
Subject: Re: Eigen updated

Posted by [Sender Ghost](#) on Fri, 22 May 2020 08:08:06 GMT

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koldo wrote on Fri, 22 May 2020 07:25

Replacing `#ifdef CPU_X86` with `#if defined(CPU_X86) && defined(__SSE2__)` just avoids the problem by avoiding `#include <smmintrin.h>`

The `__SSE2__` define was used for `<emmintrin.h>` include, because of `_mm_set1_epi32` usage. There is a possibility to use `<immintrin.h>` include for available intrinsics:

```
#ifdef __SSE2__
#include <emmintrin.h>
#endif
```

or `<x86intrin.h>`:

```
#include <immintrin.h>
```

But may need to check for related define where related intrinsic(s) used, I guess.

Some examples of how this was done for Eigen:

`uppsrc/plugin/Eigen/Eigen/src/Core/util/ConfigureVectorization.h:236-238:`

```
#ifdef __SSE4_1__
#define EIGEN_VECTORIZE_SSE4_1
#endif
```

`uppsrc/plugin/Eigen/Eigen/src/Core/util/ConfigureVectorization.h:350-352:`

```
#ifdef EIGEN_VECTORIZE_SSE4_1
#include <smmintrin.h>
#endif
```

for OpenGL Mathematics (GLM):

`uppsrc/plugin/glm/simd/platform.h:242:`

```
#define GLM_ARCH_SSE2 (GLM_ARCH_SSE2_BIT | GLM_ARCH_SSE)
```

`uppsrc/plugin/glm/simd/platform.h:296-297:`

```
# elif defined(__SSE2__) || defined(__x86_64__) || defined(_M_X64) || defined(_M_IX86_FP)
# define GLM_ARCH (GLM_ARCH_SSE2)
```

`uppsrc/plugin/glm/simd/platform.h:340-342:`

```
#elif GLM_ARCH & GLM_ARCH_SSE2_BIT
# include <emmintrin.h>
```

```
#endif//GLM_ARCH
```

Possible to fix Eigen build issue, if place usage of intrinsic(s) (e.g. in uppsrc/Core) inside of C/C++ (*.c/*.cpp) instead of header (*.h) files. Maybe there are other methods.
