
AVR Toolchain Installer: Release 3.4.1.1195

Atmel AVR Toolchain provides software development tools for both the 8-bit and 32-bit AVR device families.

The toolchains provided in this package are based on GNU C Compiler. Atmel AVR Toolchain inherits from two software distributions - AVR32 GNU toolchain and WinAVR. AVR32 GCC Toolchain was ported by Atmel and maintained internally. While AVR (8 bit) GCC Toolchain was ported and is maintained by the opensource communities. Atmel contributes to the latter. It is to be noted that these are two different toolchains.



**8/32-bits Atmel
Microcontrollers**

**Release
3.4.1.1195**

Installation Instructions

Atmel AVR Toolchain is a suite of executable, open source software development tools for the Atmel AVR 8/32-bit series of Micro Controller Units (MCU). It includes the GNU GCC compiler for C and C++.

Installation

The package comes in two forms:

- As a standalone installer (for Windows and Linux)
- As a Atmel Studio 6 Toolchain Extension (for Windows)

Mainfest

1. AVR 8-bit GNU Toolchain
 2. *Compiler (GCC), Binary utilities (such as assembler, linker, etc.) and Standard C library (avr-libc) for AVR 8 bit devices.
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1. AVR 32-bit GNU Toolchain
 2. *Compiler (GCC) , Binary utilities (such as assembler, linker, etc.) and Standard C library (Newlib) for AVR 32 bit devices.

Layout

The directory structure of the installation is as follows:

`<install>` = The directory where you installed AVR Toolchain.

- <install>
 - The folder where you have installed AVR Toolchain.
 - Default folder when using the installer is 'C:\Program Files\Atmel\AVR Tools\AVR Toolchain'
- <install>\bin
 - The folder where all executables are installed
- <install>\source
 - The folder where patches for different open source programs is located
- <install>\doc
 - The folder where Readme files and other documentations are installed

For more specific details see Release Notes for AVR 8-bit GNU Toolchain and AVR 32-bit GNU Toolchain.

`PATH` Environment Variable

There is one folder in AVR Toolchain that contain executable programs. If ``<install>`` is your install folder then this folder is:

```
<install>\bin
```

The ``<install>\bin`` folder contains the software development toolset proper. This includes GNU binutils, GCC, and other programs and many miscellaneous Unix or GNU programs that are built for Windows. This includes sh (bash) and make among a host of other things.

For your operating system to easily locate these folders, they must be put at the **beginning** of the `PATH` environment variable. The reason for putting these directories at the beginning of the `PATH` environment variable is for the correct make program to be called.

AVR Toolchain installer modifies this registry key: `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Environment\Path`

IMPORTANT: On Windows you may require Administrator privileges for the installer to automatically put these directories in your `PATH` environment variable.

Registry Keys

AVR Toolchain installs a minimal amount of registry keys. These keys are installed to inform of the installation path, the uninstaller, and for GCC to find other parts of the compiler as needed. Below are the specific keys that are installed.

- **Installation Location**

- This registry key will be added to provide the location of the AVR Toolchain installation:
HKEY_LOCAL_MACHINE\SOFTWARE\Atmel\AVR Toolchain\{VERSION}
with {VERSION} being replaced by the version number of AVR Toolchain.
Formerly, the key above without {VERSION} was equal to the install location.

- **GCC Component Paths**

- There are some keys that are installed that are used to help GCC find installed component programs:
HKEY_LOCAL_MACHINE\Software\Free Software Foundation\AVR Toolchain\{VERSION}\GCC
HKEY_LOCAL_MACHINE\Software\Free Software Foundation\AVR Toolchain\{VERSION}\BINUTILS
HKEY_LOCAL_MACHINE\Software\Free Software Foundation\AVR Toolchain\{VERSION}\G++
with {VERSION} being replaced by the version number of AVR Toolchain. Each of these keys points to the AVR Toolchain install location for that version of AVR Toolchain.

- **PATH Environment Variable**

- The registry key:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Environment\Path
may be modified (if selected at installation time) to add two directories to the PATH environment variable.

- **Uninstaller**

- There are several registry keys written under:
HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Uninstall\{Product GUID}
with Product-GUID being 2CE5E313-EC49-4527-A752-6DC89FE51C0D. These registry keys are used to register the uninstaller with Windows.

Finding Help

Documentation

The first and best place to find help is in the documentation of corresponding tools. AVR Toolchain includes the user manuals for many of the software tools that are shipped in the package.

The documentation for any particular package may come in different formats depending upon what is available from that package and available space in the AVR Toolchain installation. The different documentation formats that you'll find in AVR Toolchain are:

1. HTML - Hyper Text Markup Language. Requires a web browser to view.
2. PDF - Portable Document Format. Requires a PDF viewer such as Acrobat.

Additionally many user manuals can also be found online, especially packages that are part of the GNU project. You can find links to many of these in the Links section below.

For packages that have HTML, and PDF documentation, look in your ``<install>\doc` directory.`

AVR Toolchain installs on your desktop two shortcuts. One is to the HTML documentation on avr-libc that is installed locally. The other shortcut is to the GNU Manuals online (which requires Internet connection).

Online Sources

Please try and find the answer in the documentation first before asking for help online.

TIP: If you need to ask for help online, please read this first: How To Ask Questions The Smart Way (<http://catb.org/~esr/faqs/smart-questions.html>)

Help for the AVR software development toolset (and specifically AVR GCC) can be found at:

- **Atmel AVR Home** (<http://www.atmel.com/avr>)
 - Find info about different Atmel AVR products and application notes.
- **AVR Freaks** (<http://www.avrfreaks.net>)
 - All AVR, all the time! This site has several forums including a general AVR Forum and an AVR GCC Forum specifically for discussion of the GCC compiler for the AVR. They also have an Academy which contains user's projects. This gives you access to a lot of sample code, libraries, and various AVR projects.
- **avr-gcc mailing list** (<http://savannah.nongnu.org/mail/?group=avr>)
 - The avr-gcc list is intended as a forum for discussion about the following: Bugs, Programming technique, Installation and distributions, Hints and tips, Other avr-gcc related stuff. Note that all of the developers of the toolset are subscribed to this list!
- **Mikrocontroller.net** (<http://www.mikrocontroller.net/>)
 - For native German speakers. They have a forum for the AVR GCC compiler.

Help for other projects and tools included in AVR Toolchain can usually be found at the individual project's web page which usually includes links to their mailing lists.

When a help is needed it is recommended that uses the websites and mailing list first before contacting the AVR Toolchain developers.

Support and Bugs

You can fill out a relevant tracker on the <http://support.atmel.com/> Technical Support, if you have one of the following:

- Issue in the packaging
- Issue in the installation
- Issue in the software
- Suggestions for a new tool to be added
- Suggestions for improvements to the overall package

Source Code

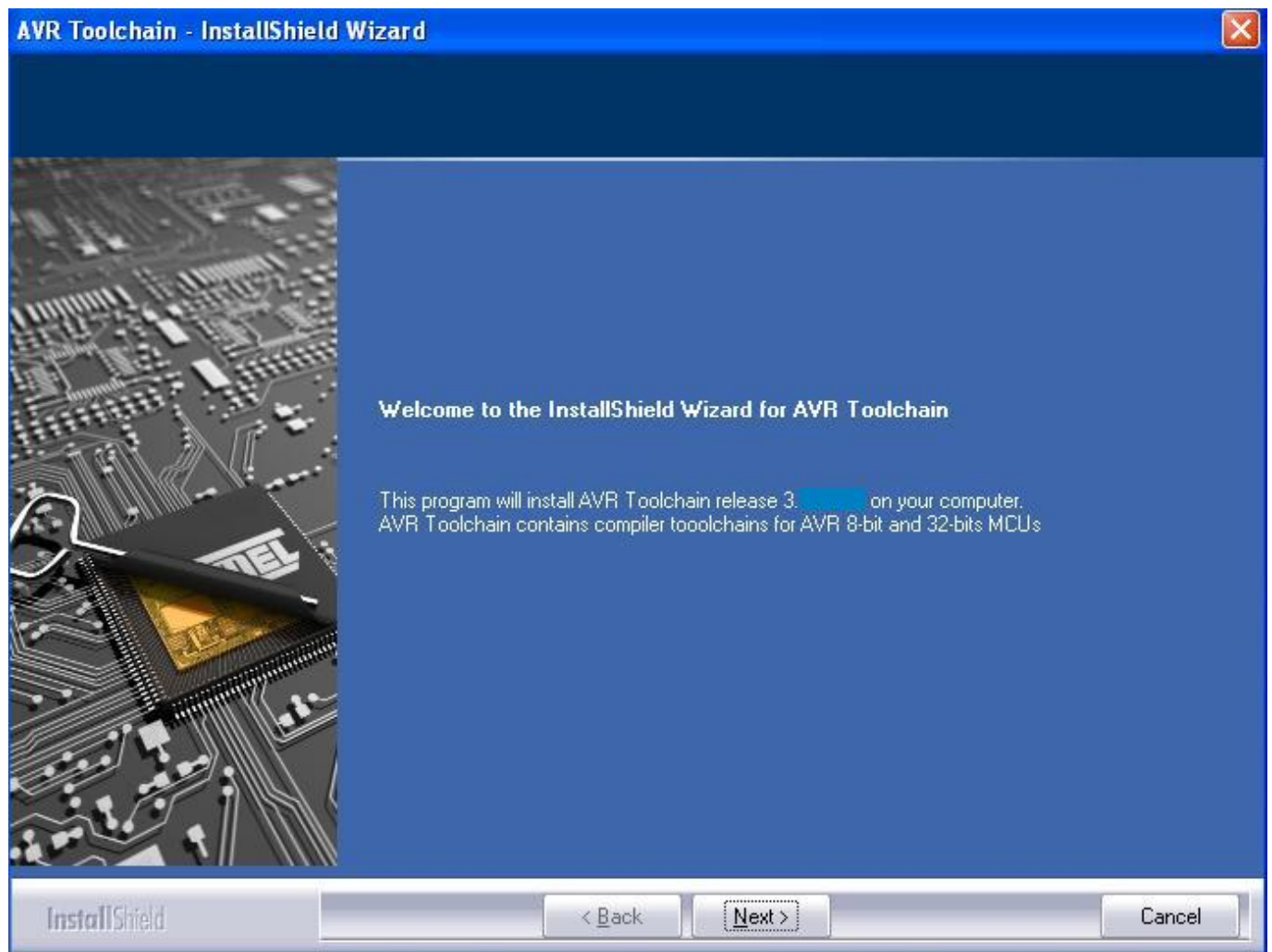
Atmel AVR Toolchain uses modified source code of various open/free source software tools. The corresponding source code for each tool and the scripts used to build the binaries are available at <http://distribute.atmel.no/tools/opensource/>. Please refer to the release notes of the individual toolchain for more information.

New and Noteworthy

This chapter lists new and noteworthy items for the AVR Toolchain release.

AVR Toolchain

Replaces WinAVR and AVR32 GNU Toolchain



Contact Information

For support on AVR Toolchain please contact avr@atmel.com.

Users of AVR Toolchain are also welcome to discuss on the AVR Freaks website forum for AVR Software Tools.

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