Subject: Re: BufferPainter::Clear() optimization
Posted by mirek on Mon, 18 May 2020 11:43:39 GMT
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This variation of basically the same thing seems a tiny bit faster:

```
void Fill3a(RGBA *t, RGBA c, int len)
{
 __m128i val4 = _mm_set1_epi32(*(int*)&c);
 auto Set4 = [&](int at) { _mm_storeu_si128((__m128i *)(t + at), val4); };
 auto Set4S = [&](int at) { _mm_stream_si128((__m128i *)(t + at), val4); };
 if(len >= 32) {
  if(len > 1024*1024 / 16 && ((uintptr_t)t & 3) == 0) { // for really huge data, bypass the cache
   while((uintptr_t)t & 15) { // align to 16 bytes for SSE
    *t++ = c;
    len--;
   }
   do {
    Set4S(0); Set4S(4); Set4S(8); Set4S(12);
    Set4S(16); Set4S(20); Set4S(24); Set4S(28);
    t += 32;
    len -= 32;
   }
   while(len >= 32);
   _mm_sfence();
  }
  else
   do {
    Set4(0); Set4(4); Set4(8); Set4(12);
    Set4(16); Set4(20); Set4(24); Set4(28);
    t += 32;
    len -= 32;
   }
   while(len >= 32);
 }
 if(len & 16) {
  Set4(0); Set4(4); Set4(8); Set4(12);
  t += 16;
 }
 if(len & 8) {
  Set4(0); Set4(4);
  t += 8;
 }
 if(len & 4) {
  Set4(0);
  t += 4;
 }
```

```
 if(len & 2) {
  t[0] = t[1] = c;
  t += 2;
 }
 if(len & 1)
  t[0] = c;
}
```