Subject: Re: A terminal emulator widget for U++
Posted by Oblivion on Sat, 06 Jun 2020 11:57:44 GMT
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Hello,

Terminal ctrl is updated. It has a number of under-the-hood improvements that lead to higher performance/throughput.
To give you an idea, here are some benchmark results I've been compiling (both synthetic and real-usage) for some time:

CPU: AMD FX 6100 - Black Edition (Six-core processor)
Memory: 8 GiB, DDR-3 1800 Mhz
Storage: 128 Gib SSD, 1Tib HDD
Graphics: AMD Radeon R7 240, 2GiB
Monitor: LCD, HD (1080p)
OS/Kernel: Arch/Linux 5.6 (x86_64)
Desktop: GNOME 3.36 (X11)
Framework: Ultimate++ 2020.1 (alpha)
Flags: GUI
Compilers: GCC 10.0.1 CLANG 10.0.0
Application: TerminalExample (with a high throughput loop).
Font: The same IBM Plex Mono, monospace font used in all tests.

Disclaimer: The benchmarks below do not represent any competition.
        They don't represent any weak spots of the mentioned terminals. They are all high quality stuff.
        The sole purpose of these benchmarks is to give an idea as to where the Terminal ctrl's "engine" performance stands ATM.

Note: All benchmarks are repeated 50 times, automatically.
    The performance difference between GCC/CLANG builds is negligable.
    The latest stable versions of the mentioned terminals are used in these tests (as of May-June 2020).

Results of command: "time find /usr", file count: 415897, page size: 237 x 55, Monospace Font)

Terminal Emulator	real	user	sys	Notes
Alacritty	0m3,776s	0m1,134s	0m2,637s	Scrollback buffer size: 64k
Terminal ctrl	0m4,126s	0m1,202s	0m2,466s	Scrollback buffer size: 64k
Kitty	0m5,608s	0m1,224s	0m2,763s	Scrollback buffer size: 64k
Gnome Terminal	0m6,785s	0m1,243s	0m3,015s	Scrollback buffer size: 64k
xterm	0m24,368s	0m1,661s	0m3,766s	Scrollback buffer size: 64k

Terminal Emulator	real	user	sys	Notes

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Simple terminal (0.8)          0m3,791s   0m1,162s   0m2,533s   Has no scrollback buffer.
Terminal ctrl   (0.3)          0m3,971s   0m1,120s   0m2,472s   Scrollback disabled.


Terminal Emulator              real       user       sys        Notes
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Terminal ctrl   (0.3)          0m4,380s   0m1,479s   0m2,536s   localhost, Scrollback buffer size:
2000 lines, no compression, (SshTerminalExample is used)
PuTTY (0.73)                   0m40,828s  0m1,354s   0m3,071s   localhost, Scrollback buffer
size: 2000 lines, no compression

// Vte-bench, benchmark 1: scrolling. page size: 237 x 55, Monospace Font.


Terminal Emulator              real       user       sys        Notes
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Alacritty              0m1,936s   0m0,001s   0m0,946s
Kitty                  0m2,985s   0m0,000s   0m0,567s
Gnome Terminal             0m3,758s   0m0,001s   0m0,940s
Terminal ctrl            0m4,064s   0m0,000s   0m0,859s
Simple terminal (0.8)          0m4,623s   0m0,000s   0m1,105s
xterm                  0m47,249s  0m0,000s   0m0,567s

// Vte-bench, benchmark 2: alt-screen-random-write, page size: 237 x 55, Monospace Font.


Terminal Emulator              real       user       sys        Notes
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Alacritty              0m1,520s   0m0,000s   0m0,554s
Kitty                  0m2,750s   0m0,000s   0m0,408s
Gnome Terminal             0m3,153s   0m0,004s   0m0,726s
Terminal ctrl            0m3,790s   0m0,000s   0m0,474s
Simple terminal (0.8)          0m7,097s   0m0,001s   0m0,825s
xterm                  0m19,797s  0m0,001s   0m0,993s

// Vte-bench, benchmark 3: scrolling-in-region, page size: 237 x 55, Monospace Font.


Terminal Emulator              real       user       sys        Notes
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Alacritty              0m3,337s   0m0,001s   0m3,297s
Gnome Terminal             0m5,280s   0m0,001s   0m3,254s
Kitty                  0m6,326s   0m0,001s   0m6,034s
Terminal ctrl            0m6,739s   0m0,001s   0m4,033s
Simple terminal (0.8)          0m7,844s   0m0,001s   0m7,348s
xterm                  3m36,599s  0m0,001s   0m11,011s
```

(Eventually I will add the final benchmark results to the Terminal package as a markdown file. Consider the above mentioned results only as a preview.)

If you have any questions, feature requests, bug reports, suggestions, criticism, etc. let me know.

Best regards,
Oblivion