
Subject: SSE2(/AVX) and alignment issues
Posted by [mirek](#) on Fri, 28 Jan 2011 09:55:45 GMT
[View Forum Message](#) <> [Reply to Message](#)

I have spent some time thinking about some more direct support of SSE2 in U++ and there is a stupid problem:

U++ allocator guarantees 8 byte alignment only, while SSE2 requests 16 bytes alignment.

I am now undecided which approach would be good:

- I could make allocator 16-byte aligned, at the price of about 4% less space effectivity. This is fine, but when AVX comes, we are then at 32bytes alignment, then with another AVX version at 64 bytes etc... and that would have much worse results.

- I could make `_containers_` (Vector etc) alignment aware. This is much superior approach as it does not require any sacrifices in space efficiency and is future proof w.r.t. changing alignment requirements as AVX grows in width. However, one big problem is that you would not be able to use 'new' to allocate SSE2 objects.

Of course, there is not much use for 'new' in U++ anyway, but still...

(Actually, life would be much easier in C++ if there would not be any 'new' and 'delete'

Mirek
