
Subject: Re: BufferPainter::Clear() optimization
Posted by [mirek](#) on Mon, 18 May 2020 22:02:48 GMT
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What about this:

```
never_inline
void HugeFill(dword *t, dword c, int len)
{
    __m128i val4 = _mm_set1_epi32(*(int*)&c);
    auto Set4S = [&](int at) { _mm_stream_si128((__m128i *)t + at), val4); };
    while((uintptr_t)t & 15) { // align to 16 bytes for SSE
        *t++ = c;
        len--;
    }
    while(len >= 16) {
        Set4S(0);
        Set4S(4);
        Set4S(8);
        Set4S(12);
        t += 16;
        len -= 16;
    }
    while(len--)
        *t++ = c;
        _mm_sfence();
}

void Fill6(dword *t, dword c, int len)
{
    if(len >= 4) {
        __m128i val4 = _mm_set1_epi32(*(int*)&c);
        auto Set4 = [&](int at) { _mm_storeu_si128((__m128i *)t + at), val4); };
        if(len > 4*1024*1024 / 4) {
            HugeFill(t, c, len);
            return;
        }
        while(len >= 16) {
            Set4(0);
            Set4(4);
            Set4(8);
            Set4(12);
            t += 16;
            len -= 16;
        }
        if(len & 8) {
            Set4(0);
        }
    }
}
```

```
Set4(4);
t += 8;
}
if(len & 4) {
    Set4(0);
    t += 4;
}
}
if(len & 3)
    t[0] = t[(len & 2) >> 1] = t[(len & 2) & ((len & 1) << 1)] = c;
}
```
