

Re: Rendering Unicode diacritics

Source: <http://coding.derkeiler.com/Archive/Tcl/comp.lang.tcl/2005-09/msg00888.html>

- *From:* "Aric Bills" <aric.bills@xxxxxxxxxx>
 - *Date:* 27 Sep 2005 03:46:44 -0700
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Hi Benny,

Thanks for responding to my post. You are right about consulting the source, of course, but I have so little experience with the Tk source code that I didn't even know where to begin looking, and so little experience with font rendering that I didn't really know I was looking for. I guess I will now start by looking at calls to TextOut. Thanks for that helpful info. If there is such a thing as a road map for the Tk source code (and especially font rendering), I would love to know about it.

I can see why you conclude that I need a better font rather than a better rendering system; if that's the case, I have no idea which font would do the job. None of the fonts installed on my computer, including Arial, Times New Roman, and Lucida Sans Unicode (all OpenType fonts from Microsoft) seem capable of properly rendering combining diacritics by themselves, at least in Tk.

It's my understanding that in order to render combining diacritics correctly, you need some kind of "smart font" technology. Apparently, the most common smart font technology for Windows is the combination of OpenType fonts with Uniscribe.

I'm not sure how (or whether) Uniscribe fits into the Tk picture on Windows. If it is a part of Tk's unicode rendering process, then it's possible that upgrading my Uniscribe DLL would solve the problem. (Apparently, versions of Uniscribe prior to MS Word 2003 didn't treat the Latin alphabet as a complex script.) However, this is not a good solution to the problem in general, because, at the moment, updating Uniscribe involves either buying Word 2003 or joining the VOLT user community. It would be ridiculous to ask my potential end users to do either of these things.

I understand that it's possible to implement application-specific alternatives to Uniscribe (i.e. use OpenType fonts with a different OpenType-aware smart renderer); apparently Adobe has done just that. I personally wouldn't know how to do that, but if somebody else does, and can point me in that direction, I'll look into it.

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You asked what it would accomplish to write a module for Tk that uses Graphite. For my needs, I see it as a better alternative to Uniscribe for the following reasons:

1. I can distribute Graphite as part of a program; I can't distribute Uniscribe, and I can't count on any given version being already installed on end-users' computers.
2. Graphite's language-specific behavior is extensible. Uniscribe's isn't, and because development at Microsoft is primarily motivated by potential for profit, chances are good they will never build in satisfactory support for many of the languages that linguists like myself would like to work with.
3. Because the impetus behind Graphite comes in large part from the field of linguistics, there are a number of Graphite-centered solutions to various linguistic problems (for example, more than one nice implementation of the International Phonetic Alphabet). This is an added bonus for those of us who work in linguistics.

Chances are good Graphite support would meet other people's needs as well. Among other things, Graphite is capable of handling bidirectional text, something Tk can't currently do.

You mentioned development contracts. It has occurred to me that, theoretically, someone could be hired to do this sort of work, but as a poor graduate student who can barely feed and clothe his family, (and who's writing free and open source software for linguists and Alaska Natives, two badly underfunded populations) I won't be the one doing the hiring :) It may be possible to write a grant that would fund this sort of work; if anyone has suggestions along those lines, please speak up. Otherwise, I may be pursuing the pokey road of learning enough about Tk internals and Graphite to try to solve this problem myself.

You also mentioned that there is some "missing Unicode stuff." Can you elaborate on what's missing?

Sorry for the long post. Thanks to everyone for any feedback you might have on these issues.

Aric

• *Follow-Ups:*

- ◆ *Re: Rendering Unicode diacritics*
◇ From: Benjamin Riefenstahl

• *References:*

- ◆ *Rendering Unicode diacritics*
◇ From: aric . bills

Re: Rendering Unicode diacritics

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