
Subject: Re: How to link assembler compiled file
Posted by [frederik.dumarey](#) on Sat, 24 May 2025 18:12:32 GMT
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Just to be sure, are you aware there are intrinsics for these?

Yes, I do, and for those interested, I have a small example of it here:

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

int main(int argc, const char *argv[])
{
    alignas(32) float a[8] = {1.0f, 2.0f, 3.0f, 4.0f, 1.5f, 2.5f, 3.5f, 4.5f};
    alignas(32) float b[8] = {5.0f, 6.0f, 7.0f, 8.0f, 5.5f, 6.5f, 7.5f, 8.5f};

    //load data in AVX registers
    __m256 vec_a = _mm256_load_ps(a);
    __m256 vec_b = _mm256_load_ps(b);

    //multiply elements
    __m256 vec_mul = _mm256_mul_ps(vec_a, vec_b);

    //horizontal add to compute the sum of all elements
    __m256 temp = _mm256_hadd_ps(vec_mul, vec_mul);
    temp = _mm256_hadd_ps(temp, temp);

    //extract 128 lower bits and sum
    __m128 low = _mm256_castps256_ps128(temp);
    __m128 high = _mm256_extractf128_ps(temp, 1);
    __m128 sum = _mm_add_ps(low, high);

    //extract the final result
    float result = _mm_cvtss_f32(sum);

    std::cout << "Dot product: " << result << std::endl;

    return 0;
}
```