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## Bug 638764 - result of print to pdf printer has text which is not selectable

[Last Comment](#)**Status:** RESOLVED FIXED**Whiteboard:****Keywords:****Product:** Core**Component:** Printing: Output**Version:** unspecified**Platform:** x86 Windows XP**Importance:** -- normal with [2 votes](#) ([vote](#))**Target Milestone:** mozilla5**Assigned To:** Jonathan Kew**QA Contact:** [printing@core.bugs](mailto:printing@core.bugs)**URL:****Depends on:****Blocks:**[Show dependency tree](#) / [graph](#)[Save Changes](#)**Reported:**2011-03-04 06:59 PST by [Tomáš](#)**Modified:**2011-04-26 11:40 PDT ([History](#))**CC List:**10 users including you ([edit](#))

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**Flags:**[wanted-fennec1.0](#)[in-testsuite](#)[in-litmus](#)**See Also:****tracking-firefox5:** ---**status-firefox5:** ---**tracking-firefox6:** ---**blocking-fennec:** ---**blocking2.0:** ---**status2.0:** ---**blocking1.9.2:** ---**status1.9.2:** ---**blocking1.9.1:** ---**status1.9.1:** ---

### Attachments

**Bug list PDF printed weird** (25.26 KB, application/pdf)  
2011-03-06 05:03 PST, [Tomáš](#)

[no flags](#)[Details](#)

**Page for Bug 638764 printed weird** (29.39 KB, application/pdf)  
2011-03-06 05:05 PST, [Tomáš](#)

[no flags](#)[Details](#)

**comparison of PDF generated under GDI and D2D** (35.90 KB, image/png)  
2011-03-08 12:50 PST, [Jonathan Kew](#)

[no flags](#)[Details](#)

**PDF printed with tryserver build - cannot select h1 header** (206.95 KB, application/pdf)  
2011-03-16 03:35 PDT, [Tomáš](#)

[no flags](#)[Details](#)

<b>patch, fix dwrite printing to use real fonts - updated to use RefPtr&lt;&gt; for gdi interop object</b> (10.95 KB, patch) 2011-04-07 20:52 PDT, Jonathan Kew	bas.schouten: review+	<a href="#">Details</a>   <a href="#">Diff</a>   <a href="#">Review (Splinter)</a>
<a href="#">Add an attachment</a> (proposed patch, testcase, etc.)		<a href="#">Show Obsolete</a> (1) <a href="#">View All</a>

[Summon comment box](#)

<b>Tomáš</b> 2011-03-04 06:59:53 PST	Description [reply] [-]
<p>User-Agent: Mozilla/5.0 (Windows NT 6.1; rv:2.0b12) Gecko/20100101 Firefox/4.0b12 Build Identifier: Mozilla/5.0 (Windows NT 6.1; rv:2.0b12) Gecko/20100101 Firefox/4.0b12</p> <p>After printing page to PDF printer: Acrobat Distiller 9.4.2 (Windows) / PScript5.dll Version 5.2.2</p> <p>the text in pdf is not selectable also the file is quite big for a few paragraphs of text (over 1MB for printed version of this page - <a href="https://bugzilla.mozilla.org/enter_bug.cgi?product=Core&amp;format=guided">https://bugzilla.mozilla.org/enter_bug.cgi?product=Core&amp;format=guided</a> ) compared to 57kB when the same page is printed from FF3.6</p> <p>Looks like it's printed like graphics instead of text with fonts.</p> <p>This support issue seems to have additional info: <a href="http://support.mozilla.com/en-US/questions/760923">http://support.mozilla.com/en-US/questions/760923</a> - suggesting it has connection to hardware accelaration of rendering.</p> <p>IMHO if FF4.0 is shipped with this bug a lot of people would find it disappointing.</p> <p>Maybe has connection to <a href="#">Bug 625852</a> ??</p> <p>Reproducible: Always</p> <p>Steps to Reproduce:</p> <ol style="list-style-type: none"><li>1. open a page in FF4.0b12</li><li>2. select print from file menu</li><li>3. in print dialog select Adobe PDF as writer and send to print</li></ol> <p>Actual Results:</p> <p>Good looking PDF file with everything fine except the text is not selectable and the file is quite big.</p> <p>Expected Results:</p> <p>The text in PDF should be selectable and the resulting file should be much smaller.</p>	

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**Tomáš 2011-03-04 07:05:39 PST****Comment 1 [reply] [-]**

I forgot to mention that I have fully accelerated rendering switched on:

```
Adapter      NVIDIA GeForce 8600M GT
Id manufacturer  10de
Id device      0407
RAM            256
Drivers        nvd3dum nvwgf2um,nvwgf2um
Driver version  8.17.12.6099
Driver date     10-16-2010
Direct2D enabled    true
DirectWrite enabled  true (6.1.7600.16699, font cache n/a)
WebGL           Google Inc. -- ANGLE -- OpenGL ES 2.0 (ANGLE 0.0.0.541)
Windows         graphic acceleration 2/2 Direct3D 10
```

**Boris Zbarsky (:bz) 2011-03-04 07:15:13 PST****Comment 2 [reply] [-]**

It's possible that the patch is using graphical effects that can't be represented with just text...

**Robert O'Callahan (:roc) (Mozilla Corporation) 2011-03-04 19:26:54 PST** **Comment 3 [reply] [-]**

Not in this case.

A Feb 12 Linux build with acceleration disabled works fine for me ---  
[https://bugzilla.mozilla.org/enter\\_bug.cgi?product=Core&format=guided](https://bugzilla.mozilla.org/enter_bug.cgi?product=Core&format=guided) prints to a 70K file and I can select the text.

Tomáš, if you disable acceleration on Windows, does your build work?

This is likely to be an issue in the font subsystem or possibly cairo.

**Robert O'Callahan (:roc) (Mozilla Corporation) 2011-03-04 20:21:09 PST** **Comment 4 [reply] [-]**

\*\*\* ~~Bug 638763~~ has been marked as a duplicate of this bug. \*\*\*

**Tomáš 2011-03-06 05:03:00 PST****Comment 5 [reply] [-]**

When acceleration disabled:

```
Popis adaptéru  NVIDIA GeForce 8600M GT
Direct2D enabled    false
DirectWrite enabled  false (6.1.7600.16699, font cache n/a)
WebGL             Google Inc. -- ANGLE -- OpenGL ES 2.0 (ANGLE 0.0.0.541)
Windows graphic acceleration  0/1
```

at this setting the outcome of print varies. Sometimes page is printed absolutely weird and sometimes the outcome is looking right and the text is selectable. Also the file size of PDF is appropriate to printed text.

I'm sending samples of printed PDF files which are printed wrong.

It looks like it's not dependant on any particular page, just some occasional bug. It's not regularly reproducible.

**Tomáš 2011-03-06 05:03:37 PST****Comment 6 [reply] [-]**

Created [attachment 517247](#) [details]  
Bug list PDF printed weird

**Tomáš** 2011-03-06 05:05:13 PST

**Comment 7** [reply] [-]

Created [attachment 517248](#) [details]  
Page for ~~Bug 638764~~ printed weird

**Jonathan Kew** 2011-03-06 05:11:21 PST

**Comment 8** [reply] [-]

(In reply to comment #5)  
> When acceleration disabled:  
>  
> Popis adaptéru NVIDIA GeForce 8600M GT  
> Direct2D enabled false  
> DirectWrite enabled false (6.1.7600.16699, font cache n/a)  
> WebGL Google Inc. -- ANGLE -- OpenGL ES 2.0 (ANGLE 0.0.0.541)  
> Windows graphic acceleration 0/1  
>  
>  
> at this setting the outcome of print varies. Sometimes page is printed  
> absolutely weird and sometimes the outcome is looking right and the text is  
> selectable. Also the file size of PDF is appropriate to printed text.  
>  
> I'm sending samples of printed PDF files which are printed wrong.  
>  
> It looks like it's not dependant on any particular page, just some occasional  
> bug. It's not regularly reproducible.

That's ~~bug 635768~~, which was fixed since beta12 was built - you need to update to the latest nightly (or RC, when it comes out). That is unrelated to any problems when accelerated rendering is enabled.

**Tomáš** 2011-03-06 05:26:59 PST

**Comment 9** [reply] [-]

So with nightly minefield:  
4.0b13pre  
buildID 20110305030406

Direct2D Enabled true  
DirectWrite Enabled true (6.1.7600.16699, font cache n/a)  
WebGL Renderer Google Inc. -- ANGLE -- OpenGL ES 2.0 (ANGLE 0.0.0.541)  
GPU Accelerated Windows 1/1 Direct3D 10

resulted in PDF with text not selectable and big file size.

Minefield with HW accel. off and Adobe PDF printer produces PDF file with selectable text and appropriate size.

**Jonathan Kew** 2011-03-08 12:50:35 PST

**Comment 10** [reply] [-]

Created [attachment 517843](#) [details]  
comparison of PDF generated under GDI and D2D

When D2D is not enabled, so we just use GDI rendering, the PDF is correctly generated with text and fonts, so that the text remains selectable and renders properly as the PDF is scaled.

When D2D is enabled, it looks like all the glyphs in the text are being converted to outline graphics, so the textual nature of the data is lost; moreover, the conversion is lousy, as can be seen in the screenshot here which

shows magnified views (in Acrobat) of the same glyph in a PDF generated via the GDI path (left) and one generated with D2D (right). Note how the glyph in the D2D-generated PDF has a very irregular, ugly outline.

**Jonathan Kew** 2011-03-08 13:02:36 PST

**Comment 11** [reply] [-]

Actually, the issue is not GDI vs D2D rendering backends, but GDI vs DWrite fonts. If DWrite is enabled, even with D2D disabled, we get the bad PDF.

**Jonathan Kew** 2011-03-09 03:31:24 PST

**Comment 12** [reply] [-]

So, the problem begins in `_cairo_win32_printing_surface_show_glyphs`, which handles `CAIRO_FONT_TYPE_WIN32` via a "proper" text-rendering path, but doesn't know about `CAIRO_FONT_TYPE_DWRITE` and therefore falls back on getting glyph outlines as paths and filling them. This results in all the symptoms here: huge PDFs, no selectable or searchable text, and lousy glyph shapes.

It's trivial to make `_cairo_win32_printing_surface_show_glyphs` know about dwrite fonts as well as win32 fonts, and it will then call `_cairo_win32_surface_show_glyphs` instead of using its glyph-path fallback. HOWEVER, this doesn't actually help us, because with dwrite fonts, `_cairo_win32_surface_show_glyphs` will call the helper `_cairo_dwrite_show_glyphs_on_surface`. And how does that work? It generates and blits bitmaps into the device context. So at "best", the end result would be to replace the path-based glyph shapes with bitmaps rasterized at 300dpi. They'd still look rough, they'd still not be selectable or searchable as text, and the files would still be huge. :(

(An added issue is that something goes wrong with this path anyway, when rendering to a printer DC: I'm seeing the background filled with black, so the text ends up invisible unless it happens to be a non-black color. But given that painting all the text as bitmaps wouldn't really be an improvement anyway, I'm not going to try figuring out what's wrong here.)

**Jonathan Kew** 2011-03-09 09:57:30 PST

**Comment 13** [reply] [-]

Created [attachment 518092](#) [details]  
patch, make cairo print text via `ExtTextOut` with GDI fonts, even when using DWrite

This feels like a rather ugly hack, but it resolves the problem, and I don't see how else we can do it.

The DW/GDI interop stuff worries me because it does not guarantee to give us the same physical font for use in GDI as DW was using. But we're already relying on this for font table access in some cases, so I guess it's no worse to use it here. As a precaution, the patch checks whether the resulting GDI font turned out to be a `Type1` or `bitmap` font, and bails if that happens because DW can't have been using those. (This shouldn't happen, based on the `lfOutPrecision` value set in the `LOGFONT`, but I don't know how far we can trust the font mapping algorithms.)

**Jonathan Kew** 2011-03-10 01:09:09 PST

**Comment 14** [reply] [-]

There's a tryserver build at  
<http://ftp.mozilla.org/pub/mozilla.org/firefox/tryserver-builds/jkew@mozilla.com-cf4f65d8eadd>  
if you'd like to test printing with this patch and confirm whether it works as expected.

**Tomáš** 2011-03-11 11:41:57 PST

**Comment 15** [reply] [-]

At my configuration the tryserver build works fine for paragraph (maybe also some other text), but headers are still not selectable - confirmed on multiple sites. Eg:  
<http://edition.cnn.com/2011/TECH/innovation/03/10/why.sxsw.matters/index.html>

HW acceleration ON

**Jonathan Kew** 2011-03-16 02:54:49 PDT

**Comment 16** [reply] [-]

(In reply to comment #15)  
> At my configuration the tryserver build works fine for paragraph (maybe also  
> some other text), but headers are still not selectable - confirmed on multiple  
> sites. Eg:  
> <http://edition.cnn.com/2011/TECH/innovation/03/10/why.sxsw.matters/index.html>  
>  
> HW acceleration ON

Could you post an example of such a PDF, please?

**Tomáš** 2011-03-16 03:35:07 PDT

**Comment 17** [reply] [-]

Created [attachment 519613](#) [details]  
PDF printed with tryserver build - cannot select h1 header

I tried other sites with the same result, the h1 tag cannot be selected in printed PDF (with tryserver build) - didn't tested other headers - H2 etc.

**Jonathan Kew** 2011-03-16 05:36:52 PDT

**Comment 18** [reply] [-]

I don't know why this happens. I tried printing a similar page from the same site, and all the text (including the <h1> title) can be selected in the resulting PDF. I notice that you're using Adobe Distiller, whereas I was using the PDF995 driver; perhaps that creates the PDF in a slightly different way.

**José Jeria** 2011-03-16 11:14:04 PDT

**Comment 19** [reply] [-]

\*\*\* [Bug 639668](#) has been marked as a duplicate of this bug. \*\*\*

**Tomáš** 2011-03-21 05:22:26 PDT

**Comment 20** [reply] [-]

Yes maybe it could be on Adobe distiller's side.. Thanks for making most of the text selectable..

**Jonathan Kew** 2011-03-27 15:26:41 PDT

**Comment 21** [reply] [-]

<ping> review?

**Jonathan Kew** 2011-04-07 20:52:47 PDT

**Comment 22** [reply] [-]

Created [attachment 524562](#) [details]  
patch, fix dwrite printing to use real fonts - updated to use RefPtr<> for gdi interop object

Updated to use RefPtr<IDWriteGdiInterop> to avoid leaking the interop object.  
Untested until I get home, but ought to be fine. :)

**Bas Schouten (:bas)** 2011-04-07 21:21:41 PDT

**Comment 23** [reply] [-]

Comment on attachment 524562 [details]

patch, fix dwrite printing to use real fonts - updated to use RefPtr<> for gdi interop object

```
>diff --git a/gfx/cairo/cairo/src/cairo-dwrite-font.cpp b/gfx/cairo/cairo/src/cairo-dwrite-font.c
>--- a/gfx/cairo/cairo/src/cairo-dwrite-font.cpp
>+++ b/gfx/cairo/cairo/src/cairo-dwrite-font.cpp
>@@ -1364,8 +1364,70 @@ _cairo_dwrite_show_glyphs_on_surface(voi
>+     LOGFONTW logfont;
>+     gdiInterop->ConvertFontFaceToLOGFONT (dwface->dwriteface, &logfont);
```

We should probably check the return value here.

```
>diff --git a/gfx/cairo/cairo/src/cairo-platform.h b/gfx/cairo/cairo/src/cairo-platform.h
>--- a/gfx/cairo/cairo/src/cairo-platform.h
>+++ b/gfx/cairo/cairo/src/cairo-platform.h
>@@ -34,16 +34,19 @@
> *      Stuart Parmenter <stuart@mozilla.com>
> */
>
> #ifndef CAIRO_PLATFORM_H
> #define CAIRO_PLATFORM_H
>
> #include "prcpucfg.h"
>
> /* we're replacing any definition from cairoint.h etc */
> #undef cairo_public
>+
```

This is good but should probably go in a separate patch.

**Jonathan Kew** 2011-04-11 06:07:57 PDT

**Comment 24** [reply] [-]

(In reply to comment #23)

> We should probably check the return value here.

Added check and pushed to cedar:

<http://hg.mozilla.org/projects/cedar/rev/6cfaf3ab8b96>

> This is good but should probably go in a separate patch.

Pushed followup to cedar as a separate changeset:

<http://hg.mozilla.org/projects/cedar/rev/364b5727594a>

**Ehsan Akhgari [:ehsan]** 2011-04-11 11:40:30 PDT

**Comment 25** [reply] [-]

<http://hg.mozilla.org/mozilla-central/rev/6cfaf3ab8b96>

<http://hg.mozilla.org/mozilla-central/rev/364b5727594a>

**Alice0775 White** 2011-04-26 11:40:42 PDT

**Comment 26** [reply] [-]

\*\*\* Bug ~~652872~~ has been marked as a duplicate of this bug. \*\*\*

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#### Additional Comments:

**Status:**RESOLVED FIXED

Save Changes

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