



A decade of Guix —
a subjective retrospective

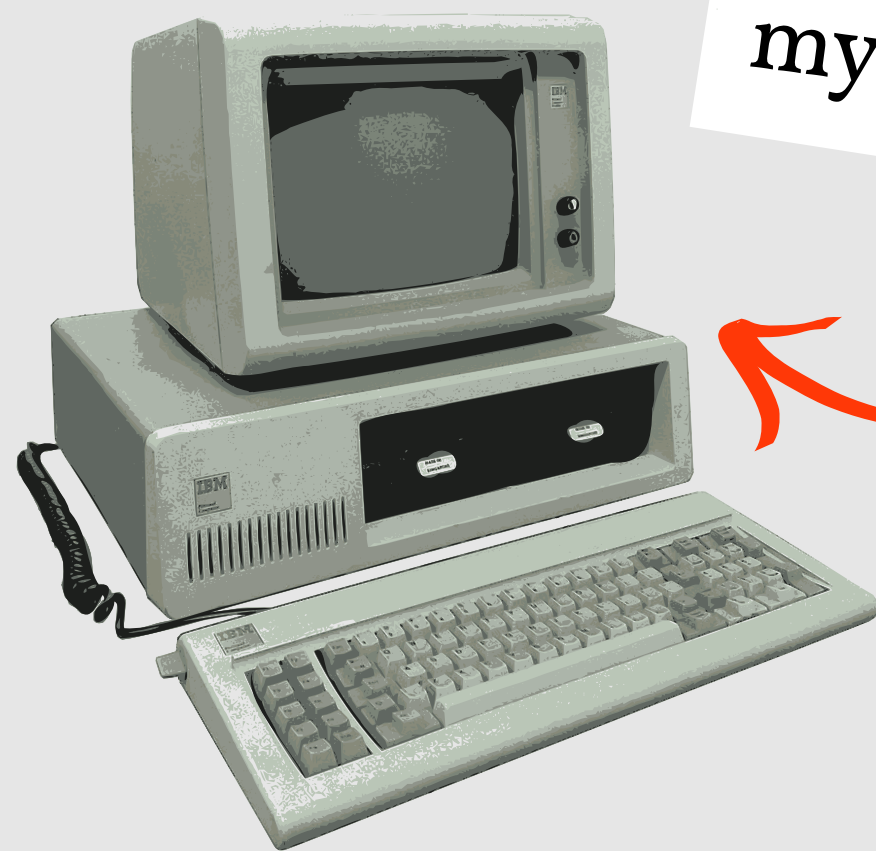
Ricardo Wurmus

rekado on IRC

Guix contributor **since 2014**

Sysadmin at MDC **since 2014**

Coincidence?

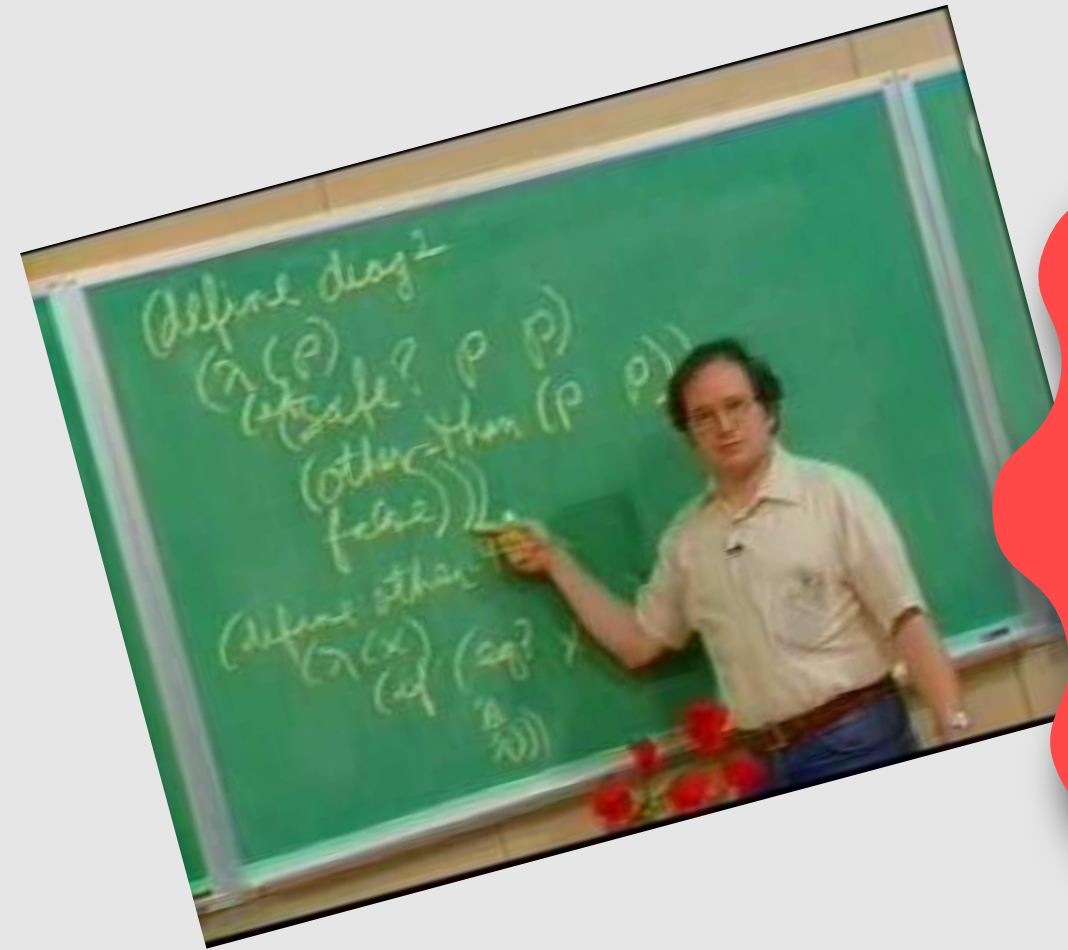


my first computer



Computers
are
FUN!






**Software
can be
*beautiful***

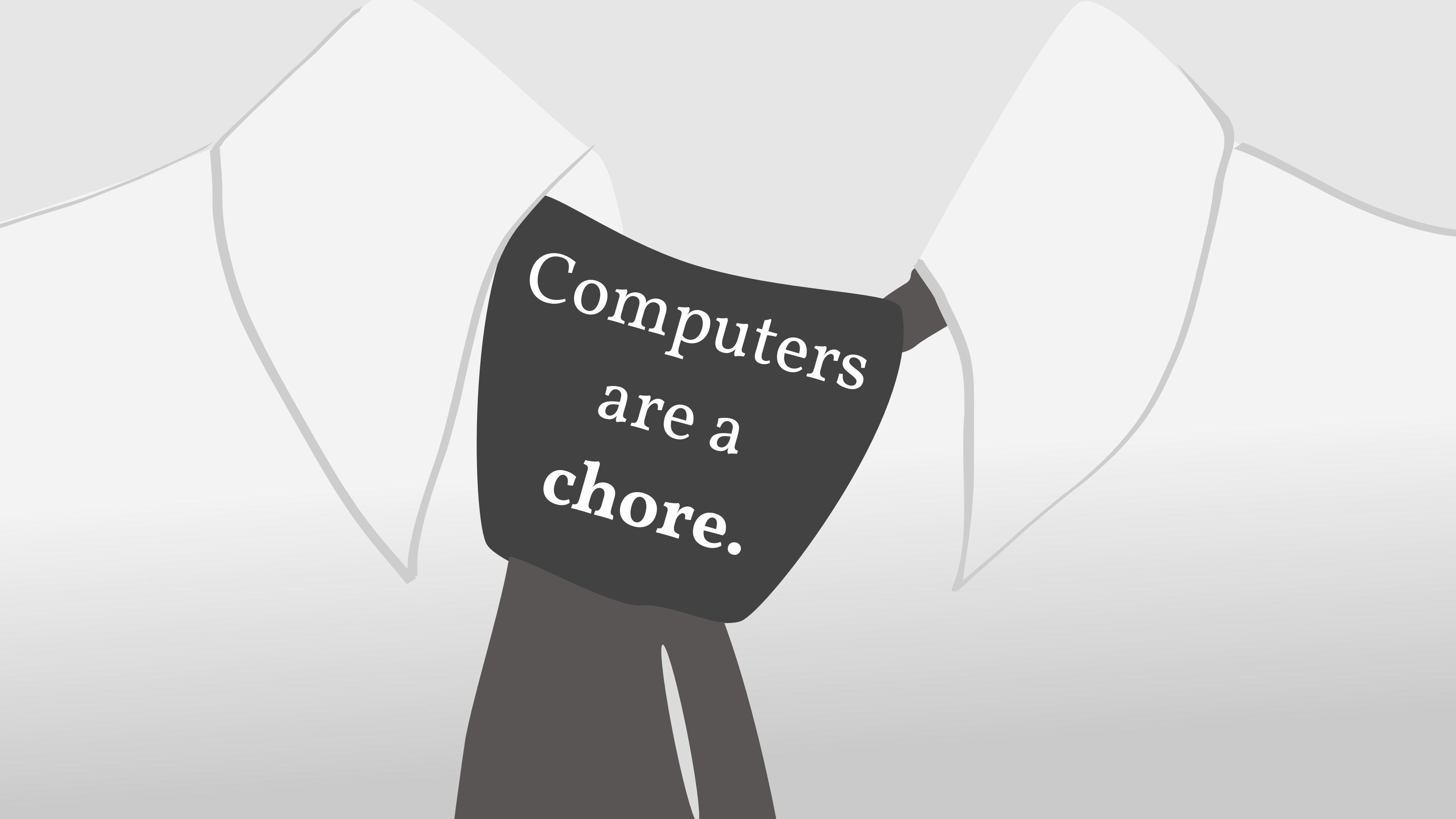


Software
is not
beautiful





Computers
are serious
business.



Computers
are a
chore.



Berlin Institute for
Medical Systems
Biology

Max-Delbrück-
Centrum, Berlin

August 2014

BBB Management GmbH Campus
Berlin-Buch, CC BY-SA 3.0,
"Timoféeff-Ressovsky-Haus"



Sisyphos maintains
an ever-growing
collection of RPMs
September 2014

Bernard Dupont, CC BY-SA 2.0,
"Large Copper Dung Beetle on
top of its dung ball"

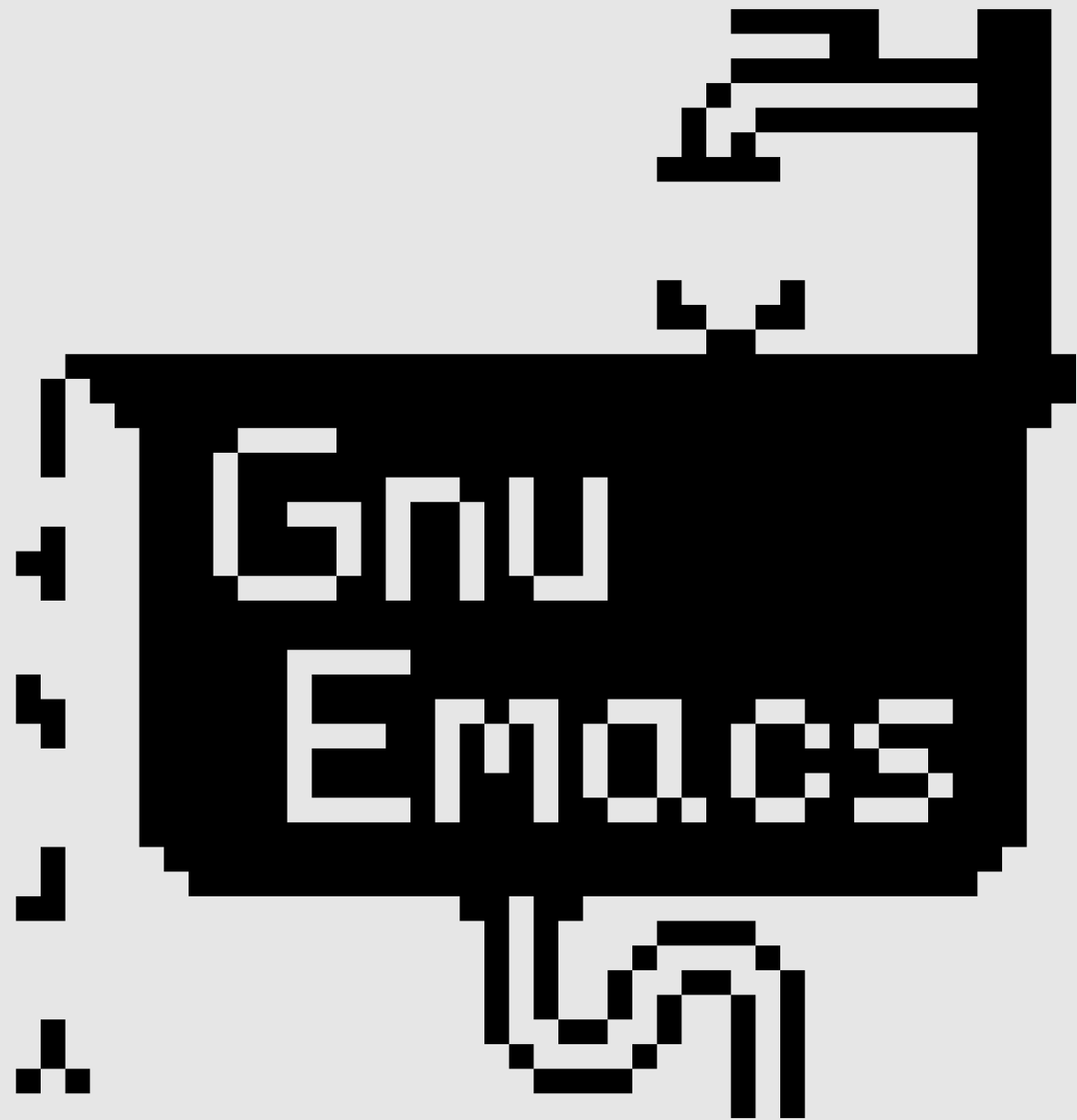

```
;; Announcement.
```

```
-*- scheme -*-
```

```
(define guix
  (package
    (name "guix")
    (version "0.1") ; first alpha release
    (source [...])
    (license gpl3+)
    (home-page "http://www.gnu.org/software/guix/";)
    (synopsis "Functional package management for GNU")
    (description
      "GNU Guix is a functional package manager and associated free
software distribution of the GNU system.
[...] Building the
distribution is a cooperative effort, and you are invited to join!")
    ))

;; Ludovic, on behalf of the Guix team.
```

First Announcement
of GNU Guix
January 18, 2013



Richard M. Stallman, 1981

EMACS the extensible, customizable self-documenting display editor.

<https://doi.org/10.1145/872730.806466>

“ [Users] who need changes in the system will always be free to make them [by themselves], or hire any available programmer or company to make them for [them].

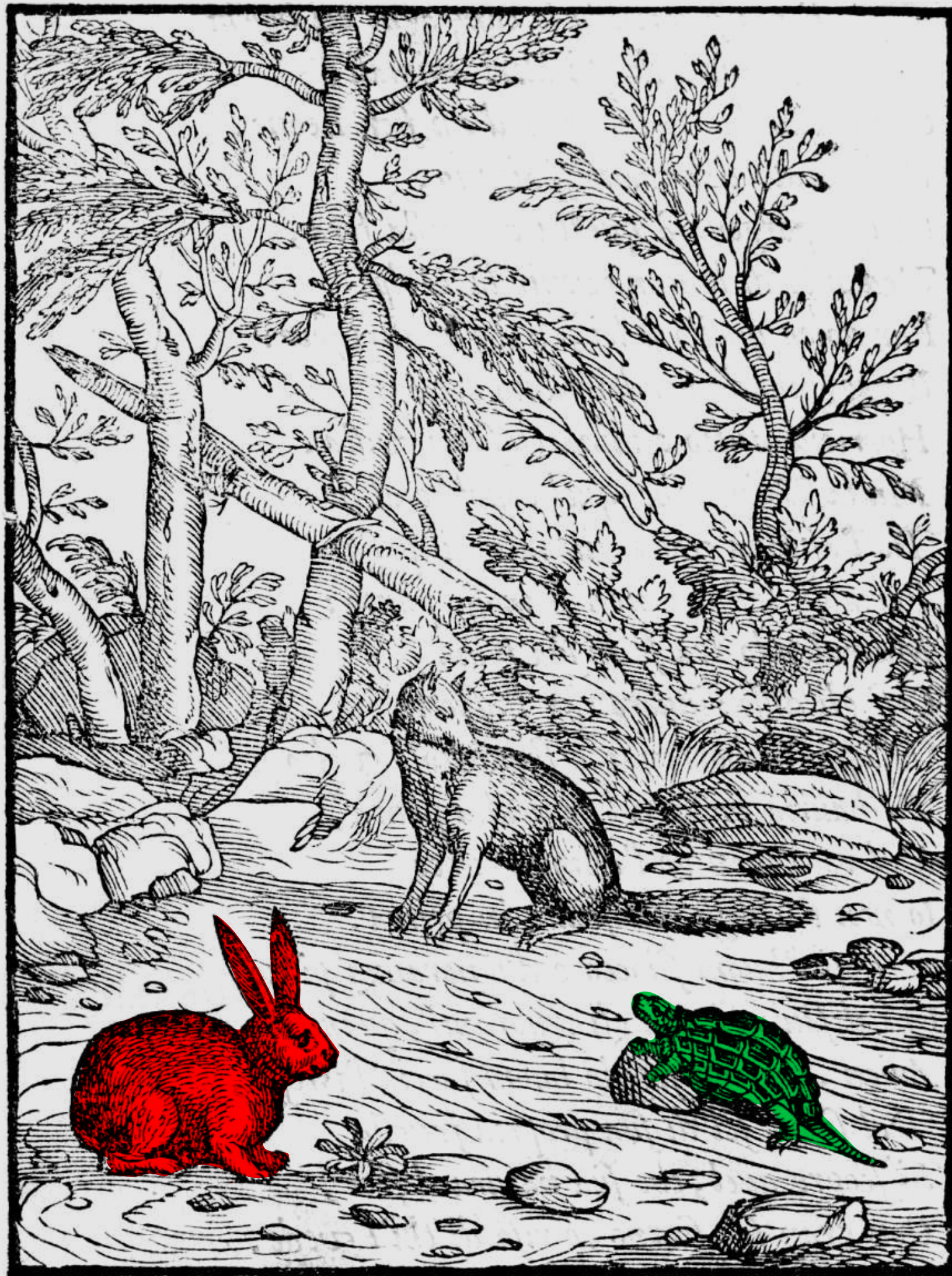
Users will no longer be at the mercy of one programmer or company which owns the sources and is in sole position to make changes.



Does this liberate users from
needless restrictions?

Does this increase user
autonomy?

Does this make any of the four
freedoms more *practical*?

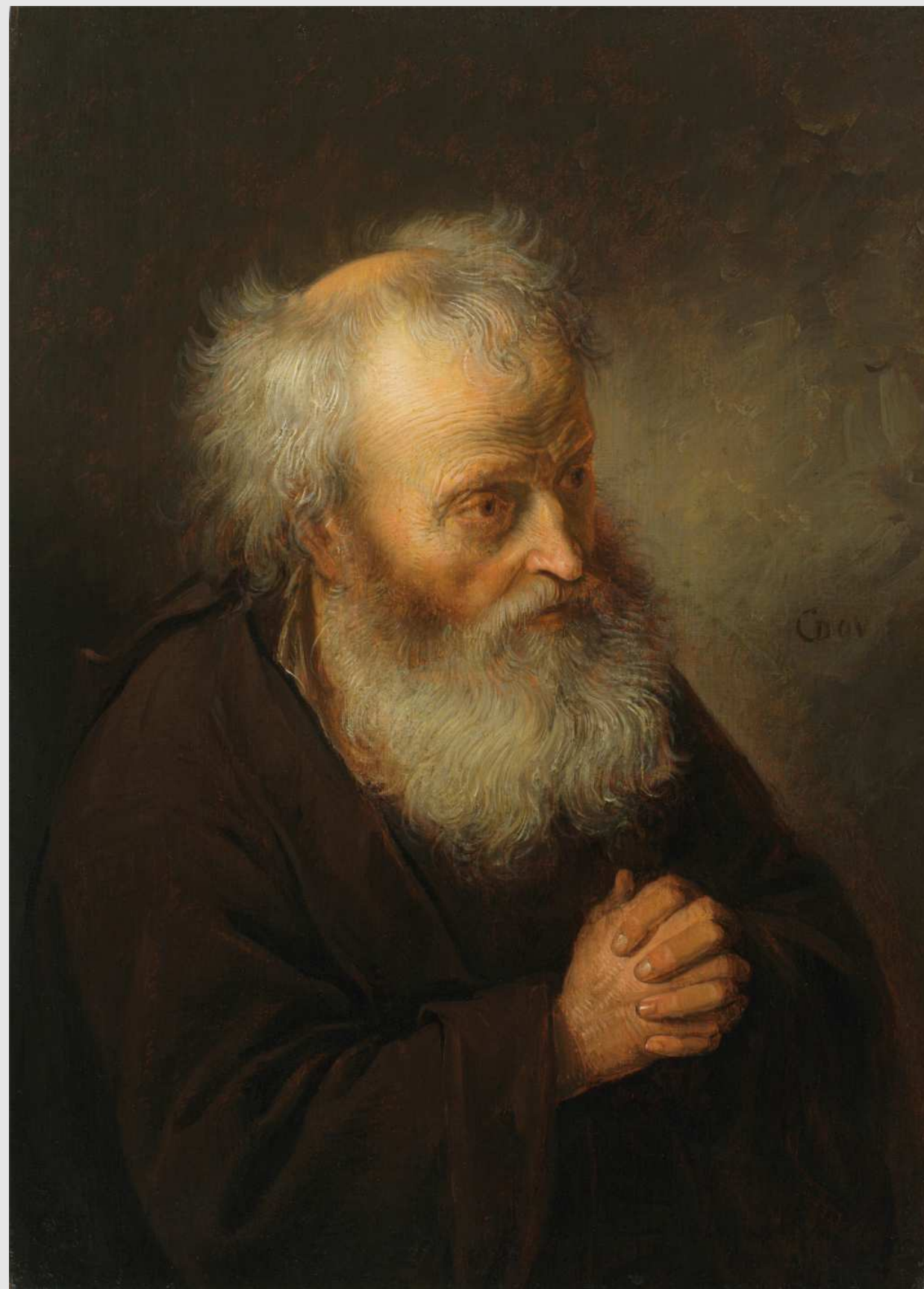


The Hare and the Tortoise
Giovanni Mario Verdizotti,
1570

I. The freedom to study how the program works, and *change it* so it does your computing as you wish.



yeah, right...



Gerrit Dou
Old Man Praying
ca. 1665–70



Claude Verlinde
The Work Bench, 1953





Java





Java



Java




```
$ GUIX_PACKAGE_PATH=/my/packages  
$ guix install my-custom-package
```

Channels **extend** Guix

*A small selection of
popular channels.*



guix-hpc

High-performance
computing packages at Inria



guix-hpc-nonfree

Non-free software commonly
used in HPC, such as CUDA.



guix-past

Providing old package
versions.



guix-science

General scientific and
statistics packages.



guix-science-nonfree

Non-free scientific software, notably
bioinformatics and statistics packages.



guix-bioinformatics

Bioinformatics and HPC packages
used by Genenetwork at the
University of Tennessee.



guix-bimsb

Bioinformatics tools and
package variants for BIMS.B.



guix-bimsb-nonfree

Merging with guix-science-nonfree
soon.



guix-genomics

Packages for bioinformatics
and genomics used at UTHSC.



guix-cran

Automated import of CRAN
packages.



nonguix

Firefox, Linux, Linux firmware
blobs, etc.

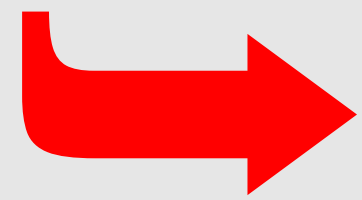


guix-zpid

Packages in use at the Leibniz
Institute for Psychology
Information.



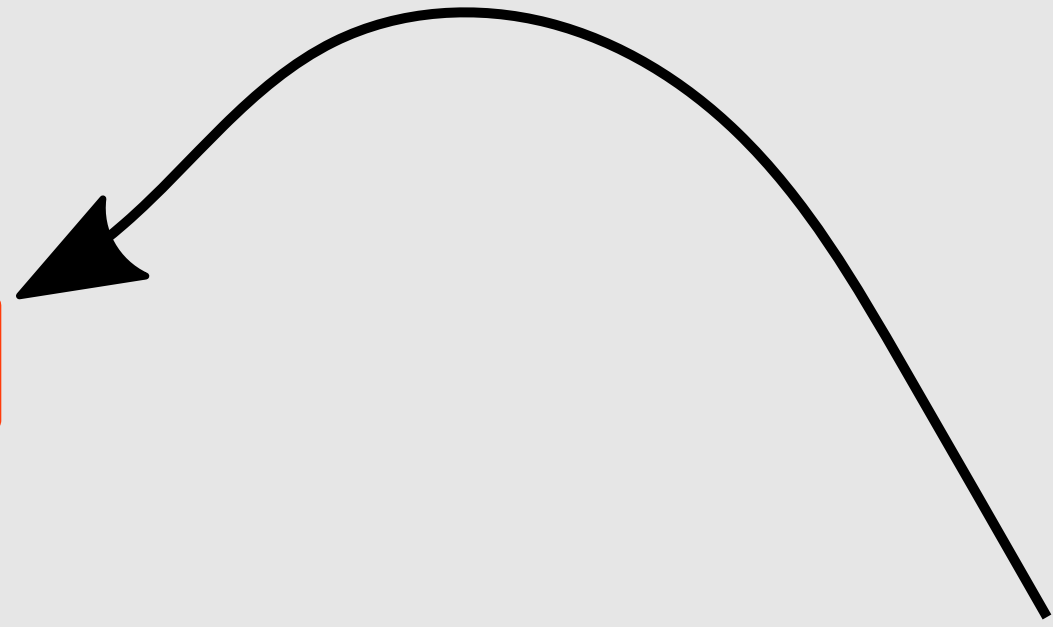
Low barrier &
domain-specific programming



Practical software
freedom

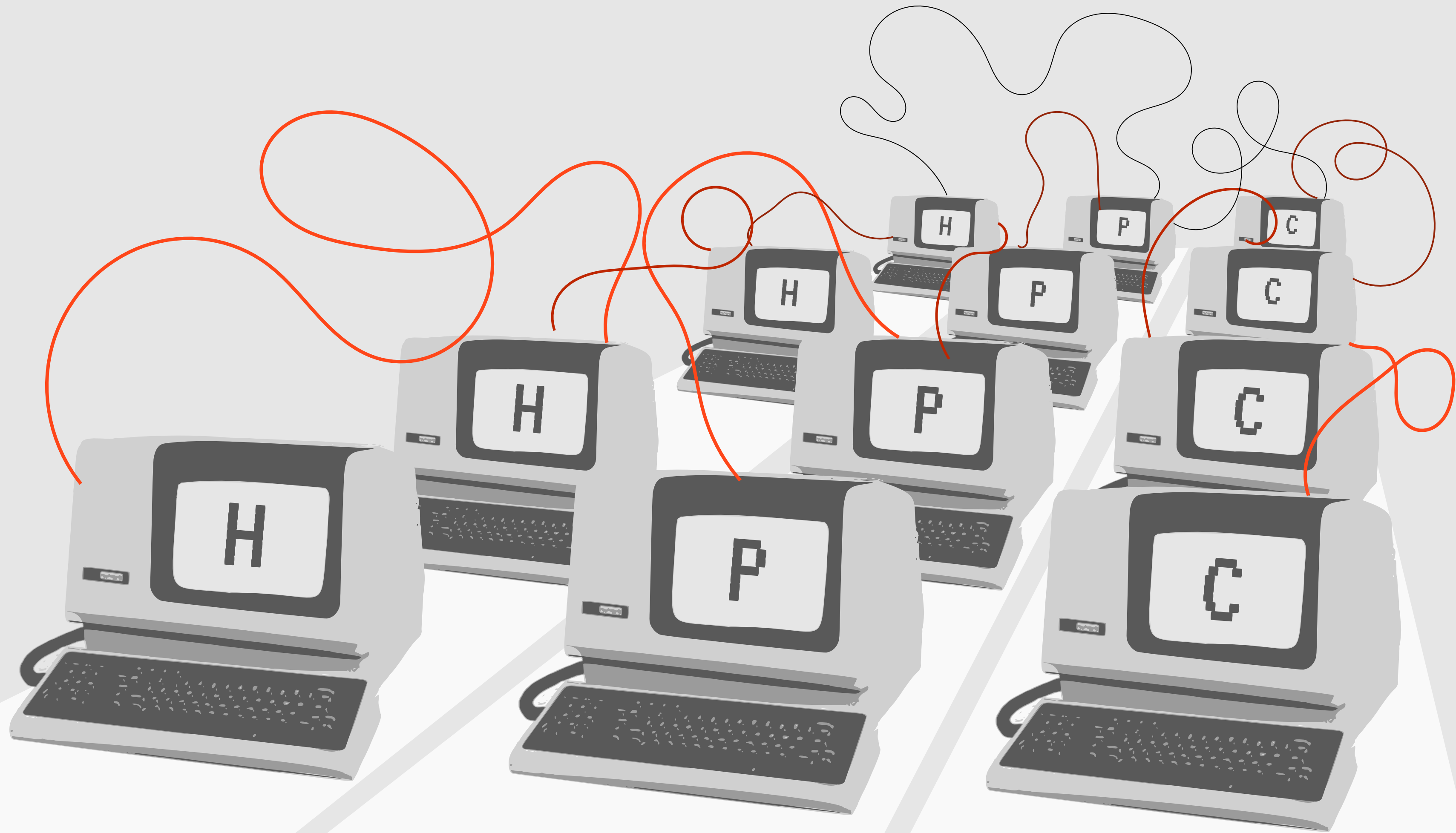

```
$ GUIX_EXTENSIONS_PATH=/my/guix/extensions  
$ guix random
```

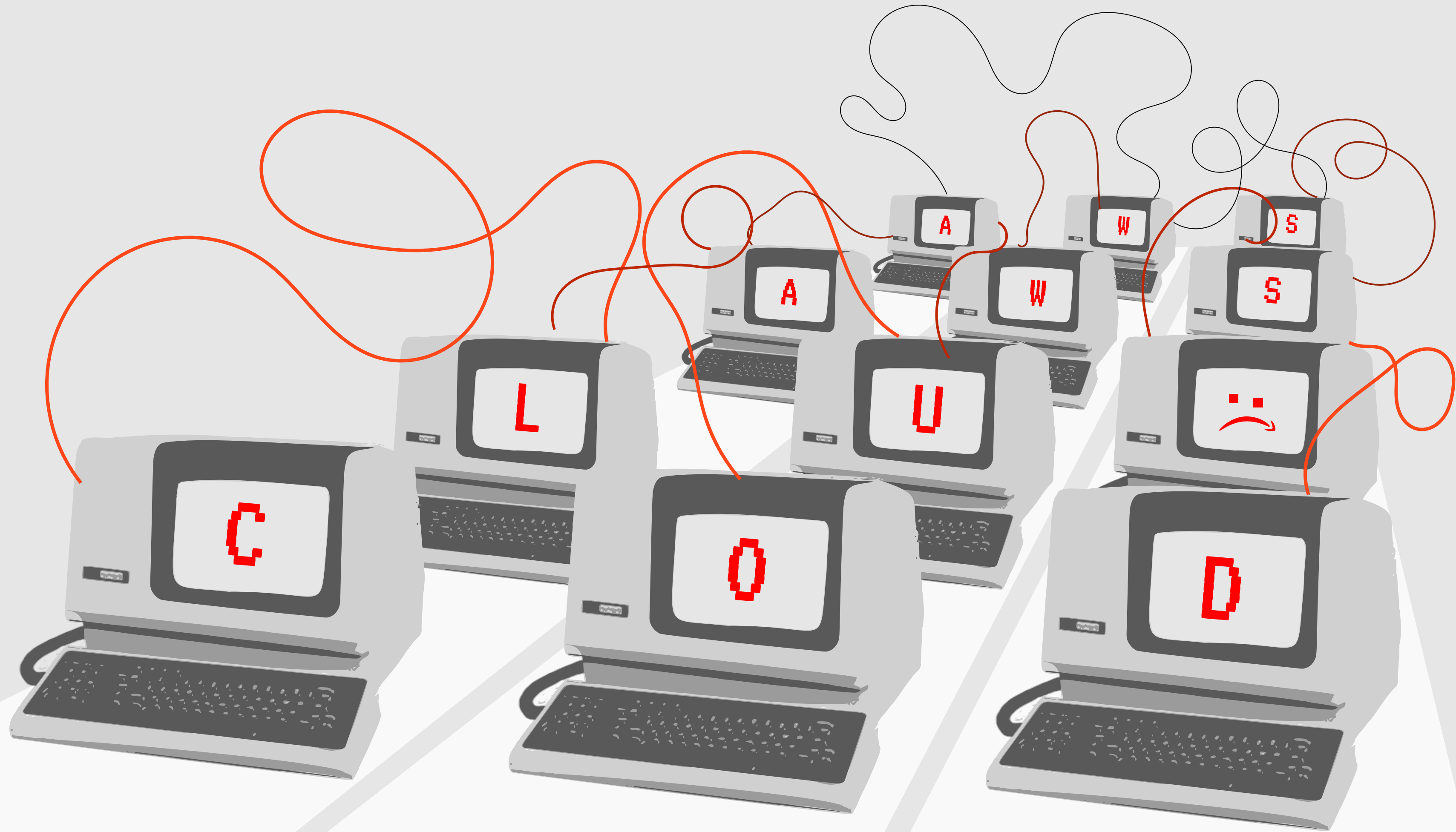
```
Installing random package ...
```

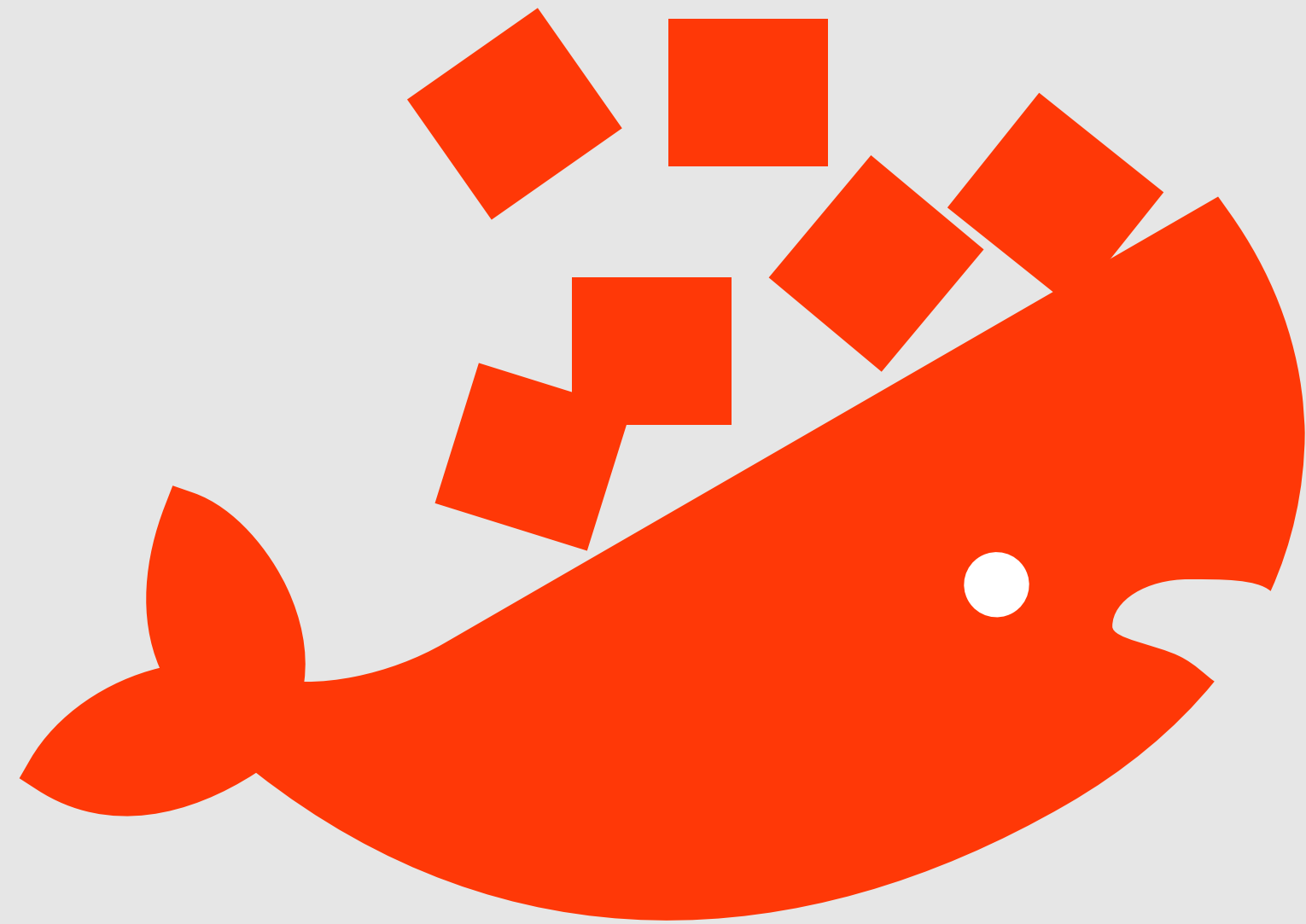


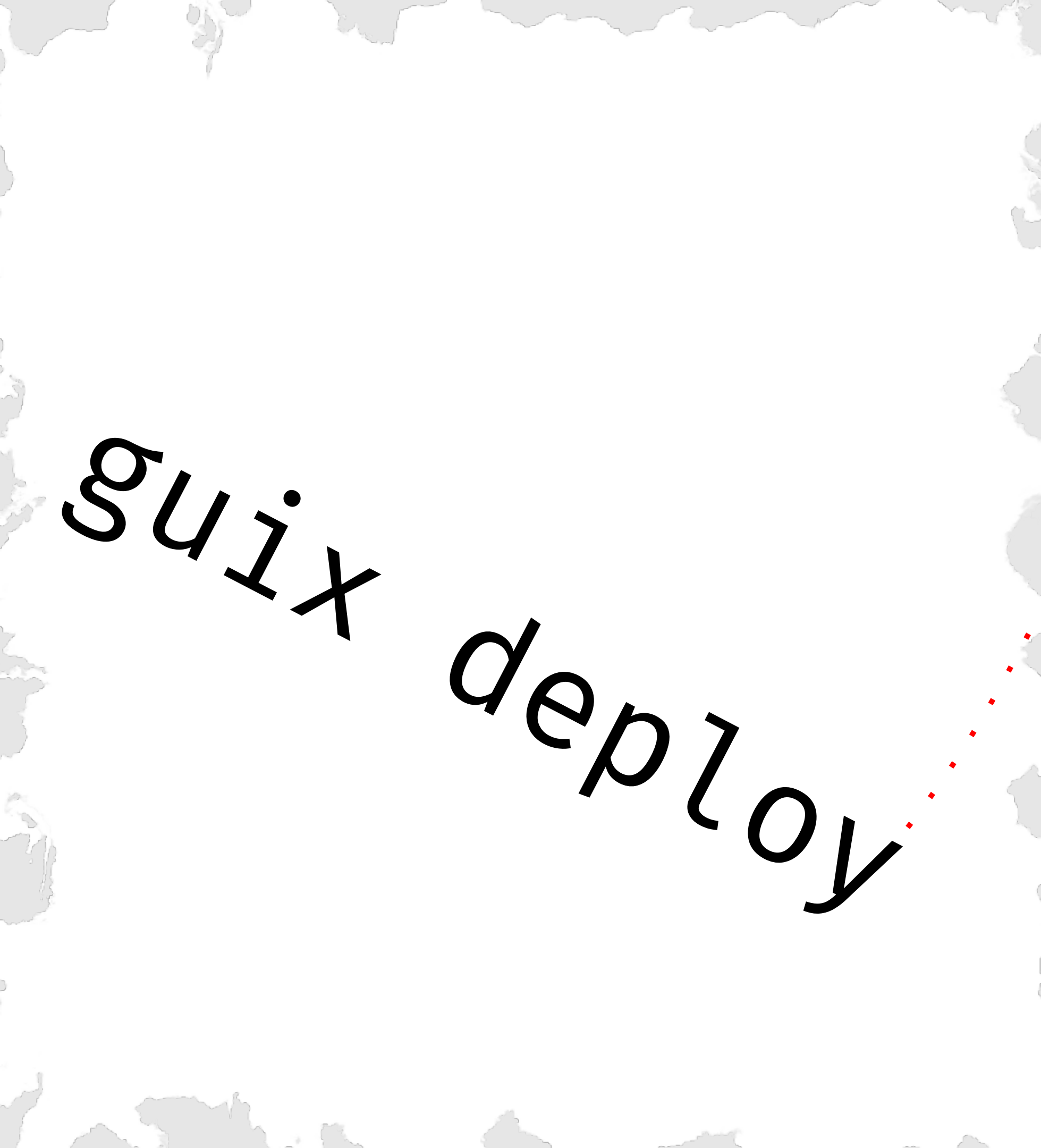
Workflow Language Extension

(not to scale)

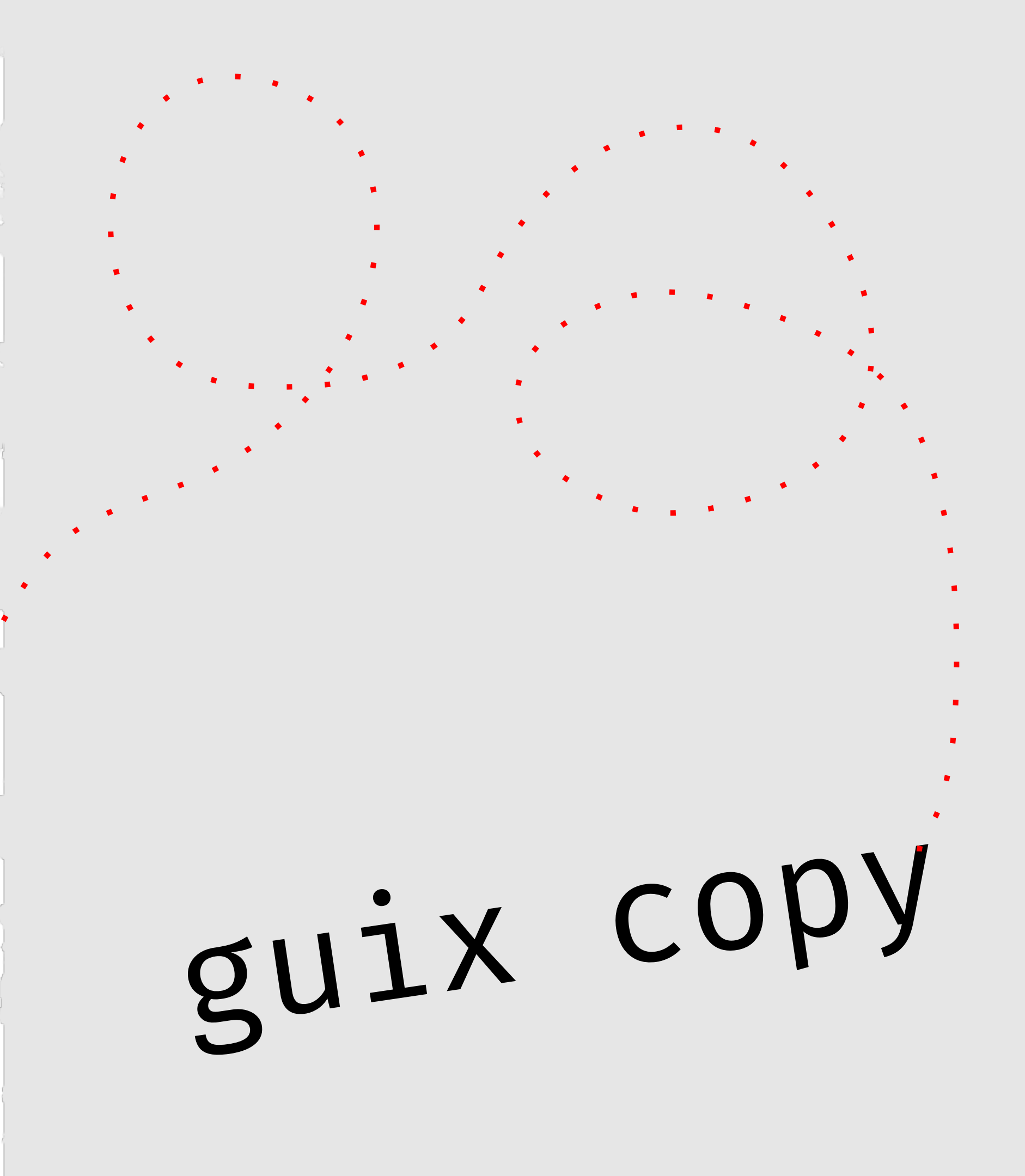








guix deploy



guix copy

Extending user autonomy
to *any* compute substrate
requires playing to its
strengths.

- 1 Guix is a great fit for HPC at the MDC
- 2 There are no “end users”
- 3 GNU values make for better tools
- 4 Cloud as HPC by different means

rekado



Let's talk!



#guix-hpc

#guix on libera.chat



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