BENE DE ME SCRIPSISTI THOMA

DOCTOR ANGELICVS

Keine Ahnung von Nix

An Introduction to Nix by the Least Enthusiastic Nix User

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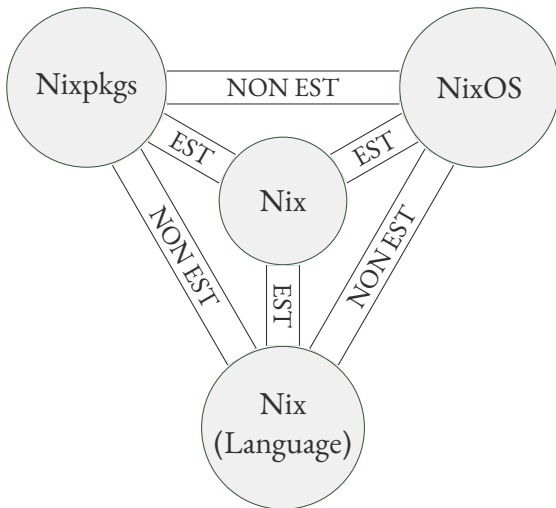2025-05-22

$Id: talk.tex,v 1.5 2025/05/26 17:04:20 flo Exp flo$

Part I

Prolegomena

Nixology

Nix (Language)

JSON with functions $\sim$ Untyped (lazy) λ-calculus with records

Functions

```
id = x: x

add = x: y: x + y

omega = x: x x

k = x: y: x

bb = a: b: c: d: a (b c d)
```

Records *Attribute Sets*

```
{
  string = "hello";
  integer = 1;
  float = 3.141;
  bool = true;
  list = [ 1 "two" false ];
  attribute-set = {
    a = "hello";
    b = 2;
    c = 2.718;
    d = false;
  }; # comments are supported
}
```

Derivations

```
derivation {
  name = "hello";
  system = "x86_64-linux";
  builder = "/bin/sh";
  args = [ "-c" "echo foo > $out"];
}
```

```
$ cat der.nix
derivation {
  name = "hello";
  system = "x86_64-linux";
  builder = "/bin/sh";
  args = [ "-c" "echo foo > $out"];
}
$ nix-build der.nix
this derivation will be built:
  /nix/store/hash-hello.drv
building '/nix/store/hash'-hello.drv'...
/nix/store/hash'-hello
$ cat /nix/store/hash'-hello
foo
```

Builder execution

1. set $PWD to a temporary directory
2. clear environment, set according to derivation
3. execute `builder` with `args`, write output to $out
4. set $out to be read-only…

Nixpkgs

A collection of over 120.000 `nix` packages/derivations

NixOS

A systemd/Linux distribution built on top of `nixpkgs`

Part II

Polemics

Hujjat al-Nix

- Purely functional package management is a good idea

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- Rollbacks are trivial

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[1]mostly

Hujjat al-Nix

- Purely functional package management is a good idea
- Rollbacks are trivial
- Derivations are reproducible[1]

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[1]mostly

Annoyances

- 120.000 packages — because *everything* has to be packaged

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- 120.000 packages — because *everything* has to be packaged
- Documentation all over the place
- Nix is not a good programming language

Guix

- A *sane* configuration/programming language[2]

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[2]Guile Scheme

Guix

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- More unified ecosystem

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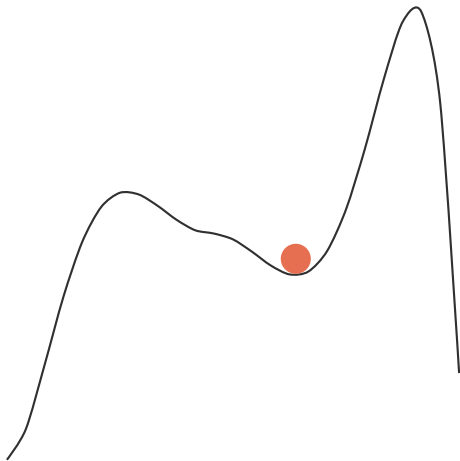- Submission to GNU zealots is required

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[2]Guile Scheme

Guix

- A *sane* configuration/programming language[2]
- More unified ecosystem
- Submission to GNU zealots is required
- Noone knows how to pronounce the name

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[2]Guile Scheme

Why I use Nix{,OS}

The Ballad of Frankie Lee and Judas Priest