

Haskell Tooling Whirlwind

Steven Shaw
@steshaw



- Cabal sandboxes on steroids
- Build cache for Cabal/GHC
- Slow build → Fast Build
- Hopefully will be folded into Cabal'

steshaw/steshaw.org #195	d161d59	master	Steven Shaw	Try CircleCI without /var/tmp/halcyon-cache	12 days ago	00:45	Success
steshaw/steshaw.org #194	d161d59	master	Steven Shaw	Try CircleCI without /var/tmp/halcyon-cache	12 days ago	01:20	Success
steshaw/steshaw.org #193	8e63511	master	Steven Shaw	Tweak interests	12 days ago	01:14	Success
steshaw/steshaw.org #192	8e63511	master	Steven Shaw	Tweak interests	12 days ago	01:27	Success
steshaw/steshaw.org #191	8e63511	master	Steven Shaw	Tweak interests	12 days ago	03:05	Success
steshaw/steshaw.org #190	cc5b003	master	Steven Shaw	Halcyon now installs alex and happy so don't apt-get install them.	12 days ago	50:16	Success
steshaw/steshaw.org #189	1b561b4	master	Steven Shaw	Use halcyon magic files to install alex + happy plus choose cabal version	12 days ago	51:04	Fixed
steshaw/steshaw.org #188	2c5d97c	master	Steven Shaw	Update <code>`.halcyon/constraints`</code>	13 days ago	29:53	Failed
steshaw/steshaw.org #187	2c5d97c	master	Steven Shaw	Update <code>`.halcyon/constraints`</code>	13 days ago	35:04	Failed
steshaw/steshaw.org #186	0d3509a	master	Steven Shaw	Revert to simple use of compressCssCompiler	13 days ago	29:13	Failed
steshaw/steshaw.org #185	8f6660c	master	Steven Shaw	Allow <code>`apt-get update`</code> to fail on Circle...	13 days ago	29:39	Failed
steshaw/steshaw.org #184	034675d	master	Steven Shaw	Wrap command in <code>bash -c</code>	13 days ago	00:48	Failed
steshaw/steshaw.org #183	8f89dff	master	Steven Shaw	See if installing <code>`alex`</code> and <code>`happy`</code> helps with CircleCI build	13 days ago	00:45	Failed
steshaw/steshaw.org #182	beb6be3	master	Steven Shaw	Fix hjsmin/Jasmine JS minifier	13 days ago	27:43	Failed
steshaw/steshaw.org #181	52077bb	master	Steven Shaw	Need hjsmin	14 days ago	27:56	Failed
steshaw/steshaw.org #180	bbd5065	master	Steven Shaw	Compress JS	14 days ago	29:13	Failed
steshaw/steshaw.org #179	24b423a	master	Steven Shaw	Source code highlighting now uses a solarized-light theme.	14 days ago	31:51	Success
steshaw/steshaw.org #178	df44b0a	master	Steven Shaw	In order of <code>_first_` use</code>	14 days ago	29:31	Success



12 days ago 00:45

12 days ago 01:20

12 days ago 01:14

12 days ago 01:27

12 days ago 03:05

12 days ago 50:16

12 days ago 51:04

13 days ago 29:53

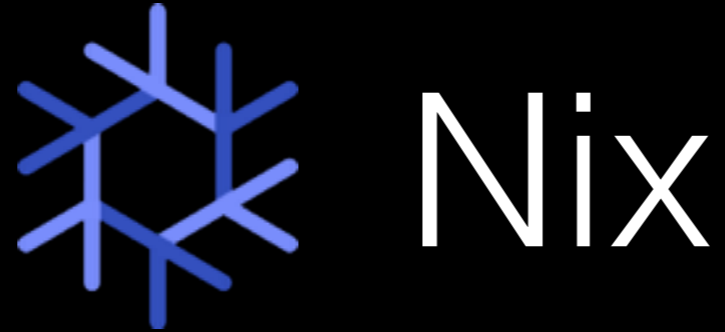
13 days ago 35:04

13 days ago 29:13



haskell on heroku

- Builds on Halcyon
- GHC → Heroku
- by Miëtek Bak
- @mietek



- Purely functional, cross-platform package system
- Source-based with binary substitution.
- Immutable, side-by-side versions of packages.
- Easily construct [development] environments with fixed versions of all your dependencies.
- `$ nix-shell -p git -p vim -p gcc`

Nix and Haskell

- haskellngPackages
- <http://wiki.ocharles.org.uk/Nix>

```
#!/usr/bin/env bash
```

```
cd ~
```

```
git clone --depth 1 git://github.com/nixos/nixpkgs
```

```
nix-env -f ~/nixpkgs -i -A haskellngPackages.cabal2nix -A haskellngPackages.cabal-install
```

```
mkdir hello
```

```
cd hello
```

```
cabal init
```

```
cabal2nix --shell . >shell.nix
```

```
nix-shell -I ~ --command 'cabal configure'
```

```
cabal build
```



NixOS

- based entirely on Nix package manager
- develop and deploy on the same system.
- Hydra for CI/CD
- NixOps for cloud deployment

Atom.io

- `$ apm install language-haskell`
- `$ apm install ide-haskell`
- Enjoy :)
 - syntax highlighting
 - goto definition
 - linting (with ghc-mod)

steshaw.org

- .git
- .halcyon
 - cabal-version
 - constraints
 - extra-source-hash-ignore
 - sandbox-extra-apps
- _cache
- _site
- about
 - index.md
 - kcs2.html
 - kcs.html
- bin
- css
 - default.css
 - syntax-figure.css
 - syntax.css
- js
 - header.js
 - octopressify.js
- posts
 - 2004-08-09-neverwinter-nights-on-linux.markdown
 - 2004-08-14-the-python-paradox.markdown
 - 2004-08-18-pairs-as-lambdas.markdown
 - 2004-08-22-erlang-the-movie.markdown
 - 2004-08-22-swingworker-race-condition.markdown
 - 2004-08-29-the-koan-of-side-effects.markdown
 - 2004-08-30-abelson-and-sussman-lectures.markdown
 - 2004-08-30-realplayer10-on-linux.markdown
 - 2004-08-30-spring-and-hibernate.markdown
 - 2004-09-15-cpu-scheduling.markdown
 - 2004-09-15-misunderstandings-about-closures.markdown
 - 2004-09-27-movitz-a-lisp-os-platform.markdown
 - 2004-09-27-wci-and-shared-libraries.markdown
 - 2004-10-22-avoid-round-trips.markdown
 - 2005-01-01-hibernate-in-action.markdown
 - 2005-01-24-developer-testing-with-kent-beck.markdown
 - 2005-02-16-interviewing-programmers.markdown
 - 2005-02-17-transactional-caches.markdown
 - 2005-02-21-fonts-on-gentoo.markdown
 - 2005-02-21-mock-object-framework-talk.markdown
 - 2005-02-22-noxml-and-web-service-specifications.markdown
 - 2005-02-22-soap-is-brain-dead.markdown
 - 2005-02-22-static-versus-dynamic-attitude.markdown
 - 2005-04-24-continuations-for-curmudgeons.markdown
 - 2005-05-02-javabygroovy.markdown
 - 2005-10-25-dependency-injection-vitaly-important-or-totally-irrele
 - 2005-11-13-ubuntu-on-inspron-9300.markdown
 - 2005-12-04-getting-lost-in-the-wikipedia.markdown
 - 2005-12-07-ruby-on-net.markdown
 - 2005-12-07-ubuntu-breezy-under-vmware-player.markdown
 - 2006-01-10-better-is-better-and-worse-is-worse.markdown
 - 2006-01-18-w3-principles-of-design.markdown
 - 2006-02-01-code-as-data-closures.markdown
 - 2006-02-01-when-can-i-get-a-fix-of-language-goodness.markdown
 - 2006-02-25-computer-games-a-blast-from-the-past.markdown

site.hs

```

103 >>= relativizeUrls
104
105 match "index.html" $ do
106   route idRoute
107   compile $ do
108     posts <- recentFirst =<< loadAll allPosts
109     let indexCtx = listField "posts" pageCtx (return posts)
110         << constField "title" "Home"
111         << constField "homeactive" "active"
112         << constField "homeurl" nullLink
113         << pageCtx
114     getResourceBody
115     >>= applyAsTemplate indexCtx
116     >>= loadAndApplyTemplate "templates/default.html" indexCtx
117     >>= relativizeUrls
118
119 match "templates/*" $ compile templateCompiler
120
121 let feedCtx = pageCtx << bodyField "description"
122
123 mkFeed "atom.xml" renderAtom
124 mkFeed "rss.xml" renderRss
125
126 where
127   -- "blog/2015/03/29/this-is-cool.html" => "blog/2015/03/29/this-is-cool/index.html"
128   htmlToOwnDir :: String -> String
129   htmlToOwnDir url = either (const url) id pr
130   where
131     pr = runParser p 0 "<blog>" url
132     p = do
133       stuff <- many $ noneOf "."
134       return $ stuff ++ "/index.html"
135   floop :: String -> String
136   floop url = trace ("\n\nurl is " ++ url ++ "\n\n") $ either (const url) id r
137   where
138     r = trace $ show (parseResult url) $ parseResult url
139   parseResult :: String -> Either ParseError String
140   parseResult url = runParser parsePostUrl () "<postUrl>" url
141
142   year <- string "posts/"
143   year <- count 4 digit
144   _ <- char '-'
145   month <- count 2 digit
146   _ <- char '-'
147   day <- count 2 digit
148   _ <- char '-'
149   title <- many anyChar
150   return $ intercalate "/" ["blog", year, month, day, title]
151
152 compressJsCompiler :: Compiler (Item String)
153 compressJsCompiler = fmap jasmine <$> getResourceString
154
155 jasmine :: String -> String
156 jasmine src = LB.unpack $ minify $ LB.fromChunks [E.encodeUtf8 $ T.pack src]
157
158 allPosts = "posts/*"
159
160 mkFeed file renderer =
161   create [file] $ do

```

Eta reduce Found: parseResult url = runParser parsePostUrl () "<postUrl>" url Why not: parseResult = runParser parsePostUrl () "<postUrl>"

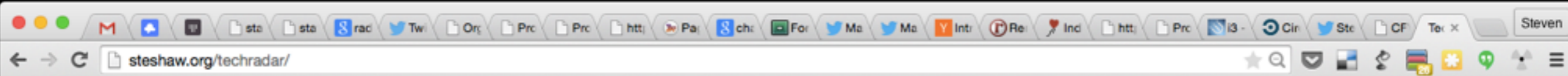
Command UTF-8 Haskell master +43, -9 3

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138     r = trace $ show (parseResult url) $ parseResult url
139     parseResult :: String -> Either ParseError String
140     parseResult url = runParser parsePostUrl () "<postUrl>" url
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```
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Tech Radar



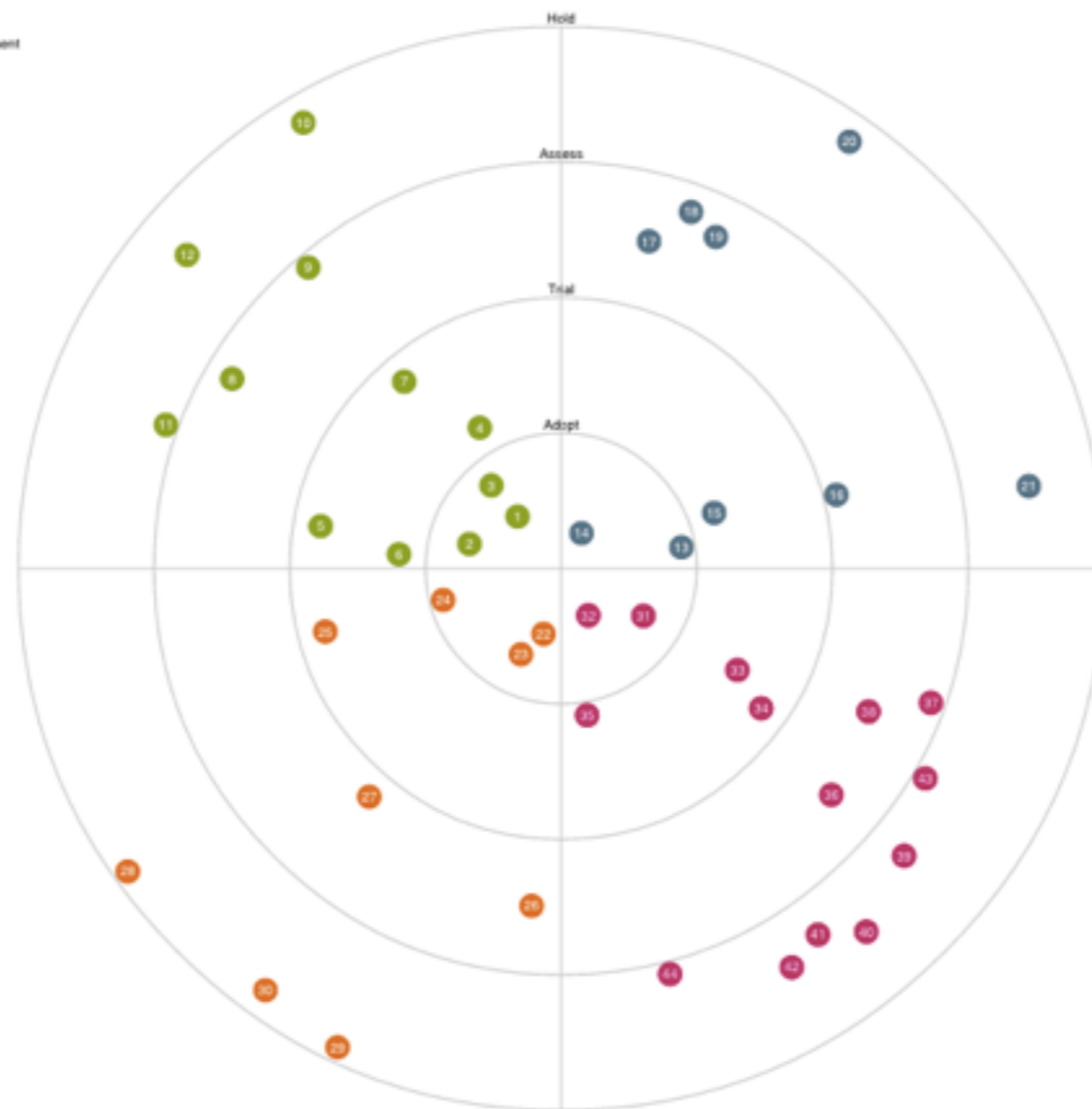
Tech Radar

Techniques

- Adopt
 - 1. Mathematics
 - 2. Property based testing
 - 3. Continuous Flow
- Trial
 - 4. Code Reviews
 - 5. Hammer Driven Development
 - 6. Hole Driven Development
 - 7. Lean
- Assess
 - 8. Pair Programming
 - 9. Lean Startup
- Hold
 - 10. Dependency Injection
 - 11. Scrum
 - 12. Iterations

Platforms

- Adopt
 - 22. JVM
 - 23. AWS
 - 24. Ubuntu
- Trial
 - 25. NixOS
- Assess
 - 26. OpenStack
 - 27. Node.js/npm
- Hold
 - 28. Ruby On Rails
 - 29. Java EE
 - 30. Spring



Tools

- Adopt
 - 13. Docker
 - 14. Git
- Trial
 - 15. Kafka
- Assess
 - 16. Nix
 - 17. Ansible
 - 18. Chef
 - 19. Puppet
- Hold
 - 20. Hibernate
 - 21. MongoDB

Languages

- Adopt
 - 31. Scala
 - 32. Haskell
- Trial
 - 33. PureScript
 - 34. TypeScript
 - 35. Erlang
- Assess
 - 36. Coq
 - 37. Agda
 - 38. Idris
- Hold
 - 39. Java
 - 40. Ruby
 - 41. Python
 - 42. PHP
 - 43. JavaScript
 - 44. Elxir

Fork me on GitHub

Techniques

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- 23. AWS
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- 26. OpenStack
- 27. Node.js/io.js

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- 35. Erlang

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- 36. Coq
- 37. Agda
- 38. Idris

Hold

- 39. Java
- 40. Ruby
- 41. Python
- 42. PHP
- 43. JavaScript
- 44. Elixir

References

- halcyon.sh
- nixos.org
- atom.io
- atom.io/packages/ide-haskell
- steshaw.org/techradar
- commercialhaskell.com