

# BEST Update Utility User's Manual

CAENels s.r.l.

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## OVERVIEW

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**BEST** Update Utility is a tool to download new hardware and software images to **BEST** FPGA Card memory. New images can enable new features, improve system functionality, improve system performance and resolve problems or bugs.

At every power-up of the **BEST** Central Unit, an image is downloaded from Flash memory on FPGA Card to the FPGA. This tool allows to replace the image in Flash memory.

During the update process, this program first reads image header to get some information about the image. Then it erases Flash memory (Flash memory must be erased before writing). Afterwards, a new image can be written to Flash memory. Before finishing, program verifies written content and repair eventual errors in Flash memory. After update process has successfully finished, it is safe to turn off computer. A new image takes effect after power cycling the **BEST** Central Unit.

**BEST** Update Utility uses proprietary .bestru format for handling images

## INSTALLATION

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### DOWNLOADING .DEB FILE

User should download *bestupdateutility1.0-1\_amd64.deb* to **BEST** Central Unit computer. This can be done by attaching Ethernet cable to the computer (see BEST User's Manual for additional information) and downloading the file to local disk. An USB flash drive can be used, if the BEST Local Unit is behind the firewall or if it cannot access internet.

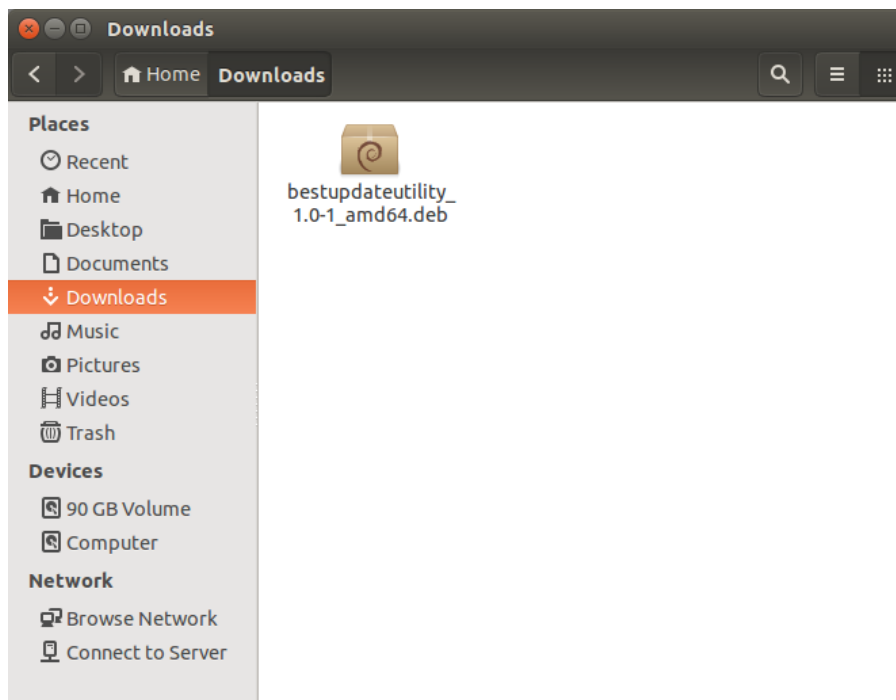


FIGURE 1

## INSTALLATION USING UBUNTU SOFTWARE CENTER

Debian packages (usually with file extension *.deb*) can on Ubuntu be installed using Ubuntu Software Center, which provides a user-friendly manner to install additional software to system. To install **BEST** Update Utility user should double click on *bestupdateutility1.0-1\_amd64.deb* icon in folder. A new window will pop up (Image 2).

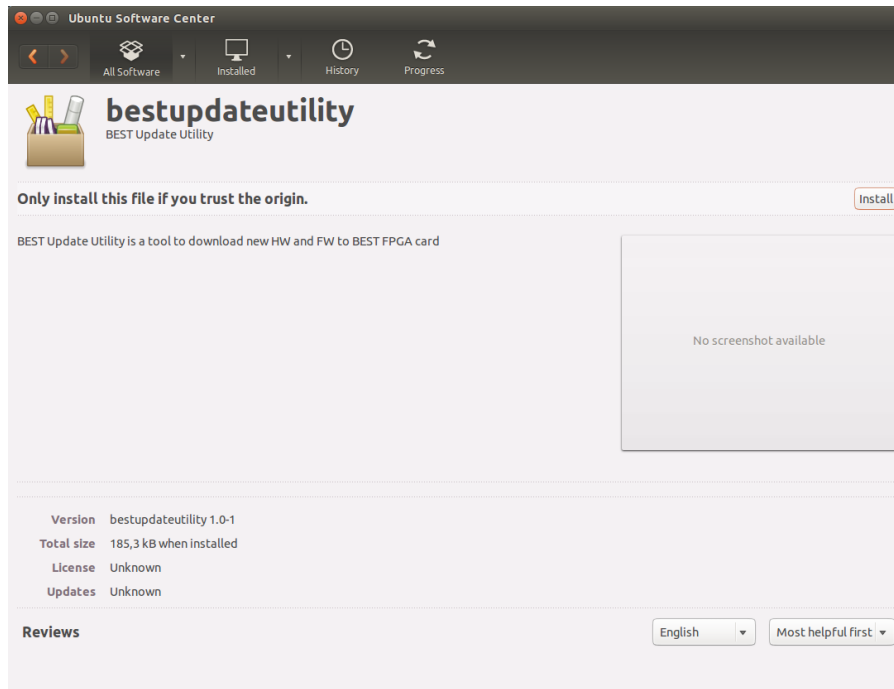


FIGURE 2

**BEST** Update Utility can be installed by pressing on **Install** button. The installation will then begin (Image 3).

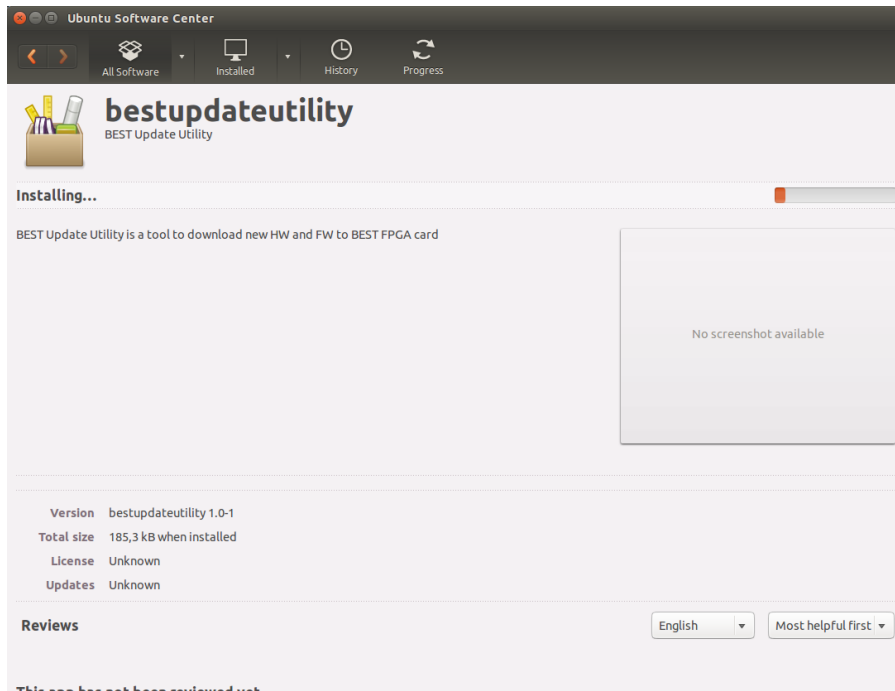


FIGURE 3

During the installation process you will be asked for authentication (Image 4).

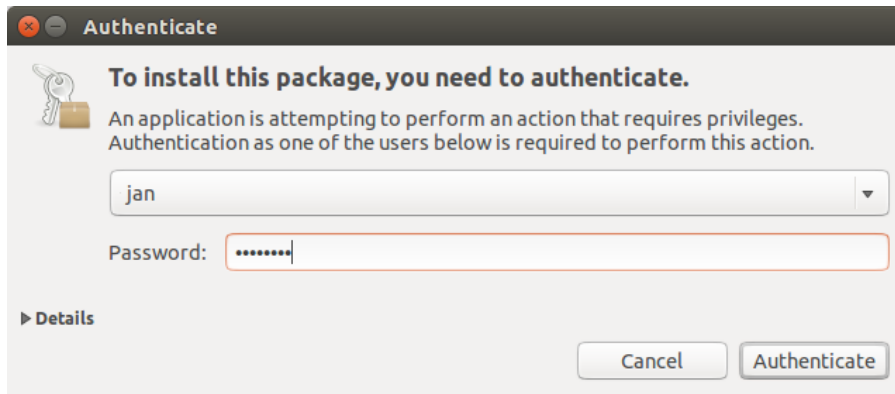


FIGURE 4

If the default values have not been changed, these should be:

Username: **best**

Password: **WeAreTheBest**

After the installation has been finished, a green checkmark (Image 5) is displayed in Ubuntu Software Center. Now you are ready to use the **BEST** Update Utility.



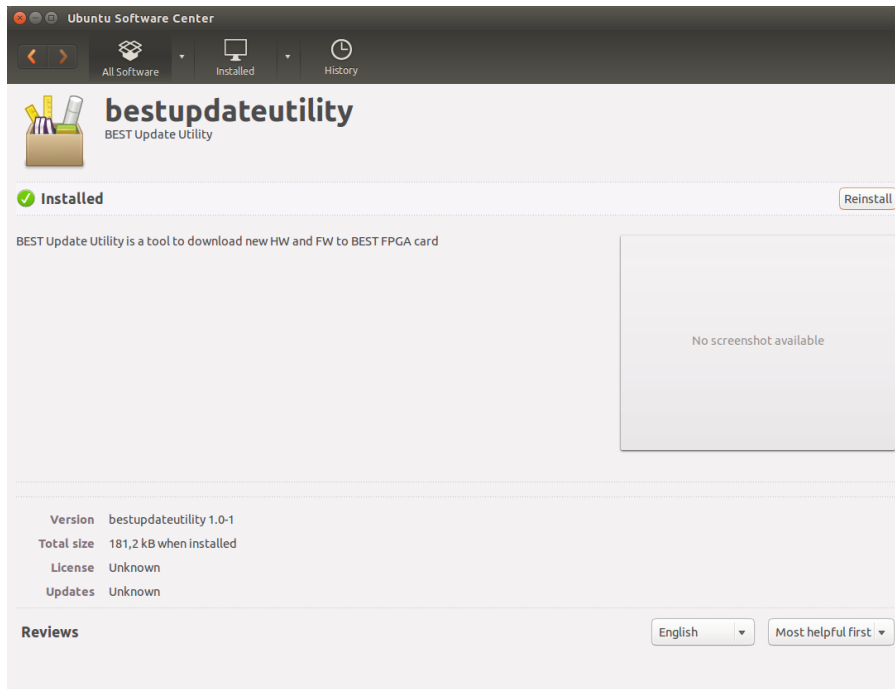


FIGURE 5

A new icon will appear on desktop (Image 6) after successful installation. **BEST** Update Utility can be launched by double clicking on it.

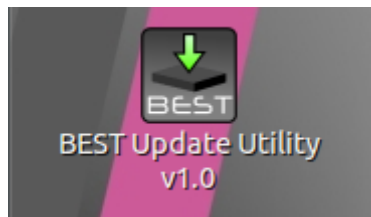


FIGURE 6

## USAGE

Image 7 shows **BEST** Update Utility window. A current versions of FPGA Hardware, Software and PID Block are shown. Next is a BEST image file selector with possibility to select files (button ...). AT the bottom there are two bars which show progress during update.

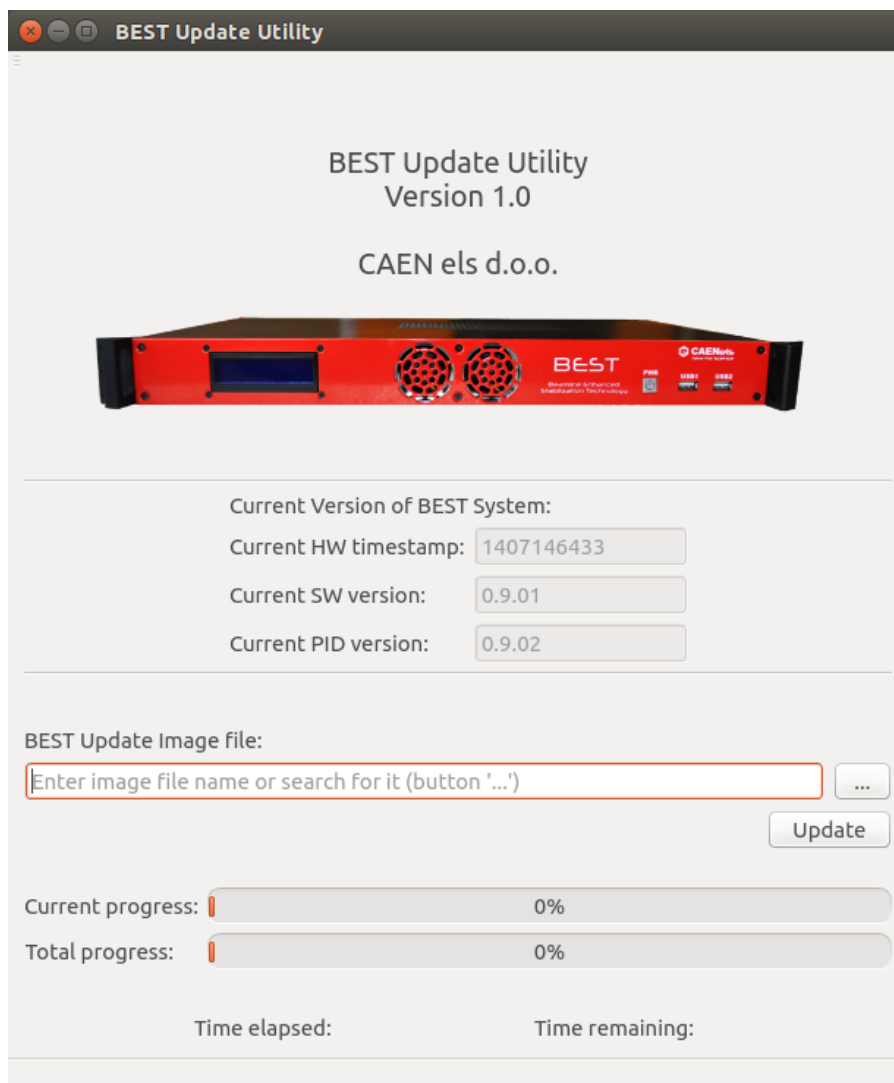


FIGURE 7

Do not turn off BEST Central Unit during the update process. In the case system anyway runs out of power, there is a recovery mode, which cannot be overwritten. If the main image gets corrupted a FPGA will boot into a recovery mode.

## SELECTING IMAGE

Firstly, a image to download to flash memory should be selected. A file path can be entered in the white box or a file can be selected by pressing the "...” button (Image 8).

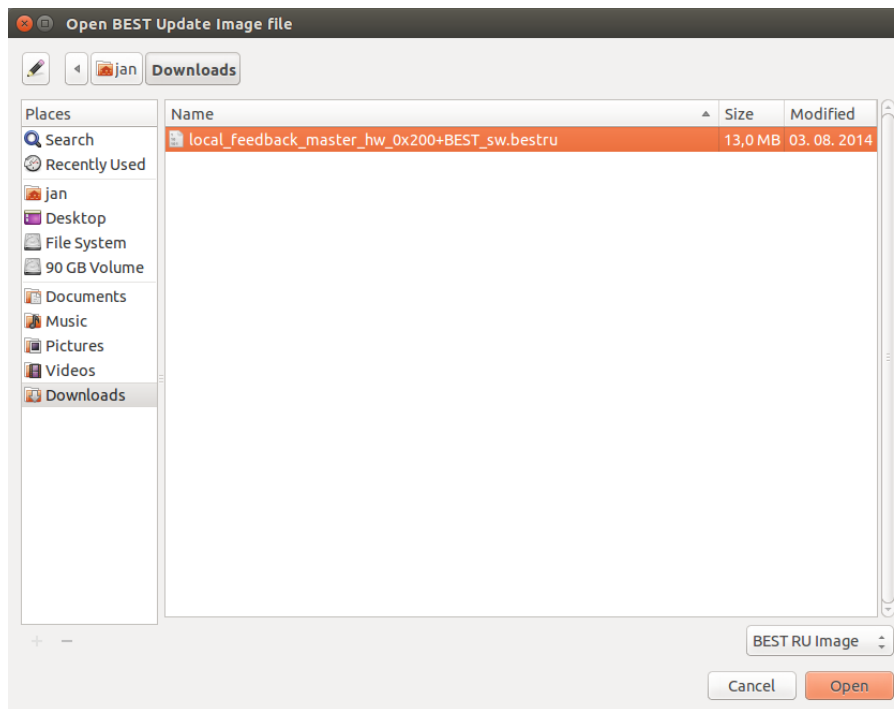


FIGURE 8

BEST Update Utility uses proprietary format for handling images, with **.bestru** extension.

## UPDATING

A new image is downloaded to FPGA Flash memory by pressing the "Update" button.

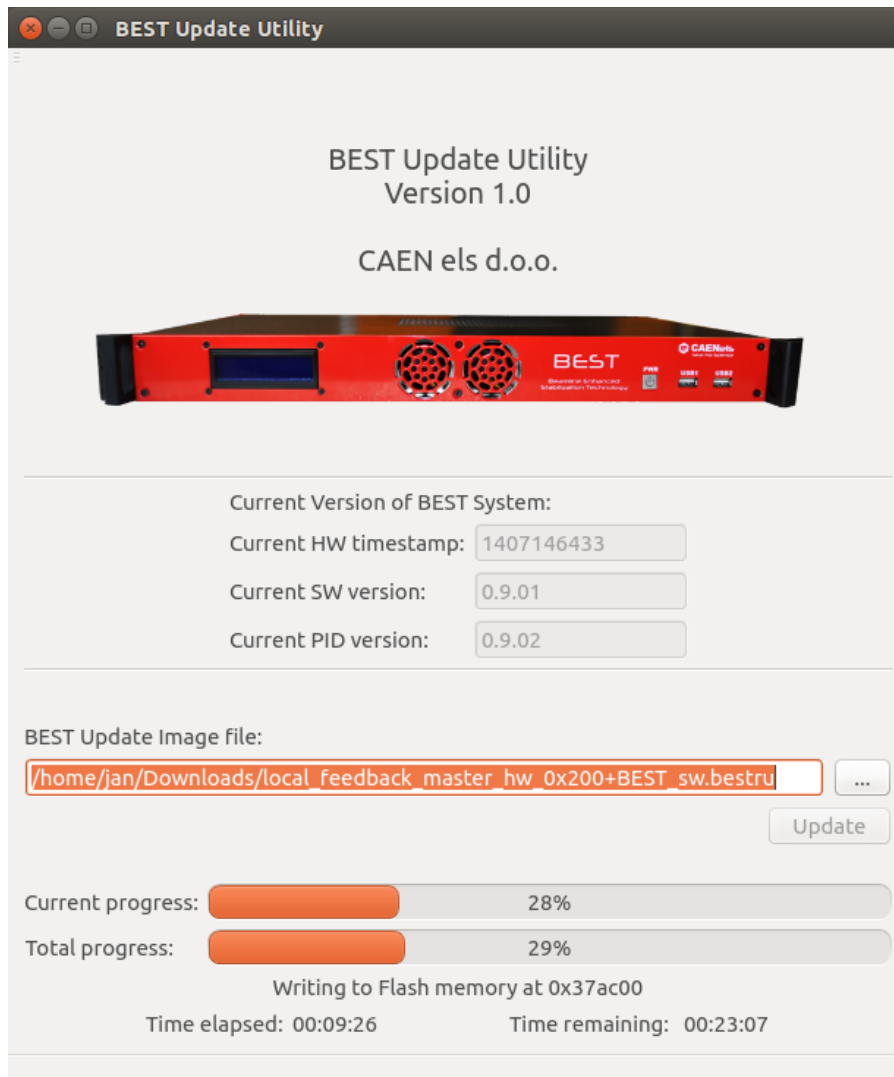


FIGURE 9

**BEST** System Update takes around a half hour for complete system update.

After the update has completed the message is displayed: *Done updating. It is safe to restart the computer* (Image 10).

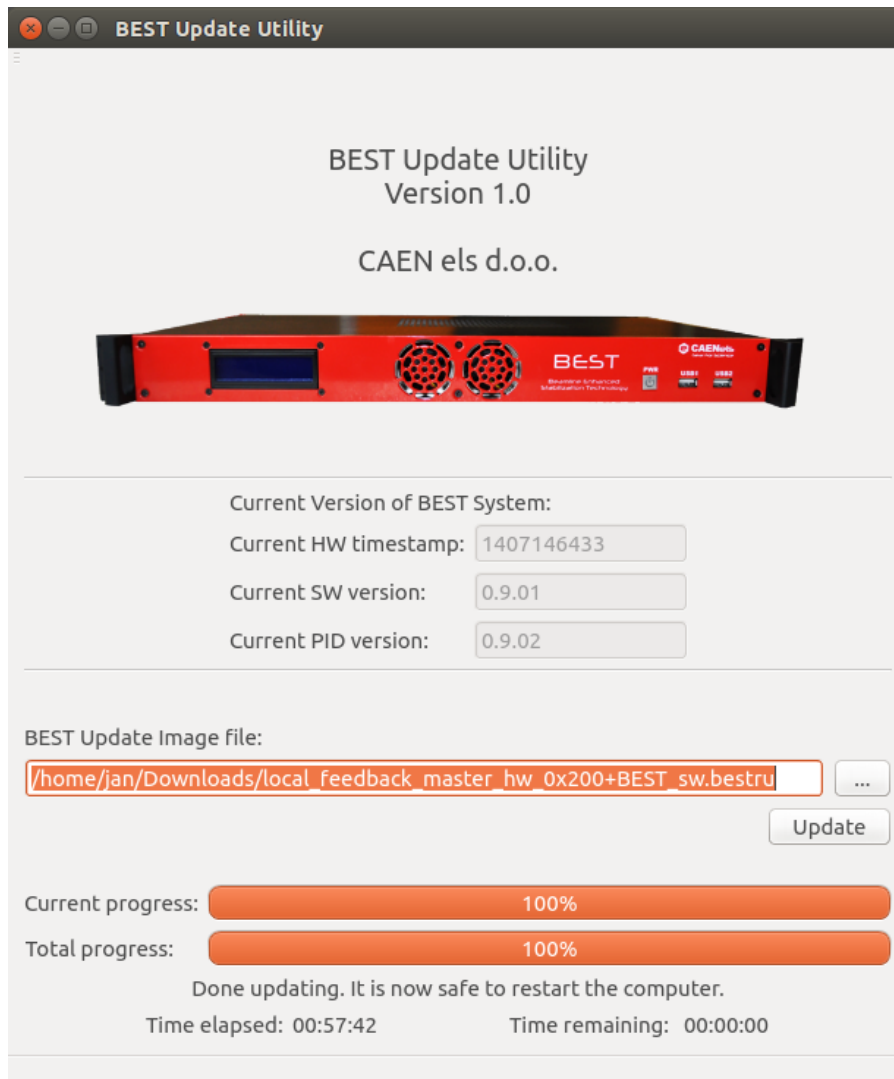


FIGURE 10