Operating System Update with WinCC flexible

WinCC flexible 2008

FAQ · October 2011
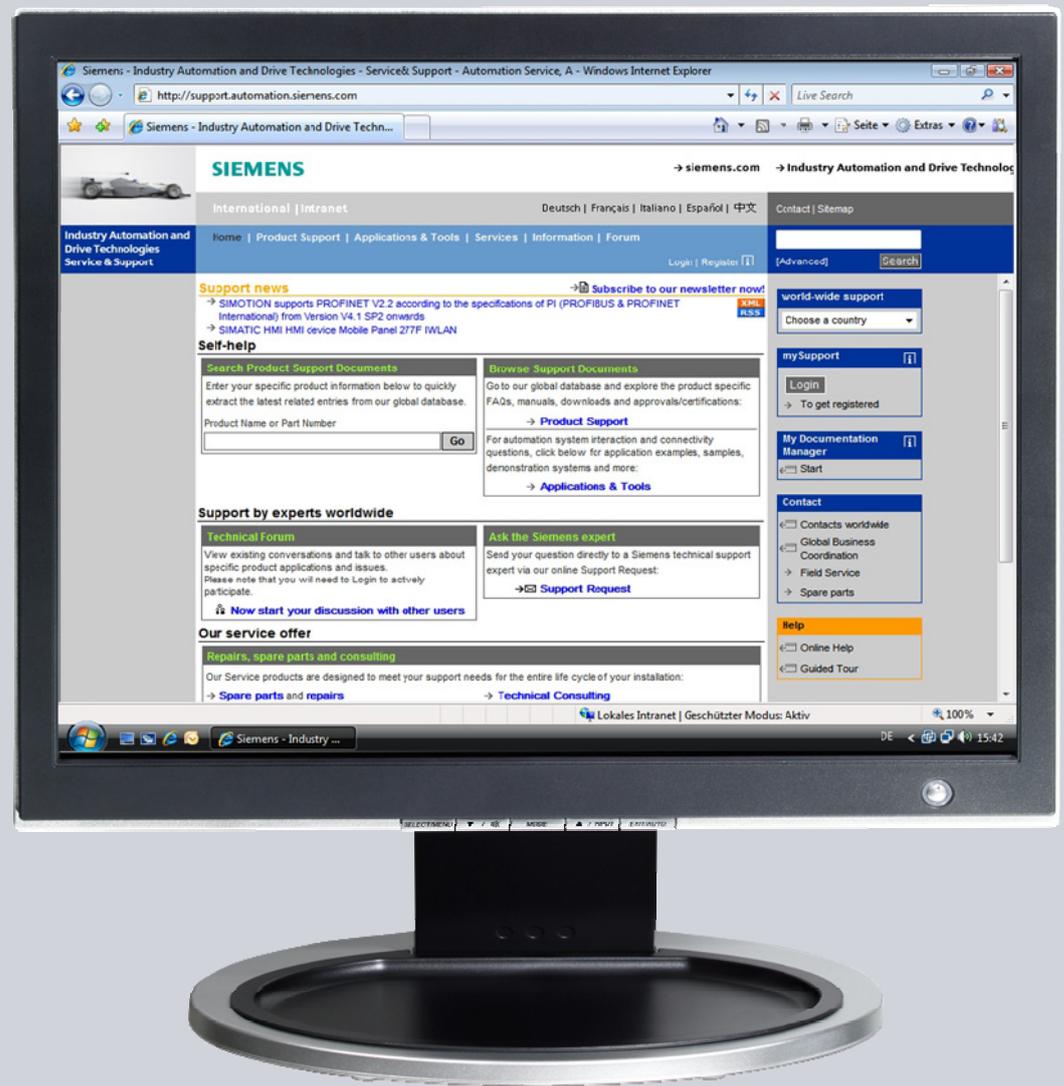
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Question

How do you do an operating system update (OS update) on operator panels with WinCC flexible?

Answer

Follow the instructions and notes listed in this document for a detailed answer to the above question.

Contents

1 Operating System Update with WinCC flexible

Below is a summary of how to do an operating system update (OS update) with WinCC flexible.

- The operating system of the operator panel depends on the version of WinCC flexible used.
  You should do always do an operating system update whenever the operating system of the operator panel does not match the software version used.
  Information about this is described in section 1.1.

- If no operable operator panel image exists on the operator panel,
  you can only update the operating system by means of a reset to factory settings.
  Information about this is described in sections 1.2 and 1.3.

- If you have questions on establishing the connection or problems with the operating system update, please refer to chapters 2 and 3.

Notes	Updating the operating system deletes all the data on the operator panel.
	Therefore, first make a backup of the data below: (using ProSave or Automation License Manager, for example)
	• User management.
	• Recipes.
	• Licenses (if you reset the operating system to the factory settings. Information about this is available in Entry ID: 27005215.)

1.1 Operating System Update (OS Update)

If you use WinCC flexible 2008 SP1 or higher to transfer a project to an operator panel on which an incorrect version of the operating system is installed, WinCC flexible recognizes this immediately.

You get a message via which you can do the operating system update automatically.

Please proceed as follows to perform an operating system update "manually".

Table 1-1

No.	Procedure
1.	**Back up data:** Updating the operating system deletes all the data on the operator panel. Therefore, first make a backup of the data below, with ProSave, for example: • User management. • Recipes.
2.	**Set the PG/PC interface:** • In the SIMATIC Manager, you select the menu command "Tools > Set PG/PC Interface...". • There you set the interface parameters used, CP5512 (PROFIBUS), for example.
3.	**Make transfer settings on the operator panel:** Make the corresponding transfer settings on the operator panel and then switch the operator panel to Transfer mode.
4.	**Establish cable connection:** Connect the operator panel to the PG/PC with an appropriate connection cable (according to the transfer setting selected).
5.	**Configure WinCC flexible:** Open the WinCC flexible configuration.
6.	**Set transfer mode:** • In the WinCC flexible menu bar, select the menu "Project > Transfer > Transfer settings...". Make the following settings in the dialog displayed. • Then click the "**Apply** button".

No.	Procedure
7.	**Update the operating system:** • In the WinCC flexible menu bar, select the menu "Project > Transfer > Update operating system...". (Project > Transfer > OS update...). • The "**SIMATIC ProSave [OS Update]**" dialog opens. - The path with the image of the operating system is already preinstalled. (You can also choose a different path for the image of the operating system). - ProSave automatically adopts the transfer settings you made in Point 5. • Click the "**Device status**" button. A connection is established between "ProSave" and the "operator panel". • After the connection has been established successfully, the current image version of the operator panel is displayed. Click on the "**Update OS**" button. The operating system update is started. **Note:** Make sure that the correct image path is set. (See also section 2.2)
8.	**Transfer the project:** After updating the operating system, the operator panel switches to "Transfer Mode". Now you can transfer the configuration. **Note:** For Touch operator panels, you should calibrate the screen beforehand under "Control Panel > OP > Touch".

1.2 Resetting the Operating System to the Factory Settings (Booting)

Proceed as follows to reset an operator panel to the factory settings.

Notes	If you reset the operating system to the factory settings, you cannot use all the communication connections and cables. Information on which cable you can use for which operator panel is available in section 2.1.2.

If "Ethernet" is preset as transfer type for booting, then refer to section 1.3.

Table 1-2

No.	Procedure
1.	**Back up licenses and authorizations:** Before resetting your operator panel to the factory settings, make sure that there are no licenses or authorizations on the operator panel. Information about this is available in Entry ID: 27005215
2.	**Set the PG/PC interface:** For the "Reset to factory settings" function, the only setting you have to make in the PG/PC interface is for the transfer type "Ethernet" (see section 1.3).
3.	**Make transfer settings on the operator panel:** No transfer settings need to be made on the operator panel.
4.	**Operator panel power supply:** Switch off the power supply for the operator panel.
5.	**Establish cable connection:** Connect the operator panel to the PG/PC with an appropriate connection cable
6.	**Configure WinCC flexible:** Open the WinCC flexible configuration.
7.	**Set transfer mode:** • In the WinCC flexible menu bar, select the menu "Project > Transfer > Transfer settings...". • Make the relevant settings in the dialog window displayed.

No.	Procedure

8.	**Reset to the factory settings:**
	
	• In the WinCC flexible menu bar, select the menu "Project > Transfer > Update operating system...". (Project > Transfer > OS update...). The "**SIMATIC ProSave [OS Update]**" dialog opens.
	    - The path with the image of the operating system is already preinstalled. (You can also choose a different path for the image of the operating system).
	    - ProSave automatically adopts the transfer settings you made in "Point 7".
	• Check the "**Reset to factory settings**" option or "Boot" (in earlier versions of ProSave).
	• Click on the "**Update OS**" button.
	    - If you have specified "Ethernet" as the connection parameter, then you also enter the "MAC address" of the operator panel here.
	• Click "**Update OS**" button and depending on the operator panel used...
	    - A dialog window opens with a safety note. Read the note. Acknowledge the message with "**Yes**" and you will be requested to reboot the operator panel.
	    - The connection to the operator panel starts to be established. Read the note. If necessary, you can abort the action with the "**Cancel**" button.
	• Switch the operator panel's power supply on again. The operator panel is reset to the factory settings.
	
	Note:
	If the "Reset to factory settings" check box is not displayed, refer to section 3.2.

9.	Depending on the operator panel used, after transfer of the data, "ProSave" requests you to reboot the operator panel (switch off and on). The operator panel then performs additional installation steps.
10.	**Transfer the project:** After completion of the installation, the "Control Panel" is displayed on the operator panel. For a subsequent project transfer, you first make the required transfer settings on the operator panel. For Touch operator panels, you should calibrate the screen beforehand under "Control Panel > OP > Touch". Now you can transfer the configuration.

1.3 Resetting the Operating System to the Factory Settings via Ethernet Connection

Below we take the example of an MP 377 Touch to show how to reset an operator panel to the factory settings via Ethernet.

Notes

MP 377 operator panels with the Image version installed for WinCC flexible 2008 and higher (Image version as from V01.00.02.00_01.83) have the parameter "Prepare for Reset".

More information on this is available in
Entry ID: 35677293.

Table 1-3

No.	Procedure
1.	**Back up licenses and authorizations:** Before resetting your operator panel to the factory settings, make sure that there are no licenses or authorizations on the operator panel. Information about this is available in Entry ID: 27005215
2.	**Set the PG/PC interface:** • In the SIMATIC Manager, you select the menu command "Tools > Set PG/PC Interface...". • Set the interface parameters used to "TCP/IP -> Your network card".
3.	**Make transfer settings on the operator panel:** No transfer settings need to be made on the operator panel.
4.	**MAC address of the operator panel:** To continue you need the MAC address of the operator panel. Please refer to section 2.3 to determine the MAC address.
5.	**Operator panel power supply:** Switch off the power supply for the operator panel.
6.	**Establish cable connection:** Connect the operator panel and the PG/PC using an Ethernet cable (cross-over or patch cable).
7.	**Configure WinCC flexible:** Open the WinCC flexible configuration.
8.	**Set transfer mode:** In the WinCC flexible menu bar, select the menu "Project > Transfer > Transfer settings..." and select "Ethernet" as the transfer type. Specify a unique IP address and then click the "**Apply**" button.

No.	Procedure

9.	**Reset to the factory settings:**
	
	• In the WinCC flexible menu bar, select the menu
	"Project > Transfer > Update operating system..."
	(Project > Transfer > OS update...).
	• The "**SIMATIC ProSave [OS Update]**" dialog opens.
	  - The path with the image of the operating system is already preinstalled.
	  (You can also choose a different path for the image of the operating system).
	  - ProSave automatically adopts the transfer settings you made in "Point 9".
	• Check the "**Reset to factory settings**" option or "Boot" (in earlier versions of ProSave).
	An input field is displayed for the MAC address.
	• Enter the operator panel's "MAC address".
	Refer to section 2.3 for how to determine the MAC address.
	• Click on the "**Update OS**" button.
	You will then receive a security warning.
	Read the note. Acknowledge the message with "**Yes**" and you will be requested to reboot the operator panel.
	• Switch the operator panel on again.
	
	Note:
	• If the "Reset to factory settings" check box is not displayed, refer to section 3.2.
	• Make sure that the correct image path is set. This applies, in particular, if multiple Engineering Systems
	like ProTool, WinCC flexible or WinCC (TIA Portal), for example, are installed jointly on your computer. (See also section 2.2).

10.	**Transfer the project:** After completion of the installation, the "Control Panel" is displayed on the operator panel. For a subsequent project transfer, you first make the required transfer settings on the operator panel. For Touch operator panels, you should calibrate the screen beforehand under "Control Panel > OP > Touch". Now you can transfer the configuration.

2 Additional Information

2.1 Cable Connection between PC and Operator Panel

2.1.1 Operating System Update

When performing an operating system update, you can use all the communication connections supported by your operator panel.

2.1.2 Resetting the Operating System to the Factory Settings (Booting)

If you reset the operating system to the factory settings, you cannot use all the communication connections and cables.

Information about this is given in the table below.
The settings were made in ProSave version V9.0.0.0.

Table 2-1

Operator panel	RS 232 Zero modem cable	RS232/PPI Multi-master cable	USB/PPI Multi-master cable	PN PtP Cross	PN Ethernet
	6ES7 901-1BF00-0XA0	6ES7 901-3CB30-0XA0	6ES7 901-3DB30-0XA0	6XV1 870-3RH20 *^{1})	Standard Ethernet CAT5
C7-635 OP / TP	X	--	--	--	--
C7-636 Key / Touch	X	--	--	--	--
OP 73 micro	--	X	X	--	--
OP 73	--	X	X	--	--
OP 77A	--	X	X	--	--
OP 77B	X	--	--	--	--
TP 170 micro	--	X	--	--	--
TP 170A	X	--	--	--	--
OP 170B	X	--	--	--	--
TP 170B	X	--	--	--	--
TP 177 micro	--	X	X	--	--
TP 177A	--	X	X	--	--
TP 177B PN/DP	--	X	X^{*2})	--	--
TP 177B mono DP	--	X	X^{*2})	--	--
TP 177B 4" color PN/DP	--	--	--	X	X
OP 177B PN/DP	--	X	X^{*2})	--	--

Operator panel	RS 232 Zero modem cable	RS232/PPI Multi-master cable	USB/PPI Multi-master cable	PN PtP Cross	PN Ethernet
OP 177B mono DP	--	X	X^{*2})	--	--
OP 270	X	--	--	--	--
OP 277	--	X	X^{*2})	--	--
TP 270	X	--	--	--	--
TP 277	--	X	X^{*2})	--	--
MP177	--	X	X^{*2})	--	--
MP 270	X	--	--	--	--
MP 277	--	X	X^{*2})	--	--
MP 370	X	--	--	--	--
MP 377	--	--	--	X	X
Mobile Panel 170	X	--	--	--	--
Mobile Panel 177 DP	--	X	X^{*2})	--	--
Mobile Panel 177 PN	--	X	X^{*2})	--	--
Mobile Panel 277	--	X	X^{*2})	--	--
Mobile Panel 277 IWLAN	--	--	--	X	X
Mobile Panel 277F IWLAN	--	--	--	X	X
KTP400 Basic mono PN	--	--	--	X	X
KTP600 Basic DP	--	X	X	--	--
KTP600 Basic PN	--	--	--	X	X
KTP600 Basic mono PN	--	--	--	X	X
KTP1000 Basic DP	--	X	X	--	--
KTP1000 Basic PN	--	--	--	X	X
TP1500 Basic PN	--	--	--	X	X

^{*1}) For the RS232/PPI multi-master cable you set DIP switches 1 to 3 according to the baud rate selected in ProSave.
DIP switches 4 to 8 must all be set to ZERO.

^{*2}) With this cable connection you cannot deselect the "Reset to factory settings" option.

2.2   Set the Image Path / File in ProSave

In the following cases, you must change the image path or the image file accordingly.

1.   After you have set the ProTool image path for the operator panel displayed, you must set the image path for
     WinCC flexible if you now wish to use the same operator panel in WinCC flexible.

2.   If you need an earlier version of Image than the one currently displayed.

| **Notes** | • | The image path setting is device-related. The setting is retained for the selected panel type after ProSave is closed. |
| | • | Beforehand, make sure that the correct Image path is set. This applies, in particular, if, for example, WinCC flexible and ProTool are installed jointly on your computer. |

In order to set the image path in ProSave, click the button to the right of the image path and browse through the folder tree to specify the folder path in which the image files are located.

In the folders you find the image files required for the respective operator panel.

Figure 2-1
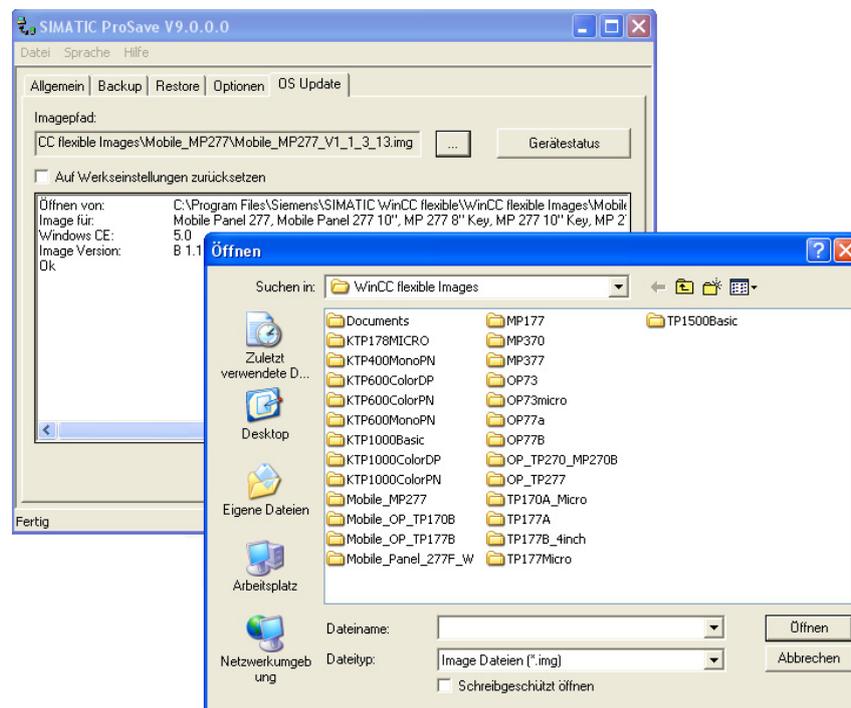
Sample image path in WinCC flexible

C:\Program Files\Siemens\SIMATIC WinCC flexible\WinCC flexible Images\Operator Panel\xxxxx.img

Notes	The Image version of the operator panels depends on the version of WinCC flexible used.
	Information about how these are interrelated is available at this link: http://support.automation.siemens.com/WW/view/de/28263711

2.3   Determining the MAC Address

You can determine the operator panel's MAC address as follows.

- The MAC address is printed on the back of the operator panel
  (for example, MAC-ADD.: 00-0E-8C-F8-6A-18).

- When you switch on the operator panel, the MAC address is displayed during startup.

- Via the "Control Panel" of the operator panel.
  In the Control Panel you open the "**OP**" dialog and select the "**Device**" tab.
  In this tab you find the device-specific data, like the MAC address.

3 Problem Analysis

3.1 Disconnected Connection when Using the RS232/PPI Multi-Master Cable

If the connection is disconnected when updating the operating system, set a lower bit rate.

If you are using high bit rates, then you must implement the RS232/PPI multi-master cable with "E-Stand 03" (development status 03) or higher.

3.2 Check Box Not Available in ProSave

If the "Reset to factory settings" check box is not displayed, then recheck the connection settings made (Link). It is possible that the operator panel does not support the transfer type required for this option.

Refer here to Table 2-1 under point 2.1.2.

3.3 Check Box Cannot be Deselected in ProSave

If you use the "USB/PPI Multi-Master Cable" transfer type, then, depending on the system, on some operator panels it might not be possible to deselect the "Reset to factory settings" option.
In this case, you cannot make an operating system update (OS Update) using the cable, but can only do a reboot ("Reset to factory settings").

Refer here to Table 2-1 under point 2.1.2.

3.4 Error Message During the Transfer of the Configuration

You have changed the operating system of your operator panel and during transfer of the configuration you receive the message that the operating system version of the operator panel does not match the software version used.

In this case, prior to updating the operating system, check that the image path has been set correctly and that you have selected the correct image file. See section 2.2 for this.

Example of an error message in WinCC flexible

Figure 3-1

or in older versions of WinCC flexible

Figure 3-2
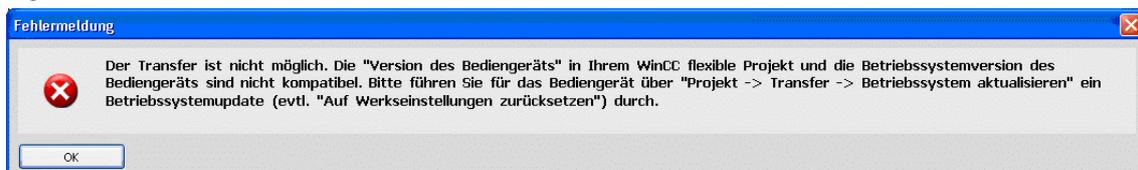
3.5 MP 377 "Reset to factory settings" (booting)

If the MP 377 operator panel cannot be reset to the factory settings, then check the Image version of the MP 377.

MP 377 operator panels with the Image version installed for WinCC flexible 2008 and higher (Image version as from V01.00.02.00_01.83) have the new parameter "Prepare for Reset".

In this case refer to Entry ID: 35677293.

3.6 A Connection to the Operator Panel Cannot be Established

Some points are given below, which you should check if no connection is established between the operator panel and the configuration computer.

3.6.1 Check transmission type and address on the operator panel

Compare the transfer settings on the operator panel with those on the configuration computer.

Example

Specification of configuration computer...

- Transfer via PROFIBUS
- Panel address 10

Make sure that "Panel is the only master on the bus" is checked for the transfer settings on the operator panel.

Figure 3-3
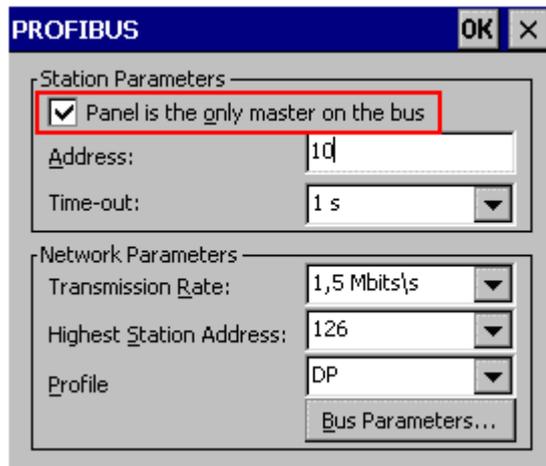
More information on the topic of "Transfer Settings" is available in Entry ID: 23802404

3.6.2 Check Cable Connection and Connector

MPI/PROFIBUS cable

Please check the points below.

- Cable connection between the operator panel and the configuration computer.
- Check the cable for damage.
- Bus connector especially the connection of the terminating resistors.
  - Terminating resistors ON/OFF.

The following guideline value applies:

- Bus terminating resistor OFF:
  - Bus connector with "two" cables connected.
- Bus terminating resistor ON:
  - Bus connector with "one" cable connected.

More information on the topic of "Bus terminating resistor" is available in Entry ID: 187276.

RS232/PPI multi-master cable

When using an "RS232/PPI multi-master cable", please note the switch settings.

More information on this topic is available in Entry ID: 16532946

Ethernet Cable

Use a "crossed" Ethernet cable for the connection between a PG/PC and an operator panel.

If you use a "patch" cable, you need a switch in addition.

Notes	Operator panels with two "Ethernet interfaces" have an integrated switch.

3.6.3   Check the PG/PC Interface on the Configuration Computer

Check the PG/PC interface on your configuration computer.

- In Windows XP
  - "Start > SIMATIC > SIMATIC NET > Set PG-PC interface".
- In STEP 7
  - "Menu bar: Tools > Set PG/PC interface..."

When setting the interface parameters in
MPI or PROFIBUS, make sure that the node address is set to "0".
We also recommend that you select the "PG/PC is the only master on the bus"
option.

Figure 3-4