK" button.

- The migration script can be executed now.

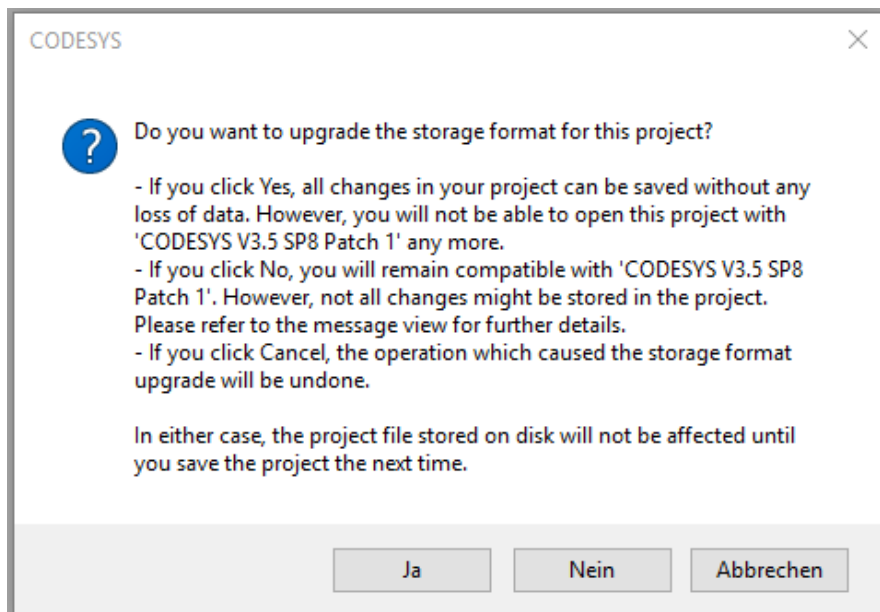


The following dialog window will show up after executing the property “Execute Script File...”

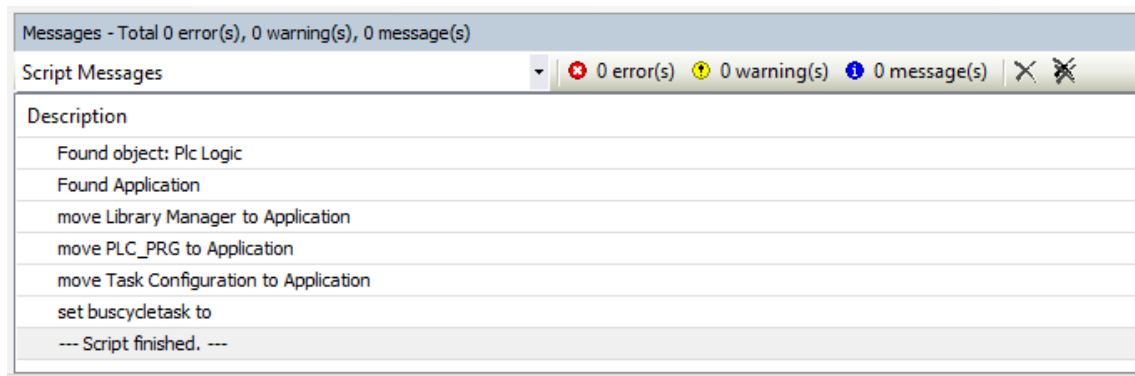


Browse to the folder where the script has been saved and push the button “Open” to execute the script.

The CODESYS script will update all main devices of the project tree to the correct new version.



The following window will show up, confirm with the button “Yes” to continue the migration. The migration script is finished, when you get the message in CODESYS.



6. Update sub nodes below “Ethernet”

These nodes may not be processed by the migration script and need to be updated manually:

- Update project node(s) for Modbus Slaves / PROFINET or Ethernet/IP Devices (if the GSDML Interpreter has changed)
- This applies to PROFINET or EIP devices only if the GSDML requires an update

2.6 Additional information

Here are some additional information.

1. Unfortunately the migration does not save the IP-address, in case you set it under the device.
The setting of the IP-address needs to be done manually.
2. If required, import users and groups manually
On top of that the migration script does not transfer the user and the groups. So the best way is to export your users and groups and import the data after the migration.

