
Subject: About recent memset optimization

Posted by [Tom1](#) on Fri, 17 Nov 2023 20:24:56 GMT

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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
