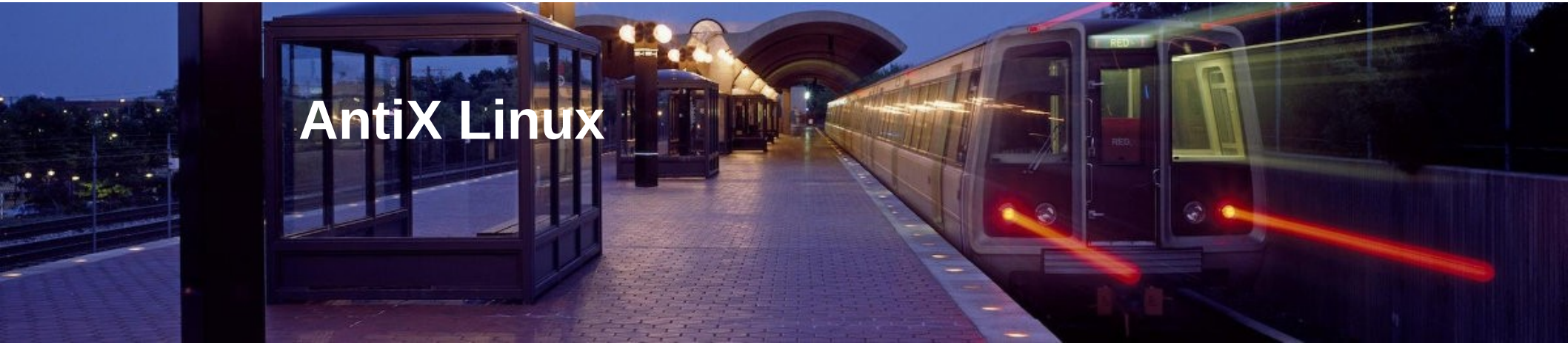


Peter Scholtens, Linux Gebruikersgroep Nijmegen, 11 oktober 2022

AntiX Linux

- Versie 21 “Grup Yorum”
  - Volledige distributie is 1.4GB, basis versie is 800MB, core en netinstall zijn nog kleiner.
  - Gebaseerd op Debian
  - Zuinige window manager ice-wm
  - for **32 bit** and 64 bit computers

Uit sinds 31 oktober 2021!

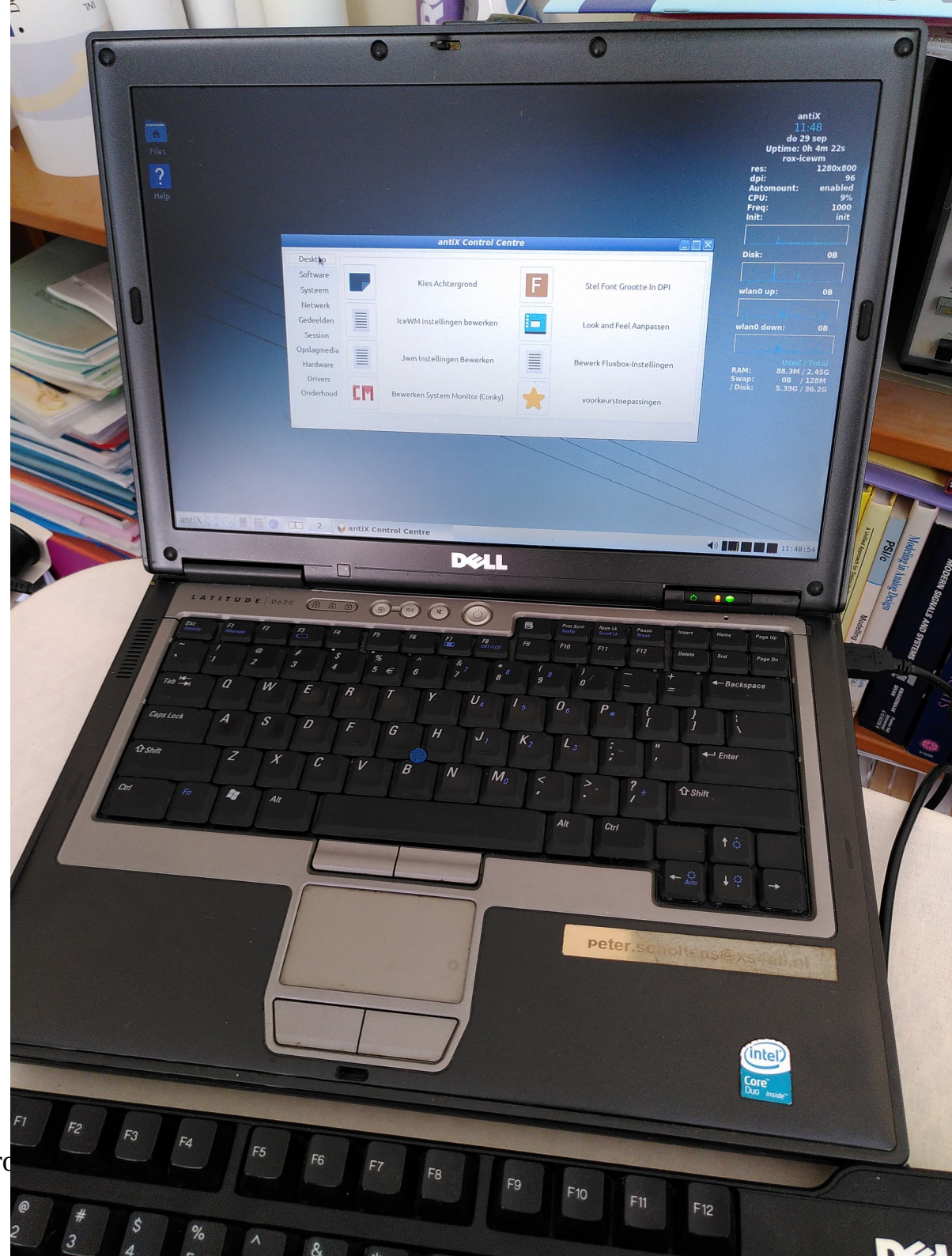
“Device-Under-Test”

Dell Latitude laptop
Bouwjaar 2006

Uit robuste serie, er bestaan ook ATG (All Terrain Grade) versies van.

dual core **32-bits**
RAM 2.5 GB
HDD 40 Gbyte
accu stuk…
toetsenbord stuk… :-(

Update 13 oktober: flexibele ribbon connector was niet goed uitgelijnd, nu werkt het wel !!!



Ventoy

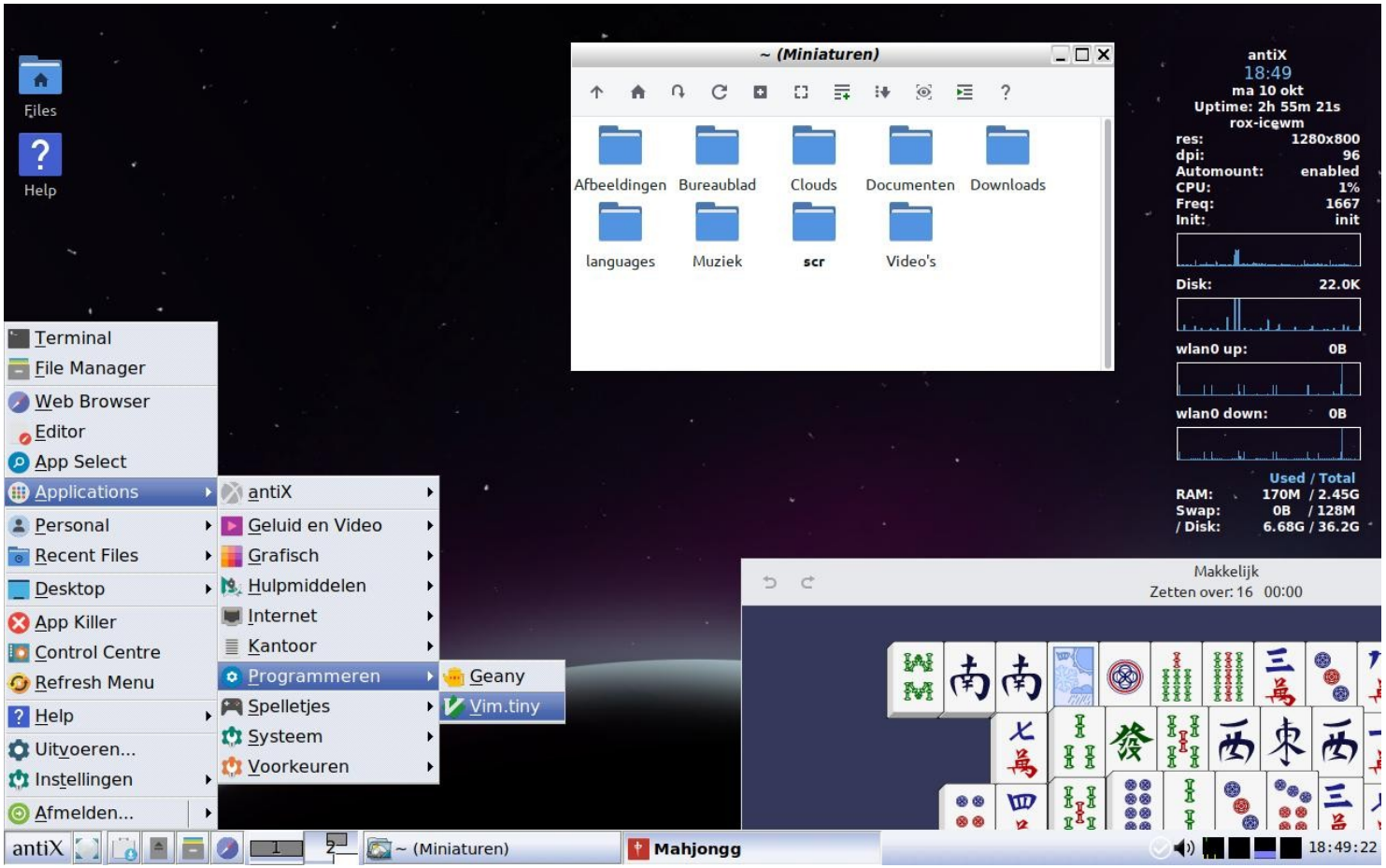
- USB stick gemaakt met zowel 32-bits – 64bits versie
- Na installatie Ventoy zie je een gewone disk waar je achteraf nog verschillende ISO’s op kan zetten, eventueel tientallen distrobuties om uit te proberen.
- Zowel UEFI als legacy
- Ventoy boot op 32- en 64-bits CPU’s


Ventoy
你好 archlinux-2020-11.01-x86_64.iso
微软 cn_windows11_x64.iso
CentOS-8.2.2004-x86_64-minimal.iso
cloudready-free-92.3.4-64bit.img
deepin-desktop-community-20.2.4-amd64.iso
FreeBSD-13.0-RELEASE-amd64-disc1.iso
synoboot-v1.02b.img
ubuntu-21.10-desktop-amd64.iso
VMware-VMvisor-Installer-7.0.0-15843807.x86_64.iso
WinPE10_8_Sergei_Strelec_x86_x64_2021.07.21_English.iso
This ISO file contains USB and network drivers and third-part software.
1.0.64 UEFI www.ventoy.net h:Help F1:Memdisk F2:Power F3:TreeView F4:Localboot F5:Tools F6:ExMenu

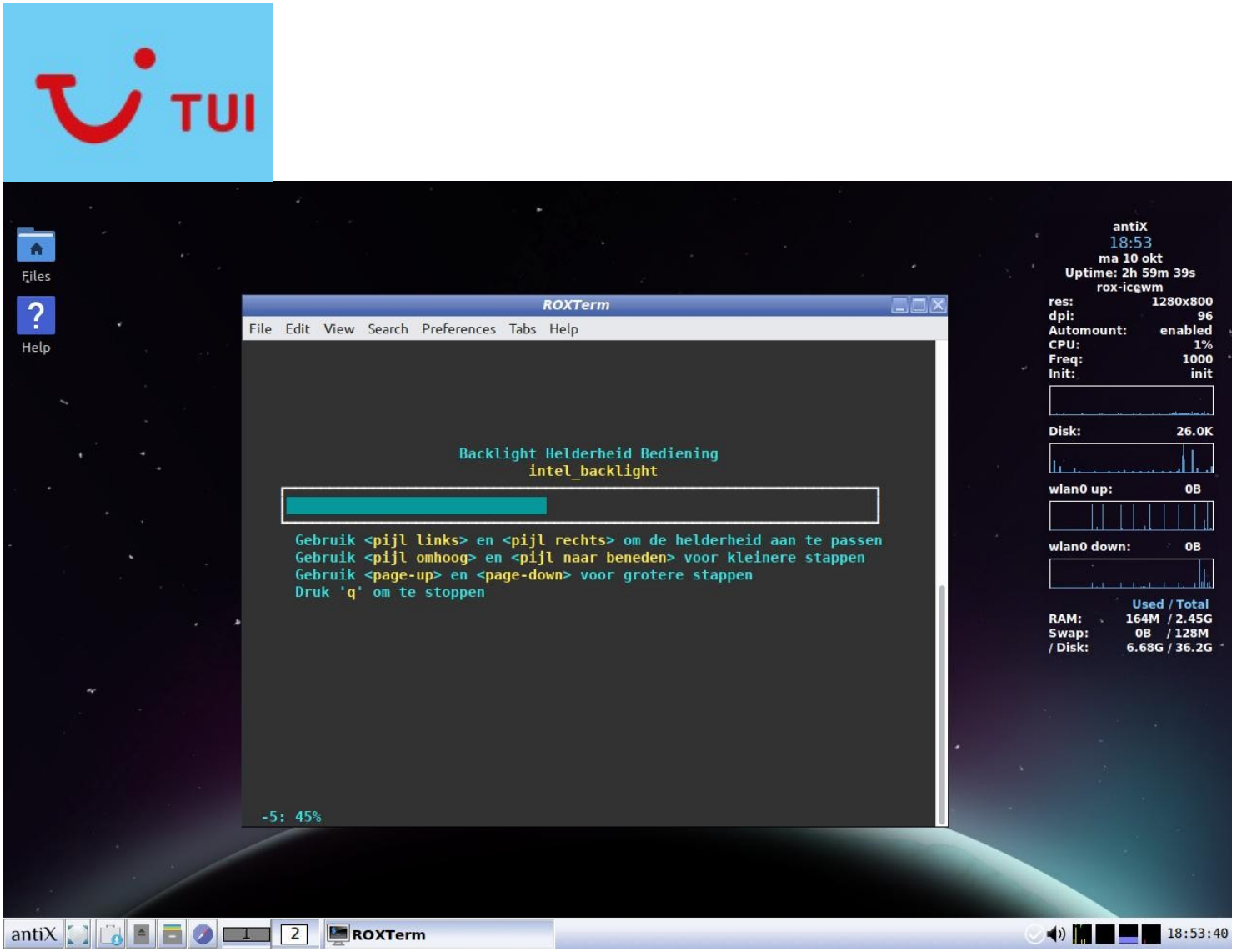
Opstarten AntiX

- Al sinds 2007
- Debian “but totally free of systemd”
- In plaats daarvan runit: http://smarden.org/runit/
- Het start inderdaad vlotter op dan de Ubuntu versie opdezelfde laptop.
- “AntiX for antiques” ?

Veel pull down/up menu’s, dus waar zat het ook alweer?

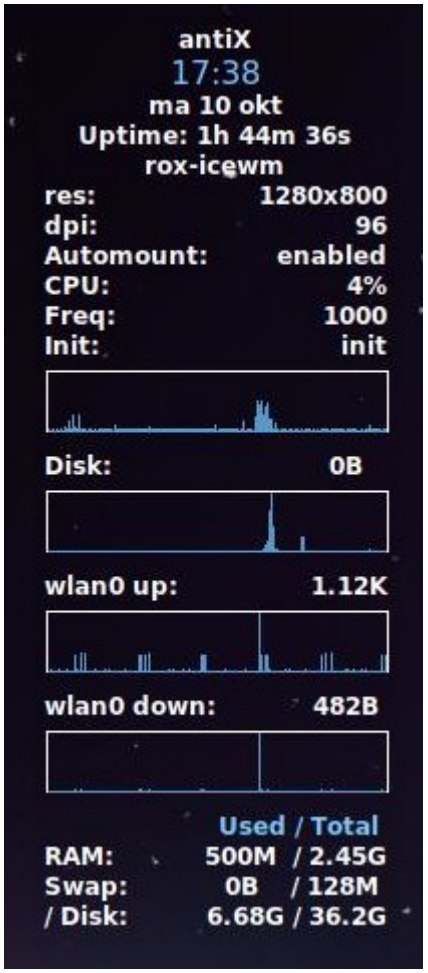


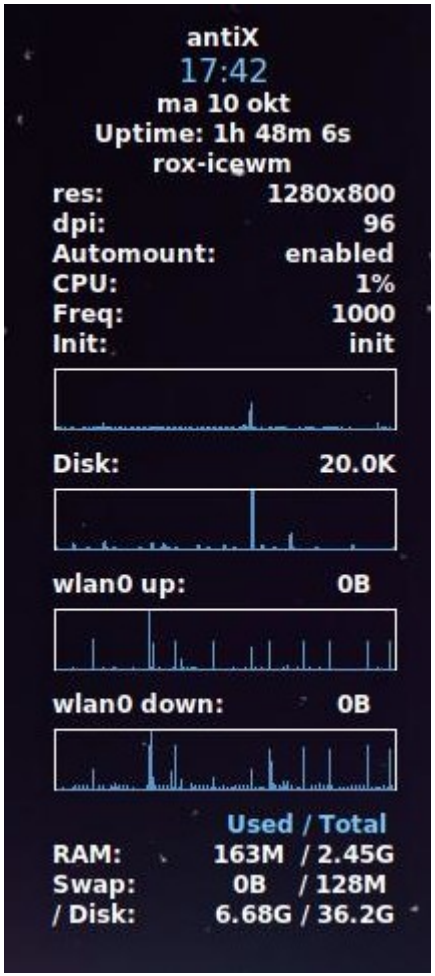
Zo wel compacte GUI tools als command line interfaces



En veel **TUI** (Text-based User Interface)
Of correcter Character Based User Interface (CBUI)

AntiX is zuinig met geheugen en CPU



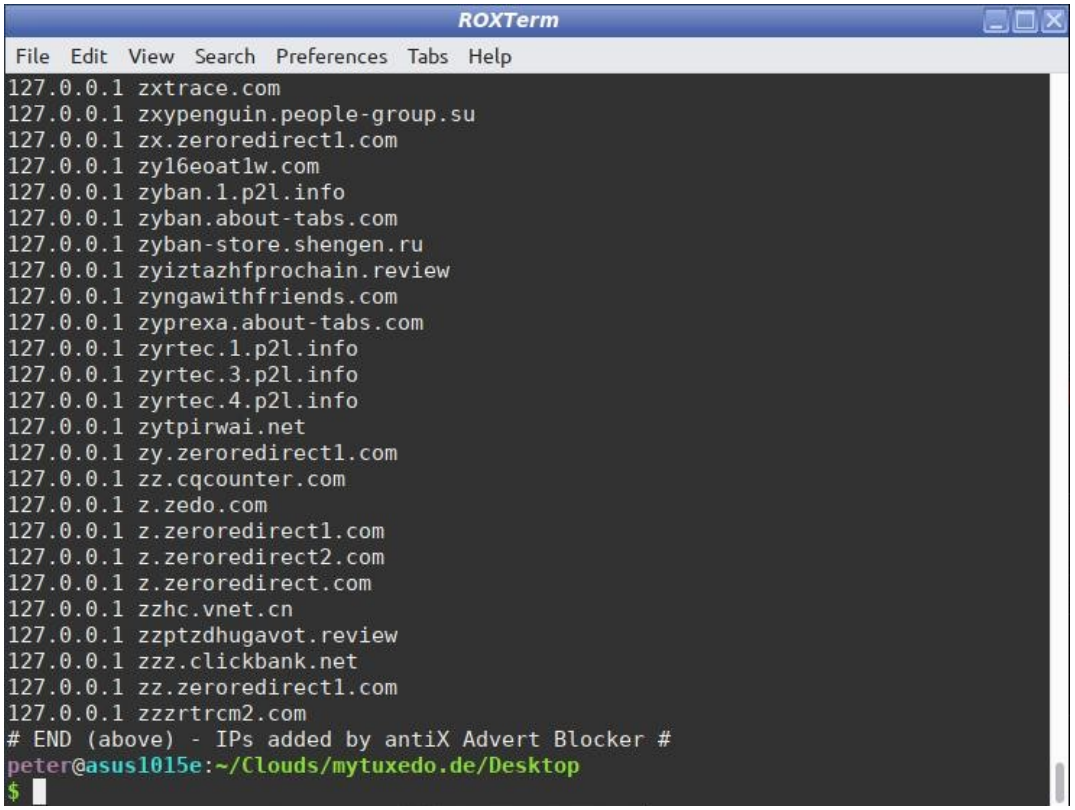


"Slechts" 500MB gebruikt van RAM?? Oh, met Firefox…

Zonder FF slechts 163MB :-)
1 procent van 1GHz = 10MHz, dus Arduino was genoeg?

AntiX advert Blocker

- Hele lijst van IPv4 adressen is geblokkeerd
- Meer dan 74000 adressen!
- Zie terminal:
  `less /etc/hosts`
  `wc /etc/hosts`



Data uitwisselen

- Ik gebruik de gratis service van mytuxedo.de :-)
- Niet groot, 10 Gbyte maar genoeg (HDD is maar 40Gb!).
- sudo apt install nextcloud-desktop

Aan het werk met Rust

crossplatform mogelijk, ook 32-bits Linux is nog steeds Tier1 platform!

Tier 1 with Host Tools

Tier 1 targets can be thought of as "guaranteed to work". The Rust project builds official binary releases for each tier 1 target, and automated testing ensures that each tier 1 target builds and passes tests after each change.

Tier 1 targets with host tools additionally support running tools like `rustc` and `cargo` natively on the target, and automated testing ensures that tests pass for the host tools as well. This allows the target to be used as a development platform, not just a compilation target. For the full requirements, see Tier 1 with Host Tools in the Target Tier Policy.

All tier 1 targets with host tools support the full standard library.

target	notes
`aarch64-unknown-linux-gnu`	ARM64 Linux (kernel 4.1, glibc 2.17+) [1]
`i686-pc-windows-gnu`	32-bit MinGW (Windows 7+) [2]
`i686-pc-windows-msvc`	32-bit MSVC (Windows 7+) [2]
`i686-unknown-linux-gnu`	32-bit Linux (kernel 3.2+, glibc 2.17+)
`x86_64-apple-darwin`	64-bit macOS (10.7+, Lion+)
`x86_64-pc-windows-gnu`	64-bit MinGW (Windows 7+) [2]
`x86_64-pc-windows-msvc`	64-bit MSVC (Windows 7+) [2]
`x86_64-unknown-linux-gnu`	64-bit Linux (kernel 3.2+, glibc 2.17+)

[1] Stack probes support is missing on `aarch64-unknown-linux-gnu`, but it's planned to be implemented in the near future. The implementation is tracked on issue #77071.

[2] Only Windows 10 currently undergoes automated testing. Earlier versions of Windows rely on testing and support from the community.

Installatie Rust en FLTK-rs

- Niet vanuit de package repo, maar direkt de recenste (maar toch stabiele) versie
- Wel safe,..? In ieder geval up-to-date

```
curl --proto '=https' --tlsv1.2 -sSf https://sh.rustup.rs | sh
```

- ‘Fast and Light Toolkit’
  - Oorspronkelijk in C/C++ geschreven
  - Rust wrapper er opheen: fltk-rs

FLTK Screenshots

FLTK Apps | FLTK Library | Forums | Links | Login

[Home | Articles & FAQs | Bugs & Features | Documentation | Download | Screenshots]

FLTK Widgets

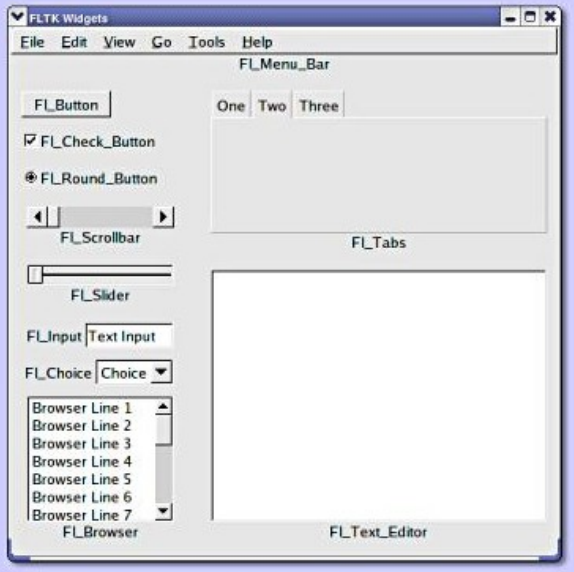
FLTK includes all of the usual widgets to develop your applications, and new widgets can be created easily through C++ subclassing. All widgets support keyboard shortcuts and can be controlled both via the keyboard or mouse.

The `Fl_Button` class supports push, check (`Fl_Check_Button`), round (`Fl_Round_Button`), and "light" (`Fl_Light_Button`) button styles; all styles can operate in momentary (press and release), toggle (press on, press off), or radio (press one of many) modes, so it is possible to create almost any kind of button from a single widget.

The `Fl_Input_`, `Fl_Text_Display`, and `Fl_Help_View` widgets provide simple to complex text input and output facilities. The `Fl_Text_Display` widget is based on a C++ version of the **NEdit** software's extensible text editor API.

The `Fl_Valuator` class provides a variety of numeric input controls including scrollbars (`Fl_Scrollbar`) and sliders (`Fl_Slider`).

The `Fl_Menu_` class provides several menu-based controls including menubars (`Fl_Menu_Bar`) and combo boxes (`Fl_Choice`).



FLTK Widgets w/Standard Scheme

- Pro: werkt op Mac, Windows, Linux
- Pro: er is een Rust interface van: https://github.com/fltk-rs/
- Con: wel wat gedateerd, C++ van de Nedit toolkit.

Rust werkt, maar mijn eigen applicatie compileert niet direkt:

Probleem 1:
= note: /usr/bin/ld: cannot find Scrt1.o: No such file or directory
/usr/bin/ld: cannot find crti.o: No such file or directory

Analyse 1:
https://stackoverflow.com/questions/6329887/how-to-fix-linker-error-cannot-find-crt1-o

Oplossing 1:
sudo apt install gcc-multilib

Probleem 2:
cargo:warning=Could not find invokable cmake!

Oplossing 2:
sudo apt install cmake

Probleem3:
CMake Error at CMakeLists.txt:3 (project):
The CMAKE_CXX_COMPILER:
c++

Maar niet vloeiend...

Oplossing3:
sudo apt install clang

Probleem 4:
-- Please install Xft development files and try again or disable OPTION_USE_PANGO.

Oplodssing 4:
sudo apt install libxft-dev

Nog iets geduld nodig...

Probleem 5:
= note: /usr/bin/ld: cannot find -lXext
/usr/bin/ld: cannot find -lXinerama
/usr/bin/ld: cannot find -lXcursor
/usr/bin/ld: cannot find -lXfixes
/usr/bin/ld: cannot find -lpango-1.0
/usr/bin/ld: cannot find -lpangoxft-1.0
/usr/bin/ld: cannot find -lgobject-2.0
/usr/bin/ld: cannot find -lcairo
/usr/bin/ld: cannot find -lpangocairo-1.0

Oplossing 5:
sudo apt install libxext-dev libxinerama-dev libxcursor-dev libxfixes-dev libpango1.0-dev libcairo2-dev libpangocairo-1.0-0

The CPU battle!

```
peter@macau:~/Languages/rust/projects
peter@macau:~/Languages/rust/projects
   Compiling proc-macro2 v1.0.46
   Compiling quote v1.0.21
   Compiling unicode-ident v1.0.5
   Compiling cfg-if v1.0.0
   Compiling cc v1.0.73
   Compiling syn v1.0.102
   Compiling crossbeam-utils v0.8.12
   Compiling autocfg v1.1.0
   Compiling libc v0.2.135
   Compiling serde_derive v1.0.145
   Compiling bitflags v1.3.2
   Compiling parking_lot_core v0.9.3
   Compiling serde v1.0.145
   Compiling paste v1.0.9
   Compiling ttf-parser v0.17.0
   Compiling scopeguard v1.1.0
   Compiling smallvec v1.10.0
   Compiling thiserror v1.0.37
   Compiling base64 v0.13.0
   Compiling lazy_static v1.4.0
   Compiling lock_api v0.4.9
   Compiling cmake v0.1.48
   Compiling crossbeam-channel v0.5.6
   Compiling fltk-sys v1.3.16
   Compiling parking_lot v0.12.1
   Compiling thiserror-impl v1.0.37
   Compiling ron v0.8.0
   Compiling fltk v1.3.16
   Compiling fltk-table v0.2.1
   Compiling fltk-flex v0.2.1
    Building [=========================>  ] 51/53: fltk
```

ROXTerm

File Edit View Search Preferences Tabs Help

1. ROXTerm

```
    |          ^^^^^^^^^^^^^^^
    |
    = note: `#[warn(unused_must_use)]` on by default
    = note: this `Result` may be an `Err` variant, which should be handled

warning: unused `Result` that must be used
  --> src/log.rs:59:5
   |
59 |     (*super::CHANNEL.lock()).as_ref().unwrap().send(Some(msg));
   |     ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
   |
   = note: this `Result` may be an `Err` variant, which should be handled

warning: `donquixote` (bin "donquixote") generated 43 warnings
    Finished release [optimized] target(s) in 7m 15s

real    7m16,009s
user    12m44,101s
sys     0m28,945s
peter@delld620:~/languages/rust/projects/personal/donquixote
$
```

Alles als gedownload dus geen tijdverlies daarmee.

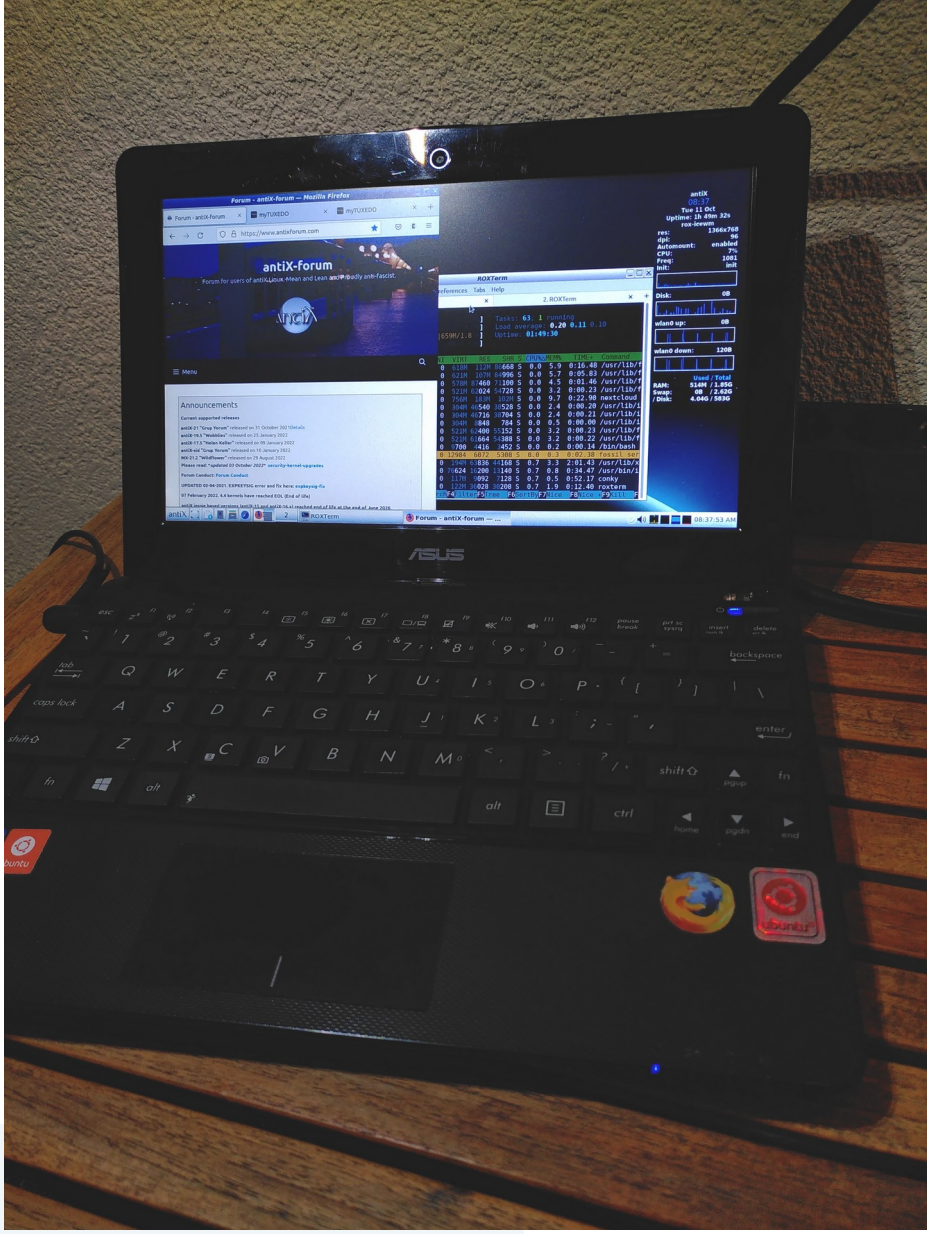
time cargo build --release

i7-4790 CPU @ 3.60GHz
3 minuten 42 sec

T2300 1.66GHz
12 minuten 44 seconden

“Project 2”

Asus 1015e
Bouwjaar 2013
Celeron 847 @1.1GHz
64-bit
RAM 2.0GB
HDD 300Gbyte
accu stuk…



CPU Mark Rating

Zie slide 3

As of 11th of October 2022 - Higher results represent better performance

Intel Core Duo T2300 @ 1.66GHz	334
Intel Celeron 847 @ 1.10GHz	474
Intel Core i7-4790 @ 3.60GHz	7,234

Zie foto rechtsboven

Mijn desktop

PassMark Software © 2008-2022

Conclusie

- Linux op oudere laptops van +/- 5 jaar kan nog prima (Linux Mint?)
- Linux op meer dan 10 jaar oude laptop kan ook nog met AntiX Linux, maar meer tekst (TUI) of command line interface wel hogere drempel voor beginners.
- Nieuwere CPU compileert maar 3.44 sneller dan 16 jaar oude CPU: *Moore's Law is dead! (nou ja, het loopt minder snel)*
- Reserve onderdelen vaak niet meer via site van originele fabrikant, maar bij opkoper (vermoed ik)
- Met dank aan https://viadennis.nl/ dus nu met een nieuw toetsenbord en accu!