CURT User Guide

Christ Update and Recovery Tool

Intended Use

The **C**hrist **U**pdate and **R**ecovery **T**ool can be used to recover the image on a device, when an error has occurred or if it is necessary to update the image.

Contents

Intended Use 1

Contents 1

1 Preparation 2

2 Perform The Update 3

3 Yocto Configuration 5

4 Migration 6

5 Linux Support 6

© Christ Electronic Systems GmbH

Oct. 2026, Revision 08
Document No.: PA10002483

CURT User Guide

Christ Update and Recovery Tool

1 Preparation

- A USB stick with partition table and FAT32 formatted first partition is required. Some USB sticks come from the factory without a partition table and are formatted directly. This can be recognized due to the fact that the first partition is e.g. /dev/sda and not /dev/sda1. If this is the case please repartition and format the USB stick.

- Copy the file **curt.itb** to the USB stick.
  The file is already located on the USB stick of the Evalkit or can be downloaded.
  Find the download links in chapter 4. Migration

INFORMATION!
The latest CURT now supports all platforms and display resolutions!

CAUTION!
If you want to update a rocko based image, please contact us for further information as you might not be able to boot CURT or brick your system! linux@christ-es.de

- Copy the image file to the USB stick.
  The name of the file must have following structure: *** image * -Vx.y.7z**
  Vx.y is configured in the image recipe like **PV="x.y"**.

  Example:
  ces-qt-demoimage-pixicdl100-20170404101200-V2.0.7z

  If the image was built with Yocto, then the image can be found under:
  tmp/deploy/pixi-cdl100/

INFORMATION!
If several image files are on the stick, the highest version is used. In the case of several identical versions, the selection is random.

2 Perform The Update

1. Plug the USB stick into the device

2. Activate recovery / update mode on the device.

   - **Webconfig:** The prefered way to initiate an update via CURT. For further information, please refer to the Webconfig manual.

   - **Recovery:** The device does not start the operating system. In this case, the recovery mode will be activated automatically.

   - **Update via Recovery:** The recovery mode is used for updating. Connect the device to the power supply and disconnect it after 1-2 seconds. This simulates a malfunction of the software and the automatic recovery mode is activated on the next boot.

   - **Update via Software Switch:** Two possible variants trigger the update process.
     The **correct method** for updating includes the following steps within the running system.
     Choose **variant 1** or **variant 2**. Variant 1 is only available in the latest releases.

     INFORMATION!
     Not every device inevitably contains this script (enable-update) for **Variant 1**.
     Variant 2 instead is supported by all devices.

     Variant 1
     Run the following command in the linux command-console (execute script):

     ```
     enable-update
     ```

     Finally restart the system.

     Variant 2 (if variant 1 is not available)
     Set the U-Boot variable **run_update** to **1** with the command (in linux command console):

     ```
     fw_setenv run_update 1
     ```

     Before this can be done the ReadOnly flag for the partition **/dev/mmcblk1boot0** must be set to **0**. For example with the following shell command:

     ```
     echo 0 >/sys/block/mmcblk1boot0/force_ro
     ```

     Finally set the write protection (ReadOnly flag) back to 1 and restart the system.

     Note:
     Not every device inevitably contains this script (enable-update) for **Variant 1**.
     Variant 2 instead is supported by all devices.

3. When CURT is ready it will select the image with the highest version and check it for consistency. The following picture shows CURT after the consistency check passed.

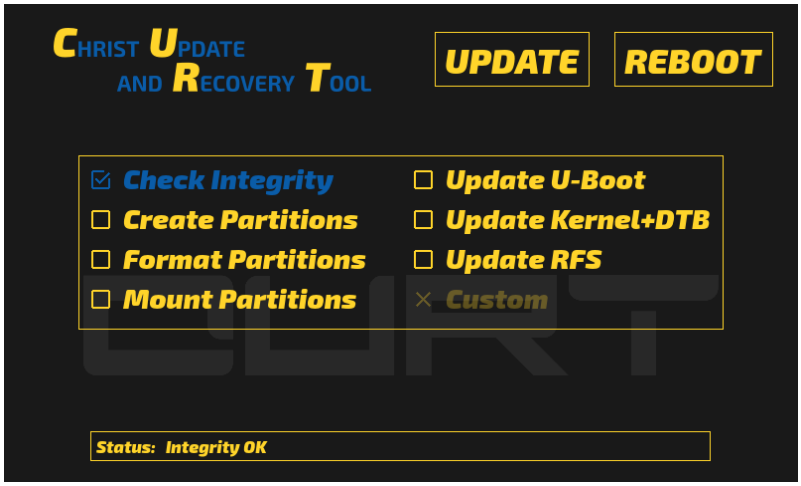

Figure 1: CURT after the integrity check

4. Click on **UPDATE** start the update process. Successfully completed tasks are indicated in blue with a check mark, a red cross indicates an error. Grayed out tasks with a cross were disabled in the update configuration. For more information see chapter **3 "Yocto Configuration"**. Figure 2 shows CURT after a successful update process.

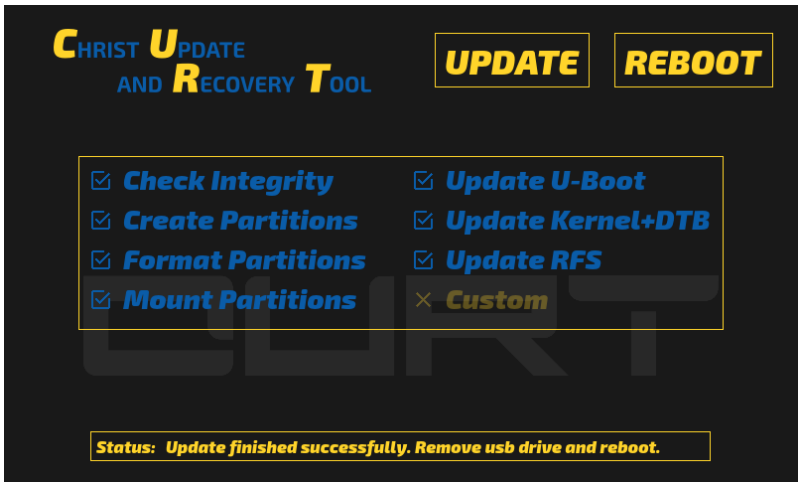

Figure 2: CURT after successful update

5. After a successful update remove the USB stick and click **REBOOT.**

INFORMATION!
In rare cases it might happen that CURT is not properly booting form cheap USB sticks. This is due to the USB implementation in the boot loader. In such a case try another USB stick.

3 Yocto Configuration

The creation of CURT compatible image is achieved by adding the following to the image recipe:

```
require recipes/images/christ-image-fstype.inc
```

In addition, the configuration of the update is controlled via two variables (achieved by adding the following variables to the image recipe):

- CHRIST_UPDATE_INCLUDE_UBOOT
  This flag determines whether the U-Boot is updated.

  CAUTION:
  Updating the bootloader increases the risk of permanent software damage. Update it only if necessary!

- CHRIST_UPDATE_INCLUDE_CUSTOM
  An additional script can be included with the "CHRIST_UPDATE_INCLUDE_CUSTOM" variable. Set it to 1 to execute the script as last task of the image update process. Here it is possible to set special parameters, update the touch firmware, perform initializations, etc.
  The default search path for custom.sh is in recipes/images/ or set a path to your custom script file via "CHRIST_UPDATE_CUSTOM_FILE".
  The script should return to CURT whether it was successful (custom=1) or not (custom=0).
  Example custom.sh:

```
#!/bin/sh

LOGFILE="/tmp/curt.log"

echo "[CURT.Custom]" >> $LOGFILE
echo "custom=1" >> $LOGFILE
echo "custom_script=end" >> $LOGFILE
```

INFORMATION!
For example recipes using CURT configuration options refer to our demo images at:
https://github.com/software-celo/meta-ces/tree/dunfell/recipes/images

4 Migration

The migration between different releases can be easily performed with CURT.
Please refer to the following table to select the correct CURT version.

Operation	CURT	Password
2.4 rocko → 3.4 honister 2.4 rocko → 3.1 dunfell 2.4 rocko → 2.7 warrior 2.4 rocko → 2.4 rocko	https://dataserv.christ-ag.com/s/AzPJCn3JHp6kPK9	curt2018
2.7 warrior → 3.4 honister 2.7 warrior → 3.1 dunfell 2.7 warrior → 2.7 warrior 2.7 warrior → 2.4 rocko	https://dataserv.christ-ag.com/s/fnqAYLHLNjq76ZQ	curt2019
3.1 dunfell → 3.4 honister 3.1 dunfell → 3.1 dunfell 3.1 dunfell → 2.7 warrior	https://dataserv.christ-ag.com/s/tFn2MfdfqAF8PJj	curt2020
3.4 honister → 3.4 honister 3.4 honister → 3.1 dunfell 3.4 honister → 5.0 scarthgap 5.0 scarthgap → 5.0 scarthgap	https://dataserv.christ-ag.com/s/YwHCsqWTjp3NzFF	curt2023!!

In case a version upgrade is performed, the bootloader must also be updated.

INFORMATION!
Version upgrade: No further action is necessary.

CAUTION:
Version downgrade: The U-Boot downgrade has to be manually triggered. For that, the tag "-cproduction" must be added to the image name. The tag must be added after the timestamp and before the version string.

Example:
ces-webconfig-image-pixi-cq100-20240609092956-cproduction-V14.0.7z"

5 Linux Support

E-Mail: linux@christ-es.de

Disclaimer

Technical data are subject to modification and delivery subject to availability. Any liability that the data and illustrations are complete, actual or correct is excluded. Designations may be trademarks and/or copyrights of the respective manufacturer, the use of which by third parties for their own purposes may infringe the rights of such owner.

Contact

Christ Electronic Systems GmbH
Alpenstraße 34
87700 Memmingen

Phone:
+49 8331 8371-0 (Main Office)
+49 8331 8371-500 (Service)

Mail:
info@christ-es.de

Homepage:
https://www.christ-es.com

© Christ Electronic Systems GmbH