

# Eigen

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This page explains how to install the Eigen linear algebra library on Ubuntu.

## Install dependencies and tools

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First, install GCC, CMake, GNU Make and Git if you haven't already.

```
$ sudo apt update
$ sudo apt install gcc g++ cmake make git
```

## Download and install

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```
1  #!/usr/bin/env bash
2
3  # Script to download and install Eigen3
4
5  set -ex
6
7  version="3.3.7" # Release tag on GitLab
8  prefix="$HOME/.local"
9
10 cd /tmp
11 # Download
12 git clone --single-branch --depth=1 --branch "$version" \
13     https://gitlab.com/libeigen/eigen.git
14 mkdir eigen/build && cd $_
15 # Configure
16 cmake .. \
17     -DCMAKE_BUILD_TYPE=Release \
18     -DCMAKE_INSTALL_PREFIX="$prefix"
19 # Install
20 make install
```

You don't have to build anything, because Eigen is a header-only library.

## Usage

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To use Eigen in your project, you can use the following CMake snippet:

```
1  find_package(Eigen3 REQUIRED)
2
3  add_executable(eigen-demo main.cpp)
4  target_link_libraries(eigen-demo PRIVATE Eigen3::Eigen)
```

CMake has to find Eigen, so you need to make sure that `$HOME/.local` is in its search paths. See [Installing Locally](#).

## Tested on

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- Ubuntu 20.04 - Eigen 3.3.7