Planet SoC

Week 7 Updates: Notifications and Font Sizes

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I'll focus on two features I added to msimprpl this week: font size support in instant messages, and mail notifications.

Font sizes in the MySpaceIM protocol are unusual. They are specified in instant messages by the 'h' attribute of the tag. In the official client, you can choose font sizes in points, from 4 to 72 points. However, the 'h' attribute is not in points. Here are some correspondences from the user-entered point sizes to the client-sent value of the h attribute:

4pt = 5

5pt = 7

6pt = 8

7pt = 9

8pt = 11

The relationship does not appear to be constant, the differences between the pairs of values are +1, +2, +2, +2, +3. Fortunately the relationship becomes clear at the larger point sizes:

18pt = 24

72pt = 96

96 is the Dots Per Inch (DPI) resolution of my display. 72 points is 1 inch (1 point is 1/72 " by definition). Therefore, the 'h' attribute in MySpaceIM markup is actually the height of the font in pixels. This can be confirmed by changing your resolution (in Windows) to 120 DPI. 72 point fonts will be sent with a height of 120.

But we're not done yet. To send the fonts to libpurple as formatted text, an HTML-like markup formatting is used. Specifically, the SIZE attribute of the tag. The size libpurple expects is relative, though MySpaceIM sends absolute sizes. From pidgin/gtkimhtml.c:

```
/* POINT_SIZE converts from AIM font sizes to a point size scale factor. */
#define MAX_FONT_SIZE 7
#define POINT_SIZE(x) (_point_sizes [MIN ((x > 0 ? x : 1), MAX_FONT_SIZE) - 1])
static gdouble _point_sizes [] = { .85, .95, 1, 1.2, 1.44, 1.728, 2.0736};
```

The index of the point sizes array is a number from 0 to 6, corresponding to the SIZE attribute minus 1, that maps to a scale factor relative to the default size. Size 3 is the normal font size, size 2 is 95%, size 4 is 120%, and so on. The factors above 3 are times 1.2: 1.44 = 1.2 ^ 2, 1.728 = 1.2 ^3, etc. Toward a standard font size interval system is an incomplete, but useful read about the mess that is HTML font sizes.

Nonetheless, it is possible to get perfect scaling (at least when Pidgin uses msimprpl) by copying _point_sizes into my code so the exact same values are used. The only remaining issue is finding the base font size that Pidgin uses.

Turns out Pidgin calls `pango_font_description_get_size`, but as a prpl I don't want to be dependent on the UI, so I cannot make this call. Experimentation reveals that 8 points is a good base size, though I made this parameter configurable in the protocol plugin account options if the default is not suitable. In the account options you can also change the DPI that msimprpl uses in font size conversions if you are not running at 96 DPI. This is less than ideal, but better than having the prpl have a UI dependency. Msimprpl should be eventually be usable in other applications that use libpurple, such as Adium or Finch.

Libpurple also has an option to specify "sane point sizes": `OPT_PROTO_USE_POINTSIZE`. In pidgin/gtkconv.c, this enables `GTK_IMHTML_USE_POINTSIZE`, but I lost track of where it goes from there. It seems only QQ prpl uses this option. However, even with the relative HTML font sizes, msimprpl's fonts decently match those of the official client:

The quick brown fox jumped over the lazy dog.   Pidgin - msimprpl

The quick brown fox jumped over the lazy dog.   Official MySpaceIM

The match is not perfect, but sufficient. When not lined up closely, as in this comparison, the smoothness of the fonts in Pidgin as compared to the official MySpaceIM client is more noticeable than size differences. Again, to reiterate, you can change the base font size if you would like. I'm also open to suggestions if there is a better way to go about specifying font sizes in libpurple.

That's about it for font sizes, which are by the way supported on both incoming and outgoing messages. This week I also added mail notification support, which can be useful for heavy MySpace users that want to know if they have new mail messages, friend requests, or blog/picture/profile comments. Msimprpl 0.12 uses libpurple's notification API to notify of these new messages as emails. Opening these messages will take you to the proper page on MySpace.

Msimprpl sends a mail status check every minute, and the servers reply with a message specifying what kind of new messages there are. The servers continue to say there are new messages every minute, if you keep asking, so in msimprpl I store the old mail check status and only send a notification on the rising edge. That is, you'll only be notified when the mail status goes from no mail to new mail, not just when you have new mail. This is more useful behavior, since you wouldn't want to be bombarded with new mail notification every minute.

You can find more information on msimprpl at my msimprpl wiki page. The latest version, released today (0.12), includes the changes mentioned in this blog post.

Tags: msimprpl   Pidgin
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