Rtools43 for Windows

Rtools is a toolchain bundle used for building R packages from source (those that need compilation of C/C++ or Fortran code) and for build R itself. Rtools43 is used for R-devel, the development version of R since revision 83535 and is intended for R 4.3.0.

Rtools43 consists of Msys2 build tools, GCC 12/MinGW-w64 compiler toolchain, libraries built using the toolchain, and QPDF. Rtools43 supports 64-bit Windows and UCRT as the C runtime.

Compared to Rtools42, Rtools43 has newer versions of three core components: GCC, MinGW-w64, and binutils. It is therefore recommended to re-compile all code with the new toolchain to avoid problems. The code compiled by even earlier versions of Rtools is incompatible due to use of MSVCRT and has to be recompiled with Rtools43 for use in R packages.

Installing Rtools43

Rtools43 is only needed for installation of R packages from source or building R from source. R can be installed from the R binary installer and by default will install binary versions of CRAN packages, which does not require Rtools43.

Moreover, online build services are available to check and build R packages for Windows, for which again one does not need to install Rtools43 locally. The Winbuilder check service uses identical setup as the CRAN incomming packages checks and has already all CRAN and Bioconductor packages pre-installed.

Rtools43 may be installed from the Rtools43 installer. It is recommended to use the defaults, including the default installation location of C:\rtools43.

When using R installed by the installer, no further setup is necessary after installing Rtools43 to build R packages from source. When using the default installation location, R and Rtools43 may be installed in any order and Rtools43 may be installed when R is already running.

Additional information

A detailed tutorial on how to build R and packages using Rtools43 for R package authors and R developers is available for R-devel.

From the user perspective, Rtools43 is the same as Rtools42. It uses newer versions of the compiler toolchain and libraries, and hence some package authors will have to extend their make files to link additional libraries. Maintainers of CRAN and Bioconductor packages may use these patches for reference or re-use them in their code.

A change log for Rtools43 vs Rtools42 and of individual revisions of Rtools43 is available here

Rtools43 is also available in base and full toolchain tarballs suitable for users who have their own installation of Msys2. The base toolchain tarball is smaller and includes only what is needed to build R and the recommended packages. All Rtools files are available here.

Sources are available for the toochain tarballs and the Rtools43 installer.