



RUBY

current state and future

Hello!

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Agenda

1. Ruby status
2. Is future already here?
3. Reflect

Let's talk about Ruby





Ruby is dead

Current status according to Matz

- Not dead
- Almost 25 YO
- Stable
- +10% faster every year



“

I felt it was important for us to set some kind of goal, so I named it Ruby 3x3. The goal is to make Ruby 3 run three times faster as compared to Ruby 2.0.

-Matz

Ruby 3

- 3 times faster
- Performance NOT at the cost of memory footprint
- Backwards compatible
- ~~Static typing system~~
- No release date

We'll do it for the
Olympic in 2020.





“

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RTL and JIT

To the rescue

Vladimir Makarov

- Red Hat employee
- 20 years work on GCC
- 2 years work on Ruby



Register Transfer Language vs Stack based

RTL

- Less instruction number
- Less memory traffic
- **Allow to introduce JIT**

```
plus <a index>, <b index>, <c index>
```

Stack based

- Shorter instruction length
- Faster instruction decoding

```
getlocal_OP__WC__0 <b index>
```

```
getlocal_OP__WC__0 <c index>
```

```
opt_plus
```

```
setlocal_OP__WC__0 <a index>
```

Just-in-time compilation

- Compilation to bytecode
- VM compiles to machine code

Faster, more memory hungry.

JIT

There were few approaches, team decided to implement their own JIT. MJIT.

MJIT is MRI JIT.

MJIT is Memory JIT.

MJIT can use GCC or LLVM.

Benchmarking

- Ruby 2.0 is baseline
- No micro-benchmark
- Optcarrot

NES emulator written in Ruby.

How hard it is?

- Hard
- Harder
- Hardest
- **Impossible**
- Hell



**IS FUTURE
ALREADY HERE?**

What if I told you...

There is Ruby, which is 3 times faster than Ruby 2.0. JIT is already implemented. It's stable and around for years...



Not a new kid on the block.
Been around for **15 years**.

Ruby 2.3.x compatible.
Team working on 2.4.

Standard library
just like CRuby.

Pure Ruby gems
should work just great.

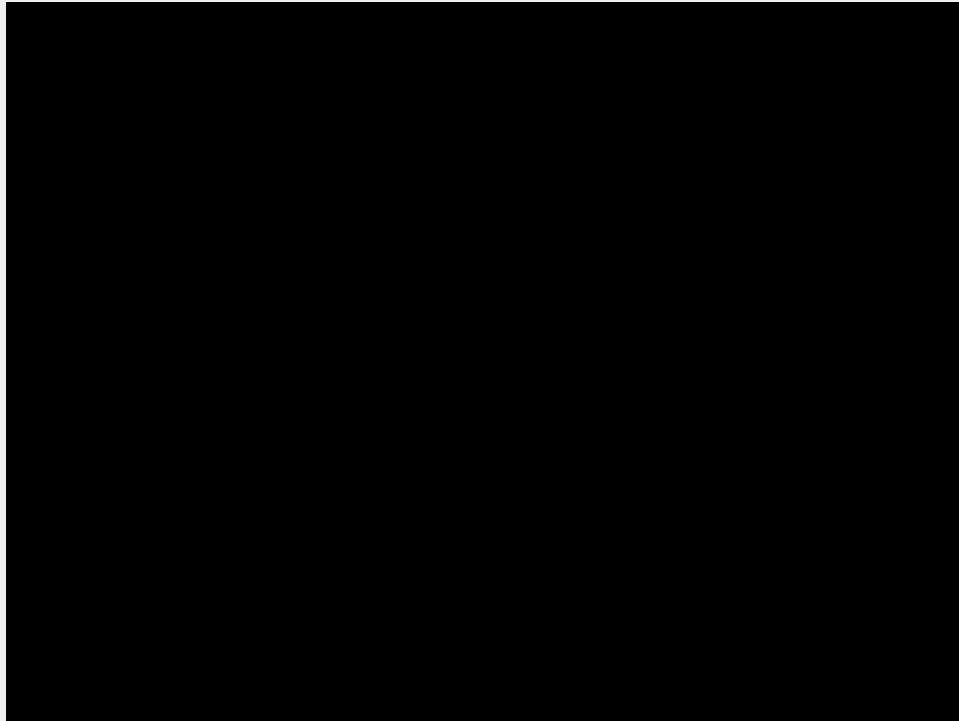
Power of JVM

- Fast JIT to native code
- Fully parallel threading
- Leading-edge GC
- Access to Java, Scala, Clojure, ...
- Still Ruby!

99%+ of test passing
for Ruby and Rails.

You can even write
minecraft plugins.

JVM's concurrency & tools (monitor CPU, threads, heap)



JIT to JVM
2-10x times faster than MRI
it's been around for a long time

JRuby

- Fast and getting faster
- Compatible
- Uses all your cores
- Fun!



**DOES IT RISE ANY
QUESTIONS?**

Problem?

Is Ruby core team focusing more on implementation - MRI than on language itself?



ruby 2.6



Wszystko

Grafika

Filmy

Mapy

Wiadomości

Więcej

Ustawienia

Narzędzia

Okolo 10 100 000 wyników (0,27 s)

2.6.6 Released - RubyGems Blog

blog.rubygems.org/2016/06/22/2.6.6-released.html ▼ Tłumaczenie strony

22 cze 2016 - RubyGems 2.6.6 includes bug fixes. To update to ... gem update --system=2.6.6 ...

RubyGems.org is the **Ruby** community's gem hosting service.

rubygems-update | RubyGems.org | your community gem host

<https://rubygems.org/gems/rubygems-update/versions/2.6.7> ▼ Tłumaczenie strony

rubygems-update 2.6.7. RubyGems is a package management framework for **Ruby**. This gem is an

update for the RubyGems software. You must have an ...

2.6.12 Released - RubyGems Blog

blog.rubygems.org/2017/04/30/2.6.12-released.html ▼ Tłumaczenie strony

30 kwi 2017 - by Samuel Giddins. RubyGems 2.6.12 includes bug fixes. ... Add a test for requiring a

default spec as installed by the **ruby** installer. Pull request ...

2.6.11 Released - RubyGems Blog

blog.rubygems.org/2017/03/16/2.6.11-released.html ▼ Tłumaczenie strony

16 mar 2017 - RubyGems 2.6.11 includes bug fixes. To update ... Fixed broken tests on **ruby-head**. ...

Avoid activating **Ruby** 2.5 default gems when possible.

mail | RubyGems.org | your community gem host

<https://rubygems.org/gems/mail/versions/2.6.4> ▼ Tłumaczenie strony

mail 2.6.4. A really **Ruby** Mail handler. ... 2017 (377 KB); 2.7.0.rc1 - May 09, 2017 (341 KB); 2.6.6 - June 09, 2017 (345 KB); 2.6.4 - March 23, 2016 (344 KB).

2.6.13 Released - RubyGems Blog

blog.rubygems.org/2017/08/27/2.6.13-released.html ▼ Tłumaczenie strony

27 sie 2017 - 2.6.13 Released. by Samuel Giddins. RubyGems 2.6.13 includes security fixes. ...

RubyGems.org is the **Ruby** community's gem hosting service.

shrine | RubyGems.org | your community gem host

Any wishes?

Roadmaps for future **Ruby**
(**not MRI**) releases.

Problem?

Does Ruby has a standard as a language?

Any wishes?

Formal language **specification**
and **compatibility** test suite.

Problem?

Is Ruby innovative enough?

Problem?

Ruby 2.0

Problem?

- Keyword arguments
- UTF-8 as default file encoding
- Refinements (experimental)

Problem?

Ruby 2.1

Problem?

- Rational/Complex literal
- defs return value
- Refinements are no longer experimental

Problem?

Ruby 2.2

Problem?

None

Problem?

Ruby 2.3

Problem?

- Frozen string literals
- Safe navigation operator (&.)
- Squiggly heredocs (<<~)

Problem?

Ruby 2.4

Problem?

- Unify Fixnum and Bignum into Integer
- Support Unicode case mappings

Problem?

Ruby 2.5

Problem?

- Top-level constant look-up is removed
- rescue/else/ensure are allowed inside do/end blocks
- Refinements take place in string interpolations



“

*Ruby is no longer my project.
It's the Ruby community's project.*

-Matz

Make Ruby better

File tickets.

Make Ruby better

Send patches.

Make Ruby better

Blog about the issues.

Make Ruby better

Speak about the issues.

Make Ruby better

Let's make Ruby **better together!**

Make Ruby better



Thanks!

Any questions?