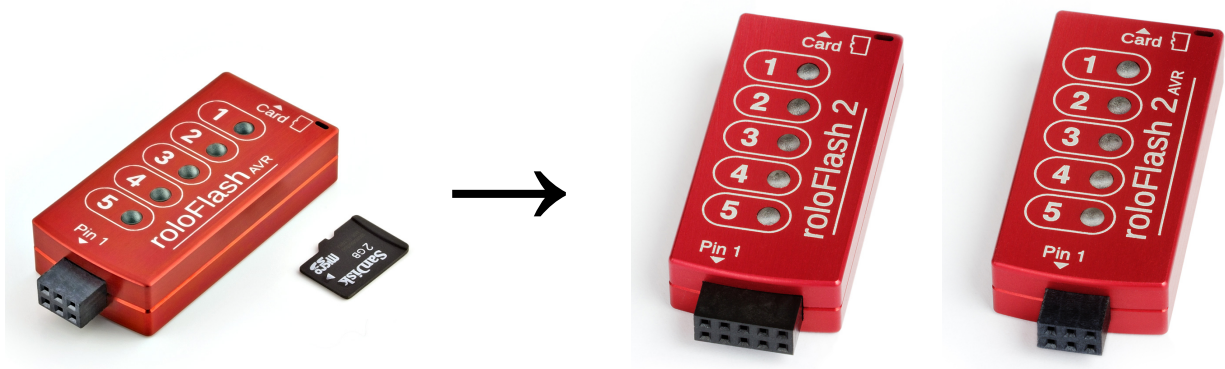


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# Migration Guide roloBasic Scripts for roloFlash AVR and roloFlash 2 Family



Guide to migrating roloBasic scripts from roloFlash AVR to the roloFlash 2 family (roloFlash 2 and roloFlash 2 AVR)

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# Table of Contents

I	roloFlash: API Versions.....	iii
II	Conceptional Difference.....	iv
III	Individual Functions.....	vi
IV	Files Used.....	viii

# I roloFlash: API Versions

The following roloFlash API versions are currently in circulation:

- For roloFlash AVR:
  - (only one version in circulation)
- For the roloFlash 2 family:
  - 02
  - 04
  - 05

The API version is encoded in the complete software version string for the roloFlash 2 family as major number:

**Example:** „05.AB“: API version 5 (major version = „05“, minor version = „AB“)

This guide illustrates how to adapt your roloBasic scripts from roloFlash AVR to the roloFlash 2 family in API version 5.

## **Note:**

The folder "scripts" on the microSD card that comes with roloFlash contains numerous example scripts for various typical applications of roloFlash and targeting various microcontrollers. These scripts might be a better starting point for converting your scripts than to follow this migration guide.

## **Note:**

If you need help converting your roloBasic scripts

- from roloFlash AVR to the roloFlash 2 family or
- from one roloFlash 2 API version to another,

contact us via e-mail to [<rh@halec.de>](mailto:rh@halec.de).

## II Conceptual Difference

roloFlash AVR	roloFlash 2 family
<p>A roloBasic script <b>can</b> a magic cookie in its first line. This must be coded as a comment:</p> <pre>!roloFlash AVR</pre>	<p>A roloBasic script <b>must</b> have a magic cookie in its first line. It <b>must</b> begin with a „#“ and read, for instance:</p> <pre>#roloFlash 2, v05.AB</pre> <ul style="list-style-type: none"> <li>• Please write „#roloFlash 2“ for roloFlash 2 AVR, not „#roloFlash 2 AVR“.</li> <li>• "v05" is the API version, which is identical to the major version of the roloFlash software.</li> <li>• „AB“ is the minor version of the roloFlash software and only serves documentation purposes. Instead of it, you can also a „*“ as Wildcard:</li> </ul> <pre>#roloFlash 2, v05.*</pre>
<p>Supports only one target family, the controllers of which are always connected via ISP.</p> <p>Impact on the API: - Immediate communication with the target is possible (e. g. getSignature)</p>	<p>Supports multiple target families, which are connected via different busses. Some busses allow for connection of multiple targets (JTAG for STM32).</p> <p>Impact on the API: - First a bus must be opened (e. g. busHandle = bus_open( ISP, 100000)), which returns a bus handle.  - Then the target has to be opened, specifying the aforementioned bus handle, e. g. targetHandle = target_open(busHandle, 0)  - Only now it is possible to communicate with the target using the target handle, e. g. target_getDeviceId(targetHandle)</p>
<p>getSignature <b>implicitly</b> determines additional parameters like flash size and flash page size.</p>	<p>getDeviceID has no side effects.</p> <p>The required parameters can be read from an internal database and, if you want to flash the target, have to be set <b>explicitly</b>:</p>

```
dbHandle = DB_getHandle(<targetName>)
Example:
    dbHandle = DB_getHandle(Atmega128)

flashSize = DB_get(dbHandle,
DB_FLASHSIZE)

pageSize = DB_get(dbHandle,
DB_FLASHPAGESIZE)

target_setMemoryMap targetHandle, FLASH,
MEM_SIZE, flashSize

target_setMemoryMap targetHandle, FLASH,
MEM_PAGESIZE, pageSize
```

### III Individual Functions

roloFlash AVR	roloFlash 2 Family
targetPresent	target_getPresent(<targetHandle>)
programTarget	target_setMode targetHandle, PROGRAMMODE
runTarget	target_setMode targetHandle, RUNMODE
restartTarget	target_restart <targetHandle>
SetProgrammingSpeed <speed>	bus_open(ISP, <index>, <speed>) or bus_setSpeed <busHandle>, <speed>
getTargetVoltage	getTargetBoardVoltage
readBits(<index>)	target_readBits(<targetHandle>, <index>)
writeBits index, values	target_writeBits <targetHandle>, <index>, <values>
getSignature	target_getDeviceID(<targetHandle>)
getFlashLayout	target_getMemoryMap(<targetHandle>, FLASH, MEM_SIZE) and target_getMemoryMap(<targetHandle>, FLASH, MEM_PAGESIZE)
setFlashLayout(<size>, <pagesize>)	target_setMemoryMap <targetHandle>, FLASH, MEM_SIZE, <size>) and target_setMemoryMap <targetHandle>, FLASH, MEM_PAGESIZE, <pagesize>)
getEepromLayout	target_getMemoryMap(<targetHandle>, EEPROM, MEM_SIZE) and target_getMemoryMap(<targetHandle>, EEPROM, MEM_PAGESIZE)
setEepromLayout(<size>, <pagesize>)	target_setMemoryMap <targetHandle>, EEPROM, MEM_SIZE, <size>) and target_setMemoryMap <targetHandle>,

	EEPROM, MEM_PAGESIZE, <pagesize>)
setExtendedAddressMode <value>	target_setExtendedAddressMode <targetHandle>, <value>
clearMemoryLayout	target_clearMemoryLayout <targetHandle>
eraseFlash	target_eraseFlash <targetHandle>
writeFileToFlash 0, <filename>	target_writeFromFile <targetHandle>, 0, <filename>, HEX, FLASH, WRITEONLY
writeVerifyFileToFlash 0, <filename>	target_writeFromFile <targetHandle>, 0, <filename>, HEX, FLASH, WRITEVERIFY
verifyFileToFlash 0, <filename>	target_writeFromFile <targetHandle>, 0, <filename>, HEX, FLASH, VERIFYONLY
writeFileToEeprom 0, <filename>	target_writeFromFile <targetHandle>, 0, <filename>, HEX, EEPROM, WRITEONLY
writeVerifyFileToEeprom 0, <filename>	target_writeFromFile <targetHandle>, 0, <filename>, HEX, EEPROM, WRITEVERIFY
verifyFileToEeprom 0, <filename>	target_writeFromFile <targetHandle>, 0, <filename>, HEX, EEPROM, VERIFYONLY
All filesystem functions, e. g.:	
fsOpen	fs_open
...	...
All LED functions, e. g.:	
ledOn	led_on
...	...

# IV Files Used

As of major version 05 (inclusively), the files used have been renamed:

<b>roloFlash 2 family with major version of at most 04 or roloFlash AVR</b>	<b>roloFlash 2 family with major version of at least 05</b>
run.bas	run_v05.bas
RUN.BIN	RUN_V05.BIN
rbc.exe	rbc_v05.exe
compile.bat	compile_v05.bat

As a result of these changes, the following possibilities arise:

- If you use both roloFlash AVR and roloFlash 2 (or roloFlash 2 AVR), you can prepare microSD cards so that both versions are present. Such a card can be used in roloFlash AVR as well as in roloFlash 2 or roloFlash 2 AVR, it will contain the files RUN.BIN for roloFlash and RUN\_V05.BIN for roloFlash 2 or roloFlash 2 AVR with major version 05.
- With future versions (e. g. major version 06) for roloFlash 2, you can copy the scripts for multiple major versions (e. g. RUN\_V05.BIN and RUN\_V06.BIN) to the microSD card. With such a card, you can use the script with different roloFlash 2 having different firmware versions.
- Note: Changes of only the minor version (e. g. from V05.AA to V05.AB) do not affect the compatibility of roloBasic scripts.
- Note: You can downgrade roloFlash 2 to an older firmware version at any time. Therefore, you can test a new version and afterwards decide if you keep the new version or change to a different version.