Eigen

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

Install dependencies and tools

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

```bash
#!/usr/bin/env bash

# Script to download and install Eigen3

set -ex

version="3.3.7" # Release tag on GitLab
prefix="$HOME/.local"

cd /tmp
# Download
git clone --single-branch --depth=1 --branch "$version" \
    https://gitlab.com/libeigen/eigen.git
mkdir eigen/build && cd $_
# Configure
cmake .. \
    -DCMAKE_BUILD_TYPE=Release \
    -DCMAKE_INSTALL_PREFIX="$prefix"
# Install
make install
```

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

Usage

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

```cmake
find_package(Eigen3 REQUIRED)

add_executable(eigen-demo main.cpp)
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

- Ubuntu 20.04 - Eigen 3.3.7