

Preparations for iMX5 units – CCP VA/VC, XS/XA and XM2

Pre-condition:

The CODESYS RT must have been installed before running this update script, because it sets up (configures) the CODESYS environment in a proper way.

Step1: Update Codesys application on target device.

This information assumes that you are familiar with working in Codesys.

It covers the situation when you already have a working development environment and the runtime is already installed on the target unit. It is valid for all our displays (VC, VA and VS).

You have finished the development or update of your application in Codesys. The application changes have been downloaded and tested on your “development” display.

Step 2: Create Boot application:

1. Now you want to deploy the updated application to your other target display units, so you need to create a Boot Application.
2. Within the Codesys DevEnv, connect to the display you have in your office.
3. Select ‘Online → Login’. Make sure to check the option: ‘Login with download.’ Now the Codesys project will be built and re-loaded. But the application is stopped.
4. Move the application to ‘Run’ and verify that it is running (green).
5. Create a Boot application with the option: ‘Online → Create boot application’
6. The boot application has now been created and loaded to the display.

The next section describes how to create an automated way to update several displays with the same Codesys application. The files will be saved on an USB-stick and automatically installed when the USB is inserted in the display.

Step 3: Automatic installation from USB.

1. Connect and login to the development display with a terminal (ssh, PuTTY, KiTTY, etc) (Use user ‘root’ and password ‘suseroot’)
2. Move to the ‘/opt’ folder
Here you should find the folder: CoDeSysControl
This folder contains all Codesys-files from your Development project, if you followed the steps above.
(Note, you may also need to remove any User-specific files, like ‘Persistent Vars’, ‘User IDs’ etc, before compressing in the next step!)
3. Compress the CoDeSys-folder (use any name you want on the tar-file!).
Use the command:

```
$ tar -cf CODESYS_App.tar CoDeSysControl/
```

4. Copy any supporting files (non-Codesys) (optional)

Note! If you have a splash-screen (a certain image shown during boot), you may have to copy that to the new display.

More info in this link: <http://support.crosscontrol.com/kb/splash-screen>

5. Move/transfer tar-file from display to your PC

Use any tool you like to copy between the display unit and your PC (WinSCP, FileZilla etc)

Place it in an empty folder to see the files that will be your contents on the USB!

6. Write the auto script

The file can be created in Linux on the display itself, by using the editor 'nano'.

See link: <https://www.howtoforge.com/linux-nano-command/>

If creating the file on a PC:

Windows and Linux/Unix uses different EOL characters, so make sure you do this correctly!

Be sure to use a text-editor that will give the correct line-endings to the script-file!

If this is not correct, the script won't execute!!!

Example when using editor 'Notepad++':

Select this setting: 'Edit → EOL Conversion' and select 'UNIX/OSX Format'

7. Naming of the script

If starting from scratch, give the script the exact name of: `cc-auto.sh`

The Linux OS will look for this file name in the root-directory of the USB-stick, when it is inserted in the USB port. If it finds the script with the name 'cc-auto.sh', it will execute it!

Add the following to the script:

```
#!/bin/sh
# --- OPTION, display maximatecc logo
fbv /media/usb/logo.png &

# --- Install Codesys Application
cp /media/usb/CODESYS_App.tar /opt
cd /opt
tar -xf CODESYS_App.tar

# Turn off autostart of CC Settings screen
chmod -x /opt/etc/init.d/StartupGui

# Give time for copy to complete (10sec)
sleep 10

# Beep to indicate done. User should remove USB-stick at this point.
ccsettingsconsole --buzzer --frequency=1000 --volume=40 --status=enable
sleep 2
ccsettingsconsole --buzzer --frequency=1000 --volume=40 --status=disable

# --- OPTION, add splash screen

# Reboot your display
reboot
```

(NOTE! You need to change the name of the tar-file [CODESYS_App.tar] to the name you use!)

8. Move files to USB-stick

Move the files to the root-directory on an USB-stick. Note, it must be on the root-directory for the Linux-system to detect the cc-auto.sh file, when the USB is inserted.

There should be three files present in the folder, that you shall move to your USB-stick:

- cc-auto.sh (install script)
- <name of CodesysAppl>.tar (new Codesys application)
- logo.png (optional – only valid for imx5-units)

9. Plug the USB into the display you want to update

The update should start automatically and the “install screen” should be visible. When the display reboots, remember to remove the USB-stick!

Otherwise the Linux OS will then detect the USB again and find the ‘cc-auto.sh’ and start executing that all over again!

10. Check that the update was correct

Log in to your display and check with ‘ps’ that the Codesys RT is running and that your updated Codesys application has started.

You can also check that everything appears to correct in the folder: /opt/CoDeSysControl

If you have the possibility, try this on one of your own displays, before doing it on the field to be sure that the update is working correctly!

Also be aware of the fact, that if you turn of the autostart of the settings screen (StartupGui), you won’t be able to ‘see’ the IP address of the display! The advice is to set a static IP address on your unit so you will be able to find it and so you can connect to it!