

Commandline GUI

Way to Go...

Scope

1. GUI facilities on commandline

- screen widgets, menus, ...
- colour management
- cursor handling

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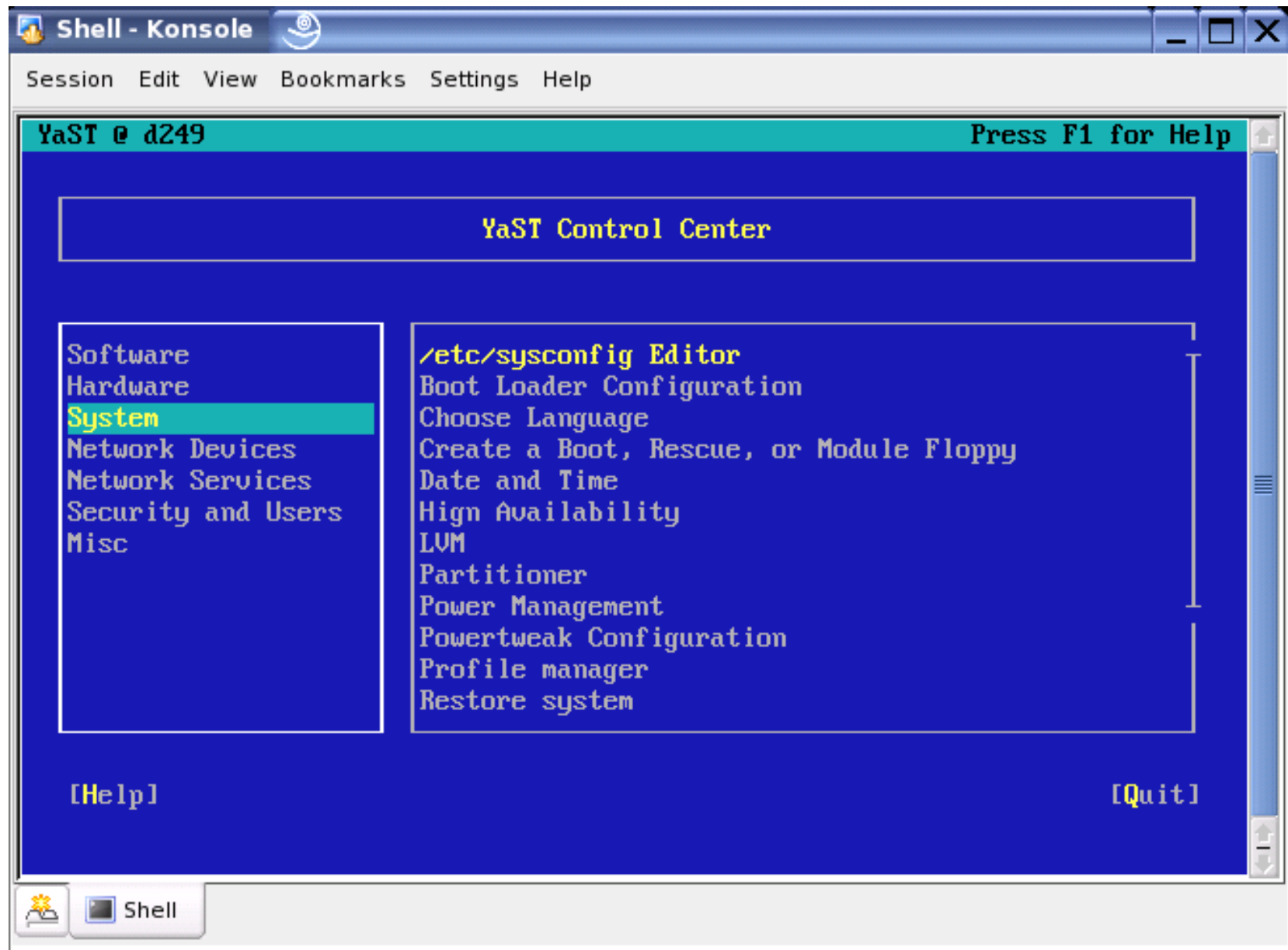
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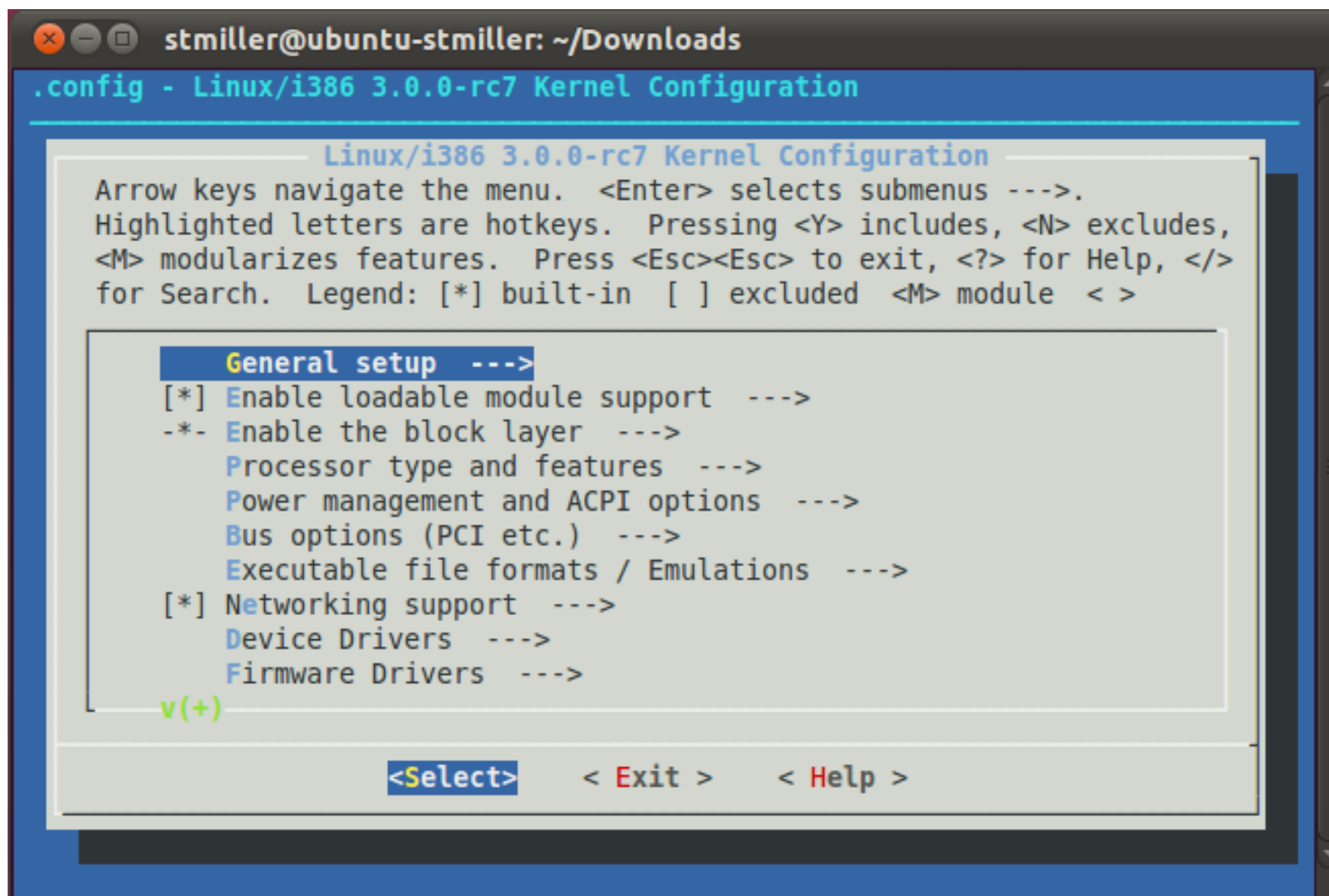
ncurses

- **old** - since System V release 4 (1992)
- most commandline-installers / menus
- GNU **C**

ncurses - YaST



ncurses - menuconfig



The screenshot shows a terminal window titled "stmiller@ubuntu-stmiller: ~/Downloads". Inside the terminal, the "Linux/i386 3.0.0-rc7 Kernel Configuration" menu is displayed. The menu is a ncurses-style interface with a blue title bar and a grey content area. The title bar contains the text ".config - Linux/i386 3.0.0-rc7 Kernel Configuration". The content area has a title "Linux/i386 3.0.0-rc7 Kernel Configuration" and a paragraph of instructions: "Arrow keys navigate the menu. <Enter> selects submenus --->. Highlighted letters are hotkeys. Pressing <Y> includes, <N> excludes, <M> modularizes features. Press <Esc><Esc> to exit, <?> for Help, </> for Search. Legend: [*] built-in [] excluded <M> module < >". Below the instructions, the "General setup --->" menu item is highlighted in blue. Under "General setup", the following items are listed: "[*] Enable loadable module support --->", "-*- Enable the block layer --->", "Processor type and features --->", "Power management and ACPI options --->", "Bus options (PCI etc.) --->", "Executable file formats / Emulations --->", "[*] Networking support --->", "Device Drivers --->", and "Firmware Drivers --->". At the bottom of the menu, there are three options: "<Select>", "<Exit >", and "<Help >". A green cursor "v(+)" is positioned at the bottom left of the menu area.

```
stmiller@ubuntu-stmiller: ~/Downloads
.config - Linux/i386 3.0.0-rc7 Kernel Configuration

Linux/i386 3.0.0-rc7 Kernel Configuration
Arrow keys navigate the menu.  <Enter> selects submenus --->.
Highlighted letters are hotkeys.  Pressing <Y> includes, <N> excludes,
<M> modularizes features.  Press <Esc><Esc> to exit, <?> for Help, </>
for Search.  Legend: [*] built-in  [ ] excluded  <M> module  < >

General setup --->
[*] Enable loadable module support --->
-*- Enable the block layer --->
Processor type and features --->
Power management and ACPI options --->
Bus options (PCI etc.) --->
Executable file formats / Emulations --->
[*] Networking support --->
Device Drivers --->
Firmware Drivers --->

v(+)
```

<Select> <Exit > <Help >

ncurses - htop

```
Terminal - [screen 1: bash] jo68huc@meggy:~
File Edit View Terminal Go Help

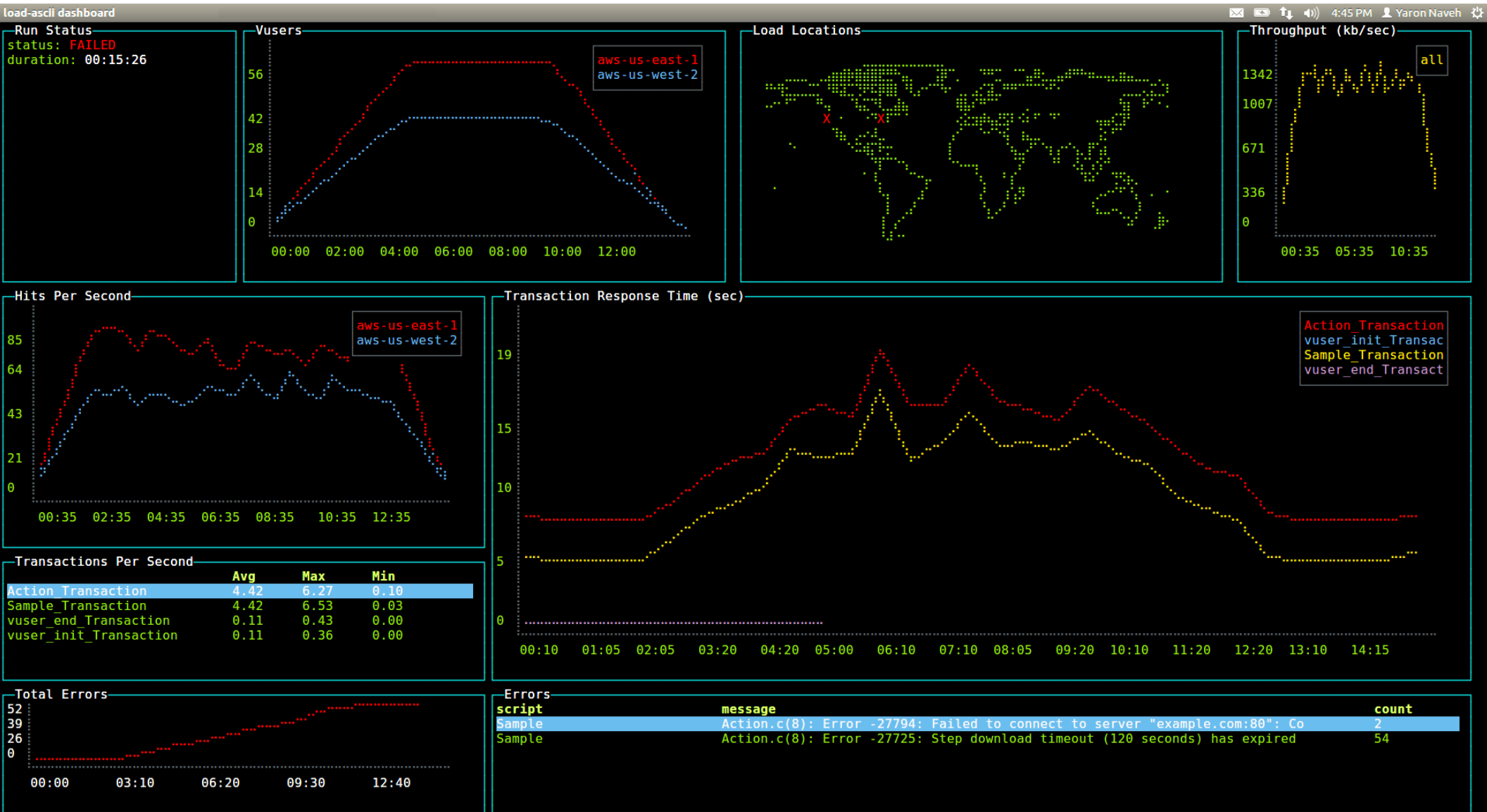
1  [|||||] 100.0% 13 [|||||] 100.0% 25 [|||||] 0.0% 37 [|||||] 100.0%
2  [|||||] 100.0% 14 [|||||] 100.0% 26 [|||||] 0.0% 38 [|||||] 17.2%
3  [|||||] 100.0% 15 [|||||] 100.0% 27 [|||||] 0.0% 39 [|||||] 0.0%
4  [|||||] 100.0% 16 [|||||] 100.0% 28 [|||||] 0.0% 40 [|||||] 0.0%
5  [|||||] 8.6% 17 [|||||] 100.0% 29 [|||||] 100.0% 41 [|||||] 0.0%
6  [|||||] 0.6% 18 [|||||] 100.0% 30 [|||||] 0.0% 42 [|||||] 0.0%
7  [|||||] 100.0% 19 [|||||] 0.0% 31 [|||||] 0.0% 43 [|||||] 6.7%
8  [|||||] 100.0% 20 [|||||] 0.6% 32 [|||||] 0.0% 44 [|||||] 100.0%
9  [|||||] 0.6% 21 [|||||] 82.8% 33 [|||||] 100.0% 45 [|||||] 100.0%
10 [|||||] 100.0% 22 [|||||] 100.0% 34 [|||||] 0.0% 46 [|||||] 100.0%
11 [|||||] 100.0% 23 [|||||] 100.0% 35 [|||||] 0.0% 47 [|||||] 100.0%
12 [|||||] 100.0% 24 [|||||] 0.0% 36 [|||||] 100.0% 48 [|||||] 100.0%
Mem[|||||] 38453/258325MB Tasks: 359, 910 thr; 28 running
Swp[|||||] 407/4095MB Load average: 27.17 27.10 27.02
Uptime: 166 days(!), 17:02:16

PID USER PRI NI VIRT RES SHR S CPU% MEM% TIME+ Command
24175 ha62gad 20 0 6354M 2220M 70908 S 101. 0.9 176h /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r run
26059 neb 39 19 15816 8152 1868 R 100. 0.0 5h01:27 dnetc -n -1
42787 to78men 20 0 16.0G 5548M 71092 S 100. 2.1 23h35:27 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan34
21110 neb 39 19 15816 8148 1868 R 100. 0.0 6h07:19 dnetc -n -1
43251 to78men 20 0 14.5G 3353M 71096 S 100. 1.3 23h35:09 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan78
8095 neb 39 19 15816 8148 1868 R 100. 0.0 30:20:09 dnetc -n -1
40647 neb 39 19 15816 8152 1868 R 100. 0.0 2h19:37 dnetc -n -1
43783 to78men 20 0 12.6G 2303M 71092 S 100. 0.9 23h32:46 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan56
44650 neb 39 19 15816 8148 1868 R 100. 0.0 1h33:53 dnetc -n -1
43253 to78men 20 0 17.0G 5809M 71088 S 100. 2.2 23h34:52 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan910
7682 neb 39 19 15816 8152 1868 R 100. 0.0 33:57:49 dnetc -n -1
42712 neb 39 19 15816 8152 1868 R 100. 0.0 1h51:09 dnetc -n -1
46816 neb 39 19 15816 8152 1868 R 100. 0.0 1h03:36 dnetc -n -1
12766 neb 39 19 15816 8152 1868 R 100. 0.0 8h13:10 dnetc -n -1
7956 neb 39 19 15816 8152 1868 R 100. 0.0 32:58:00 dnetc -n -1
43377 to78men 20 0 14.5G 3353M 71096 R 100. 1.3 23h32:50 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan78
42910 to78men 20 0 16.0G 5548M 71092 R 100. 2.1 23h33:22 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan34
45076 neb 39 19 15816 8148 1868 R 100. 0.0 1h27:13 dnetc -n -1
33588 neb 39 19 15816 8148 1868 R 100. 0.0 3h38:03 dnetc -n -1
45340 neb 39 19 15816 8148 1868 R 100. 0.0 1h20:58 dnetc -n -1
41565 mi28tup 20 0 12.7G 12.2G 13008 R 100. 4.8 112h /opt/Mathematica/8.0/SystemFiles/Kernel/Binaries/Linux-x86-64/MathK
42321 neb 39 19 15816 8148 1868 R 100. 0.0 1h56:46 dnetc -n -1
41370 neb 39 19 15816 8152 1868 R 100. 0.0 2h14:06 dnetc -n -1
43843 to78men 20 0 12.6G 2303M 71092 R 100. 0.9 23h30:39 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan56
```

blessed node.js

- ncurses replacement
 - `github.com/chjj/blessed`
 - `github.com/yaronn/blessed-contrib`
- **thorough** (16,000 lines of JavaScript)
- **high-level widget API**
 - simpler than ncurses
 - Boxes, Forms, Lists, FileManager, ...
 - HTML-like (DOM)

blessed node.js



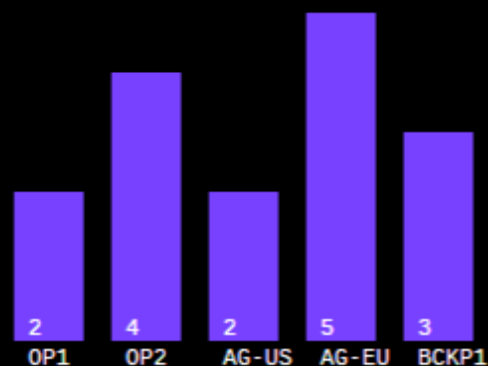
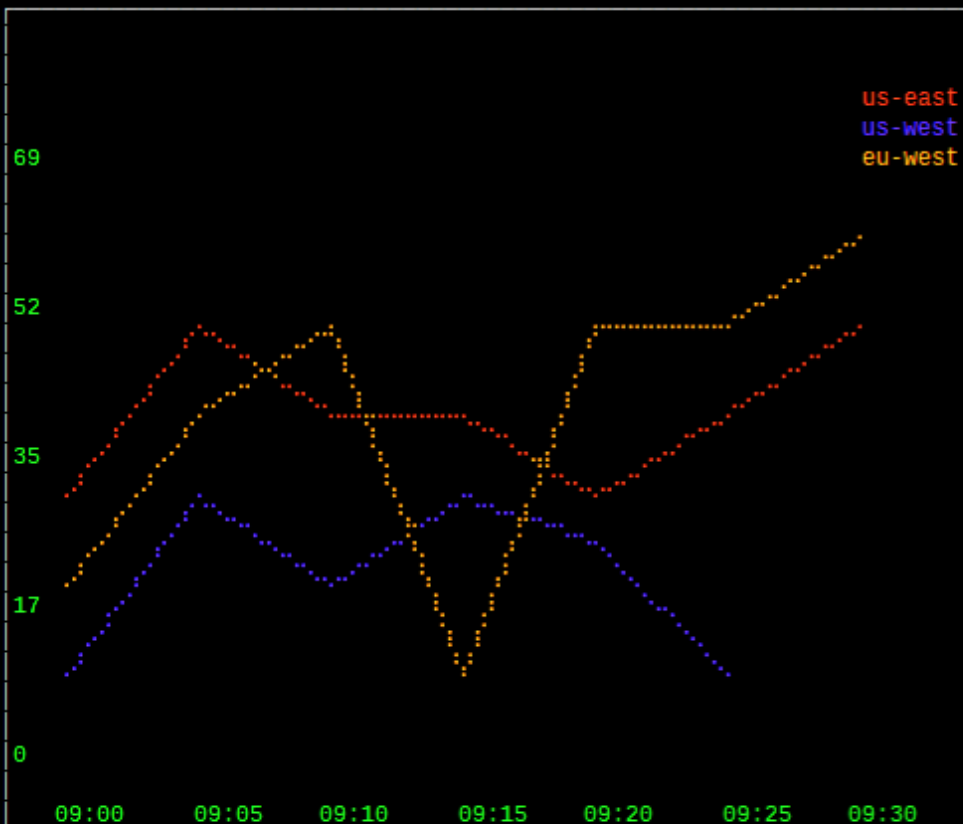
blessed-contrib WOPR

wopr is a markup format for rich terminal reports, presentations and infographics. Build the report from any language and view it locally or remotely via curl.

More information: <https://github.com/yaronn/wopr> or <https://twitter.com/YaronNaveh>

Press Return for the next slide

#	time	pass	fail	pct	status
1	02:17	21	13	20%	fail
2	02:15	33	11	25%	pass
3	03:22	15	12	80%	fail
4	05:00	11	18	12%	fail
5	02:17	17	12	0%	pass
6	01:01	23	29	80%	fail
7	00:24	27	37	21%	pass



Go termbox

- **cross-platform** (Mac, Windows, Linux)
 - common denominator
 - low-level API

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- **antipode of blessed:**
 - minimalist vs. exceeding ncurses
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- `github.com/nsf/termbox-go`

Go termbox

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 - common denominator
 - low-level API
- antipode of blessed:
 - minimalist vs. *exceeding ncurses*
 - low-level API vs. *widget abstractions*
- `github.com/nsf/termbox-go`

termbox example

ssh tetris@104.154.80.84



- password: **tetris**
- commands:
 - s: start
 - escape: exit

limetext.org lime-termbox

```
Activities Terminal Tue 16:04 zyang
zyang@dhcp-1-183:~/go/src/lime/frontend/termbox

File Edit View Search Terminal Help
// Copyright 2013 The lime Authors.
// Use of this source code is governed by a 2-clause
// BSD-style license that can be found in the LICENSE file.
package main

import (
    "code.google.com/p/log4go"
    "fmt"
    . "github.com/quarnster/util/text"
    "lime/3rdparty/libs/gopy/lib"
    "lime/3rdparty/libs/termbox-go"
    "lime/backend"
    "lime/backend/commands"
    "lime/backend/render"
    "lime/backend/sublime"
    "lime/backend/textmate"
    "lime/backend/util"
    "runtime/debug"
    "sync"
    "time"
)

var {
    lut = map[termbox.Key]backend.KeyPress{
        // Omission of these are intentional due to map collisions
        // termbox.KeyCtrlTilde: backend.KeyPress{Ctrl: true, Key: '~'},
        // termbox.KeyCtrlBackslash: backend.KeyPress{Ctrl: true, Key: '\\'},
        // termbox.KeyCtrlSlash: backend.KeyPress{Ctrl: true, Key: '/'},
        // termbox.KeyCtrlUnderscore: backend.KeyPress{Ctrl: true, Key: '_'},
        // termbox.KeyCtrlLsqBracket: backend.KeyPress{Ctrl: true, Key: '['},
        // termbox.KeyCtrlRsqBracket: backend.KeyPress{Ctrl: true, Key: ']'},
        // termbox.KeyCtrl3:
        // termbox.KeyCtrl8
    }
}

00003946 102 [2013/12/17 16:04:13 CST] [DEBG] (main.func·009:432) Adding colour: 34 0x00C4B14A {R:196 G:177 B:74}
00004060 101 [2013/12/17 16:04:13 CST] [DEBG] (main.func·009:432) Adding colour: 35 0x0041A83E {R:65 G:168 B:62}
00004173 138 [2013/12/17 16:04:13 CST] [INFO] (lime/backend.(*Editor).loadKeybinding:141) Loaded ../../backend/packages/Default/Default.sublime-keymap
00004324 141 [2013/12/17 16:04:14 CST] [INFO] (lime/backend.(*Editor).loadKeybinding:141) Loaded ../../3rdparty/bundles/Vintageous/Default.sublime-keymap
00004478 137 [2013/12/17 16:04:14 CST] [INFO] (lime/backend.(*Editor).loadSetting:160) Loaded ../../backend/packages/Default/Default.sublime-settings
00004628 126 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.transformers
00004767 128 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.jump_list_cmds
00004908 125 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.action_cmds
00005046 133 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.transformers_visual
00005192 125 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.motion_cmds
00005330 177 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Skipping registering irreversible_text: irreversible_text is already a registered com
00005520 125 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.test_runner
00005658 117 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.run
00005788 119 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.state
00005920 177 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Skipping registering irreversible_text: irreversible_text is already a registered com
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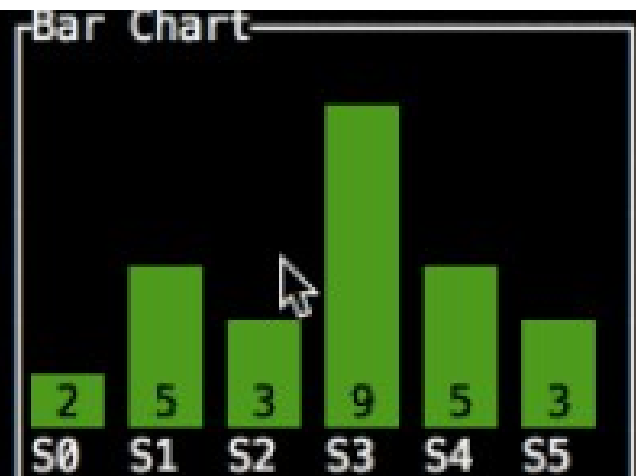
termui

- `github.com/gizak/termui`
- inspired by blessed (widgets)
- based on termbox
- still **work-in-progress**

termui

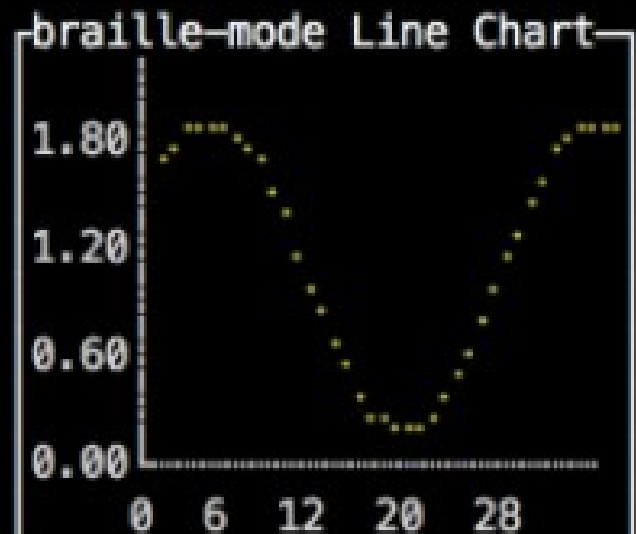
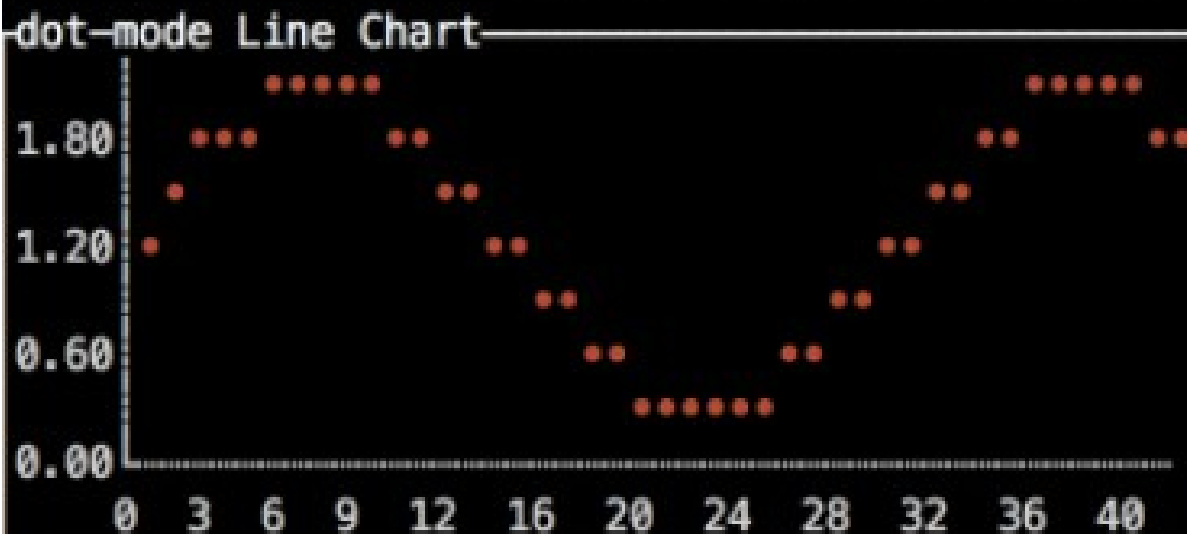
Text Box
:PRESS q TO QUIT DEMO

List
[2] interrupt.go
[3] keyboard.go
[4] output.go
[5] random_out.go
[6] dashboard.go



Gauge
2%

Hey!
I am a borderless block!



Conclusion

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