

Postbuild Hex File Generator

TechnicalReference

Description

Version 1.01.00

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Status	Released

Document Information

History

Author	Date	Version	Remarks
Alexander Zeeb	26.01.2011	1.0.0	Initial creation
Armin Happel	22.05.2013	1.01.00	Rename program and document to "PostBuildHexFileGenerator" Minor corrections in the document

Reference Documents

No.	Source	Title	Version
[1]	Vector	Technical Reference_ PostbuildLoadable.pdf	



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We have configured the programs in accordance with your specifications in the questionnaire. Whereas the programs do support other configurations than the one specified in your questionnaire, Vector's release of the programs delivered to your company is expressly restricted to the configuration you have specified in the questionnaire.



Caution

This symbol calls your attention to warnings.

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1 History

1.1 Version 1.01.00

1.1.1 What's new

Basically, the functionality is the same as version 1.00.00. The major change was the adaption of the program name and the correction of the version.

The documentation contains a few clarification in respect to the usage of the program and its parameters.

1.2 Version 1.0.0

1.2.1 What is new?

This is the initial version of the Postbuild.exe tool.

2 Introduction

This document describes the usage of the Postbuild HEX file generator tool. It provides an easy-to-use functionality to update flashable hexadecimal files with postbuild data files provided by Vector's PostBuildXmlGenerator (AUTOSAR4) or GENy (AUTOSAR3 and Legacies) within the scope of a BSW postbuild. For detailed information about postbuild data, refer to [1].



Caution

The application of this product can be dangerous. Please use with care.

Note that this tool may be used to alter the program or data intended to be downloaded onto an ECU for series production. The results of this data manipulation must be observed very carefully and thoroughly tested.

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3 Functional Description

The HEX-file generator performs a post-build update by converting postbuild data provided by XML-Files into a flashable *.HEX-file.

PostBuildHexFileGenerator prints out a usage help text by passing the argument **-h** (or without any parameter) when calling the executable.

3.1 Command line arguments

PostBuildHexFileGenerator accepts the following command line arguments:

Argument	Description
-i <inputhexfile>	Specifies the flashable hexadecimal file (<inputhexfile>) on which the postbuild shall be applied. This is an optional argument. The input file name must not contain blanks or other illegal characters that makes the input name unrecognizable by argument strings! This parameter is optional.
-o <outputhexfile>	Specifies the name of the flashable hexadecimal file (<outputhexfile>) which results from the postbuild process. The output file name must not contain blanks or other illegal characters that makes the input name unrecognizable by argument strings! This parameter is mandatory.
<PbData.xml>	XML-File which contains the postbuild data. Note, that this parameter must always be the last in the argument list! Only one postbuild file can be entered per call. This parameter is mandatory.

Table 3-1 Command line arguments

The program is called with the following arguments:

```
PostBuildHexFileGenerator [-i InputHexFile] -o OutputHexFile PostBuildFile.xml
```

3.2 Use Cases

The postbuild XML-file contains information about data that shall be updated within an ECU and the address location for this. Typically, the XML-file is generated by a tool. This tool knows what data shall be modified to apply the required changes and where the data must be updated within the ECU(the address location).

Now, you either just want to extract this data into an Intel-HEX file, or you want to update the data and apply them on an existing HEX-File. The PostBuildHexFileGenerator can do this for you.

3.2.1 Postbuild on an existing flashable file

In this case, the previously used hex file (e.g. with the calibration HEX file or the program HEX file) already exists and the XML-file which contains the postbuild data that shall be applied. The already existing HEX-file may be available either in Intel HEX- or Motorolas S-Record format.

The PostbuildHexFileGenerator reads first the contents of the existing HEX-file into the internal memory, then reads the data information from the postbuild XML-file and overwrites these data into the internal memory. Afterwards, the internal memory contents are written to the specified output-file. If the postbuild file contains memory sections that didn't exist in the input hex file, the section will be automatically generated by the tool.

Note: The so generated output file is always in Intels *.HEX format no matter which format the input HEX file was.

The input file name and output file name can be the same. Be aware, that the input file name is then overwritten by the contents of the output file.

The ECU can be flashed either by downloading the whole file or just the Postbuild data sections. This can be done by means of a bootloader.



Example

Postbuild.exe -I existingFlashable.hex -o newFlashable.hex postbuildData.xml

3.2.2 Postbuild without an existing flashable file

In this case, only the XML-file which contains the postbuild data is needed. Postbuild uses this file to generate a flashable file in Intels *.HEX-format, which consists of the postbuild data sections defined in the XML-file.

The so generated file can be used to postbuild single sections of an ECU i.e. by means of a Bootloader.



Example

Postbuild.exe -o newFlashable.hex postbuildData.xml

4 Glossary and Abbreviations

4.1 Glossary

Term	Description
Flashable hexadecimal file	Flash image which can be downloaded to an ECU. Contains data, constants and code.
Postbuild	Effective way to update selective data in an existing program (HEX-File) without recompile and link the whole project..
Hexview	Is an effective tool from Vector Informatik to read and write HEX-data in different formats. It also provides the ability to apply postbuild data on given XML-files like the PostBuildHexFileGenerator, but Hexview is more flexible and more powerful.
Memory section	Is a contiguous range of data with a given start address and its length.
HEX-File	A HEX file contains one or more memory sections in ASCII format. The data are represented in lines of hexadecimal values with a preceding address and length information per line. A checksum at the end ensures the data integrity of a line. Standard HEX-file formats are Intel-HEX or Motorola S-Record files.

4.2 Abbreviations

Abbreviation	Description
XML	Extensive Markup Language
ECU	Electronic Control Unit

5 Contact

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