Subject: About recent memset optimization
Posted by Tom1 on Fri, 17 Nov 2023 20:24:56 GMT

Hi,

I noticed that BufferPainter::ClearOp() has slowed down greatly due to recent memset changes.

An UHD/4K screen sized ImageBuffer can be cleared to white:

Revision 17045 : 740 us
Current rev. ST : 1990 us
Current rev. MT : 1880 us

It turned out that these changes in Mem.cpp cause the issue:

```
#if 0 // streaming does not seem to be benefical anymore *** HERE ***
#ifdef CPU_SSE2
 if(len >= 1024*1024 && 0) { // for really huge data, bypass the cache  *** HERE *** && 0
  auto Set4S = [&](int at) { data.Stream(t + at); };
  while(len >= 64) {
   Set4S(0*16); Set4S(1*16); Set4S(2*16); Set4S(3*16);
   t += 64;
   len -= 64;
  }
  _mm_sfence();
  e = t - 1;
 }
#endif
#endif *** HERE ***
```

So, "&& 0" and "#if 0" block streaming, and causes the loss of speed.

I have "Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz   3.60 GHz" here. I do not know if the effect is similar on other platforms, but surely here the streaming with ST is the way to go for fast ImageBuffer clears.

Best regards,

Tom