

# MSYS2

## Software Distribution and Building Platform for Windows

**MSYS2** is a collection of tools and libraries providing you with an easy-to-use environment for building, installing and running native Windows software.

It consists of a command line terminal called [mintty](#), bash, version control systems like git and subversion, tools like tar and awk and even build systems like autotools, all based on a modified version of [Cygwin](#). Despite some of these central parts being based on Cygwin, the main focus of MSYS2 is to provide a build environment for native Windows software and the Cygwin-using parts are kept at a minimum. MSYS2 provides up-to-date native builds for GCC, mingw-w64, CPython, CMake, Meson, OpenSSL, FFmpeg, Rust, Ruby, just to name a few.

To provide easy installation of packages and a way to keep them updated it features a package management system called [Pacman](#), which should be familiar to Arch Linux users. It brings many powerful features such as dependency resolution and simple complete system upgrades, as well as straight-forward and reproducible package building. Our package repository contains [more than 2500 pre-built packages](#) ready to install.

For more details see '[What is MSYS2?](#)' which also compares MSYS2 to other software distributions and development environments like [Cygwin](#), [WSL](#), [Chocolatey](#), [Scoop](#), ... and '[Who Is Using MSYS2?](#)' to see which projects are using MSYS2 and what for.

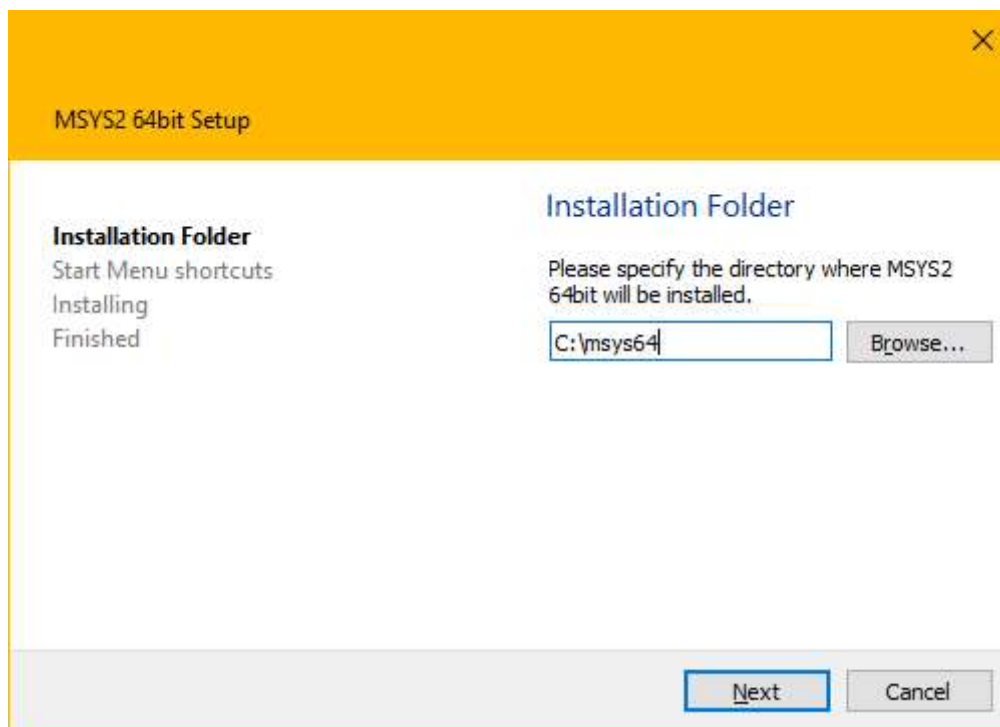
## Installation

1. Download the installer: [msys2-x86\\_64-20220128.exe](#)

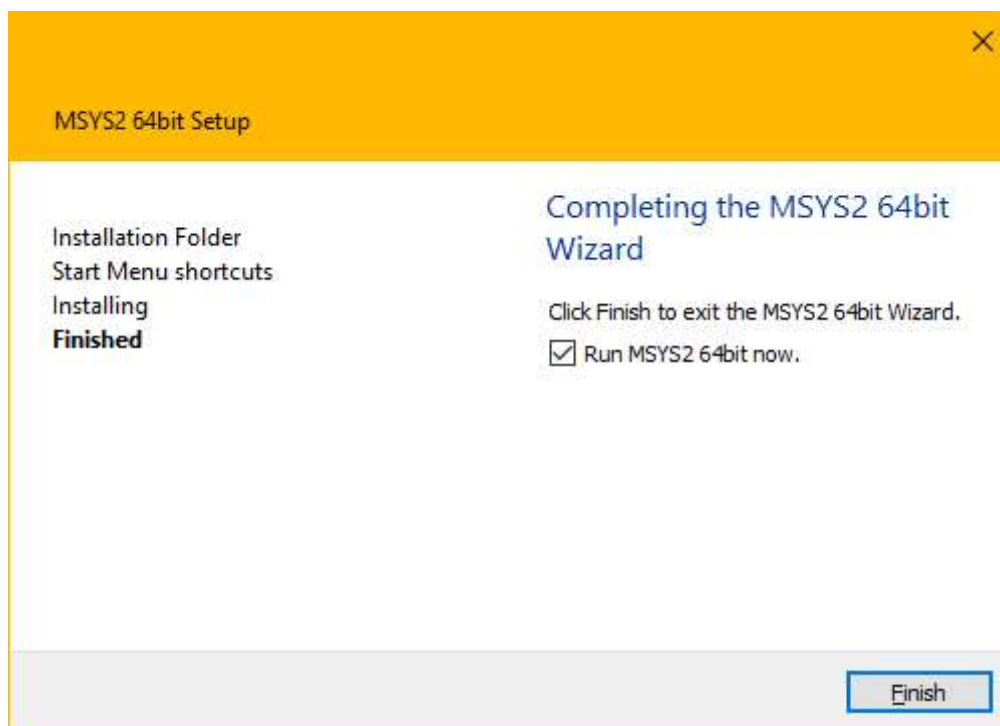
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[7d1e86477213c64dfc8fa2c28b891f878576db171df53f18014bb8679c7faa3e](#) or [GPG signature](#) by [0xf7a49b0ec](#).

2. Run the installer. MSYS2 requires 64 bit Windows 7 or newer.
3. Enter your desired **Installation Folder** (short ASCII-only path on a NTFS volume, no accents, no spaces, no symlinks, no subst or network drives, no FAT).



4. When done, tick **Run MSYS2 now**.



5. Update the package database and base packages. Unless your setup file is very recent, it will take two steps. First run `pacman -Syu`:

```

$ pacman -Syu
:: Synchronizing package databases...
mingw32                               805.0 KiB
mingw32.sig                           438.0  B
mingw64                               807.9 KiB
mingw64.sig                           438.0  B
msys                                   289.3 KiB
msys.sig                              438.0  B
:: Starting core system upgrade...
warning: terminate other MSYS2 programs before proceeding
resolving dependencies...
looking for conflicting packages...

Packages (6) bash-5.1.004-1  filesystem-2021.01-1
               mintty-1~3.4.4-1  msys2-runtime-3.1.7-4
               pacman-5.2.2-9  pacman-mirrors-20201208-1

Total Download Size:   11.05 MiB
Total Installed Size:  53.92 MiB
Net Upgrade Size:      -1.24 MiB

:: Proceed with installation? [Y/n]
:: Retrieving packages...
bash-5.1.004-1-x86_64           2.3 MiB
filesystem-2021.01-1-any        33.2 KiB
mintty-1~3.4.4-1-x86_64        767.2 KiB
msys2-runtime-3.1.7-4-x86_64    2.6 MiB
pacman-mirrors-20201208-1-any   3.8 KiB
pacman-5.2.2-9-x86_64          5.4 MiB
(6/6) checking keys in keyring    100%
(6/6) checking package integrity  100%
(6/6) loading package files       100%
(6/6) checking for file conflicts 100%
(6/6) checking available disk space 100%
:: Processing package changes...
(1/6) upgrading bash              100%
(2/6) upgrading filesystem        100%
(3/6) upgrading mintty           100%
(4/6) upgrading msys2-runtime     100%
(5/6) upgrading pacman-mirrors    100%
(6/6) upgrading pacman           100%
:: To complete this update all MSYS2 processes including this terminal will
be closed. Confirm to proceed [Y/n]

```

6. Run "MSYS2 MSYS" from Start menu. Update the rest of the base packages with `pacman -`

`Su`:

```

$ pacman -Su
:: Starting core system upgrade...

```

```

there is nothing to do
:: Starting full system upgrade...
resolving dependencies...
looking for conflicting packages...

Packages (20) base-2020.12-1  bsdtar-3.5.0-1
          [... more packages listed ...]

Total Download Size:   12.82 MiB
Total Installed Size:  44.25 MiB
Net Upgrade Size:      3.01 MiB

:: Proceed with installation? [Y/n]
[... downloading and installation continues ...]

```

7. Now MSYS2 is ready for you. You will probably want to install some tools and the mingw-w64 GCC to start compiling:

```

$ pacman -S --needed base-devel mingw-w64-x86_64-toolchain
warning: file-5.39-2 is up to date -- skipping
[... more warnings ...]
:: There are 48 members in group base-devel:
:: Repository msys
   1) asciidoc  2) autoconf  3) autoconf2.13  4) autogen
   [... more packages listed ...]

Enter a selection (default=all):
:: There are 19 members in group mingw-w64-x86_64-toolchain:
:: Repository mingw64
   1) mingw-w64-x86_64-binutils  2) mingw-w64-x86_64-crt-git
   [... more packages listed ...]

Enter a selection (default=all):
resolving dependencies...
looking for conflicting packages...

Packages (123) docbook-xml-4.5-2  docbook-xsl-1.79.2-1
          [... more packages listed ...]
          m4-1.4.18-2  make-4.3-1  man-db-2.9.3-1
          mingw-w64-x86_64-binutils-2.35.1-3
          mingw-w64-x86_64-crt-git-9.0.0.6090.ad98746a-1
          mingw-w64-x86_64-gcc-10.2.0-6
          mingw-w64-x86_64-gcc-ada-10.2.0-6
          mingw-w64-x86_64-gcc-fortran-10.2.0-6
          mingw-w64-x86_64-gcc-libgfortran-10.2.0-6
          mingw-w64-x86_64-gcc-libs-10.2.0-6
          mingw-w64-x86_64-gcc-objc-10.2.0-6
          mingw-w64-x86_64-gdb-10.1-2
          mingw-w64-x86_64-gdb-multiarch-10.1-2
          [... more packages listed ...]

```

```
Total Download Size:    196.15 MiB
Total Installed Size: 1254.96 MiB

:: Proceed with installation? [Y/n]
[... downloading and installation continues ...]
```

8. To start building using the mingw-w64 GCC, close this window and run "MSYS MinGW 64-bit" from Start menu. Now you can call `make` or `gcc` to build software for Windows.
9. Check out [the introduction page](#) to learn which Start menu item to use when and which packages to install. Take look at [Detailed MSYS2 install guide](#) for troubleshooting and additional details on how to keep your MSYS2 up-to-date.

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See <https://www.msys2.org/news/#2021-04-21-rip-mingwandroid>

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