
Subject: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 09 Jan 2019 10:23:06 GMT
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Hi,

Here's a strange issue: When I render a map using Painter, sometimes some letter does not render at all at specific scales. Alternatively, as you can see in the attached picture, it may render at false scale:

When rotating the map slightly, the same text renders correctly:

...Unless when the rotation is exactly 90, 180 or 270 degrees, which causes similar scaling error.

Another variant is that the letter appears to be completely absent.

BUT: when zooming the map, the letter renders perfectly OK.

There is no difference if Painter is in MT or ST mode.

Finally, this behavior persists for that run of the program only. If I close and restart the program, the same letter will likely render OK all the time, but there may (or may not) be another letter that suffers from the same problem.

I think this is some sort of initialization problem with fonts... but who knows.

Best regards,

Tom

File Attachments

- 1) [T1.png](#), downloaded 618 times
 - 2) [T2.png](#), downloaded 694 times
-

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 09 Jan 2019 12:38:49 GMT
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Hi,

Here's some more. In this picture two of the letters have shrunk in the middle of a word:

When zooming in, the text gets fixed:

Instead of a testcase, here's a clip of the code I use for rendering the text with Painter:

```
Font fnt(font);
fnt.Height((int)floor(height_dp)).Bold(object.bold).Italic(object.italic==1).Underline(object.selected);
```

```
PointF p(project.Transform(object.x,object.y));
double rot=object.rotation+rotation;
rot+=object.no_rotate?-GetViewRotation():0;
```

```
painter.Begin();
```

```
painter.Translate(p);
if(rot) painter.Rotate(-rot*DEGR2RAD);
switch(object.italic){
case 2:
painter.Transform(Xform2D::Sheer(-0.3));
break;
case 3:
painter.Transform(Xform2D::Sheer(0.2));
break;
}
```

```
Vector<String> lines=Split(text,10);
```

```
for(int row=0;row<lines.GetCount();row++){
Size sz=GetTextSize(lines[row],fnt);
PointF delta(0,0);
switch(object.attpoint){
case 1: // 1 = Top left
break;
case 2: // Top Center
delta.x=-sz.cx/2;
break;
case 3: // Top Right
delta.x=-sz.cx;
break;
case 4: // Middle Left
delta.y=-sz.cy/2;
break;
case 5: // Middle Center
delta.y=-sz.cy/2;
delta.x=-sz.cx/2;
```

```
    break;
    case 6: // Middle Right
        delta.y=-sz.cy/2;
        delta.x=-sz.cx;
        break;
    default:
    case 7: // Bottom Left
        delta.y=-sz.cy;
        break;
    case 8: // Bottom Center
        delta.y=-sz.cy;
        delta.x=-sz.cx/2;
        break;
    case 9: // Bottom Right
        delta.y=-sz.cy;
        delta.x=-sz.cx;
        break;
}
delta.y+=row*height_dp*1.5; // sz.cy
painter.Text(delta,lines[row],fnt);
}
```

if(edgecolor.a) painter.Stroke(height_dp*0.1,edgecolor);
painter.Fill(textcolor);
painter.End();

Best regards,

Tom

File Attachments

- 1) [T4.png](#), downloaded 609 times
 - 2) [T3.png](#), downloaded 633 times
-

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 10 Jan 2019 16:09:11 GMT
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I can see nothing obvious, but it feels like caching issue.

Please try this:

```
void ApproximateChar(LinearPathConsumer& t, Pointf at, int ch, Font fnt, double tolerance)
{
    PAINTER_TIMING("ApproximateChar");
}
```

```

Value v;
INTERLOCKED {
    PAINTER_TIMING("ApproximateChar::Fetch");
    static LRUCache<Value, GlyphKey> cache;
    cache.Shrink(500000);
    sMakeGlyph h;
    h.gk.fnt = fnt;
    h.gk.chr = ch;
    h.gk.tolerance = tolerance;
    v = cache.Get(h);
}
#if 1
GlyphPainter chp;
chp.move = chp.pos = Null;
chp.tolerance = tolerance;
PaintCharacter(chp, Pointf(0, 0), ch, fnt);
Vector<float>& g = chp.glyph;
#else
const Vector<float>& g = ValueTo< Vector<float> >(v);
#endif
int i = 0;
while(i < g.GetCount()) {
    Pointf p;
    p.x = g[i++];
    if(p.x > 1e30) {
        p.x = g[i++];
        p.y = g[i++];
        t.Move(p + at);
    }
    else {
        PAINTER_TIMING("ApproximateChar::Line");
        p.y = g[i++];
        t.Line(p + at);
    }
}
}
}

```

(This switches caching off.)

Mirek

Subject: Re: Strange issue with text in Painter
 Posted by [Tom1](#) on Thu, 10 Jan 2019 16:26:33 GMT
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Hi,

Thanks! I will check this too tomorrow!

Anyway, if this does not sort out easily, I can store the problematic sequence in a Painting and serialize it in a file for you to check out. (The same procedure as last time, when there was a complex Painter issue.)

Thanks,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 10 Jan 2019 16:46:30 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Thu, 10 January 2019 17:26Hi,

Thanks! I will check this too tomorrow!

Anyway, if this does not sort out easily, I can store the problematic sequence in a Painting and serialize it in a file for you to check out. (The same procedure as last time, when there was a complex Painter issue.)

Thanks,

Tom

Yes, good idea.

Also, if my code change does not solve the problem, try this:

```
void BufferPainter::CharacterOp(const Pointf& p, int ch, Font fnt)
{
  LLOG("@ CharacterOp " << p << ", " << ch << ", " << fnt);
  #if 1
    DoMove0();
    PaintCharacter(*this, p, ch, fnt);
  #else
    move = current = EndPoint(p, false);
    auto& m = PathAdd<CharData>(CHAR);
    m.p = EndPoint(p, false);
    m.ch = ch;
    m.fnt = fnt;
    path_info->ischar = true;
  #endif
}
```

```
EvenOdd();  
#endif  
}
```

(It is similar - removing caching - just on another level)

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Fri, 11 Jan 2019 08:40:10 GMT
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Hi Mirek,

The change in `ApproximateChar()` appears to fix the issue. However, as can be expected, the rendering speed drops dramatically.

I will next revert the `ApproximateChar()` changes and then test the `BufferPainter::CharacterOp()` change...

Best regards,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Fri, 11 Jan 2019 09:07:55 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi,

Also the change in `BufferPainter::CharacterOp()` seems to fix the issue. Similarly, the rendering speed drops.

The special thing about these maps I'm rendering is that they have an extremely small change in the text rotation thorough out the map page as they have been transformed from one coordinate projection to another (Transverse Mercator to Mercator in this case) and this involves a change in text rotation by the amount of meridian convergence value. This boils down to just parts of a degree through out the entire map width. I do not know if the caching gets affected by this or not.

I also generated a serialized painting, but it did not exhibit the issue. I think this is because the history for the cache is different and therefore the problem does not show up.

Best regards,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Fri, 11 Jan 2019 09:10:43 GMT
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So I am looking into caching right now.. One possibility is that this is caused by font replacements.

What is the Font use? If it is anything else than arial, does changing the font to Arial fix the issue?

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Fri, 11 Jan 2019 09:17:09 GMT
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The font was "font=Font(Font::SANSSERIF,12);"

Changed to "font=Font(Font::ARIAL,12);", but nothing changes.

(I think the enum makes these two the same.)

BR,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Fri, 11 Jan 2019 10:05:43 GMT
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Could you add these DLOGs

```
struct GlyphKey {
    Font fnt;
    int chr;
    double tolerance;

    bool operator==(const GlyphKey& b) const {
        DLOG("*** operator==");
        DDUMP(fnt);
        DDUMP(b.fnt);
        DDUMP(chr);
        DDUMP(b.chr);
        return fnt == b.fnt && chr == b.chr && tolerance == b.tolerance;
    }
    unsigned GetHashValue() const {
```

```

    return CombineHash(fnt, chr, tolerance);
}
};

```

```

struct sMakeGlyph : LRUCache<Value, GlyphKey>::Maker {
    GlyphKey gk;

```

```

    GlyphKey Key() const    { return gk; }
    int    Make(Value& v) const {
        GlyphPainter gp;
        gp.move = gp.pos = Null;
        gp.tolerance = gk.tolerance;
        DLOG("*** Make");
        DDUMP(GetHashValue(gk));
        DDUMP(gk.fnt);
        DDUMP(gk.chr);
        PaintCharacter(gp, Pointf(0, 0), gk.chr, gk.fnt);
        int sz = gp.glyph.GetCount() * 4;
        v = RawPickToValue(pick(gp.glyph));
        return sz;
    }
};

```

```

void ApproximateChar(LinearPathConsumer& t, Pointf at, int ch, Font fnt, double tolerance)

```

```

{
    PAINTER_TIMING("ApproximateChar");
    Value v;
    INTERLOCKED {
        DLOG("==== ApproximateChar " << ch << " " << fnt);
        PAINTER_TIMING("ApproximateChar::Fetch");
        static LRUCache<Value, GlyphKey> cache;
        cache.Shrink(500000);
        sMakeGlyph h;
        h.gk.fnt = fnt;
        h.gk.chr = ch;
        h.gk.tolerance = tolerance;
        DDUMP(GetHashValue(h.gk));
        v = cache.Get(h);
    }
    #if 0
        GlyphPainter chp;
        chp.move = chp.pos = Null;
        chp.tolerance = tolerance;
        PaintCharacter(chp, Pointf(0, 0), ch, fnt);
        const Vector<float>& g = chp.glyph;
    #else
        const Vector<float>& g = ValueTo< Vector<float> >(v);
    #endif
}

```



```

int i = 0;
while(i < g.GetCount()) {
    Pointf p;
    p.x = g[i++];
    if(p.x > 1e30) {
        p.x = g[i++];
        p.y = g[i++];
        t.Move(p + at);
    }
    else {
        PAINTER_TIMING("ApproximateChar::Line");
        p.y = g[i++];
        t.Line(p + at);
    }
}
}
}
}

```

then bring it into error state, send me the screenshot and .log?

Thanks,

Mirek

Subject: Re: Strange issue with text in Painter
 Posted by [Tom1](#) on Fri, 11 Jan 2019 10:46:30 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi,

Here you go! Please find attached a the log, a screenshot and the serialized painting of the same.

As you can see in the painting, the text should read 'Perttilä', not 'erttilä'.

(You can view the painting using the PainterBench -tool.)

BR,

Tom

PS: The DLOG and DDUMP cause errors in RELEASE mode, but not in DEBUG mode though:

----- Painter (GUI PROTECT MSC17X64 MSC WIN32) (8 / 32)

RenderChar.cpp

C:\upp-12610\upp.src\uppsrc\Painter\RenderChar.cpp(96): error C2018: unknown character '0x40'

C:\upp-12610\upp.src\uppsrc\Painter\RenderChar.cpp(97): error C2018: unknown character '0x40'

C:\upp-12610\upp.src\uppsrc\Painter\RenderChar.cpp(98): error C2018: unknown character '0x40'
C:\upp-12610\upp.src\uppsrc\Painter\RenderChar.cpp(99): error C2018: unknown character '0x40'
C:\upp-12610\upp.src\uppsrc\Painter\RenderChar.cpp(100): error C2018: unknown character '0x40'
C:\upp-12610\upp.src\uppsrc\Painter\RenderChar.cpp(116): error C2018: unknown character '0x40'
C:\upp-12610\upp.src\uppsrc\Painter\RenderChar.cpp(117): error C2018: unknown character '0x40'
C:\upp-12610\upp.src\uppsrc\Painter\RenderChar.cpp(118): error C2018: unknown character '0x40'
C:\upp-12610\upp.src\uppsrc\Painter\RenderChar.cpp(119): error C2018: unknown character '0x40'
C:\upp-12610\upp.src\uppsrc\Painter\RenderChar.cpp(132): error C2018: unknown character '0x40'
C:\upp-12610\upp.src\uppsrc\Painter\RenderChar.cpp(140): error C2018: unknown character '0x40'
Painter: 1 file(s) built in (0:00.90), 902 msecs / file, duration = 910 msecs, parallelization 0%

File Attachments

1) [T5.7z](#), downloaded 168 times

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Fri, 11 Jan 2019 11:10:04 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Fri, 11 January 2019 11:46Hi,
PS: The DLOG and DDUMP cause errors in RELEASE mode, but not in DEBUG mode though:

That is by design. It forces you to remove LOGs that you have inserted for debugging purposes. Not ideal, but better than to have logfile overcrowded with forgotten debugging info that you have needed 5 years ago :)

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Fri, 11 Jan 2019 11:12:14 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Fri, 11 January 2019 13:10Tom1 wrote on Fri, 11 January 2019 11:46Hi,
PS: The DLOG and DDUMP cause errors in RELEASE mode, but not in DEBUG mode though:

That is by design. It forces you to remove LOGs that you have inserted for debugging purposes. Not ideal, but better than to have logfile overcrowded with forgotten debugging info that you have

needed 5 years ago :)

Good point! :o

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Fri, 11 Jan 2019 11:33:38 GMT
[View Forum Message](#) <> [Reply to Message](#)

No luck... Let us add more logging:

```
struct GlyphKey {
    Font fnt;
    int chr;
    double tolerance;

    bool operator==(const GlyphKey& b) const {
        DLOG("*** operator==");
        DDUMP(fnt);
        DDUMP(b.fnt);
        DDUMP(chr);
        DDUMP(b.chr);
        return fnt == b.fnt && chr == b.chr && tolerance == b.tolerance;
    }
    unsigned GetHashValue() const {
        return CombineHash(fnt, chr, tolerance);
    }
};
```

```
struct sMakeGlyph : LRUCache<Value, GlyphKey>::Maker {
    GlyphKey gk;
```

```
    GlyphKey Key() const { return gk; }
    int Make(Value& v) const {
        GlyphPainter gp;
        gp.move = gp.pos = Null;
        gp.tolerance = gk.tolerance;
        DLOG("*** Make");
        DDUMP(GetHashValue(gk));
        DDUMP(gk.fnt);
        DDUMP(gk.chr);
        PaintCharacter(gp, Pointf(0, 0), gk.chr, gk.fnt);
        int sz = gp.glyph.GetCount() * 4;
        v = RawPickToValue(pick(gp.glyph));
        return sz;
    }
};
```

```

void ApproximateChar(LinearPathConsumer& t, Pointf at, int ch, Font fnt, double tolerance)
{
    PAINTER_TIMING("ApproximateChar");
    Value v;
    INTERLOCKED {
        DLOG("==== ApproximateChar " << ch << " " << fnt);
        PAINTER_TIMING("ApproximateChar::Fetch");
        static LRUCache<Value, GlyphKey> cache;
        cache.Shrink(500000);
        sMakeGlyph h;
        h.gk.fnt = fnt;
        h.gk.chr = ch;
        h.gk.tolerance = tolerance;
        DDUMP(GetHashValue(h.gk));
        v = cache.Get(h);
        DDUMP(ValueTo< Vector<float> >(v));
    }
    #if 0
        GlyphPainter chp;
        chp.move = chp.pos = Null;
        chp.tolerance = tolerance;
        PaintCharacter(chp, Pointf(0, 0), ch, fnt);
        const Vector<float>& g = chp.glyph;
    #else
        const Vector<float>& g = ValueTo< Vector<float> >(v);
    #endif
    int i = 0;
    while(i < g.GetCount()) {
        Pointf p;
        p.x = g[i++];
        if(p.x > 1e30) {
            p.x = g[i++];
            p.y = g[i++];
            t.Move(p + at);
        }
        else {
            PAINTER_TIMING("ApproximateChar::Line");
            p.y = g[i++];
            t.Line(p + at);
        }
    }
}

```

the same (no need to send painting, just .log and tell me what letter is missing / wrong).

Thanks,

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Fri, 11 Jan 2019 11:53:52 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi,

Here's the new log. No images or paintings this time :)

The failed letter was a capital 'U' this time (at false size).

Best regards,

Tom

File Attachments

1) [ChartTest.7z](#), downloaded 154 times

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Fri, 11 Jan 2019 13:33:44 GMT
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Hi,

Here's one sequence (of log) where the first letter 'J' is rendered too large:

```
==== ApproximateChar 74 <Arial:27>
```

```
GetHashCode(h.gk) = 3041017192
```

```
*** operator==
```

```
fnt = <Arial:27>
```

```
b.fnt = <Arial:5 Italic>
```

```
chr = 74
```

```
b.chr = 214
```

```
*** operator==
```

```
fnt = <Arial:27>
```

```
b.fnt = <Arial:27>
```

```
chr = 74
```

```
b.chr = 74
```

```
ValueTo< Vector<float> >(v) = [9.99999984824321e30, 1, 17.46875, 4, 17, 4.39453125,  
19.908203125, 5.296875, 21.7265625, 6.671875, 22.681640625, 8.484375, 23, 9.892578125,  
22.84765625, 11.0859375, 22.390625, 12.00390625, 21.671875, 12.5859375, 20.734375, 13,  
17.390625, 13, -1, 16, -1, 16, 17.09375, 15.79296875, 20.046875, 15.171875, 22.25,  
14.1015625, 23.861328125, 12.546875, 25.0390625, 10.59375, 25.759765625, 8.328125, 26,
```

6.63671875, 25.86572265625, 5.15625, 25.462890625, 3.88671875, 24.79150390625, 2.828125, 23.8515625, 1.9990234375, 22.64697265625, 1.41796875, 21.181640625, 1, 17.46875]

==== ApproximateChar 111 <Arial:27>

GetHashValue(h.gk) = 3041016509

*** operator==

fnt = <Arial:27>

b.fnt = <Arial:27>

chr = 111

b.chr = 111

ValueTo< Vector<float> >(v) = [9.99999984824321e30, 1, 18.5, 1.1337890625, 16.63671875, 1.53515625, 15.03125, 2.2041015625, 13.68359375, 3.140625, 12.59375, 5.12890625, 11.3984375, 7.5, 11, 10.109375, 11.484375, 12.1875, 12.9375, 13.546875, 15.24609375, 14, 18.296875, 13.798828125, 20.76953125, 13.1953125, 22.65625, 12.208984375, 24.0703125, 10.859375, 25.125, 9.25390625, 25.78125, 7.5, 26, 4.87109375, 25.517578125, 2.796875, 24.0703125, 2.0107421875, 22.99853515625, 1.44921875, 21.712890625, 1, 18.5, 9.99999984824321e30, 3, 18.5, 3.3203125, 20.90625, 4.28125, 22.625, 5.7265625, 23.65625, 7.5, 24, 9.2734375, 23.654296875, 10.71875, 22.6171875, 11.6796875, 20.873046875, 12, 18.40625, 11.677734375, 16.0703125, 10.7109375, 14.375, 9.263671875, 13.34375, 7.5, 13, 5.7265625, 13.341796875, 4.28125, 14.3671875, 3.3203125, 16.083984375, 3, 18.5]

==== ApproximateChar 101 <Arial:27>

GetHashValue(h.gk) = 3041016535

*** operator==

fnt = <Arial:27>

b.fnt = <Arial:27>

chr = 101

b.chr = 101

ValueTo< Vector<float> >(v) = [9.99999984824321e30, 11.96875, 22, 13.9375, 22, 13.107421875, 23.69140625, 11.7734375, 24.953125, 9.970703125, 25.73828125, 7.734375, 26, 4.94921875, 25.515625, 2.8125, 24.0625, 1.453125, 21.734375, 1, 18.625, 1.458984375, 15.40625, 2.03271484375, 14.1015625, 2.8359375, 13, 4.943359375, 11.5, 7.59375, 11, 10.162109375, 11.482421875, 12.2109375, 12.9296875, 13.552734375, 15.251953125, 14, 18.359375, 13.984375, 19, 3, 19, 3.44921875, 21.138671875, 4.484375, 22.7109375, 5.9765625, 23.677734375, 7.796875, 24, 10.3125, 23.5234375, 11.25, 22.904296875, 11.96875, 22, 9.99999984824321e30, 3, 17, 12, 17, 11.6484375, 15.46484375, 10.96875, 14.359375, 9.46484375, 13.33984375, 7.578125, 13, 5.8515625, 13.271484375, 4.421875, 14.0859375, 3.42578125, 15.357421875, 3, 17]

Interestingly it always has two operator== hash compares until a match is found. (I repeated the rendering multiple times to find the spot in log more easily.) Is this multiple hash match affecting the caching in some way?

BR,

Tom

PS: When a wrong cache item is picked for a character, it may have wrong size and wrong Italic/Normal coding, but it always is the correct letter (if it is visible at all). I think the complete lack

of visibility might come from very small size of the cached character. This is almost like the LRUcache only looked at the character code when picking the result. Well, of course this is not the case, since otherwise most of the text items would be trash I guess...

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Fri, 11 Jan 2019 14:29:02 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Fri, 11 January 2019 14:33Hi,
Interestingly it always has two operator== hash compares until a match is found. (I repeated the rendering multiple times to find the spot in log more easily.) Is this multiple hash match affecting the caching in some way?

That is hashcode collision. Nothing to worry about.

Quote:

PS: When a wrong cache item is picked for a character, it may have wrong size and wrong Italic/Normal coding, but it always is the correct

Wrong italic/normal bit is new - is that sure?

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Fri, 11 Jan 2019 14:33:04 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi,

The first message in this thread portrays that: The 'Örviksudden' should have been in italic, but was instead shown with straight up 'Ö', if you look at it carefully. I have seen this in other tests too occasionally, so I can confirm it.

Best regards,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Fri, 11 Jan 2019 14:43:28 GMT

Still no clues... Anyway, let us modify logging a bit:

```
void ApproximateChar(LinearPathConsumer& t, Pointf at, int ch, Font fnt, double tolerance)
{
    PAINTER_TIMING("ApproximateChar");
    Value v;
    INTERLOCKED {
        DLOG("==== ApproximateChar " << ch << " " << (char)ch << " " << fnt << ", tolerance: " <<
tolerance);
        PAINTER_TIMING("ApproximateChar::Fetch");
        static LRUCache<Value, GlyphKey> cache;
        cache.Shrink(500000);
        sMakeGlyph h;
        h.gk.fnt = fnt;
        h.gk.chr = ch;
        h.gk.tolerance = tolerance;
        v = cache.Get(h);
        DDUMP(ValueTo< Vector<float> >(v));
    #if 1
        GlyphPainter chp;
        chp.move = chp.pos = Null;
        chp.tolerance = tolerance;
        PaintCharacter(chp, Pointf(0, 0), ch, fnt);
        DDUMP(chp.glyph);
        ASSERT(ValueTo< Vector<float> >(v) == chp.glyph);
    #endif
    }
    const Vector<float>& g = ValueTo< Vector<float> >(v);
    int i = 0;
    while(i < g.GetCount()) {
        Pointf p;
        p.x = g[i++];
        if(p.x > 1e30) {
            p.x = g[i++];
            p.y = g[i++];
            t.Move(p + at);
        }
        else {
            PAINTER_TIMING("ApproximateChar::Line");
            p.y = g[i++];
            t.Line(p + at);
        }
    }
}
```


(If error is here, it should also assert....)

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Fri, 11 Jan 2019 14:47:01 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Fri, 11 January 2019 15:33Hi,

The first message in this thread portrays that: The 'Örviksudden' should have been in italic, but was instead shown with straight up 'Ö', if you look at it carefully. I have seen this in other tests too occasionally, so I can confirm it.

Well, alternative theory is that some letters are rendered with wrong transformation matrix... I guess random matrix would explain both wrong size and "unitalicizing".....

Anyway, it would probably also create some more profound artefacts that you have not observed yet (?)

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Fri, 11 Jan 2019 17:50:01 GMT
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mirek wrote on Fri, 11 January 2019 16:43Still no clues... Anyway, let us modify logging a bit:

```
void ApproximateChar(LinearPathConsumer& t, Pointf at, int ch, Font fnt, double tolerance)
{
    PAINTER_TIMING("ApproximateChar");
    Value v;
    INTERLOCKED {
        DLOG("==== ApproximateChar " << ch << " " << (char)ch << " " << fnt << ", tolerance: " <<
tolerance);
        PAINTER_TIMING("ApproximateChar::Fetch");
        static LRUCache<Value, GlyphKey> cache;
        cache.Shrink(500000);
        sMakeGlyph h;
        h.gk.fnt = fnt;
        h.gk.chr = ch;
        h.gk.tolerance = tolerance;
        v = cache.Get(h);
    }
}
```

```

DDUMP(ValueTo< Vector<float> >(v));
#if 1
  GlyphPainter chp;
  chp.move = chp.pos = Null;
  chp.tolerance = tolerance;
  PaintCharacter(chp, Pointf(0, 0), ch, fnt);
  DDUMP(chp.glyph);
  ASSERT(ValueTo< Vector<float> >(v) == chp.glyph);
#endif
}
const Vector<float>& g = ValueTo< Vector<float> >(v);
int i = 0;
while(i < g.GetCount()) {
  Pointf p;
  p.x = g[i++];
  if(p.x > 1e30) {
    p.x = g[i++];
    p.y = g[i++];
    t.Move(p + at);
  }
  else {
    PAINTER_TIMING("ApproximateChar::Line");
    p.y = g[i++];
    t.Line(p + at);
  }
}
}
}
}

```

(If error is here, it should also assert....)

Strangely enough, this did not exhibit the problem at all. There are no buggy letters, as far as I could tell from looking around the map for 30 minutes. No asserts either, but that is to be expected as the problem did not surface here... I have been running with MSBT17x64 but I must next look at 32-bit compiler to see if it behaves differently. And maybe test on Linux too to see if the behavior changes.

I will continue with this on Monday...

As for the transformation matrix, I cannot see a chance for it to change between successive letters. That would require another thread to break the matrix, but this issue happens in ST too, so I think it is next to impossible.

Anyway, thanks for your efforts on this so far and have a nice weekend!

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Fri, 11 Jan 2019 18:26:58 GMT
[View Forum Message](#) <> [Reply to Message](#)

IDK, I see no issues and as the last try I have adapted our benchmarking snippet to test zooming in hope that it will reproduce the caching error:

```
#include <CtrlLib/CtrlLib.h>
#include <Painter/Painter.h>

using namespace Upp;

class PainterText : public TopWindow {
public:
    Painting p;
    FileSel fs;
    BufferPainter bpainter;
    double scale = 2;

    void Open(){
        if(fs.ExecuteOpen("Select a painting to view")){
            p.Clear();
            p.Serialize(FileIn(fs.Get()));
        }
    }

    virtual void MouseWheel(Point p, int zdelta, dword keyflags)
    {
        if(zdelta < 0)
            scale *= 0.8;
        else
            scale /= 0.8;
        Refresh();
    }

    virtual bool Key(dword key, int count){
        Refresh();
        switch(key){
            case K_CTRL_O:
                Open();
                return true;
        }
        return false;
    }

    typedef PainterText CLASSNAME;
};
```

```

PainterText(){
    Sizeable();

    p.Serialize(FileIn("C:/xxx/PainteTest/T5.painting"));
}

virtual void Paint(Draw &draw){
    ImageBuffer ib(GetSize());
    {
        bpainter.Create(ib);
        bpainter.Co(false);
        bpainter.PreClipDashed();
        bpainter.Clear(White());
        bpainter.EvenOdd();

        bpainter.Scale(scale);
        bpainter.Paint(p);

        bpainter.Finish();
    }

    SetSurface(draw,Rect(ib.GetSize()),ib,ib.GetSize(),Point(0,0));
}
};

GUI_APP_MAIN
{
    PainterText().Run();
}

```

but nothing.... Is not it possible that some new addition to your code is overwriting the cached?
Some dangling pointer perhaps?

Mirek

Subject: Re: Strange issue with text in Painter
 Posted by [mirek](#) on Sat, 12 Jan 2019 12:14:24 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Fri, 11 January 2019 18:50mirek wrote on Fri, 11 January 2019 16:43

```

#if 1
    GlyphPainter chp;
    chp.move = chp.pos = Null;
    chp.tolerance = tolerance;
    PaintCharacter(chp, Pointf(0, 0), ch, fnt);

```

```
DDUMP(chp.glyph);  
ASSERT(ValueTo< Vector<float> >(v) == chp.glyph);  
#endif
```

(If error is here, it should also assert....)

Strangely enough, this did not exhibit the problem at all. There are no buggy letters, as far as I could tell from looking around the map for 30 minutes. No asserts either, but that is to be expected as the problem did not surface here...

Well, that is something we can work with...

First of all, it would be nice to make sure this really makes differences. Change to #if 0 to resolve this.

If this is positive, I would set back to #if 1, retest, if problem is gone, then start removing lines of testing code from the last one until the problem reappears. That should give us some clue...

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Sat, 12 Jan 2019 13:57:01 GMT
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Hi,

Yes, I will follow your instructions... starting on Monday.

The absolute worst case scenario for me is if I have any pointer issues and corruption of memory thereby.

Late last night I started to think that I may have turned off PROTECT flag simultaneously when switching again to DEBUG mode for the test. This may have contributed to disappearance of the problem too. This is something I will have to check first thing on Monday. I mean the effect of working with and without PROTECT.

Anyway, I will keep digging. And I wish to thank you for your effort on this. (Hope I have not wasted your time with some stupid mistake of my own.)

Thanks and best regards,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 08:58:02 GMT
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Hi Mirek,

OK, here's the situation. Using PROTECT or not does not have any effect on this issue. Neither does the compiler; MSBT17 and MSBT17x64 both work the same.

After starting to comment out the lines from the bottom of the sequence, PaintCharacter() proved to be the line required for correct operation. Commenting it out it brought the problem back:

```
#if 1
  GlyphPainter chp;
  chp.move = chp.pos = Null;
  chp.tolerance = tolerance;
  PaintCharacter(chp, Pointf(0, 0), ch, fnt); // <<-- Required for correct rendering
// DDUMP(chp.glyph);
// ASSERT(ValueTo< Vector<float> >(v) == chp.glyph);
#endif
```

Any suggestions, how I should proceed?

Best regards,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 09:13:18 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Mon, 14 January 2019 09:58Hi Mirek,

OK, here's the situation. Using PROTECT or not does not have any effect on this issue. Neither does the compiler; MSBT17 and MSBT17x64 both work the same.

After starting to comment out the lines from the bottom of the sequence, PaintCharacter() proved to be the line required for correct operation. Commenting it out it brought the problem back:

```
#if 1
  GlyphPainter chp;
  chp.move = chp.pos = Null;
  chp.tolerance = tolerance;
  PaintCharacter(chp, Pointf(0, 0), ch, fnt); // <<-- Required for correct rendering
// DDUMP(chp.glyph);
// ASSERT(ValueTo< Vector<float> >(v) == chp.glyph);
#endif
```

Any suggestions, how I should proceed?

Best regards,

Tom

Try this:

```
#ifdef 1
  DLOG("==== ApproximateChar " << ch << " " << (char)ch << " " << fnt << ", tolerance: " <<
tolerance);
  DDUMP(ValueTo< Vector<float> >(v));
  GlyphPainter chp;
  chp.move = chp.pos = Null;
  chp.tolerance = tolerance;
  extern HFONT GetWin32Font(Font fnt, int angle);
  GetWin32Font(fnt, 0);
// PaintCharacter(chp, Pointf(0, 0), ch, fnt);
// DDUMP(chp.glyph);
// ASSERT(ValueTo< Vector<float> >(v) == chp.glyph);
#endif
```

GetWin32Font is called by PaintCharacter and has some caching inside too, maybe that is the one that is causing the trouble. Of course, if calling it fixes the problem, try to comment and uncomment...

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 09:18:57 GMT
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mirek wrote on Mon, 14 January 2019 11:13...
Try this:

```
#ifdef 1
  DLOG("==== ApproximateChar " << ch << " " << (char)ch << " " << fnt << ", tolerance: " <<
tolerance);
  DDUMP(ValueTo< Vector<float> >(v));
  GlyphPainter chp;
  chp.move = chp.pos = Null;
  chp.tolerance = tolerance;
  extern HFONT GetWin32Font(Font fnt, int angle);
  GetWin32Font(fnt, 0);
// PaintCharacter(chp, Pointf(0, 0), ch, fnt);
```

```
// DDUMP(chp.glyph);
// ASSERT(ValueTo< Vector<float> >(v) == chp.glyph);
#endif
```

GetWin32Font is called by PaintCharacter and has some caching inside too, maybe that is the one that is causing the trouble. Of course, if calling it fixes the problem, try to comment and uncomment...

This does not fix the issue.

BR,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 09:26:07 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Mon, 14 January 2019 10:18mirek wrote on Mon, 14 January 2019 11:13...
Try this:

```
#ifdef 1
  DLOG("==== ApproximateChar " << ch << " " << (char)ch << " " << fnt << ", tolerance: " <<
tolerance);
  DDUMP(ValueTo< Vector<float> >(v));
  GlyphPainter chp;
  chp.move = chp.pos = Null;
  chp.tolerance = tolerance;
  extern HFONT GetWin32Font(Font fnt, int angle);
  GetWin32Font(fnt, 0);
  // PaintCharacter(chp, Pointf(0, 0), ch, fnt);
  // DDUMP(chp.glyph);
  // ASSERT(ValueTo< Vector<float> >(v) == chp.glyph);
#endif
```

GetWin32Font is called by PaintCharacter and has some caching inside too, maybe that is the one that is causing the trouble. Of course, if calling it fixes the problem, try to comment and uncomment...

This does not fix the issue.

BR,

Tom

What happens if you do

```
void PaintCharacter(Painter& sw, const Pointf& p, int chr, Font font)
{
    GlyphInfo gi = GetGlyphInfo(font, chr);
    PaintCharPath pw;
    pw.sw = &sw;
    if(gi.IsNormal())
        font.Render(pw, p.x, p.y, chr);
    /* else
    if(gi.IsReplaced()) {
        Font fnt = font;
        fnt.Face(gi.lspc);
        fnt.Height(gi.rspc);
        fnt.Render(pw, p.x, p.y + font.GetAscent() - fnt.GetAscent(), chr);
    }
    else
    if(gi.IsComposed()) {
        ComposedGlyph cg;
        Compose(font, chr, cg);
        font.Render(pw, p.x, p.y, cg.basic_char);
        sw.Div();
        cg.mark_font.Render(pw, p.x + cg.mark_pos.x, p.y + cg.mark_pos.y, cg.mark_char);
    }*/
    sw.EvenOdd(true);
}
```

This should have no impact at all; we are testing branches that do character replacements if characters are missing. But I guess it is worth checking (as everything else fails).

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 09:28:47 GMT
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Another idea to test:

```
#ifdef 1
    DLOG("==== ApproximateChar " << ch << " " << (char)ch << " " << fnt << ", tolerance: " <<
tolerance);
    DDUMP(ValueTo< Vector<float> >(v));
    GlyphPainter chp;
    chp.move = chp.pos = Null;
    chp.tolerance = tolerance;
```

```
    GetGlyphInfo(fnt, ch);
// GetWin32Font(fnt, 0);
// PaintCharacter(chp, Pointf(0, 0), ch, fnt);
    DDUMP(chp.glyph);
    ASSERT(ValueTo< Vector<float> >(v) == chp.glyph);
#endif
```

Does this fix the issue? (GetGlyphInfo is another caching function called from PaintCharacter).

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 09:39:51 GMT
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Yes, this does not have any effect what so ever. (I mean the Painter.cpp :: PaintCharacter() change.)

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 09:42:35 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Mon, 14 January 2019 11:28Another idea to test:

```
#ifdef 1
    DLOG("==== ApproximateChar " << ch << " " << (char)ch << " " << fnt << ", tolerance: " <<
tolerance);
    DDUMP(ValueTo< Vector<float> >(v));
    GlyphPainter chp;
    chp.move = chp.pos = Null;
    chp.tolerance = tolerance;
    GetGlyphInfo(fnt, ch);
// GetWin32Font(fnt, 0);
// PaintCharacter(chp, Pointf(0, 0), ch, fnt);
    DDUMP(chp.glyph);
    ASSERT(ValueTo< Vector<float> >(v) == chp.glyph);
#endif
```

Does this fix the issue? (GetGlyphInfo is another caching function called from PaintCharacter).

Mirek

This does not fix the issue either. (Additionally I had to comment out the ASSERT, as the chp.glyph is not initialized to compare correctly with v.)

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 09:47:10 GMT
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What about this:

```
#ifdef 1
  DLOG("==== ApproximateChar " << ch << " " << (char)ch << " " << fnt << ", tolerance: " <<
tolerance);
  DDUMP(ValueTo< Vector<float> >(v));
  GlyphPainter chp;
  chp.move = chp.pos = Null;
  chp.tolerance = tolerance;

  struct PaintCharPath : FontGlyphConsumer {
    Painter *sw;

    virtual void Move(Pointf p) {
      sw->Move(p);
    }
    virtual void Line(Pointf p) {
      sw->Line(p);
    }
    virtual void Quadratic(Pointf p1, Pointf p2) {
      sw->Quadratic(p1, p2);
    }
    virtual void Cubic(Pointf p1, Pointf p2, Pointf p3) {
      sw->Cubic(p1, p2, p3);
    }
    virtual void Close() {
      sw->Close();
    }
  } pw;
  pw.sw = &chp;
  fnt.Render(pw, 0, 0, ch);
// PaintCharacter(chp, Pointf(0, 0), ch, fnt);
// DDUMP(chp.glyph);
// ASSERT(ValueTo< Vector<float> >(v) == chp.glyph);
#endif
```

(We are trying to identify which part of PaintCharacter makes the difference...)

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 10:01:28 GMT
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Tried. Now the error appears if "fnt.Render(pw, 0, 0, ch);" is commented out from the above.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 10:07:27 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Mon, 14 January 2019 11:01Tried. Now the error appears if "fnt.Render(pw, 0, 0, ch);" is commented out from the above.

BR, Tom

Getting closer, but still no clue....

```
#ifdef 1
  DLOG("==== ApproximateChar " << ch << " " << (char)ch << " " << fnt << ", tolerance: " <<
tolerance);
  DDUMP(ValueTo< Vector<float> >(v));
  GlyphPainter chp;
  chp.move = chp.pos = Null;
  chp.tolerance = tolerance;

  struct PaintCharPath : FontGlyphConsumer {
    Painter *sw;

    virtual void Move(Pointf p) {
      sw->Move(p);
    }
    virtual void Line(Pointf p) {
      sw->Line(p);
    }
    virtual void Quadratic(Pointf p1, Pointf p2) {
      sw->Quadratic(p1, p2);
    }
    virtual void Cubic(Pointf p1, Pointf p2, Pointf p3) {
```

```

    sw->Cubic(p1, p2, p3);
}
virtual void Close() {
    sw->Close();
}
} pw;
pw.sw = &chp;
void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt);
RenderCharacterSys(pw, 0, 0, ch, fnt);
// fnt.Render(pw, 0, 0, ch);
// PaintCharacter(chp, Pointf(0, 0), ch, fnt);
// DDUMP(chp.glyph);
// ASSERT(ValueTo< Vector<float> >(v) == chp.glyph);
#endif

```

Now if RenderCharacterSys here is our 'toggle', I suggest start commenting out its internals to see what really makes the difference...

Mirek

Subject: Re: Strange issue with text in Painter
 Posted by [mirek](#) on Mon, 14 Jan 2019 10:11:53 GMT
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Oh, sorry about the part about "commenting out" - that would not work (because we are using it for the desired rendering as well).

What we need to do is to copy it and THEN start removing...

```

double fx_to_dbl(const FIXED& p);
Pointf fx_to_dbl(const Pointf& pp, const POINTFX& p);

struct sMakeGlyph : LRUCache<Value, GlyphKey>::Maker {
    GlyphKey gk;

    GlyphKey Key() const { return gk; }
    int Make(Value& v) const {
        GlyphPainter gp;
        gp.move = gp.pos = Null;
        gp.tolerance = gk.tolerance;
        PaintCharacter(gp, Pointf(0, 0), gk.chr, gk.fnt);
        int sz = gp.glyph.GetCount() * 4;
        v = RawPickToValue(pick(gp.glyph));
        return sz;
    }
}

```

```

};

void RenderCharPath2(const char* gbuf, unsigned total_size, FontGlyphConsumer& sw, double
xx, double yy)
{
    const char* cur_glyph = gbuf;
    const char* end_glyph = gbuf + total_size;
    Pointf pp(xx, yy);
    while(cur_glyph < end_glyph) {
        const TTPOLYGONHEADER* th = (TTPOLYGONHEADER*)cur_glyph;
        const char* end_poly = cur_glyph + th->cb;
        const char* cur_poly = cur_glyph + sizeof(TTPOLYGONHEADER);
        sw.Move(fx_to_dbl(pp, th->pfxStart));
        while(cur_poly < end_poly) {
            const TTPOLYCURVE* pc = (const TTPOLYCURVE*)cur_poly;
            if (pc->wType == TT_PRIM_LINE)
                for(int i = 0; i < pc->cpfx; i++)
                    sw.Line(fx_to_dbl(pp, pc->apfx[i]));
            if (pc->wType == TT_PRIM_QSPLINE)
                for(int u = 0; u < pc->cpfx - 1; u++) {
                    Pointf b = fx_to_dbl(pp, pc->apfx[u]);
                    Pointf c = fx_to_dbl(pp, pc->apfx[u + 1]);
                    if (u < pc->cpfx - 2)
                        c = Mid(b, c);
                    sw.Quadratic(b, c);
                }
            cur_poly += sizeof(WORD) * 2 + sizeof(POINTFX) * pc->cpfx;
        }
        sw.Close();
        cur_glyph += th->cb;
    }
}

```

```

HFONT GetWin32Font(Font fnt, int angle);
HDC Win32_IC();

```

```

void RenderCharacterSys2(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
    HFONT hfont = GetWin32Font(fnt, 0);
    if(hfont) {
        HDC hdc = Win32_IC();
        HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);
        GLYPHMETRICS gm;
        MAT2 m_matrix;
        memset(&m_matrix, 0, sizeof(m_matrix));
        m_matrix.eM11.value = 1;
        m_matrix.eM22.value = 1;
        int gsiz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE, &gm, 0, NULL, &m_matrix);
    }
}

```

```

if(gsz < 0)
    return;
StringBuffer gb(gsz);
gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE, &gm, gsz, ~gb, &m_matrix);
if(gsz < 0)
    return;
RenderCharPath2(~gb, gsz, sw, x, y + fnt.GetAscent());
::SelectObject(hdc, ohfont);
}
}

```

```

void ApproximateChar(LinearPathConsumer& t, Pointf at, int ch, Font fnt, double tolerance)

```

```

{
    PAINTER_TIMING("ApproximateChar");
    Value v;
    INTERLOCKED {
        PAINTER_TIMING("ApproximateChar::Fetch");
        static LRUCache<Value, GlyphKey> cache;
        cache.Shrink(500000);
        sMakeGlyph h;
        h.gk.fnt = fnt;
        h.gk.chr = ch;
        h.gk.tolerance = tolerance;
        v = cache.Get(h);
#ifdef _DEBUG
        DLOG("==== ApproximateChar " << ch << " " << (char)ch << " " << fnt << ", tolerance: " <<
tolerance);
        DDUMP(ValueTo< Vector<float> >(v));
        GlyphPainter chp;
        chp.move = chp.pos = Null;
        chp.tolerance = tolerance;

        struct PaintCharPath : FontGlyphConsumer {
            Painter *sw;

            virtual void Move(Pointf p) {
                sw->Move(p);
            }
            virtual void Line(Pointf p) {
                sw->Line(p);
            }
            virtual void Quadratic(Pointf p1, Pointf p2) {
                sw->Quadratic(p1, p2);
            }
            virtual void Cubic(Pointf p1, Pointf p2, Pointf p3) {
                sw->Cubic(p1, p2, p3);
            }
            virtual void Close() {

```

```

    sw->Close();
}
} pw;
pw.sw = &chp;
RenderCharacterSys2(pw, 0, 0, ch, fnt);
// fnt.Render(pw, 0, 0, ch);
// PaintCharacter(chp, Pointf(0, 0), ch, fnt);
// DDUMP(chp.glyph);
// ASSERT(ValueTo< Vector<float> >(v) == chp.glyph);
#endif
}
const Vector<float>& g = ValueTo< Vector<float> >(v);
int i = 0;
while(i < g.GetCount()) {
    Pointf p;
    p.x = g[i++];
    if(p.x > 1e30) {
        p.x = g[i++];
        p.y = g[i++];
        t.Move(p + at);
    }
    else {
        PAINTER_TIMING("ApproximateChar::Line");
        p.y = g[i++];
        t.Line(p + at);
    }
}
}
}
}

```

It this still 'toggles', start commenting from RenderCharPath2 call up...

Subject: Re: Strange issue with text in Painter
 Posted by [Tom1](#) on Mon, 14 Jan 2019 10:30:38 GMT
[View Forum Message](#) <> [Reply to Message](#)

Commenting out this breaks rendering: // RenderCharPath2(~gb, gsz, sw, x, y + fnt.GetAscent());

I'll try to chop that one to slices next...

BR, Tom

Subject: Re: Strange issue with text in Painter

Posted by [mirek](#) on Mon, 14 Jan 2019 10:32:23 GMT

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Also try

```
RenderCharPath2(~gb, gsz, sw, x, y/* + fnt.GetAscent()*/);
```

Subject: Re: Strange issue with text in Painter

Posted by [mirek](#) on Mon, 14 Jan 2019 10:41:43 GMT

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Thinking about it, I have suspicion that maybe RawPickToValue might have to do something with all that...

What about this:

```
struct sMakeGlyph : LRUCache<String, GlyphKey>::Maker {
    GlyphKey gk;

    GlyphKey Key() const    { return gk; }
    int    Make(String& v) const {
        GlyphPainter gp;
        gp.move = gp.pos = Null;
        gp.tolerance = gk.tolerance;
        PaintCharacter(gp, Pointf(0, 0), gk.chr, gk.fnt);
        int sz = gp.glyph.GetCount() * 4;
        v.Set((char *)gp.glyph.begin(), sizeof(float) * gp.glyph.GetCount());
        return sz;
    }
};
```

```
void ApproximateChar(LinearPathConsumer& t, Pointf at, int ch, Font fnt, double tolerance)
{
    PAINTER_TIMING("ApproximateChar");
    String v;
    INTERLOCKED {
        PAINTER_TIMING("ApproximateChar::Fetch");
        static LRUCache<String, GlyphKey> cache;
        cache.Shrink(500000);
        sMakeGlyph h;
        h.gk.fnt = fnt;
        h.gk.chr = ch;
        h.gk.tolerance = tolerance;
        v = cache.Get(h);
    }
}
```

```
int i = 0;
int count = v.GetCount() / sizeof(float);
const float *g = (const float *)~v;
while(i < count) {
    Pointf p;
    p.x = g[i++];
    if(p.x > 1e30) {
        p.x = g[i++];
        p.y = g[i++];
        t.Move(p + at);
    }
    else {
        PAINTER_TIMING("ApproximateChar::Line");
        p.y = g[i++];
        t.Line(p + at);
    }
}
}
```

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 10:49:55 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Mon, 14 January 2019 12:32Also try

```
RenderCharPath2(~gb, gsz, sw, x, y/* + fnt.GetAscent()*/);
```

This does not make any difference.

Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 10:52:44 GMT
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This shows the problem:

```
void RenderCharPath2(const char* gbuf, unsigned total_size, FontGlyphConsumer& sw, double
xx, double yy)
{
    const char* cur_glyph = gbuf;
    const char* end_glyph = gbuf + total_size;
    Pointf pp(xx, yy);
    while(cur_glyph < end_glyph) {
```

```

const TTPOLYGONHEADER* th = (TTPOLYGONHEADER*)cur_glyph;
const char* end_poly = cur_glyph + th->cb;
const char* cur_poly = cur_glyph + sizeof(TTPOLYGONHEADER);
sw.Move(fx_to_dbl(pp, th->pfxStart));
/* while(cur_poly < end_poly) {
    const TTPOLYCURVE* pc = (const TTPOLYCURVE*)cur_poly;
    if (pc->wType == TT_PRIM_LINE)
        for(int i = 0; i < pc->cpfx; i++)
            sw.Line(fx_to_dbl(pp, pc->apfx[i]));
    if (pc->wType == TT_PRIM_QSPLINE)
        for(int u = 0; u < pc->cpfx - 1; u++) {
            Pointf b = fx_to_dbl(pp, pc->apfx[u]);
            Pointf c = fx_to_dbl(pp, pc->apfx[u + 1]);
            if (u < pc->cpfx - 2)
                c = Mid(b, c);
            sw.Quadratic(b, c);
        }
    cur_poly += sizeof(WORD) * 2 + sizeof(POINTFX) * pc->cpfx;
}
*/ sw.Close();
cur_glyph += th->cb;
}
}

```

This renders OK:

```

void RenderCharPath2(const char* gbuf, unsigned total_size, FontGlyphConsumer& sw, double
xx, double yy)
{
    const char* cur_glyph = gbuf;
    const char* end_glyph = gbuf + total_size;
    Pointf pp(xx, yy);
    while(cur_glyph < end_glyph) {
        const TTPOLYGONHEADER* th = (TTPOLYGONHEADER*)cur_glyph;
        const char* end_poly = cur_glyph + th->cb;
        const char* cur_poly = cur_glyph + sizeof(TTPOLYGONHEADER);
        sw.Move(fx_to_dbl(pp, th->pfxStart));
        while(cur_poly < end_poly) {
            const TTPOLYCURVE* pc = (const TTPOLYCURVE*)cur_poly;
/* if (pc->wType == TT_PRIM_LINE)
            for(int i = 0; i < pc->cpfx; i++)
                sw.Line(fx_to_dbl(pp, pc->apfx[i]));
            if (pc->wType == TT_PRIM_QSPLINE)
                for(int u = 0; u < pc->cpfx - 1; u++) {
                    Pointf b = fx_to_dbl(pp, pc->apfx[u]);
                    Pointf c = fx_to_dbl(pp, pc->apfx[u + 1]);
                    if (u < pc->cpfx - 2)
                        c = Mid(b, c);
                }
            }
        }
    }
}

```

```
    sw.Quadratic(b, c);
}
*/ cur_poly += sizeof(WORD) * 2 + sizeof(PPOINTFX) * pc->cpfx;
}
sw.Close();
cur_glyph += th->cb;
}
}
```

I will now check the next suggestion with raw pick.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 10:56:28 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Mon, 14 January 2019 11:52 This shows the problem:
BR, Tom

Now that is crazy, is not it? :)

Must be some overlooked undefined behaviour somewhere.

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 10:57:33 GMT
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mirek wrote on Mon, 14 January 2019 12:41 Thinking about it, I have suspicion that maybe RawPickToValue might have to do something with all that...

What about this:

```
struct sMakeGlyph : LRUCache<String, GlyphKey>::Maker {
    GlyphKey gk;

    GlyphKey Key() const { return gk; }
    int Make(String& v) const {
        GlyphPainter gp;
        gp.move = gp.pos = Null;
        gp.tolerance = gk.tolerance;
        PaintCharacter(gp, Pointf(0, 0), gk.chr, gk.fnt);
        int sz = gp.glyph.GetCount() * 4;
    }
};
```

```

v.Set((char *)gp.glyph.begin(), sizeof(float) * gp.glyph.GetCount());
return sz;
}
};

```

```

void ApproximateChar(LinearPathConsumer& t, Pointf at, int ch, Font fnt, double tolerance)
{
    PAINTER_TIMING("ApproximateChar");
    String v;
    INTERLOCKED {
        PAINTER_TIMING("ApproximateChar::Fetch");
        static LRUCache<String, GlyphKey> cache;
        cache.Shrink(500000);
        sMakeGlyph h;
        h.gk.fnt = fnt;
        h.gk.chr = ch;
        h.gk.tolerance = tolerance;
        v = cache.Get(h);
    }
    int i = 0;
    int count = v.GetCount() / sizeof(float);
    const float *g = (const float *)~v;
    while(i < count) {
        Pointf p;
        p.x = g[i++];
        if(p.x > 1e30) {
            p.x = g[i++];
            p.y = g[i++];
            t.Move(p + at);
        }
        else {
            PAINTER_TIMING("ApproximateChar::Line");
            p.y = g[i++];
            t.Line(p + at);
        }
    }
}
}

```

The problem is still there with the above code.

BR, Tom

Subject: Re: Strange issue with text in Painter
 Posted by [mirek](#) on Mon, 14 Jan 2019 11:03:12 GMT

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Are you 100% sure that there is no other thread running using Painter (perhaps painting something entirely different) or maybe even Draw or Font? No background threads?

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 11:14:26 GMT

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Have you tried this on another computer? (Blaming HW is the last thing I usually do, but this is way too weird...)

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 11:16:17 GMT

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As the difference IMO amounts to some waste CPU cycles only, maybe we could try to insert some small delay instead of RenderCharacterSys2....

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 11:21:31 GMT

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According to Windows Task Manager, there are 30 threads running on this process. But my GUI is simply running on main thread. There should be nothing graphical going on in any of my background threads.

Here's an interesting part: I said previously that ST/MT in Painter did not make any difference. Well, it did not when I had started the program originally with Painter MT enabled and then switched 'live' to ST to test for the error effect. BUT: Now I started with Painter fixed in ST and: Error is gone... Sounds like in my original MT/ST test the font caching in Painter had already happened in MT before I switched it to ST.

I need to dig deeper on this.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 11:22:34 GMT
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mirek wrote on Mon, 14 January 2019 13:14Have you tried this on another computer? (Blaming HW is the last thing I usually do, but this is way too weird...)

Mirek

Need to try that too.

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 11:30:06 GMT
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Tom1 wrote on Mon, 14 January 2019 12:21According to Windows Task Manager, there are 30 threads running on this process. But my GUI is simply running on main thread. There should be nothing graphical going on in any of my background threads.

Here's an interesting part: I said previously that ST/MT in Painter did not make any difference. Well, it did not when I had started the program originally with Painter MT enabled and then switched 'live' to ST to test for the error effect. BUT: Now I started with Painter fixed in ST and: Error is gone... Sounds like in my original MT/ST test the font caching in Painter had already happened in MT before I switched it to ST.

I need to dig deeper on this.

BR, Tom

Well, that makes better sense - as the only possible difference there seem to be the delay, this would point to some sort of race condition. Probably the wrong glyph was cached BEFORE ST was activated....

Maybe there is a problem with INTERLOCKED. Can you try to replace it with explicit mutex?

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 11:41:34 GMT
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Replaced INTERLOCKED with StaticMutex, but no change... I Will continue testing.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 12:23:33 GMT
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Try this pls:

```
Buffer<ClippingLine> BufferPainter::RenderPath(double width, Event<One<SpanSource>&> ss,
const RGBA& color)
```

```
{
    PAINTER_TIMING("RenderPath");
    Buffer<ClippingLine> newclip;

    if(width == FILL)
        Close();

    current = Null;

    if(width == 0 || !ss && color.a == 0 && width >= FILL)
        return newclip;

    if(pathattr.mtx_serial != preclip_mtx_serial) {
        if(dopreclip) {
            Pointf tl, br, a;
            Xform2D imx = Inverse(pathattr.mtx);
            tl = br = imx.Transform(0, 0);
            a = imx.Transform(size.cx, 0);
            tl = min(a, tl);
            br = max(a, br);
            a = imx.Transform(0, size.cy);
            tl = min(a, tl);
            br = max(a, br);
            a = imx.Transform(size.cx, size.cy);
            tl = min(a, tl);
            br = max(a, br);
            preclip = Rectf(tl, br);
        }
        else
            preclip = Null;
        regular = pathattr.mtx.IsRegular();
        preclip_mtx_serial = pathattr.mtx_serial;
    }
}
```

```
if(co) {
    if(width >= FILL && !ss && !alt && findarg(mode, MODE_ANTIALIASED, MODE_SUBPIXEL) >=
```



```
0 && !path_info->ischar) {
```

(The difference is `&& !path_info->ischar` in the last line).

Also, is there a difference DEBUG vs RELEASE?

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 12:26:48 GMT
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mirek wrote on Mon, 14 January 2019 13:14: Have you tried this on another computer? (Blaming HW is the last thing I usually do, but this is way too weird...)

Mirek

Tried with my old reliable notebook, but it's the same.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 12:53:20 GMT
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mirek wrote on Mon, 14 January 2019 14:23: Try this pls:

```
Buffer<ClippingLine> BufferPainter::RenderPath(double width, Event<One<SpanSource>&> ss,
const RGBA& color)
{
    PAINTER_TIMING("RenderPath");
    Buffer<ClippingLine> newclip;

    if(width == FILL)
        Close();

    current = Null;

    if(width == 0 || !ss && color.a == 0 && width >= FILL)
        return newclip;

    if(pathattr.mtx_serial != preclip_mtx_serial) {
        if(dopreclip) {
            Pointf tl, br, a;
            Xform2D imx = Inverse(pathattr.mtx);
```

```
tl = br = imx.Transform(0, 0);
a = imx.Transform(size.cx, 0);
tl = min(a, tl);
br = max(a, br);
a = imx.Transform(0, size.cy);
tl = min(a, tl);
br = max(a, br);
a = imx.Transform(size.cx, size.cy);
tl = min(a, tl);
br = max(a, br);
preclip = Rectf(tl, br);
}
else
preclip = Null;
regular = pathattr.mtx.IsRegular();
preclip_mtx_serial = pathattr.mtx_serial;
}
```

```
if(co) {
if(width >= FILL && !ss && !alt && findarg(mode, MODE_ANTI_ALIAS, MODE_SUBPIXEL) >=
0 && !path_info->ischar) {
```

(The difference is && !path_info->ischar in the last line).

Also, is there a difference DEBUG vs RELEASE?

In RELEASE mode I could not find a single bad letter in 15 minutes. I think this is it!

Will try now with DEBUG...

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 13:11:30 GMT
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Not a single false character in DEBUG mode either. :)

I should have found something already if the problem still existed.

So, is this the fix or means for problem isolation?

Best regards,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 14:03:30 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Mon, 14 January 2019 14:11 Not a single false character in DEBUG mode either. :)

I should have found something already if the problem still existed.

So, is this the fix or means for problem isolation?

Best regards,

Tom

This basically disables MT for character rendering...

So for now, please revert it and try two separate things for me:

```
void Painter::TextOp(const Pointf& p, const wchar *text, Font fnt, int n, const double *dx)
{
    if(n == 0) {
        Move(0, 0);
        return;
    }
    FontInfo fi = fnt.Info();
    double x = p.x;
    while(n) {
        int ch = *text++;
        Character(x, p.y, ch, fnt);
        // Div();
        if(dx)
            x += *dx++;
        else
            x += fi[ch];
        n--;
    }
    if(fnt.IsUnderline() || fnt.IsStrikeout()) {
        double a = fnt.GetAscent();
        double cy = max(a / 16, 1.0);
        double cx = x - p.x;
        if(fnt.IsUnderline())
            Rectangle(p.x, p.y + a + cy, cx, cy);
        if(fnt.IsStrikeout())
            Rectangle(p.x, p.y + 2 * a / 3, cx, cy);
    }
}
```

(This might lead to some new artifacts where characters overlap, that is expected, look for the original problem (wrong characters).

```
void BufferPainter::RenderPathSegments(LinearPathConsumer *g, const Vector<byte>& path,
                                       const SimpleAttr *attr, double tolerance)
{
    Pointf pos = Pointf(0, 0);
    const byte *data = path.begin();
    const byte *end = path.end();
    while(data < end) {
        const LinearData *d = (LinearData *)data;
        switch(d->type) {
            case MOVE: {
                g->Move(pos = attr ? attr->mtx.Transform(d->p) : d->p);
                data += sizeof(LinearData);
                break;
            }
            case LINE: {
                PAINTER_TIMING("LINE");
                g->Line(pos = attr ? attr->mtx.Transform(d->p) : d->p);
                data += sizeof(LinearData);
                break;
            }
            case QUADRATIC: {
                PAINTER_TIMING("QUADRATIC");
                const QuadraticData *d = (QuadraticData *)data;
                if(attr) {
                    Pointf p = attr->mtx.Transform(d->p);
                    ApproximateQuadratic(*g, pos, attr->mtx.Transform(d->p1), p, tolerance);
                    pos = p;
                }
                else {
                    ApproximateQuadratic(*g, pos, d->p1, d->p, tolerance);
                    pos = d->p;
                }
                data += sizeof(QuadraticData);
                break;
            }
            case CUBIC: {
                PAINTER_TIMING("CUBIC");
                const CubicData *d = (CubicData *)data;
                if(attr) {
                    Pointf p = attr->mtx.Transform(d->p);
                    ApproximateCubic(*g, pos, attr->mtx.Transform(d->p1),
                                     attr->mtx.Transform(d->p2), p, tolerance);
                    pos = p;
                }
            }
        }
    }
}
```

```

}
else {
    ApproximateCubic(*g, pos, d->p1, d->p2, d->p, tolerance);
    pos = d->p;
}
data += sizeof(CubicData);
break;
}
case CHAR: {
    const CharData *ch = (CharData *)data;
    INTERLOCKED ApproximateChar(*g, ch->p, ch->ch, ch->fnt, tolerance);
    data += sizeof(CharData);
    break;
}
default:
    NEVER();
    g->End();
    return;
}
}
g->End();
}

```

(Additional mutex in for CHAR).

Thanks,

Mirek

Subject: Re: Strange issue with text in Painter
 Posted by [Tom1](#) on Mon, 14 Jan 2019 14:18:42 GMT
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Neither of the above help... false letters can still be found.

BR, Tom

Update: I see you updated something in posting. I need to re-test.

Subject: Re: Strange issue with text in Painter
 Posted by [Tom1](#) on Mon, 14 Jan 2019 14:34:56 GMT
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OK, now it looks like "void Painter::TextOp(const Pointf& p, const wchar *text, Font fnt, int n, const

double *dx)" -fix would correct the issue.

The other does not have any effect.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 14:38:01 GMT
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No, false positive. The problem is still there even after the "void Painter::TextOp(const Pointf& p, const wchar *text, Font fnt, int n, const double *dx)" -fix.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 15:08:07 GMT
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Tom1 wrote on Mon, 14 January 2019 15:38No, false positive. The problem is still there even after the "void Painter::TextOp(const Pointf& p, const wchar *text, Font fnt, int n, const double *dx)" -fix.

BR, Tom

Well, for today I am out of ideas.... Will continue tomorrow, OK?

Perhaps one last question: This probably must have started recently, probably after the last round of optimizations. Is that correct?

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 16:21:22 GMT
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Hi,

Yes, I'm also out of time for today. Tomorrow I will have time until about 14:00 EET.

The first time I noticed this was just last week when I reported it. I had not updated from SVN in a while before that though, so I may need to go back a bit further in time to find that.

One potential reason for finding this issue is that I had just recently reached a point in my own

code where I started to rotate the texts according to the original scale and rotation, both of which change constantly over the projection surface for maps where a change from one map projection to another has been carried out.

In effect this has caused an overwhelming increase in cached fonts here in my application. I think the reason is that when tolerance changes even by the smallest fraction of a double, it necessitates a new cache entry. In my case there will be a huge amount of cache entries. Actually, if the tolerance parameter were made more discrete, e.g. through classing to slots for caching, the problem might not show up at all or at least do it extremely rarely. Then again, I think, the potential issue with caching should be corrected first, if real, and only thereafter should the optimization through classing be implemented.

I might have it all wrong here, but this is just a thought.

Anyway, Mirek, thanks for your efforts today on the task!

Best regards,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 16:45:19 GMT
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Tom1 wrote on Mon, 14 January 2019 17:21 One potential reason for finding this issue is that I had just recently reached a point in my own code where I started to rotate the texts according to the original scale and rotation, both of which change constantly over the projection surface for maps where a change from one map projection to another has been carried out.

In effect this has caused an overwhelming increase in cached fonts here in my application.

Rotated texts in Painter are rotated by Painter matrix, they are cached in zero angle position...

Anyway, good info, I will think about this all...

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Mon, 14 Jan 2019 17:31:26 GMT
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mirek wrote on Mon, 14 January 2019 18:45 Tom1 wrote on Mon, 14 January 2019 17:21 One potential reason for finding this issue is that I had just recently reached a point in my own code where I started to rotate the texts according to the original scale and rotation, both of which

change constantly over the projection surface for maps where a change from one map projection to another has been carried out.

In effect this has caused an overwhelming increase in cached fonts here in my application.

Rotated texts in Painter are rotated by Painter matrix, they are cached in zero angle position...

Anyway, good info, I will think about this all...

Mirek

Well, yes, they are indeed cached in zero angle position. I should have expressed myself more clearly to make the point: Both fine scaling and fine rotation changes ultimately have an effect on double tolerance value solved using the Painter matrix scale and stored as caching key. This is also why rotating the image sometimes corrected the problem. Please see my early screenshots in this thread. (The changes would have been just at a magnitude of rounding errors i.e. just some LSBs.)

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 17:39:46 GMT
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Tom1 wrote on Mon, 14 January 2019 18:31mirek wrote on Mon, 14 January 2019 18:45Tom1 wrote on Mon, 14 January 2019 17:21One potential reason for finding this issue is that I had just recently reached a point in my own code where I started to rotate the texts according to the original scale and rotation, both of which change constantly over the projection surface for maps where a change from one map projection to another has been carried out.

In effect this has caused an overwhelming increase in cached fonts here in my application.

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Mirek

Well, yes, they are indeed cached in zero angle position. I should have expressed myself more clearly to make the point: Both fine scaling and fine rotation changes ultimately have an effect on double tolerance value solved using the Painter matrix scale and stored as caching key. This is also why rotating the image sometimes corrected the problem. Please see my early screenshots in this thread. (The changes would have been just at a magnitude of rounding errors i.e. just some LSBs.)

BR, Tom

Well, yes, that's something I have missed so far. This is true and actually something to fix (probably round tolerance to like 10%).

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 18:53:55 GMT
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EDIT: Perhaps check the possible fix first - the last post "OK, now I see possible bug, hard to say it is related, but please test:" and do testing only if it fails.

To test:

```
void BufferPainter::FinishPathJob()
{
    if(jobcount == 0)
        return;
    /* CoWork co;
    co * [&] {
        for(;;) {
            int i = co.Next();
            if(i >= jobcount)
                break;
            CoJob& b = cojob[i];
            b.rasterizer.Reset();
            PathJob j(b.rasterizer, b.width, b.path_info, b.attr, b.preclip, b.regular);
            if(!j.preclipped) {
                b.evenodd = j.evenodd;
                BufferPainter::RenderPathSegments(j.g, b.path_info->path[b.subpath], j.regular ? &b.attr :
                NULL, j.tolerance);
            }
        }
    };*/
    for(int i = 0; i < jobcount; i++) {
        CoJob& b = cojob[i];
        b.rasterizer.Reset();
        PathJob j(b.rasterizer, b.width, b.path_info, b.attr, b.preclip, b.regular);
        if(!j.preclipped) {
            b.evenodd = j.evenodd;
            BufferPainter::RenderPathSegments(j.g, b.path_info->path[b.subpath], j.regular ? &b.attr :
            NULL, j.tolerance);
        }
    }
}
```

```
}
```

```
FinishFillJob();
```

```
fillcount = jobcount;
```

```
Swap(cofill, cojob); // Swap to keep allocated rasters (instead of pick)
```

(Changing the path rendering to run in ST)

Subject: Re: Strange issue with text in Painter

Posted by [mirek](#) on Mon, 14 Jan 2019 19:51:17 GMT

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Worth testing how much tolerance has to do with it:

```
BufferPainter::PathJob::PathJob(Rasterizer& rasterizer, double width, const PathInfo *path_info,  
                                const SimpleAttr& attr, const Rectf& preclip, bool isregular)
```

```
: trans(attr.mtx)
```

```
{
```

```
    evenodd = attr.evenodd;
```

```
    regular = isregular && width < 0 && !path_info->ischar;
```

```
    g = &rasterizer;
```

```
    if(!IsNull(preclip.left) && !path_info->ischar) {
```

```
        double ex = max(width, 0.0) * (1 + attr.miter_limit);
```

```
        if(path_info->path_max.y + ex < preclip.top || path_info->path_min.y - ex > preclip.bottom ||  
           path_info->path_max.x + ex < preclip.left || path_info->path_min.x - ex > preclip.right) {
```

```
            preclipped = true;
```

```
            return;
```

```
        }
```

```
    }
```

```
    preclipped = false;
```

```
    if(regular)
```

```
        tolerance = 0.3;
```

```
    else {
```

```
        trans.target = g;
```

```
        g = &trans;
```

```
        tolerance = 0.3 / attr.mtx.GetScale();
```

```
    }
```

```
        tolerance = 0.3; // add this...
```

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Mon, 14 Jan 2019 19:56:35 GMT
[View Forum Message](#) <> [Reply to Message](#)

OK, now I see possible bug, hard to say it is related, but please test:

```
void BufferPainter::FinishPathJob()
{
    if(jobcount == 0)
        return;
    {
        CoWork co;
        co * [&] {
            for(;;) {
                int i = co.Next();
                if(i >= jobcount)
                    break;
                CoJob& b = cojob[i];
                b.rasterizer.Reset();
                PathJob j(b.rasterizer, b.width, b.path_info, b.attr, b.preclip, b.regular);
                if(!j.preclipped) {
                    b.evenodd = j.evenodd;
                    BufferPainter::RenderPathSegments(j.g, b.path_info->path[b.subpath], j.regular ? &b.attr :
                    NULL, j.tolerance);
                }
            }
        };
    }
};
}
```

FinishFillJob();

(The difference is that CoWork is now inside block).

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 07:42:16 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Mon, 14 January 2019 21:56OK, now I see possible bug, hard to say it is related, but please test:

```
void BufferPainter::FinishPathJob()
{
    if(jobcount == 0)
        return;
```

```

{
CoWork co;
co * [&] {
for(;;) {
int i = co.Next();
if(i >= jobcount)
break;
CoJob& b = cojob[i];
b.rasterizer.Reset();
PathJob j(b.rasterizer, b.width, b.path_info, b.attr, b.preclip, b.regular);
if(!j.preclipped) {
b.evenodd = j.evenodd;
BufferPainter::RenderPathSegments(j.g, b.path_info->path[b.subpath], j.regular ? &b.attr :
NULL, j.tolerance);
}
}
};
}

FinishFillJob();

```

(The difference is that CoWork is now inside block).

Good morning,

This does not help. The problem is still there.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 07:53:43 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Mon, 14 January 2019 20:53EDIT: Perhaps check the possible fix first - the last post "OK, now I see possible bug, hard to say it is related, but please test:" and do testing only if it fails.

To test:

```

void BufferPainter::FinishPathJob()
{
if(jobcount == 0)
return;
/* CoWork co;
co * [&] {

```

```

for(;;) {
    int i = co.Next();
    if(i >= jobcount)
        break;
    CoJob& b = cojob[i];
    b.rasterizer.Reset();
    PathJob j(b.rasterizer, b.width, b.path_info, b.attr, b.preclip, b.regular);
    if(!j.preclipped) {
        b.evenodd = j.evenodd;
        BufferPainter::RenderPathSegments(j.g, b.path_info->path[b.subpath], j.regular ? &b.attr :
NULL, j.tolerance);
    }
}
};*/
for(int i = 0; i < jobcount; i++) {
    CoJob& b = cojob[i];
    b.rasterizer.Reset();
    PathJob j(b.rasterizer, b.width, b.path_info, b.attr, b.preclip, b.regular);
    if(!j.preclipped) {
        b.evenodd = j.evenodd;
        BufferPainter::RenderPathSegments(j.g, b.path_info->path[b.subpath], j.regular ? &b.attr :
NULL, j.tolerance);
    }
}

FinishFillJob();

fillcount = jobcount;
Swap(cofill, cojob); // Swap to keep allocated rasters (instead of pick)

```

(Changing the path rendering to run in ST)

This fixes the issue.

I do not know if this has anything to do with it, but I have noticed that I cannot pass reference variables as parameters to CoWork::Do() -called functions. Compiler does not complain, but the code simply does not work correctly. I have had to switch to using pointers as parameters instead of reference variables in such functions.

BR, Tom

Subject: Re: Strange issue with text in Painter
 Posted by [Tom1](#) on Tue, 15 Jan 2019 08:11:58 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi,

As for forcing "tolerance = 0.3;" likely decreases the number of cache entries to a fraction of the original in this case, the likelihood to see any issues drops equally. And so it seems: I cannot see a single erroneous character.

Then again, I can check about 1000 names in a reasonable time on screen and if the problem is there, I will see just a few errors. I think that it becomes just a few errors in a million now, so I'm not 'lucky enough' to find them.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 08:15:49 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Tue, 15 January 2019 08:53

I do not know if this has anything to do with it, but I have noticed that I cannot pass reference variables as parameters to CoWork::Do() -called functions. Compiler does not complain, but the code simply does not work correctly. I have had to switch to using pointers as parameters instead of reference variables in such functions.

That should not be issue here. Now all depends on details, but you always have to be careful that referenced variable exists until CoWork Finish or destructor... If you think that you have non-working example of different nature, please start a new thread a post it...

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 08:17:44 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Tue, 15 January 2019 09:11Hi,

As for forcing "tolerance = 0.3;" likely decreases the number of cache entries to a fraction of the original in this case, the likelihood to see any issues drops equally. And so it seems: I cannot see a single erroneous character.

Then again, I can check about 1000 names in a reasonable time on screen and if the problem is there, I will see just a few errors. I think that it becomes just a few errors in a million now, so I'm not 'lucky enough' to find them.

BR, Tom

Understood, I mainly just wanted to know if the hypothesis is correct... (Revert the change, later I will introduce a nice simple fix to round tolerance, but we need to find the bug first).

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 08:21:23 GMT
[View Forum Message](#) <> [Reply to Message](#)

I am also trying to reproduce the issue here; anyway the paintings I have here only has a couple o texts in it.

Now I am not sure you have any level-of-detail systeme there, but if not, would it be possible to send me extremely zoomed out painting file so that it has more texts in it?

(That said, when testing, do you start with such zoomed-out situation?)

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 08:23:54 GMT
[View Forum Message](#) <> [Reply to Message](#)

```
void BufferPainter::FinishPathJob()
{
    if(jobcount == 0)
        return;

    CoWork co;
    co * [&] {
        for(;;) {
            int i = co.Next();
            if(i >= jobcount)
                break;
            INTERLOCKED {
                CoJob& b = cojob[i];
                b.rasterizer.Reset();
                PathJob j(b.rasterizer, b.width, b.path_info, b.attr, b.preclip, b.regular);
                if(!j.preclipped) {
                    b.evenodd = j.evenodd;
                    BufferPainter::RenderPathSegments(j.g, b.path_info->path[b.subpath], j.regular ? &b.attr :
NULL, j.tolerance);
                }
            }
        }
    };
};
```

If problem disappears, try to move INTERLOCKED down line by line (until if) to see when/if it reappears.

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 08:30:19 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Tue, 15 January 2019 10:15Tom1 wrote on Tue, 15 January 2019 08:53
I do not know if this has anything to do with it, but I have noticed that I cannot pass reference variables as parameters to CoWork::Do() -called functions. Compiler does not complain, but the code simply does not work correctly. I have had to switch to using pointers as parameters instead of reference variables in such functions.

That should not be issue here. Now all depends on details, but you always have to be careful that referenced variable exists until CoWork Finish or destructor... If you think that you have non-working example of different nature, please start a new thread a post it...

Mirek

OK, will do when I have some time and can recall the accurate details of my problem with it to create a testcase.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 08:34:34 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Tue, 15 January 2019 10:23

```
void BufferPainter::FinishPathJob()
```

```
{  
    if(jobcount == 0)  
        return;
```

```
    CoWork co;
```

```
    co * [&] {  
        for(;;) {  
            int i = co.Next();  
            if(i >= jobcount)  
                break;  
            INTERLOCKED {
```



```
CoJob& b = cojob[i];
b.rasterizer.Reset();
PathJob j(b.rasterizer, b.width, b.path_info, b.attr, b.preclip, b.regular);
if(!j.preclipped) {
    b.evenodd = j.evenodd;
    BufferPainter::RenderPathSegments(j.g, b.path_info->path[b.subpath], j.regular ? &b.attr :
NULL, j.tolerance);
}
}
}
};
```

If problem disappears, try to move INTERLOCKED down line by line (until if) to see when/if it reappears.

This does not help.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 08:38:28 GMT
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What about locking the whole lambda body?

Also to test in the same loop:

```
PathJob j(b.rasterizer, b.width, b.path_info, b.attr, b.preclip, false);
```

(change the last parameter to 'false')

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 08:42:34 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Tue, 15 January 2019 10:21I am also trying to reproduce the issue here; anyway the paintings I have here only has a couple o texts in it.

Now I am not sure you have any level-of-detail systeme there, but if not, would it be possible to send me extremely zoomed out painting file so that it has more texts in it?

(That said, when testing, do you start with such zoomed-out situation?)

I do have a sort of level-of-detail system here, but I can squeeze quite a bunch of details on one

UHD view still using smaller than readable fonts. You can then scale the painting to a readable level. Anyway, can you PM me your e-mail address, so that I can send you the painting. (It's still over 7MB when compressed with 7-zip at ultra level.)

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 08:51:07 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Tue, 15 January 2019 10:38 What about locking the whole lambda body?

Also to test in the same loop:

```
PathJob j(b.rasterizer, b.width, b.path_info, b.attr, b.preclip, false);
```

(change the last parameter to 'false')

```
void BufferPainter::FinishPathJob()
```

```
{  
    if(jobcount == 0)  
        return;  
  
    CoWork co;  
    co * [&] {  
        INTERLOCKED {  
            for(;;) {  
                int i = co.Next();  
                if(i >= jobcount)  
                    break;  
                CoJob& b = cojob[i];  
                b.rasterizer.Reset();  
                PathJob j(b.rasterizer, b.width, b.path_info, b.attr, b.preclip, b.regular);  
                if(!j.preclipped) {  
                    b.evenodd = j.evenodd;  
                    BufferPainter::RenderPathSegments(j.g, b.path_info->path[b.subpath], j.regular ? &b.attr :  
NULL, j.tolerance);  
                }  
            }  
        }  
    }  
};
```

This works OK. I will now test with 'false' instead of 'b.regular'.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 08:53:22 GMT
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BTW, here is my testing code where I am trying to reproduce the issue:

```
#include <CtrlLib/CtrlLib.h>
#include <Painter/Painter.h>

using namespace Upp;

class PainterText : public TopWindow {
public:
    Painting p;
    FileSel fs;
    BufferPainter bpainter;
    double scale = 0.4;
    int rotation = 0;
    Pointf translate = Pointf(0, 0);
    Pointf start;

    void Open(){
        if(fs.ExecuteOpen("Select a painting to view")) {
            p.Clear();
            p.Serialize(FileIn(fs.Get()));
        }
    }

    virtual void LeftDown(Point p, dword)
    {
        start = (Pointf)p * scale;
        SetCapture();
    }

    virtual void MouseMove(Point p, dword keyflags)
    {
        if(HasCapture()) {
            Pointf pos = (Pointf)p * scale;
            translate += (pos - start);
            start = pos;
            Refresh();
        }
    }

    virtual void MouseWheel(Point p, int zdelta, dword keyflags)
    {
        if(keyflags & K_CTRL)
            rotation += sgn(zdelta);
    }
};
```

```

else {
    if(zdelta < 0)
        scale *= 0.9;
    else
        scale /= 0.9;
}
Refresh();
}

```

```

virtual bool Key(dword key, int count){
    Refresh();
    switch(key){
    case K_CTRL_O:
        Open();
        return true;
    }
    return false;
}

```

```

typedef PainterText CLASSNAME;

```

```

PainterText(){
    Sizeable();
}

```

```

    p.Serialize(FileIn("C:/xxx/PainteTest/T5.painting"));
}

```

```

virtual void Paint(Draw &draw){
    ImageBuffer ib(GetSize());
    {
        bpainter.Create(ib);
        bpainter.Co(true);
        bpainter.PreClipDashed();
        bpainter.Clear(White());
        bpainter.EvenOdd();

        bpainter.Scale(scale);
        bpainter.Rotate(rotation * .1);
        bpainter.Translate(translate);

        bpainter.Paint(p);

        bpainter.Finish();
    }
}

```

```

SetSurface(draw,Rect(ib.GetSize()),ib,ib.GetSize(),Point(0,0));
}

```

```
};  
  
GUI_APP_MAIN  
{  
  PainterText().Run();  
}
```

Perhaps you could try with the painting file you have produced - this is to ensure that I am doing the same thing...

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 08:53:25 GMT
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mirek wrote on Tue, 15 January 2019 10:38 What about locking the whole lambda body?

Also to test in the same loop:

```
PathJob j(b.rasterizer, b.width, b.path_info, b.attr, b.preclip, false);
```

(change the last parameter to 'false')

Changing the last parameter to 'false' does not work.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 09:06:01 GMT
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```
CharEntry fc_cache[512];
```

```
GlyphInfo GetGlyphInfo(Font font, int chr)  
{  
  INTERLOCKED {  
    font.RealizeStd();  
    unsigned hash = GlyphHash(font, chr);  
    CharEntry& e = fc_cache[hash & 511];  
    if(e.font != font.AsInt64() || e.chr != chr)  
      e = GetGlyphEntry(font, chr, hash);  
    return e.info;  
  }  
}
```

(removal of thread__ for fc_cache)

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 09:07:44 GMT
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```
FontEntry fi_cache[63];

const CommonFontInfo& GetFontInfo(Font font)
{
    INTERLOCKED {
        font.RealizeStd();
        unsigned hash = FoldHash(font.GetHashValue()) % 63;
        FontEntry& e = fi_cache[hash];
        if(e.font != font.AsInt64()) {
            Mutex::Lock __ (sFontLock);
            e.font = font.AsInt64();
            e.info = GetFontInfoSys(font);
        }
        return e.info;
    }
}
```

(Removal of thread__ for fi_cache)

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 09:19:52 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi,

Removal of thread__ for fc_cache and fi_cache do not help. The issue is still there.

-

As for the testcode, I could not spot any false characters there, but the granularity due to significant zooming ruins part of the larger texts.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 09:21:00 GMT
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That testing code I have posted works better with

```
virtual void LeftDown(Point p, dword)
{
    start = (Pointf)p / scale;
    SetCapture();
}

virtual void MouseMove(Point p, dword keyflags)
{
    if(HasCapture()) {
        Pointf pos = (Pointf)p / scale;
        translate += (pos - start);
        start = pos;
        Refresh();
    }
}
```

:)

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 10:13:31 GMT
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Yes :)

And:

```
PainterText().MinimizeBox().MaximizeBox().Sizeable().Run();
```

Is nice to have too to fill the screen.

But I still can't reproduce the issue with this.

One thing that caught my attention, though, is that the large bold upright texts show up extremely coarse, which is kind of expected due to the original zoom level fitting it all in one UHD screen. But why on earth are those smaller non-bold italic / upright fonts perfectly rendered although they are even smaller in the original view?

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 10:20:24 GMT
[View Forum Message](#) <> [Reply to Message](#)

Yes, I have noticed it too. I am not so sure original zoom level has anything to do with that though... (it should get new tolerance value)

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 10:23:52 GMT
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As to this issue, is it possible that all other texts are using your custom "Sheer" italic?

It actually looks like setting tolerance to 0.3 is not a good idea...

EDIT: tolerance is ok

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 10:27:41 GMT
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Is it by any means possible that missing letter are from those 'ugly' texts?

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 10:43:21 GMT
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mirek wrote on Tue, 15 January 2019 12:23As to this issue, is it possible that all other texts are using your custom "Sheer" italic?

It actually looks like setting tolerance to 0.3 is not a good idea...

EDIT: tolerance is ok

My custom reverse italic (using sheer to lean back) is using standard upright font and the normal italic is using standard italic served by Painter (as is without custom sheer). The ugly characters appear when the font is bold.

The names of lakes and other water areas (light blue) are using this reverse italic. Smaller place names are in plain italic. Larger place names are in straight-up bold. Municipalities are in even larger straight-up capital non-bold letters.

Best regards,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 10:45:00 GMT
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Interesting, I have tried to hunt down 'ugly text issue' like this:

```
void Painter::TextOp(const Pointf& p, const wchar *text, Font fnt, int n, const double *dx)
{
    DDUMP(WString(text, n));
}
```

And interestingly, it looks like those are not painted as Text... or at least not stored into painting file as Text. Is that somehow possible that you have some separate path for them?

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 10:45:19 GMT
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mirek wrote on Tue, 15 January 2019 12:27: Is it by any means possible that missing letters are from those 'ugly' texts?

I do not know about the missing letters, but the wrong size / wrong italicizing letters tend to come at same size and italicizing as many of the other texts that already occur on the view.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 10:51:23 GMT
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(gtg now, 2-3 hours)

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 10:54:27 GMT
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I have 1 h 8'...

Anyway, I need to pull back that 'Bold' from some place names. E.g. 'Paloniemi', which is rendered ugly, is just slightly larger straight up text than the more common place names which are italic... not even bold!

Best regards,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 11:27:45 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Tue, 15 January 2019 12:54I have 1 h 8'...

Anyway, I need to pull back that 'Bold' from some place names. E.g. 'Paloniemi', which is rendered ugly, is just slightly larger straight up text than the more common place names which are italic... not even bold!

Best regards,

Tom

OK, now I know: There is no separate path for those ugly texts. But I suppose the font size causes some conditional conversion to polygons in Painting. I forced all fonts to be of height 12, and then applied suitable Scale to Painter. As a result all the fonts were (ugly) rendered with precision that was insufficient when zooming in. Then I did this using height 75 and again suitable scale to painter. This time all the texts rendered beautifully in Painting. So I guess the storage format and precision in Painting is dependent on font size.

BR, Tom

EDIT: I changed font height to 1 and tried again: This time all fonts rendered perfectly!! But, the inter-character spacing precision in words was terrible.

EDIT: I think I understand why I cannot send the problem in a painting to you: The Painting is generated ST and characters are partly rendered already, so the error will not show up. I must generate a file with only unrendered characters, which get rendered at your end only.

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 12:28:52 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Tue, 15 January 2019 11:19Hi,

Removal of thread__ for fc_cache and fi_cache do not help. The issue is still there.

-

As for the testcode, I could not spot any false characters there, but the granularity due to significant zooming ruins part of the larger texts.

BR, Tom

Hi!

It looks like this change of removing thread__ for fc_cache and fi_cache did not get compiled for me as I was simultaneously working on the testcode. Now I recompiled all and tried this once more and BANG! The problem was gone from my own program. And I also got it back by adding the thread__ ahead of those two caches. I think this solved the issue!

I must fly now... Will be back for more testing tomorrow.

A million thanks and best regards,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 13:55:41 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Tue, 15 January 2019 12:27
So I guess the storage format and precision in Painting is dependent on font size.

Except it is not, AFAIK... :)

Besides, in this situation you are just using PaintingPainter, which really just directly stores Painter commands (including TextOp and CharacterOp). And the problem is that those ugly texts get stored as curves. Maybe I am blind, but I do not see a code path that could lead to THAT.

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 13:56:40 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Tue, 15 January 2019 13:28Tom1 wrote on Tue, 15 January 2019 11:19Hi,

Removal of thread__ for fc_cache and fi_cache do not help. The issue is still there.

-

As for the testcode, I could not spot any false characters there, but the granularity due to significant zooming ruins part of the larger texts.

BR, Tom

Hi!

It looks like this change of removing thread__ for fc_cache and fi_cache did not get compiled for me as I was simultaneously working on the testcode. Now I recompiled all and tried this once more and BANG! The problem was gone from my own program. And I also got it back by adding the thread__ ahead of those two caches. I think this solved the issue!

I must fly now... Will be back for more testing tomorrow.

A million thanks and best regards,

Tom

Obviously the next step is to try whether it is caused by first, second or both...

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Tue, 15 Jan 2019 15:20:30 GMT
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Upon further investigation we can forget about ugly texts. Most likely these are just results of font hinting process in Win32.

(As to what got me so confused, those texts are so mangled that I misread the name and then failed to find it in the list...)

EDIT: Hinting confirmed. I have added |GGO_UNHINTED to the GetGlyphOutlineW call and problem disappeared... (now in trunk).

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Tue, 15 Jan 2019 15:37:58 GMT
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Ok, I will try both one at a time tomorrow.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 07:54:36 GMT
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Good morning Mirek,

Removing "thread__" from "thread__ CharEntry fc_cache[512];" fixes it.

Removing "thread__" from "thread__ FontEntry fi_cache[63];" does not have any effect on the problem.

Best regards,

Tom

BTW: Why should the caches be thread_local anyway? Isn't it true that Painter will use the same fonts with a whole bunch of threads when painting in MT? Having them common for all threads would have the used fonts cached after first hit and available to all threads. (Well, I'm likely missing something important here, but you'll probably educate me on that shortly... :))

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Wed, 16 Jan 2019 08:18:24 GMT
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Tom1 wrote on Wed, 16 January 2019 08:54 Good morning Mirek,

Removing "thread__" from "thread__ CharEntry fc_cache[512];" fixes it.

Removing "thread__" from "thread__ FontEntry fi_cache[63];" does not have any effect on the problem.

Best regards,

Tom

BTW: Why should the caches be thread_local anyway? Isn't it true that Painter will use the same fonts with a whole bunch of threads when painting in MT? Having them common for all threads would have the used fonts cached after first hit and available to all threads. (Well, I'm likely missing something important here, but you'll probably educate me on that shortly... :))

Only to avoid confusion, how the code for CharEntry exactly looks now for you? And again, the rest of the code is absolutely the same as trunk?

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Wed, 16 Jan 2019 08:21:28 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Wed, 16 January 2019 08:54
BTW: Why should the caches be thread_local anyway? Isn't it true that Painter will use the same fonts with a whole bunch of threads when painting in MT? Having them common for all threads would have the used fonts cached after first hit and available to all threads. (Well, I'm likely missing something important here, but you'll probably educate me on that shortly...) :)

These functions are not Painter specific. They are used for rendering text with Draw as well. thread_local is used to avoid locking the mutex for each glyphinfo query (e.g. Font fnt = Arial(20); int char_width = fnt['A']; - operator[] is using this cache)

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 08:37:02 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Wed, 16 January 2019 10:18Tom1 wrote on Wed, 16 January 2019 08:54Good morning Mirek,

Removing "thread__" from "thread__ CharEntry fc_cache[512];" fixes it.

Removing "thread__" from "thread__ FontEntry fi_cache[63];" does not have any effect on the problem.

Best regards,

Tom

BTW: Why should the caches be thread_local anyway? Isn't it true that Painter will use the same fonts with a whole bunch of threads when painting in MT? Having them common for all threads would have the used fonts cached after first hit and available to all threads. (Well, I'm likely missing something important here, but you'll probably educate me on that shortly...) :)

Only to avoid confusion, how the code for CharEntry exactly looks now for you? And again, the rest of the code is absolutely the same as trunk?

Mirek

I refreshed from trunk this morning and the only change is in Font.cpp:

```
CharEntry fc_cache[512];
```

Instead of original:

```
thread__ CharEntry fc_cache[512];
```

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Wed, 16 Jan 2019 08:39:48 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Wed, 16 January 2019 09:37mirek wrote on Wed, 16 January 2019 10:18Tom1 wrote on Wed, 16 January 2019 08:54Good morning Mirek,

Removing "thread__" from "thread__ CharEntry fc_cache[512];" fixes it.

Removing "thread__" from "thread__ FontEntry fi_cache[63];" does not have any effect on the problem.

Best regards,

Tom

BTW: Why should the caches be thread_local anyway? Isn't it true that Painter will use the same fonts with a whole bunch of threads when painting in MT? Having them common for all threads would have the used fonts cached after first hit and available to all threads. (Well, I'm likely missing something important here, but you'll probably educate me on that shortly...) :)

Only to avoid confusion, how the code for CharEntry exactly looks now for you? And again, the rest of the code is absolutely the same as trunk?

Mirek

I refreshed from trunk this morning and the only change is in Font.cpp:

```
CharEntry fc_cache[512];
```

Instead of original:

```
thread__ CharEntry fc_cache[512];
```

BR, Tom

Well,there should be additional INTERLOCKED (to replace thread___)... Anyway, that is probably not relevant..

Any chance that you see a bug there in the code? I see nothing :(

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 08:40:03 GMT
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mirek wrote on Wed, 16 January 2019 10:21Tom1 wrote on Wed, 16 January 2019 08:54
BTW: Why should the caches be thread_local anyway? Isn't it true that Painter will use the same fonts with a whole bunch of threads when painting in MT? Having them common for all threads would have the used fonts cached after first hit and available to all threads. (Well, I'm likely missing something important here, but you'll probably educate me on that shortly...) :)

These functions are not Painter specific. They are used for rendering text with Draw as well. thread_local is used to avoid locking the mutex for each glyphinfo query (e.g. Font fnt = Arial(20); int char_width = fnt['A']; - operator[] is using this cache)

Mirek

OK, I see. I'm not surprised you had a good reason for it! :)

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 09:45:04 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Wed, 16 January 2019 10:39Tom1 wrote on Wed, 16 January 2019 09:37mirek wrote on Wed, 16 January 2019 10:18Tom1 wrote on Wed, 16 January 2019 08:54Good morning Mirek,

Removing "thread___" from "thread___ CharEntry fc_cache[512];" fixes it.

Removing "thread___" from "thread___ FontEntry fi_cache[63];" does not have any effect on the problem.

Best regards,

Tom

BTW: Why should the caches be thread_local anyway? Isn't it true that Painter will use the same fonts with a whole bunch of threads when painting in MT? Having them common for all threads would have the used fonts cached after first hit and available to all threads. (Well, I'm likely

missing something important here, but you'll probably educate me on that shortly...) :)

Only to avoid confusion, how the code for CharEntry exactly looks now for you? And again, the rest of the code is absolutely the same as trunk?

Mirek

I refreshed from trunk this morning and the only change is in Font.cpp:

```
CharEntry fc_cache[512];
```

Instead of original:

```
thread__ CharEntry fc_cache[512];
```

BR, Tom

Well, there should be additional INTERLOCKED (to replace thread__)... Anyway, that is probably not relevant..

Any chance that you see a bug there in the code? I see nothing :(

I have read the code back and forth, but I clearly do not understand what's the reason for this. I'll keep digging...

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 09:52:07 GMT
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Now I'm even more confused. I removed the access to fc_cache entirely:

```
thread__ CharEntry fc_cache[512];
```

```
GlyphInfo GetGlyphInfo(Font font, int chr)
{
    font.RealizeStd();
    unsigned hash = GlyphHash(font, chr);
    /* CharEntry& e = fc_cache[hash & 511];
    if(e.font != font.AsInt64() || e.chr != chr)
        e = GetGlyphEntry(font, chr, hash);
    return e.info;*/
    return GetGlyphEntry(font, chr, hash).info;
}
```

But the error is still there!

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Wed, 16 Jan 2019 09:53:21 GMT
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Can you try this (with thread__ in place)

```
void PaintCharacter(Painter& sw, const Pointf& p, int chr, Font font)
{
    GlyphInfo gi = GetGlyphInfo(font, chr);
    PaintCharPath pw;
    pw.sw = &sw;
    if(gi.IsNormal())
        font.Render(pw, p.x, p.y, chr);
    else
        if(gi.IsReplaced()) {
            Font fnt = font;
            fnt.Face(gi.lspc);
            fnt.Height(gi.rspc);
            fnt.Render(pw, p.x, p.y + font.GetAscent() - fnt.GetAscent(), chr);
            DLOG("Replaced " << font << " -> " << fnt << ", " << chr << " " << (char)chr);
        }
    else
        if(gi.IsComposed()) {
            DLOG("Composed " << font << ", " << chr << " " << (char)chr);
            ComposedGlyph cg;
            Compose(font, chr, cg);
            font.Render(pw, p.x, p.y, cg.basic_char);
            sw.Div();
            cg.mark_font.Render(pw, p.x + cg.mark_pos.x, p.y + cg.mark_pos.y, cg.mark_char);
        }
    sw.EvenOdd(true);
}
```

bring it to error and check whether there is anything in the log?

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Wed, 16 Jan 2019 10:11:16 GMT
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Maybe you can try to call GetGlyphInfoSys directly there, with `Mutex::Lock ____(sFontLock);`

```
thread__ CharEntry fc_cache[512];

GlyphInfo GetGlyphInfo(Font font, int chr)
{
    font.RealizeStd();
    /* unsigned hash = GlyphHash(font, chr);
    CharEntry& e = fc_cache[hash & 511];
    if(e.font != font.AsInt64() || e.chr != chr)
        e = GetGlyphEntry(font, chr, hash);
    return e.info;*/
    return GetGlyphEntry(font, chr, hash).info;
    /*
    Mutex::Lock ____(sFontLock);
    return GetGlyphInfoSys(font, chr);
    */
}
```

Another thing to test is whether

```
thread__ CharEntry fc_cache[512];

GlyphInfo GetGlyphInfo(Font font, int chr)
{
    font.RealizeStd();
    unsigned hash = GlyphHash(font, chr);
    /* CharEntry& e = fc_cache[hash & 511];
    if(e.font != font.AsInt64() || e.chr != chr)
        e = GetGlyphEntry(font, chr, hash);
    return e.info;*/
    return GetGlyphEntry(font, chr, hash).info;
}
```

still depends on `thread__` (hopefully not :)

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 10:31:09 GMT
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mirek wrote on Wed, 16 January 2019 11:53Can you try this (with thread__ in place)

```
void PaintCharacter(Painter& sw, const Pointf& p, int chr, Font font)
{
    GlyphInfo gi = GetGlyphInfo(font, chr);
    PaintCharPath pw;
    pw.sw = &sw;
    if(gi.IsNormal())
        font.Render(pw, p.x, p.y, chr);
    else
        if(gi.IsReplaced()) {
            Font fnt = font;
            fnt.Face(gi.lspc);
            fnt.Height(gi.rspc);
            fnt.Render(pw, p.x, p.y + font.GetAscent() - fnt.GetAscent(), chr);
            DLOG("Replaced " << font << " -> " << fnt << ", " << chr << " " << (char)chr);
        }
    else
        if(gi.IsComposed()) {
            DLOG("Composed " << font << ", " << chr << " " << (char)chr);
            ComposedGlyph cg;
            Compose(font, chr, cg);
            font.Render(pw, p.x, p.y, cg.basic_char);
            sw.Div();
            cg.mark_font.Render(pw, p.x + cg.mark_pos.x, p.y + cg.mark_pos.y, cg.mark_char);
        }
    sw.EvenOdd(true);
}
```

bring it to error and check whether there is anything in the log?

Mirek

Nothing is shown on log.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 10:35:11 GMT
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thread__ CharEntry fc_cache[512];

```
GlyphInfo GetGlyphInfo(Font font, int chr)
{
```

```
font.RealizeStd();
/* unsigned hash = GlyphHash(font, chr);
CharEntry& e = fc_cache[hash & 511];
if(e.font != font.AsInt64() || e.chr != chr)
    e = GetGlyphEntry(font, chr, hash);
return e.info;
return GetGlyphEntry(font, chr, hash).info;
*/
    Mutex::Lock __sFontLock);
    return GetGlyphInfoSys(font, chr);
}
```

Still fails.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 10:39:22 GMT
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```
CharEntry fc_cache[512];
```

```
GlyphInfo GetGlyphInfo(Font font, int chr)
{
    font.RealizeStd();
    unsigned hash = GlyphHash(font, chr);
/* CharEntry& e = fc_cache[hash & 511];
if(e.font != font.AsInt64() || e.chr != chr)
    e = GetGlyphEntry(font, chr, hash);
return e.info;*/
return GetGlyphEntry(font, chr, hash).info;
}
```

This fails regardless using thread__ or not.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 10:46:43 GMT
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Even this fails:

```
//CharEntry fc_cache[512];
```

```
GlyphInfo GetGlyphInfo(Font font, int chr)
{
  //Mutex::Lock ____(sFontLock);
  GlyphInfo info;
  INTERLOCKED{
  font.RealizeStd();
  info=GetGlyphInfoSys(font, chr);
  }
  return info;
}
```

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Wed, 16 Jan 2019 11:00:16 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Wed, 16 January 2019 11:46Even this fails:
//CharEntry fc_cache[512];

```
GlyphInfo GetGlyphInfo(Font font, int chr)
{
  //Mutex::Lock ____(sFontLock);
  GlyphInfo info;
  INTERLOCKED{
  font.RealizeStd();
  info=GetGlyphInfoSys(font, chr);
  }
  return info;
}
```

BR, Tom

Well, those returns some sanity...

I have found possible issue and committed to trunk, please plain trunk now.. The chance that this fixes the issue is like 5%, but it is worth trying....

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 11:07:50 GMT
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mirek wrote on Wed, 16 January 2019 13:00...

Well, those returns some sanity...

I have found possible issue and committed to trunk, please plain trunk now.. The chance that this fixes the issue is like 5%, but it is worth trying....

Unfortunately, the issue remains.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Wed, 16 Jan 2019 11:16:43 GMT
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What about this:

```
HFONT GetWin32Font(Font fnt, int angle)
{
    LTIMING("GetWin32Font");
    static HFontEntry cache[FontCACHE];
    ONCELOCK {
        for(int i = 0; i < FontCACHE; i++)
            cache[i].font.Height(-30000);
    }
    HFontEntry be;
    be = cache[0];
    /* for(int i = 0; i < FontCACHE; i++) {
        HFontEntry e = cache[i];
        if(i)
            cache[i] = be;
        if(e.font == fnt && e.angle == angle) {
            if(i)
                cache[0] = e;
            return e.hfont;
        }
        be = e;
    }*/
    LTIMING("GetWin32Font2");
    if(be.hfont)
        DeleteObject(be.hfont);

    be.font = fnt;
    be.angle = angle;
#ifdef PLATFORM_WINCE
    LOGFONT lfnt;
```

```

Zero(lfnt);
lfnt.lfHeight = fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12;
lfnt.lfWeight = fnt.IsBold() ? FW_BOLD : FW_NORMAL;
lfnt.lfItalic = fnt.IsItalic();
lfnt.lfUnderline = fnt.IsUnderline();
lfnt.lfStrikeOut = fnt.IsStrikeout();
wcscopy(lfnt.lfFaceName, ToSystemCharset(fnt.GetFaceName()));
be.hfont = CreateFontIndirect(&lfnt);
#else
be.hfont = CreateFont(
    fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
    fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
    fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
    fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
    fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
    CLIP_DEFAULT_PRECIS,
    fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
    DEFAULT_PITCH|FF_DONTCARE,
    fnt.GetFaceName()
);
#endif
cache[0] = be;
return be.hfont;
}

```

(It is actually possible that this will INCREASE the number of wrong letters, even that would be important to know)

Subject: Re: Strange issue with text in Painter
 Posted by [Tom1](#) on Wed, 16 Jan 2019 11:47:29 GMT
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mirek wrote on Wed, 16 January 2019 13:16 What about this:

```

HFONT GetWin32Font(Font fnt, int angle)
{
    LTIMING("GetWin32Font");
    static HFontEntry cache[FONTCACHE];
    ONCELOCK {
        for(int i = 0; i < FONTCACHE; i++)
            cache[i].font.Height(-30000);
    }
    HFontEntry be;
    be = cache[0];
    /* for(int i = 0; i < FONTCACHE; i++) {

```



```

HFontEntry e = cache[i];
if(i)
    cache[i] = be;
if(e.font == fnt && e.angle == angle) {
    if(i)
        cache[0] = e;
    return e.hfont;
}
be = e;
}*/
LTIMING("GetWin32Font2");
if(be.hfont)
    DeleteObject(be.hfont);

be.font = fnt;
be.angle = angle;
#ifdef PLATFORM_WINCE
LOGFONT lfnt;
Zero(lfnt);
lfnt.lfHeight = fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12;
lfnt.lfWeight = fnt.IsBold() ? FW_BOLD : FW_NORMAL;
lfnt.lfItalic = fnt.IsItalic();
lfnt.lfUnderline = fnt.IsUnderline();
lfnt.lfStrikeOut = fnt.IsStrikeout();
wcscpy(lfnt.lfFaceName, ToSystemCharSet(fnt.GetFaceName()));
be.hfont = CreateFontIndirect(&lfnt);
#else
be.hfont = CreateFont(
    fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
    fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
    fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
    fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
    fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
    CLIP_DEFAULT_PRECIS,
    fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
    DEFAULT_PITCH|FF_DONTCARE,
    fnt.GetFaceName()
);
#endif
cache[0] = be;
return be.hfont;
}

```

(It is actually possible that this will INCREASE the number of wrong letters, even that would be important to know)

It seems this fixes the issue! :)

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Wed, 16 Jan 2019 12:09:15 GMT
[View Forum Message](#) <> [Reply to Message](#)

How about

```
HFONT GetWin32Font(Font fnt, int angle)
{
    LTIMING("GetWin32Font");
    static HFontEntry cache[FONTCACHE];
    ONCELOCK {
        for(int i = 0; i < FONTCACHE; i++)
            cache[i].font.Height(-30000);
    }
    HFontEntry be;
    be = cache[0];
    INTERLOCKED
    for(int i = 0; i < FONTCACHE; i++) {
        HFontEntry e = cache[i];
        if(i)
            cache[i] = be;
        if(e.font == fnt && e.angle == angle) {
            if(i)
                cache[0] = e;
            return e.hfont;
        }
        be = e;
    }
    LTIMING("GetWin32Font2");
    if(be.hfont)
        DeleteObject(be.hfont);

    be.font = fnt;
    be.angle = angle;
#ifdef PLATFORM_WINCE
    LOGFONT lfnt;
    Zero(lfnt);
    lfnt.lfHeight = fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12;
    lfnt.lfWeight = fnt.IsBold() ? FW_BOLD : FW_NORMAL;
    lfnt.lfItalic = fnt.IsItalic();
    lfnt.lfUnderline = fnt.IsUnderline();
    lfnt.lfStrikeOut = fnt.IsStrikeout();
    wcsncpy(lfnt.lfFaceName, ToSystemCharset(fnt.GetFaceName()));
#endif
}
```

```

be.hfont = CreateFontIndirect(&lfnt);
#else
be.hfont = CreateFont(
    fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
    fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
    fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
    fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
    fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
    CLIP_DEFAULT_PRECIS,
    fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
    DEFAULT_PITCH|FF_DONTCARE,
    fnt.GetFaceName()
);
#endif
cache[0] = be;
return be.hfont;
}

```

Subject: Re: Strange issue with text in Painter
 Posted by [Tom1](#) on Wed, 16 Jan 2019 12:20:56 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Wed, 16 January 2019 14:09 How about

```

HFONT GetWin32Font(Font fnt, int angle)
{
    LTIMING("GetWin32Font");
    static HFontEntry cache[FONTCACHE];
    ONCELOCK {
        for(int i = 0; i < FONTCACHE; i++)
            cache[i].font.Height(-30000);
    }
    HFontEntry be;
    be = cache[0];
    INTERLOCKED
    for(int i = 0; i < FONTCACHE; i++) {
        HFontEntry e = cache[i];
        if(i)
            cache[i] = be;
        if(e.font == fnt && e.angle == angle) {
            if(i)
                cache[0] = e;
            return e.hfont;
        }
    }
    be = e;
}

```

```

}
LTIMING("GetWin32Font2");
if(be.hfont)
    DeleteObject(be.hfont);

be.font = fnt;
be.angle = angle;
#ifdef PLATFORM_WINCE
LOGFONT lfnt;
Zero(lfnt);
lfnt.lfHeight = fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12;
lfnt.lfWeight = fnt.IsBold() ? FW_BOLD : FW_NORMAL;
lfnt.lfItalic = fnt.IsItalic();
lfnt.lfUnderline = fnt.IsUnderline();
lfnt.lfStrikeOut = fnt.IsStrikeout();
wcscpy(lfnt.lfFaceName, ToSystemCharset(fnt.GetFaceName()));
be.hfont = CreateFontIndirect(&lfnt);
#else
be.hfont = CreateFont(
    fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
    fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
    fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
    fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
    fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
    CLIP_DEFAULT_PRECIS,
    fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
    DEFAULT_PITCH|FF_DONTCARE,
    fnt.GetFaceName()
);
#endif
cache[0] = be;
return be.hfont;
}

```

Works perfectly. :)

BR, Tom

EDIT: I'll be back online after about one hour...

Subject: Re: Strange issue with text in Painter
 Posted by [mirek](#) on Wed, 16 Jan 2019 12:26:37 GMT
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We are close but not there yet... The problem is that all calls to GetWin32Font should already be serialized (locked) - the only one that was not quite properly locked I have fixed in the trunk today.

Just for sanity check, can you do Find in Files search over all project files for GetWin32Font ?

For me, it returns

```
C:\u\upp.src\uppsrc\Draw\FontWin32.cpp (20): HFONT GetWin32Font(Font fnt, int angle)
C:\u\upp.src\uppsrc\Draw\FontWin32.cpp (22): LTIMING("GetWin32Font");
C:\u\upp.src\uppsrc\Draw\FontWin32.cpp (41): LTIMING("GetWin32Font2");
C:\u\upp.src\uppsrc\Draw\FontWin32.cpp (106): HFONT hfont = GetWin32Font(font, 0);
C:\u\upp.src\uppsrc\Draw\FontWin32.cpp (262): HFONT hfont = GetWin32Font(font, 0);
C:\u\upp.src\uppsrc\Draw\FontWin32.cpp (344): HFONT hfont = GetWin32Font(font, 0);
C:\u\upp.src\uppsrc\Draw\FontWin32.cpp (401): HFONT hfont = GetWin32Font(fnt, 0);
C:\u\upp.src\uppsrc\CtrlCore\DrawTextWin32.cpp (9): HFONT GetWin32Font(Font fnt, int angle);
C:\u\upp.src\uppsrc\CtrlCore\DrawTextWin32.cpp (21): Mutex::Lock ___(sFontLock); // need this
because of GetWin32Font
C:\u\upp.src\uppsrc\CtrlCore\DrawTextWin32.cpp (22): HGDIOBJ orgfont =
::SelectObject(handle, GetWin32Font(font, angle));
(): 10 occurrence(s) have been found.
```

Do you have any other occurrences?

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 13:27:26 GMT
[View Forum Message](#) <> [Reply to Message](#)

The "GetWin32Font" occurrences are the same.

The bad news is that I just found one missing character error again with this last code. But this is just one, which means the frequency of errors dropped significantly because of INTERLOCKing the GetWin32Font -cache. Now I must go back and check again more thoroughly when the GetWin32Font -cache is entirely disabled.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 13:47:04 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Wed, 16 January 2019 15:27The "GetWin32Font" occurrences are the same.

The bad news is that I just found one missing character error again with this last code. But this is

just one, which means the frequency of errors dropped significantly because of INTERLOCKing the GetWin32Font -cache. Now I must go back and check again more thoroughly when the GetWin32Font -cache is entirely disabled.

BR, Tom

I read through the entire map area (about the same area I sent you in painting, just a little more on the top/bottom edges) and could not find a single error when the GetWin32Font -cache was commented out.

BR, Tom

EDIT: Now I see the difference between INTERLOCKing and disabling; There is a:
cache[0] = be;

In the end of GetWin32Font(), which does not get locked. I will next test locking the most of GetWin32Font() and then a tedious 20 minutes of scanning false characters... I hope! :)

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 14:14:44 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Wed, 16 January 2019 15:47Tom1 wrote on Wed, 16 January 2019 15:27The "GetWin32Font" occurrences are the same.

The bad news is that I just found one missing character error again with this last code. But this is just one, which means the frequency of errors dropped significantly because of INTERLOCKing the GetWin32Font -cache. Now I must go back and check again more thoroughly when the GetWin32Font -cache is entirely disabled.

BR, Tom

I read through the entire map area (about the same area I sent you in painting, just a little more on the top/bottom edges) and could not find a single error when the GetWin32Font -cache was commented out.

BR, Tom

EDIT: Now I see the difference between INTERLOCKing and disabling; There is a:
cache[0] = be;

In the end of GetWin32Font(), which does not get locked. I will next test locking the most of GetWin32Font() and then a tedious 20 minutes of scanning false characters... I hope! :)

BR, Tom

No. Locking the entire GetWin32Font() does not work either. The bad letters can still be found.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Wed, 16 Jan 2019 14:16:50 GMT
[View Forum Message](#) <> [Reply to Message](#)

Well, I am starting to have suspicion the cache code (the one that commenting out fixes the issue) has some quirk, but staring on it for hours revealed nothing so far...

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Wed, 16 Jan 2019 14:22:41 GMT
[View Forum Message](#) <> [Reply to Message](#)

What about this

```
HFONT GetWin32Font(Font fnt, int angle)
{
    LTIMING("GetWin32Font");
    static HFontEntry cache[FONTCACHE];
    ONCELOCK {
        for(int i = 0; i < FONTCACHE; i++)
            cache[i].font.Height(-30000);
    }
    HFontEntry be;
    be = cache[0];
    if(be.font == fnt && be.angle == angle)
        return be.hfont;
    /*
    for(int i = 0; i < FONTCACHE; i++) {
        HFontEntry e = cache[i];
        if(i)
            cache[i] = be;
        if(e.font == fnt && e.angle == angle) {
            if(i)
                cache[0] = e;
            return e.hfont;
        }
        be = e;
    }
    */
}
```

```

*/ LTIMING("GetWin32Font2");
if(be.hfont)
    DeleteObject(be.hfont);

be.font = fnt;
be.angle = angle;
be.hfont = CreateFont(
    fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
    fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
    fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
    fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
    fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
    CLIP_DEFAULT_PRECIS,
    fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
    DEFAULT_PITCH|FF_DONTCARE,
    fnt.GetFaceName()
);

cache[0] = be;
return be.hfont;
}

```

Subject: Re: Strange issue with text in Painter
 Posted by [Tom1](#) on Wed, 16 Jan 2019 14:40:46 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Wed, 16 January 2019 16:22 What about this

```

HFONT GetWin32Font(Font fnt, int angle)
{
    LTIMING("GetWin32Font");
    static HFontEntry cache[FontCache];
    ONCELOCK {
        for(int i = 0; i < FontCache; i++)
            cache[i].font.Height(-30000);
    }
    HFontEntry be;
    be = cache[0];
    if(be.font == fnt && be.angle == angle)
        return be.hfont;
}
/*
for(int i = 0; i < FontCache; i++) {
    HFontEntry e = cache[i];
    if(i)
        cache[i] = be;
}
*/

```



```

if(e.font == fnt && e.angle == angle) {
    if(i)
        cache[0] = e;
    return e.hfont;
}
be = e;
}
*/ LTIMING("GetWin32Font2");
if(be.hfont)
    DeleteObject(be.hfont);

be.font = fnt;
be.angle = angle;
be.hfont = CreateFont(
    fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
    fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
    fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
    fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
    fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
    CLIP_DEFAULT_PRECIS,
    fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
    DEFAULT_PITCH|FF_DONTCARE,
    fnt.GetFaceName()
);

cache[0] = be;
return be.hfont;
}

```

This works :) (At least for the period from your last message... i.e. a lot of place names read!)

BR, Tom

Subject: Re: Strange issue with text in Painter
 Posted by [mirek](#) on Wed, 16 Jan 2019 15:26:06 GMT
[View Forum Message](#) <> [Reply to Message](#)

Just to be 100% sure that we are not reentrant...

```

HFONT GetWin32Font(Font fnt, int angle)
{
    LTIMING("GetWin32Font");
    static Atomic h;
    h++;
    static HFontEntry cache[FONTCACHE];
}

```

```

ONCELOCK {
  for(int i = 0; i < FONTCACHE; i++)
    cache[i].font.Height(-30000);
}
HFontEntry be;
be = cache[0];
for(int i = 0; i < FONTCACHE; i++) {
  HFontEntry e = cache[i];
  if(i)
    cache[i] = be;
  if(e.font == fnt && e.angle == angle) {
    if(i)
      cache[0] = e;
    h--;
    VERIFY(h == 0);
    return e.hfont;
  }
  be = e;
}
LTIMING("GetWin32Font2");
if(be.hfont)
  DeleteObject(be.hfont);

be.font = fnt;
be.angle = angle;
be.hfont = CreateFont(
  fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
  fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
  fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
  fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
  fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
  CLIP_DEFAULT_PRECIS,
  fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
  DEFAULT_PITCH|FF_DONTCARE,
  fnt.GetFaceName()
);

cache[0] = be;
h--;
VERIFY(h == 0);
return be.hfont;
}

```

Another thing to try is to change FONTCACHE value (e.g. set it to 2 4 8 16...)

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Wed, 16 Jan 2019 16:18:21 GMT
[View Forum Message](#) <> [Reply to Message](#)

This is to test whether some 'outside' code is not rewriting the cache:

```
HFONT GetWin32Font(Font fnt, int angle)
{
    LTIMING("GetWin32Font");
    static HFontEntry cache1[1000000];
    static HFontEntry cache[FontCache];
    static HFontEntry cache2[1000000];
    ONCELOCK {
        for(int i = 0; i < FontCache; i++)
            cache[i].font.Height(-30000);
    }
    HFontEntry be;
    be = cache[0];
    for(int i = 0; i < FontCache; i++) {
        HFontEntry e = cache[i];
        if(i)
            cache[i] = be;
        if(e.font == fnt && e.angle == angle) {
            if(i)
                cache[0] = e;
            return e.hfont;
        }
        be = e;
    }
    LTIMING("GetWin32Font2");
    if(be.hfont)
        DeleteObject(be.hfont);

    be.font = fnt;
    be.angle = angle;
    be.hfont = CreateFont(
        fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
        fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
        fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
        fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
        fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
        CLIP_DEFAULT_PRECIS,
        fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
        DEFAULT_PITCH|FF_DONTCARE,
        fnt.GetFaceName()
    );

    cache[0] = be;
}
```

```
return be.hfont;
}
```

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Wed, 16 Jan 2019 16:18:25 GMT
[View Forum Message](#) <> [Reply to Message](#)

OK! I'll do it tomorrow morning.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 07:44:54 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Wed, 16 January 2019 17:26 Just to be 100% sure that we are not reentrant...

```
HFONT GetWin32Font(Font fnt, int angle)
{
    LTIMING("GetWin32Font");
    static Atomic h;
    h++;
    static HFontEntry cache[FontCache];
    ONCELOCK {
        for(int i = 0; i < FontCache; i++)
            cache[i].font.Height(-30000);
    }
    HFontEntry be;
    be = cache[0];
    for(int i = 0; i < FontCache; i++) {
        HFontEntry e = cache[i];
        if(i)
            cache[i] = be;
        if(e.font == fnt && e.angle == angle) {
            if(i)
                cache[0] = e;
            h--;
            VERIFY(h == 0);
            return e.hfont;
        }
        be = e;
    }
}
```

```

LTIMING("GetWin32Font2");
if(be.hfont)
    DeleteObject(be.hfont);

be.font = fnt;
be.angle = angle;
be.hfont = CreateFont(
    fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
    fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
    fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
    fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
    fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
    CLIP_DEFAULT_PRECIS,
    fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
    DEFAULT_PITCH|FF_DONTCARE,
    fnt.GetFaceName()
);

cache[0] = be;
h--;
VERIFY(h == 0);
return be.hfont;
}

```

Another thing to try is to change FONTCACHE value (e.g. set it to 2 4 8 16...)

Good morning!

There is no re-entry. VERIFY does not cause assertions.

BR, Tom

Subject: Re: Strange issue with text in Painter
 Posted by [mirek](#) on Thu, 17 Jan 2019 08:10:22 GMT
[View Forum Message](#) <> [Reply to Message](#)

Good morning, another idea:

```

HDC Win32_IC2()
{
    static HDC hdc;
    ONCELOCK {
        hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
    }
}

```

```

return hdc;
}

void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
    HFONT hfont = GetWin32Font(fnt, 0);
    if(hfont) {
        HDC hdc = Win32_IC2();
        HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);
        GLYPHMETRICS gm;
        MAT2 m_matrix;
        memset(&m_matrix, 0, sizeof(m_matrix));
        m_matrix.eM11.value = 1;
        m_matrix.eM22.value = 1;
        int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
&m_matrix);
        if(gsz < 0)
            return;
        StringBuffer gb(gsz);
        gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
        if(gsz < 0)
            return;
        RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
        ::SelectObject(hdc, ohfont);
    }
}

```

Subject: Re: Strange issue with text in Painter
 Posted by [Tom1](#) on Thu, 17 Jan 2019 08:15:48 GMT
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Testing with FONTCACHE:

```

FONTCACHE = 2 => success (or so it seems)
FONTCACHE = 3 => fail
FONTCACHE = 4 => fail
FONTCACHE = 8 => fail
FONTCACHE = 16 => fail
FONTCACHE = 32 => fail
FONTCACHE = 64 => fail
FONTCACHE = 96 => fail

```

As for failures, I can see the first one usually within just 30 seconds after loading the map. But when it comes to "near successes" (or likelihood of error has decreased), I may look at the map for 5-10 minutes and then find one error. So, frequent errors are easy to find, but successes may be hard to confirm.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 17 Jan 2019 08:42:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

Maybe we can log some sense from it all:

```
HFONT GetWin32Font(Font fnt, int angle)
{
    LTIMING("GetWin32Font");
    static HFontEntry cache[FONTCACHE];
    ONCELOCK {
        for(int i = 0; i < FONTCACHE; i++)
            cache[i].font.Height(-30000);
    }
    HFontEntry be;
    be = cache[0];
    for(int i = 0; i < FONTCACHE; i++) {
        HFontEntry e = cache[i];
        if(i)
            cache[i] = be;
        if(e.font == fnt && e.angle == angle) {
            if(i)
                cache[0] = e;
            LOG("GetWin32Font found at " << i << " " << fnt);
            return e.hfont;
        }
        be = e;
    }
    LTIMING("GetWin32Font2");
    if(be.hfont)
        DeleteObject(be.hfont);

    LOG("GetWin32Font not found " << fnt);

    be.font = fnt;
    be.angle = angle;
    be.hfont = CreateFont(
        fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
        fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
        fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
        fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
        fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
        CLIP_DEFAULT_PRECIS,
```

```
fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,  
DEFAULT_PITCH|FF_DONTCARE,  
fnt.GetFaceName()  
);  
  
cache[0] = be;  
return be.hfont;  
}
```

(reproduce the error and send me the log...)

BTW, I am sorry it is taking this long, I am trying but the issue is really elusive...

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 08:51:18 GMT
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```
HFONT GetWin32Font(Font fnt, int angle)  
{  
    LTIMING("GetWin32Font");  
    static HFontEntry cache1[1000000];  
    static HFontEntry cache[FONTCACHE];  
    static HFontEntry cache2[1000000];
```

Fails too...

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 09:04:02 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 10:42 Maybe we can log some sense from it all:

```
HFONT GetWin32Font(Font fnt, int angle)  
{  
    LTIMING("GetWin32Font");  
    static HFontEntry cache[FONTCACHE];  
    ONCELOCK {  
        for(int i = 0; i < FONTCACHE; i++)  
            cache[i].font.Height(-30000);  
    }  
    HFontEntry be;
```



```

be = cache[0];
for(int i = 0; i < FONTCACHE; i++) {
    HFontEntry e = cache[i];
    if(i)
        cache[i] = be;
    if(e.font == fnt && e.angle == angle) {
        if(i)
            cache[0] = e;
        LOG("GetWin32Font found at " << i << " " << fnt);
        return e.hfont;
    }
    be = e;
}
LTIMING("GetWin32Font2");
if(be.hfont)
    DeleteObject(be.hfont);

LOG("GetWin32Font not found " << fnt);

be.font = fnt;
be.angle = angle;
be.hfont = CreateFont(
    fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
    fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
    fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
    fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
    fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
    CLIP_DEFAULT_PRECIS,
    fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
    DEFAULT_PITCH|FF_DONTCARE,
    fnt.GetFaceName()
);

cache[0] = be;
return be.hfont;
}

```

(reproduce the error and send me the log...)

BTW, I am sorry it is taking this long, I am trying but the issue is really elusive...

No worries. I know sometimes it feels the code really fights back. I'm very thankful for helping me out here, and also for creating the U++ platform in all. It has made my life so much better for over a decade already... :)

Please find attached the log.

Best regards,

Tom

File Attachments

1) [CharTest.7z](#), downloaded 132 times

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 17 Jan 2019 09:07:39 GMT
[View Forum Message](#) <> [Reply to Message](#)

Thanks, just to be sure it is not missed, please note the test with Win32_IC2....

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 09:14:03 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 11:07Thanks, just to be sure it is not missed, please note the test with Win32_IC2....

Good thing you reminded me... I had already forgotten all about it. The testing pace is intensive (as it should) and I had to help a client here in between with their problems...

I get on with it now!

// Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 17 Jan 2019 09:16:59 GMT
[View Forum Message](#) <> [Reply to Message](#)

BTW, in the log there seem to be requests for some pretty big fonts, like Arial:325. Are these ok: do you know where they are from?

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 09:19:02 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Thu, 17 January 2019 11:14mirek wrote on Thu, 17 January 2019 11:07Thanks, just to be sure it is not missed, please note the test with Win32_IC2....

Good thing you reminded me... I had already forgotten all about it. The testing pace is intensive (as it should) and I had to help a client here in between with their problems...

I get on with it now!

// Tom

This fails too.

// Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 17 Jan 2019 09:19:27 GMT
[View Forum Message](#) <> [Reply to Message](#)

Well, I should have done that in the previous request, but I got idea how to make these .logs better and how to possibly try to catch the error:

```
HFONT GetWin32Font(Font fnt, int angle)
{
    LTIMING("GetWin32Font");
    static HFontEntry cache[FONTCACHE];
    ONCELOCK {
        for(int i = 0; i < FONTCACHE; i++)
            cache[i].font.Height(-30000);
    }
    HFontEntry be;
    be = cache[0];
    for(int i = 0; i < FONTCACHE; i++) {
        HFontEntry e = cache[i];
        if(i)
            cache[i] = be;
        if(e.font == fnt && e.angle == angle) {
            if(i)
                cache[0] = e;
            LOGFONT lf;
            int ret = GetObject(e.hfont, sizeof(lf), &lf);
            LOG("GetWin32Font found at " << i << " " << fnt << " " << lf.lfFaceName << " " << lf.lfHeight);
            VERIFY(abs(lf.lfHeight) == abs(fnt.GetHeight()));
            return e.hfont;
        }
        be = e;
    }
    LTIMING("GetWin32Font2");
    if(be.hfont)
```

```
DeleteObject(be.hfont);

LOG("GetWin32Font not found " << fnt);

be.font = fnt;
be.angle = angle;
be.hfont = CreateFont(
    fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
    fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
    fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
    fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
    fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
    CLIP_DEFAULT_PRECIS,
    fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
    DEFAULT_PITCH|FF_DONTCARE,
    fnt.GetFaceName()
);

cache[0] = be;
return be.hfont;
}
```

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 09:21:40 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 11:16BTW, in the log there seem to be requests for some pretty big fonts, like Arial:325. Are these ok: do you know where they are from?

Yes, they are correct. I start up at relatively large zoom in. (Anyway, I limit the maximum requested font size to 1000.)

// Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 09:42:13 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 11:19Well, I should have done that in the previous request, but I got idea how to make these .logs better and how to possibly try to catch the error:

```

HFONT GetWin32Font(Font fnt, int angle)
{
    LTIMING("GetWin32Font");
    static HFontEntry cache[FONTCACHE];
    ONCELOCK {
        for(int i = 0; i < FONTCACHE; i++)
            cache[i].font.Height(-30000);
    }
    HFontEntry be;
    be = cache[0];
    for(int i = 0; i < FONTCACHE; i++) {
        HFontEntry e = cache[i];
        if(i)
            cache[i] = be;
        if(e.font == fnt && e.angle == angle) {
            if(i)
                cache[0] = e;
            LOGFONT lf;
            int ret = GetObject(e.hfont, sizeof(lf), &lf);
            LOG("GetWin32Font found at " << i << " " << fnt << " " << lf.lfFaceName << " " << lf.lfHeight);
            VERIFY(abs(lf.lfHeight) == abs(fnt.GetHeight()));
            return e.hfont;
        }
        be = e;
    }
    LTIMING("GetWin32Font2");
    if(be.hfont)
        DeleteObject(be.hfont);

    LOG("GetWin32Font not found " << fnt);

    be.font = fnt;
    be.angle = angle;
    be.hfont = CreateFont(
        fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
        fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
        fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
        fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
        fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
        CLIP_DEFAULT_PRECIS,
        fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
        DEFAULT_PITCH|FF_DONTCARE,
        fnt.GetFaceName()
    );

    cache[0] = be;
    return be.hfont;
}

```

Well, instead of pointing out the error, this one fixed the error...

// Tom

EDIT: Added the log...

File Attachments

1) [ChartTest.7z](#), downloaded 142 times

Subject: Re: Strange issue with text in Painter

Posted by [mirek](#) on Thu, 17 Jan 2019 09:51:52 GMT

[View Forum Message](#) <> [Reply to Message](#)

Let us try the same here: (restore rest to trunk...)

```
void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
    HFONT hfont = GetWin32Font(fnt, 0);
    if(hfont) {
        HDC hdc = Win32_IC();
        HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);

        LOGFONT lf;
        int ret = GetObject(hfont, sizeof(lf), &lf);
        LOG("RenderCharacterSys " << fnt << " " << ch << " " << (char)ch << ' ' << lf.lfFaceName << " "
        << lf.lfHeight);
        VERIFY(abs(lf.lfHeight) == abs(fnt.GetHeight()));

        GLYPHMETRICS gm;
        MAT2 m_matrix;
        memset(&m_matrix, 0, sizeof(m_matrix));
        m_matrix.eM11.value = 1;
        m_matrix.eM22.value = 1;
        int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
        &m_matrix);
        if(gsz < 0)
            return;
        StringBuffer gb(gsz);
        gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
        if(gsz < 0)
            return;
        RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
        ::SelectObject(hdc, ohfont);
    }
}
```

}

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 17 Jan 2019 09:54:05 GMT
[View Forum Message](#) <> [Reply to Message](#)

Another try, as it looks like sort of race condition... Let us know whether it needs to be GetObject, or if any delay there works...

```
HFONT GetWin32Font(Font fnt, int angle)
{
    LTIMING("GetWin32Font");
    static HFontEntry cache[FontCache];
    ONCELOCK {
        for(int i = 0; i < FontCache; i++)
            cache[i].font.Height(-30000);
    }
    HFontEntry be;
    be = cache[0];
    for(int i = 0; i < FontCache; i++) {
        HFontEntry e = cache[i];
        if(i)
            cache[i] = be;
        if(e.font == fnt && e.angle == angle) {
            if(i)
                cache[0] = e;
            Atomic x;
            for(int i = 0; i < 1000; i++)
                x++;
            return e.hfont;
        }
        be = e;
    }
    LTIMING("GetWin32Font2");
    if(be.hfont)
        DeleteObject(be.hfont);

    be.font = fnt;
    be.angle = angle;
    be.hfont = CreateFont(
        fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
        fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
        fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
        fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
```

```

fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
CLIP_DEFAULT_PRECIS,
fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
DEFAULT_PITCH|FF_DONTCARE,
fnt.GetFaceName()
);

cache[0] = be;
return be.hfont;
}

```

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 10:07:12 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 11:51 Let us try the same here: (restore rest to trunk...)

```

void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
    HFONT hfont = GetWin32Font(fnt, 0);
    if(hfont) {
        HDC hdc = Win32_IC();
        HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);

        LOGFONT lf;
        int ret = GetObject(hfont, sizeof(lf), &lf);
        LOG("RenderCharacterSys " << fnt << " " << ch << " " << (char)ch << ' ' << lf.lfFaceName << " "
        << lf.lfHeight);
        VERIFY(abs(lf.lfHeight) == abs(fnt.GetHeight()));

        GLYPHMETRICS gm;
        MAT2 m_matrix;
        memset(&m_matrix, 0, sizeof(m_matrix));
        m_matrix.eM11.value = 1;
        m_matrix.eM22.value = 1;
        int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
        &m_matrix);
        if(gsz < 0)
            return;
        StringBuffer gb(gsz);
        gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
        if(gsz < 0)
            return;
        RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
        ::SelectObject(hdc, ohfont);
    }
}

```



```
}  
}
```

This did not work. (Rest is now as in trunk.)

Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 10:10:27 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 11:54 Another try, as it looks like sort of race condition... Let us know whether it needs to be GetObject, or if any delay there works...

```
HFONT GetWin32Font(Font fnt, int angle)  
{  
    LTIMING("GetWin32Font");  
    static HFontEntry cache[FONTCACHE];  
    ONCELOCK {  
        for(int i = 0; i < FONTCACHE; i++)  
            cache[i].font.Height(-30000);  
    }  
    HFontEntry be;  
    be = cache[0];  
    for(int i = 0; i < FONTCACHE; i++) {  
        HFontEntry e = cache[i];  
        if(i  
            cache[i] = be;  
        if(e.font == fnt && e.angle == angle) {  
            if(i  
                cache[0] = e;  
            Atomic x;  
            for(int i = 0; i < 1000; i++)  
                x++;  
            return e.hfont;  
        }  
        be = e;  
    }  
    LTIMING("GetWin32Font2");  
    if(be.hfont)  
        DeleteObject(be.hfont);  
  
    be.font = fnt;  
    be.angle = angle;
```

```

be.hfont = CreateFont(
    fnt.GetHeight() ? -abs(fnt.GetHeight()) : -12,
    fnt.GetWidth(), angle, angle, fnt.IsBold() ? FW_BOLD : FW_NORMAL,
    fnt.IsItalic(), fnt.IsUnderline(), fnt.IsStrikeout(),
    fnt.GetFace() == Font::SYMBOL ? SYMBOL_CHARSET : DEFAULT_CHARSET,
    fnt.IsTrueTypeOnly() ? OUT_TT_ONLY_PRECIS : OUT_DEFAULT_PRECIS,
    CLIP_DEFAULT_PRECIS,
    fnt.IsNonAntiAliased() ? NONANTIALIASED_QUALITY : DEFAULT_QUALITY,
    DEFAULT_PITCH|FF_DONTCARE,
    fnt.GetFaceName()
);

cache[0] = be;
return be.hfont;
}

```

Error is still there...

Tom

Subject: Re: Strange issue with text in Painter
 Posted by [mirek](#) on Thu, 17 Jan 2019 10:28:46 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Thu, 17 January 2019 11:07mirek wrote on Thu, 17 January 2019 11:51Let us try the same here: (restore rest to trunk...)

```

void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
    HFONT hfont = GetWin32Font(fnt, 0);
    if(hfont) {
        HDC hdc = Win32_IC();
        HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);

        LOGFONT lf;
        int ret = GetObject(hfont, sizeof(lf), &lf);
        LOG("RenderCharacterSys " << fnt << " " << ch << " " << (char)ch << ' ' << lf.lfFaceName << " "
        << lf.lfHeight);
        VERIFY(abs(lf.lfHeight) == abs(fnt.GetHeight()));

        GLYPHMETRICS gm;
        MAT2 m_matrix;
        memset(&m_matrix, 0, sizeof(m_matrix));
        m_matrix.eM11.value = 1;
        m_matrix.eM22.value = 1;
    }
}

```

```

int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
&m_matrix);
if(gsz < 0)
return;
StringBuffer gb(gsz);
gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
if(gsz < 0)
return;
RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
::SelectObject(hdc, ohfont);
}
}

```

This did not work. (Rest is now as in trunk.)

Tom

Did not work means missing/wrong letters? And VERIFY never triggered?

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 10:32:58 GMT
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mirek wrote on Thu, 17 January 2019 12:28Tom1 wrote on Thu, 17 January 2019 11:07mirek wrote on Thu, 17 January 2019 11:51Let us try the same here: (restore rest to trunk...)

```

void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
HFONT hfont = GetWin32Font(fnt, 0);
if(hfont) {
HDC hdc = Win32_IC();
HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);

LOGFONT lf;
int ret = GetObject(hfont, sizeof(lf), &lf);
LOG("RenderCharacterSys " << fnt << " " << ch << " " << (char)ch << ' ' << lf.lfFaceName << " "
<< lf.lfHeight);
VERIFY(abs(lf.lfHeight) == abs(fnt.GetHeight()));

GLYPHMETRICS gm;
MAT2 m_matrix;
memset(&m_matrix, 0, sizeof(m_matrix));
m_matrix.eM11.value = 1;
m_matrix.eM22.value = 1;

```

```
int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
&m_matrix);
if(gsz < 0)
return;
StringBuffer gb(gsz);
gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
if(gsz < 0)
return;
RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
::SelectObject(hdc, ohfont);
}
}
```

This did not work. (Rest is now as in trunk.)

Tom

Did not work means missing/wrong letters? And VERIFY never triggered?

I mean missing/wrong letters were detected.

VERIFY did not trigger. (BTW, should it be DEBUG for VERIFY to work or is it OK to run RELEASE? Loading the map in DEBUG mode takes quite a while longer than in RELEASE mode, so I prefer using RELEASE mode when there are no LOGs needed.)

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 17 Jan 2019 10:36:07 GMT
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VERIFY should work in release too. You can run all these in release, just replace LOG with RLOG...

That said, can use perhaps send me the log? And maybe tell me what letter was missing, which word it was part of, perhaps estimate what font it should have been...

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 10:43:32 GMT
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mirek wrote on Thu, 17 January 2019 12:36VERIFY should work in release too. You can run all these in release, just replace LOG with RLOG...

That said, can use perhaps send me the log? And maybe tell me what letter was missing, which word it was part of, perhaps estimate what font it should have been...

Mirek

I tried this in DEBUG mode and the everything seemed to be correct. I will now switch back to RELEASE and swap RLOG instead of LOG...

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 17 Jan 2019 10:46:58 GMT
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Another try...

```
HDC Win32_IC()
{
  thread_local HDC hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
  return hdc;
/* static HDC hdc;
ONCELOCK {
  hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
}
return hdc;*/
}
```

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 10:54:25 GMT
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Tom1 wrote on Thu, 17 January 2019 12:43mirek wrote on Thu, 17 January 2019 12:36VERIFY should work in release too. You can run all these in release, just replace LOG with RLOG...

That said, can use perhaps send me the log? And maybe tell me what letter was missing, which word it was part of, perhaps estimate what font it should have been...

Mirek

I tried this in DEBUG mode and the everything seemed to be correct. I will now switch back to

RELEASE and swap RLOG instead of LOG...

Tom

OK, now I was (and will keep, until you say otherwise) in RELEASE mode. Using RLOG. The problem appeared in letter 'a', in words like "Rajanummi" or "Nummela". Font is Arial, size likely 37..38, I guess.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 11:09:14 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 12:46Another try...

```
HDC Win32_IC()
{
  thread_local HDC hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
  return hdc;
/* static HDC hdc;
ONCELOCK {
  hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
}
return hdc;*/
}
```

This fixes the issue. Not a single missing or false letter visible (to my eye).

May I get excited already, or is this just an intermediate step towards the goal? :)

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 17 Jan 2019 11:17:46 GMT
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Tom1 wrote on Thu, 17 January 2019 11:54Tom1 wrote on Thu, 17 January 2019 12:43mirek wrote on Thu, 17 January 2019 12:36VERIFY should work in release too. You can run all these in release, just replace LOG with RLOG...

That said, can use perhaps send me the log? And maybe tell me what letter was missing, which word it was part of, perhaps estimate what font it should have been...

Mirek

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Tom

OK, now I was (and will keep, until you say otherwise) in RELEASE mode. Using RLOG. The problem appeared in letter 'a', in words like "Rajanummi" or "Nummela". Font is Arial, size likely 37..38, I guess.

BR, Tom

I hoped for log... :)

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 11:21:54 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 13:17Tom1 wrote on Thu, 17 January 2019 11:54Tom1 wrote on Thu, 17 January 2019 12:43mirek wrote on Thu, 17 January 2019 12:36VERIFY should work in release too. You can run all these in release, just replace LOG with RLOG...

That said, can use perhaps send me the log? And maybe tell me what letter was missing, which word it was part of, perhaps estimate what font it should have been...

Mirek

I tried this in DEBUG mode and the everything seemed to be correct. I will now switch back to RELEASE and swap RLOG instead of LOG...

Tom

OK, now I was (and will keep, until you say otherwise) in RELEASE mode. Using RLOG. The problem appeared in letter 'a', in words like "Rajanummi" or "Nummela". Font is Arial, size likely 37..38, I guess.

BR, Tom

I hoped for log... :)

Sorry, like million characters read this morning... pressing both Browse... and Upload File was too much for me... :lol:

// Tom

File Attachments

1) [ChartTest.7z](#), downloaded 132 times

Subject: Re: Strange issue with text in Painter

Posted by [mirek](#) on Thu, 17 Jan 2019 11:28:02 GMT

[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Thu, 17 January 2019 12:09mirek wrote on Thu, 17 January 2019 12:46Another try...

```
HDC Win32_IC()
{
    thread_local HDC hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
    return hdc;
/* static HDC hdc;
ONCELOCK {
    hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
}
return hdc;*/
}
```

This fixes the issue. Not a single missing or false letter visible (to my eye).

May I get excited already, or is this just an intermediate step towards the goal? :)

intermediate step... But it all sort starts feeling like some inconsistency with GDI objects and threads, maybe in Win32.... (What I did here is to have IC per thread, which really should not be necessary...)

Anyway, one more test:

```
void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
    static Atomic h;
    h++;
    HFONT hfont = GetWin32Font(fnt, 0);
    VERIFY(hfont);
    if(hfont) {
        HDC hdc = Win32_IC();
        HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);
        GLYPHMETRICS gm;
        MAT2 m_matrix;
        memset(&m_matrix, 0, sizeof(m_matrix));
    }
}
```



```

m_matrix.eM11.value = 1;
m_matrix.eM22.value = 1;
int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
&m_matrix);
if(gsz < 0)
    return;
StringBuffer gb(gsz);
gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
if(gsz < 0)
    return;
RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
::SelectObject(hdc, ohfont);
}
h--;
ASSERT(h == 0);
}

```

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 11:34:37 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 13:28Tom1 wrote on Thu, 17 January 2019 12:09mirek wrote on Thu, 17 January 2019 12:46Another try...

```

HDC Win32_IC()
{
    thread_local HDC hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
    return hdc;
/* static HDC hdc;
ONCELOCK {
    hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
}
return hdc;*/
}

```

This fixes the issue. Not a single missing or false letter visible (to my eye).

May I get excited already, or is this just an intermediate step towards the goal? :)

intermediate step... But it all sort starts feeling like some inconsistency with GDI objects and threads, maybe in Win32.... (What I did here is to have IC per thread, which really should not be necessary...

Anyway, one more test:

```
void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
    static Atomic h;
    h++;
    HFONT hfont = GetWin32Font(fnt, 0);
    VERIFY(hfont);
    if(hfont) {
        HDC hdc = Win32_IC();
        HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);
        GLYPHMETRICS gm;
        MAT2 m_matrix;
        memset(&m_matrix, 0, sizeof(m_matrix));
        m_matrix.eM11.value = 1;
        m_matrix.eM22.value = 1;
        int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
&m_matrix);
        if(gsz < 0)
            return;
        StringBuffer gb(gsz);
        gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
        if(gsz < 0)
            return;
        RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
        ::SelectObject(hdc, ohfont);
    }
    h--;
    ASSERT(h == 0);
}
```

No assertion in RELEASE mode. Bad letters were detected.

Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 11:44:25 GMT
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ASSERT does not work in RELEASE mode. I'll need to test in DEBUG mode...

Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 11:47:06 GMT
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Tom1 wrote on Thu, 17 January 2019 13:34mirek wrote on Thu, 17 January 2019 13:28Tom1 wrote on Thu, 17 January 2019 12:09mirek wrote on Thu, 17 January 2019 12:46Another try...

```
HDC Win32_IC()
{
    thread_local HDC hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
    return hdc;
/* static HDC hdc;
ONCELOCK {
    hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
}
return hdc;*/
}
```

This fixes the issue. Not a single missing or false letter visible (to my eye).

May I get excited already, or is this just an intermediate step towards the goal? :)

intermediate step... But it all sort starts feeling like some inconsistency with GDI objects and threads, maybe in Win32.... (What I did here is to have IC per thread, which really should not be necessary...)

Anyway, one more test:

```
void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
    static Atomic h;
    h++;
    HFONT hfont = GetWin32Font(fnt, 0);
    VERIFY(hfont);
    if(hfont) {
        HDC hdc = Win32_IC();
        HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);
        GLYPHMETRICS gm;
        MAT2 m_matrix;
        memset(&m_matrix, 0, sizeof(m_matrix));
        m_matrix.eM11.value = 1;
        m_matrix.eM22.value = 1;
        int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
&m_matrix);
        if(gsz < 0)
```

```
return;
StringBuffer gb(gsz);
gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
if(gsz < 0)
return;
RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
::SelectObject(hdc, ohfont);
}
h--;
ASSERT(h == 0);
}
```

No assertion in RELEASE mode. Bad letters were detected.

Tom

OK. In DEBUG mode this asserted in just after a few seconds.

Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 11:52:07 GMT
[View Forum Message](#) <> [Reply to Message](#)

I tried the same in RELEASE -mode after changing the "ASSERT(h == 0);" to "VERIFY(h == 0);" and it triggered.

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 17 Jan 2019 11:56:19 GMT
[View Forum Message](#) <> [Reply to Message](#)

What about

```
HDC Win32_IC()
{
static HDC hdc;
ONCELOCK {
hdc = CreateDC("DISPLAY", NULL, NULL, NULL);
}
return hdc;
}
```

}

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 11:59:05 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 13:56 What about

```
HDC Win32_IC()
{
    static HDC hdc;
    ONCELOCK {
        hdc = CreateDC("DISPLAY", NULL, NULL, NULL);
    }
    return hdc;
}
```

Bad/missing letters were found.

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 17 Jan 2019 12:01:34 GMT
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Well, failing VERIFY is interesting. Let us dig a bit more there...

```
void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
    DLOG("RenderCharSys " << fnt << " " << ch << " " << (char)ch);
    static Atomic h;
    h++;
    HFONT hfont = GetWin32Font(fnt, 0);
    VERIFY(hfont);
    if(hfont) {
        HDC hdc = Win32_IC();
        HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);
        GLYPHMETRICS gm;
        MAT2 m_matrix;
        memset(&m_matrix, 0, sizeof(m_matrix));
        m_matrix.eM11.value = 1;
    }
}
```

```

m_matrix.eM22.value = 1;
int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
&m_matrix);
VERIFY(gsz >= 0);
if(gsz < 0)
    return;
StringBuffer gb(gsz);
gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
VERIFY(gsz >= 0);
if(gsz < 0)
    return;
RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
::SelectObject(hdc, ohfont);
}
h--;
VERIFY(h == 0);
}

```

If it fails, send me where and the log...

Subject: Re: Strange issue with text in Painter
 Posted by [Tom1](#) on Thu, 17 Jan 2019 12:04:28 GMT
[View Forum Message](#) <> [Reply to Message](#)

(Please note, it was VERIFY(h == 0), i.e. your original ASSERT... not VERIFY(hfont.)

Yes, I will test... using RLOG() instead of DLOG().

Tom

Subject: Re: Strange issue with text in Painter
 Posted by [Tom1](#) on Thu, 17 Jan 2019 12:12:06 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 14:01Well, failing VERIFY is interesting. Let us dig a bit more there...

```

void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
  DLOG("RenderCharSys " << fnt << " " << ch << " " << (char)ch);
  static Atomic h;
  h++;
  HFONT hfont = GetWin32Font(fnt, 0);

```

```

VERIFY(hfont);
if(hfont) {
    HDC hdc = Win32_IC();
    HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);
    GLYPHMETRICS gm;
    MAT2 m_matrix;
    memset(&m_matrix, 0, sizeof(m_matrix));
    m_matrix.eM11.value = 1;
    m_matrix.eM22.value = 1;
    int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
&m_matrix);
    VERIFY(gsz >= 0);
    if(gsz < 0)
        return;
    StringBuffer gb(gsz);
    gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
    VERIFY(gsz >= 0);
    if(gsz < 0)
        return;
    RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
    ::SelectObject(hdc, ohfont);
}
h--;
VERIFY(h == 0);
}

```

If it fails, send me where and the log....

VERIFY failed on the first VERIFY(gsz >= 0); on line 415.

Now I even managed to include the log attachment! :)

BR, Tom

File Attachments

1) [ChartTest.7z](#), downloaded 167 times

Subject: Re: Strange issue with text in Painter

Posted by [mirek](#) on Thu, 17 Jan 2019 12:34:02 GMT

[View Forum Message](#) <> [Reply to Message](#)

What about

```

void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{

```

```

RLOG(CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " " << (char)ch);
static Atomic h;
h++;
HFONT hfont = GetWin32Font(fnt, 0);
VERIFY(hfont);
if(hfont) {
    HDC hdc = Win32_IC();
    HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);
    GLYPHMETRICS gm;
    MAT2 m_matrix;
    memset(&m_matrix, 0, sizeof(m_matrix));
    m_matrix.eM11.value = 1;
    m_matrix.eM22.value = 1;
    int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
&m_matrix);
    if(gsz < 0) {
        LOGFONT lf;
        int ret = GetObject(hfont, sizeof(lf), &lf);
        RLOG("Failed " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "
<< (char)ch
            << ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);
        RDUMP((void *)hdc);
        RDUMP((void *)hfont);
        RDUMP(GetLastError());
    }
    VERIFY(gsz >= 0);
    if(gsz < 0)
        return;
    StringBuffer gb(gsz);
    gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
    if(gsz < 0) {
        LOGFONT lf;
        int ret = GetObject(hfont, sizeof(lf), &lf);
        RLOG("Failed2 " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "
<< (char)ch
            << ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);
        RDUMP((void *)hdc);
        RDUMP((void *)hfont);
        RDUMP(GetLastError());
    }
    VERIFY(gsz >= 0);
    if(gsz < 0)
        return;
    RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
    ::SelectObject(hdc, ohfont);
}
h--;
VERIFY(h == 0);

```


}

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 12:40:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 14:34 What about

```
void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
    RLOG(CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " " << (char)ch);
    static Atomic h;
    h++;
    HFONT hfont = GetWin32Font(fnt, 0);
    VERIFY(hfont);
    if(hfont) {
        HDC hdc = Win32_IC();
        HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);
        GLYPHMETRICS gm;
        MAT2 m_matrix;
        memset(&m_matrix, 0, sizeof(m_matrix));
        m_matrix.eM11.value = 1;
        m_matrix.eM22.value = 1;
        int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
&m_matrix);
        if(gsz < 0) {
            LOGFONT lf;
            int ret = GetObject(hfont, sizeof(lf), &lf);
            RLOG("Failed " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "
<< (char)ch
                << ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);
            RDUMP((void *)hdc);
            RDUMP((void *)hfont);
            RDUMP(GetLastError());
        }
        VERIFY(gsz >= 0);
        if(gsz < 0)
            return;
        StringBuffer gb(gsz);
        gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
        if(gsz < 0) {
            LOGFONT lf;
            int ret = GetObject(hfont, sizeof(lf), &lf);
            RLOG("Failed2 " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "
<< (char)ch
```

```

        << ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);
RDUMP((void *)hdc);
RDUMP((void *)hfont);
RDUMP(GetLastError());
}
VERIFY(gsz >= 0);
if(gsz < 0)
    return;
RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
::SelectObject(hdc, ohfont);
}
h--;
VERIFY(h == 0);
}

```

Again the first VERIFY(gsz >= 0); ASSERTED on line 424. LOG attached...

BR, Tom

File Attachments

1) [ChartTest.7z](#), downloaded 167 times

Subject: Re: Strange issue with text in Painter
Posted by mirek on Thu, 17 Jan 2019 12:58:49 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Thu, 17 January 2019 13:40 mirek wrote on Thu, 17 January 2019 14:34 What about

```

void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
    RLOG(CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " " << (char)ch);
    static Atomic h;
    h++;
    HFONT hfont = GetWin32Font(fnt, 0);
    VERIFY(hfont);
    if(hfont) {
        HDC hdc = Win32_IC();
        HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);
        GLYPHMETRICS gm;
        MAT2 m_matrix;
        memset(&m_matrix, 0, sizeof(m_matrix));
        m_matrix.eM11.value = 1;
        m_matrix.eM22.value = 1;
        int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,

```

```

&m_matrix);
if(gsz < 0) {
    LOGFONT lf;
    int ret = GetObject(hfont, sizeof(lf), &lf);
    RLOG("Failed " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "
<< (char)ch
        << ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);
    RDUMP((void *)hdc);
    RDUMP((void *)hfont);
    RDUMP(GetLastError());
}
VERIFY(gsz >= 0);
if(gsz < 0)
    return;
StringBuffer gb(gsz);
gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
if(gsz < 0) {
    LOGFONT lf;
    int ret = GetObject(hfont, sizeof(lf), &lf);
    RLOG("Failed2 " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "
<< (char)ch
        << ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);
    RDUMP((void *)hdc);
    RDUMP((void *)hfont);
    RDUMP(GetLastError());
}
VERIFY(gsz >= 0);
if(gsz < 0)
    return;
RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
::SelectObject(hdc, ohfont);
}
h--;
VERIFY(h == 0);
}

```

Again the first VERIFY(gsz >= 0); ASSERTED on line 424. LOG attached...

BR, Tom

It starts to look like Win32 does not like the sharing of HDC... (despite of what the documentation says).

What about this:

```
void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
```

```

{
RLOG(CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " " << (char)ch);
static Atomic h;
h++;
HFONT hfont = GetWin32Font(fnt, 0);
VERIFY(hfont);
if(hfont) {
HDC hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);
GLYPHMETRICS gm;
MAT2 m_matrix;
memset(&m_matrix, 0, sizeof(m_matrix));
m_matrix.eM11.value = 1;
m_matrix.eM22.value = 1;
int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
&m_matrix);
if(gsz < 0) {
LOGFONT lf;
int ret = GetObject(hfont, sizeof(lf), &lf);
RLOG("Failed " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "
<< (char)ch
<< ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);
RDUMP((void *)hdc);
RDUMP((void *)hfont);
RDUMP(GetLastError());
}
VERIFY(gsz >= 0);
if(gsz < 0)
return;
StringBuffer gb(gsz);
gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
if(gsz < 0) {
LOGFONT lf;
int ret = GetObject(hfont, sizeof(lf), &lf);
RLOG("Failed2 " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "
<< (char)ch
<< ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);
RDUMP((void *)hdc);
RDUMP((void *)hfont);
RDUMP(GetLastError());
}
VERIFY(gsz >= 0);
if(gsz < 0)
return;
RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
::SelectObject(hdc, ohfont);
::DeleteDC(hdc);
}
}

```

```
h--;  
VERIFY(h == 0);  
}
```

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 13:12:56 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 14:58...

It starts to look like Win32 does not like the sharing of HDC... (despite of what the documentation says).

What about this:

```
void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)  
{  
  RLOG(CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " " << (char)ch);  
  static Atomic h;  
  h++;  
  HFONT hfont = GetWin32Font(fnt, 0);  
  VERIFY(hfont);  
  if(hfont) {  
    HDC hdc = CreateIC("DISPLAY", NULL, NULL, NULL);  
    HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);  
    GLYPHMETRICS gm;  
    MAT2 m_matrix;  
    memset(&m_matrix, 0, sizeof(m_matrix));  
    m_matrix.eM11.value = 1;  
    m_matrix.eM22.value = 1;  
    int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,  
&m_matrix);  
    if(gsz < 0) {  
      LOGFONT lf;  
      int ret = GetObject(hfont, sizeof(lf), &lf);  
      RLOG("Failed " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "  
<< (char)ch  
        << ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);  
      RDUMP((void *)hdc);  
      RDUMP((void *)hfont);  
      RDUMP(GetLastError());  
    }  
    VERIFY(gsz >= 0);  
    if(gsz < 0)  
      return;
```

```

StringBuffer gb(gsz);
gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
if(gsz < 0) {
    LOGFONT lf;
    int ret = GetObject(hfont, sizeof(lf), &lf);
    RLOG("Failed2 " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "
<< (char)ch
        << ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);
    RDUMP((void *)hdc);
    RDUMP((void *)hfont);
    RDUMP(GetLastError());
}
VERIFY(gsz >= 0);
if(gsz < 0)
    return;
RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
::SelectObject(hdc, ohfont);
::DeleteDC(hdc);
}
h--;
VERIFY(h == 0);
}

```

As far as I can see, not a single bad or missing letter in 8 minutes of systematic intensive scanning of names. No VERIFYs/ASSERTs either. The log is attached.

BR, Tom

File Attachments

1) [ChartTest.7z](#), downloaded 159 times

Subject: Re: Strange issue with text in Painter
 Posted by [mirek](#) on Thu, 17 Jan 2019 13:16:44 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Thu, 17 January 2019 14:12mirek wrote on Thu, 17 January 2019 14:58...
 It starts to look like Win32 does not like the sharing of HDC... (despite of what the documentation says).

What about this:

```

void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
    RLOG(CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " " << (char)ch);
}

```

```

static Atomic h;
h++;
HFONT hfont = GetWin32Font(fnt, 0);
VERIFY(hfont);
if(hfont) {
    HDC hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
    HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);
    GLYPHMETRICS gm;
    MAT2 m_matrix;
    memset(&m_matrix, 0, sizeof(m_matrix));
    m_matrix.eM11.value = 1;
    m_matrix.eM22.value = 1;
    int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
&m_matrix);
    if(gsz < 0) {
        LOGFONT lf;
        int ret = GetObject(hfont, sizeof(lf), &lf);
        RLOG("Failed " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "
<< (char)ch
            << ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);
        RDUMP((void *)hdc);
        RDUMP((void *)hfont);
        RDUMP(GetLastError());
    }
    VERIFY(gsz >= 0);
    if(gsz < 0)
        return;
    StringBuffer gb(gsz);
    gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
    if(gsz < 0) {
        LOGFONT lf;
        int ret = GetObject(hfont, sizeof(lf), &lf);
        RLOG("Failed2 " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "
<< (char)ch
            << ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);
        RDUMP((void *)hdc);
        RDUMP((void *)hfont);
        RDUMP(GetLastError());
    }
    VERIFY(gsz >= 0);
    if(gsz < 0)
        return;
    RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
    ::SelectObject(hdc, ohfont);
    ::DeleteDC(hdc);
}
h--;
VERIFY(h == 0);

```

}

As far as I can see, not a single bad or missing letter in 8 minutes of systematic intensive scanning of names. No VERIFYs/ASSERTs either. The log is attached.

BR, Tom

Well, so be it, lets call it a fix. I will remove shared information context from the trunk... There will be small performance penalty, but it should be negligible (as there are caches on many levels anyway).

Hopefully my interpretation is right and we are not just hiding some other bug...

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 17 Jan 2019 13:24:53 GMT
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OK, please check trunk....

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 13:30:01 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 15:16Tom1 wrote on Thu, 17 January 2019 14:12mirek wrote on Thu, 17 January 2019 14:58...
It starts to look like Win32 does not like the sharing of HDC... (despite of what the documentation says).

What about this:

```
void RenderCharacterSys(FontGlyphConsumer& sw, double x, double y, int ch, Font fnt)
{
    RLOG(CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " " << (char)ch);
    static Atomic h;
    h++;
    HFONT hfont = GetWin32Font(fnt, 0);
    VERIFY(hfont);
    if(hfont) {
        HDC hdc = CreateIC("DISPLAY", NULL, NULL, NULL);
        HFONT ohfont = (HFONT) ::SelectObject(hdc, hfont);
        GLYPHMETRICS gm;
        MAT2 m_matrix;
```



```

memset(&m_matrix, 0, sizeof(m_matrix));
m_matrix.eM11.value = 1;
m_matrix.eM22.value = 1;
int gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, 0, NULL,
&m_matrix);
if(gsz < 0) {
LOGFONT lf;
int ret = GetObject(hfont, sizeof(lf), &lf);
RLOG("Failed " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "
<< (char)ch
<< ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);
RDUMP((void *)hdc);
RDUMP((void *)hfont);
RDUMP(GetLastError());
}
VERIFY(gsz >= 0);
if(gsz < 0)
return;
StringBuffer gb(gsz);
gsz = GetGlyphOutlineW(hdc, ch, GGO_NATIVE|GGO_UNHINTED, &gm, gsz, ~gb, &m_matrix);
if(gsz < 0) {
LOGFONT lf;
int ret = GetObject(hfont, sizeof(lf), &lf);
RLOG("Failed2 " << CoWork::GetWorkerIndex() << " RenderCharSys " << fnt << " " << ch << " "
<< (char)ch
<< ", real: " << " " << lf.lfFaceName << " " << lf.lfHeight);
RDUMP((void *)hdc);
RDUMP((void *)hfont);
RDUMP(GetLastError());
}
VERIFY(gsz >= 0);
if(gsz < 0)
return;
RenderCharPath(~gb, gsz, sw, x, y + fnt.GetAscent());
::SelectObject(hdc, ohfont);
::DeleteDC(hdc);
}
h--;
VERIFY(h == 0);
}

```

As far as I can see, not a single bad or missing letter in 8 minutes of systematic intensive scanning of names. No VERIFYs/ASSERTs either. The log is attached.

BR, Tom

Well, so be it, lets call it a fix. I will remove shared information context from the trunk... There will be small performance penalty, but it should be negligible (as there are caches on many levels anyway).

Hopefully my interpretation is right and we are not just hiding some other bug...

OK, I hope so too. Using Windows can be expensive sometimes...

As for the 'rounding of tolerance' we discussed about one hundred (or so) postings ago, should it be brought in rather sooner or later? I would like to test this current solution without other changes for a while before taking in an optimization that will decrease likelihood for error. (Actually, I believe this will solve it for good, but it's better keep an eye on it for a while... This does not 'add to cost' as I will anyway look at the map during testing of new features I'm building on top of this.)

Of course I can take this fix in now, and then postpone updating the tolerance rounding, until a week or so have passed...

In any case, Thank you Mirek for all your help and support!

Best regards,

Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 17 Jan 2019 13:33:02 GMT
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I will deal with tolerance after we are sure that the issue is fixed (otherwise it would hide that bug).

It will be actually pretty simple, what I plan to do is this:

```
tolerance = float(0.3 / attr.mtx.GetScale());
```

:)

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 13:47:14 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 15:24OK, please check trunk....

Updated... Tested... Not a single false or missing letter as far as I can see. :)

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [mirek](#) on Thu, 17 Jan 2019 13:51:25 GMT
[View Forum Message](#) <> [Reply to Message](#)

Tom1 wrote on Thu, 17 January 2019 14:47mirek wrote on Thu, 17 January 2019 15:24OK,
please check trunk....

Updated... Tested... Not a single false or missing letter as far as I can see. :)

BR, Tom

So it took only one week and 170 posts? :)

Mirek

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 13:51:28 GMT
[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 15:33I will deal with tolerance after we are sure that the
issue is fixed (otherwise it would hide that bug).

It will be actually pretty simple, what I plan to do is this:

```
tolerance = float(0.3 / attr.mtx.GetScale());
```

:)

Mirek

OK, that's simple, clear and does not eat many CPU cycles! :)

BR, Tom

Subject: Re: Strange issue with text in Painter
Posted by [Tom1](#) on Thu, 17 Jan 2019 13:52:59 GMT

[View Forum Message](#) <> [Reply to Message](#)

mirek wrote on Thu, 17 January 2019 15:51Tom1 wrote on Thu, 17 January 2019 14:47mirek wrote on Thu, 17 January 2019 15:24OK, please check trunk....

Updated... Tested... Not a single false or missing letter as far as I can see. :)

BR, Tom

So it took only one week and 170 posts? :)

Mirek

Must be a record!!!

Subject: Re: Strange issue with text in Painter
Posted by [koldo](#) on Sat, 19 Jan 2019 16:46:59 GMT
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:d :d
