

# New DNS zone file parser

Marek Vavruša (CZ.NIC)  
[marek.vavrusa@nic.cz](mailto:marek.vavrusa@nic.cz)

RIPE66, Dublin





**KNOT**  
**DNS**

**CZ.nic**



**INTERNET.  
SERIOUS BUSINESS.**

**CZ.nic**

# Why another parser?



# Choices 101

- Flex / Bison (... or Re2C / Lemon)
- Handwritten in C
- Ragel?

Parsing zone file is a  
no-brainer?

Haha, as if...



```
n NAPTR 100 10 "" "!^urn:cid:..+@[^\.]+\.(.*)$!\2!i"  
\116\101\115t TXT \0320\ \\ "\"\.\@ \*.abcd ""  
ns1 TYPE1 \# 4 C0 00 02 02
```



# Choices 101

- Flex / Bison (... or Re2C / Lemon)
- Handwritten in C
- **Ragel!**



# Ragel

<http://www.complang.org/ragel>

- Regular language to FSM
- Execute code at arbitrary points!
- Well documented, graphviz, ...

# What we've done?

- IN class only
- Pretty much every used RR type
  - including TYPE#
- Directives, escaped sequences
  - \$INCLUDE, \$TTL, \$ORIGIN
  - @ \DDD \X ();

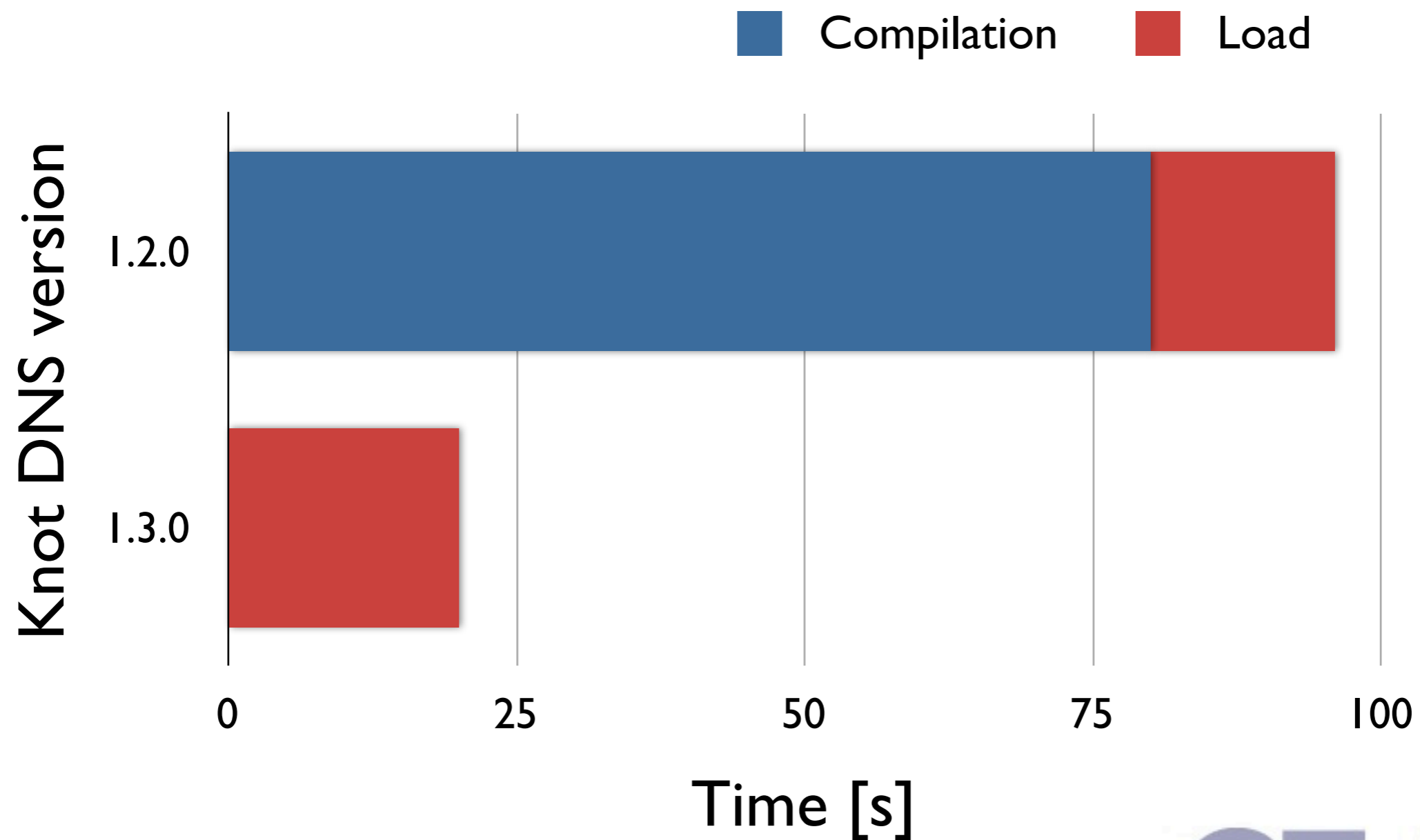


# What we've done?

- Thorough test suite (corner cases)
- Easy to use API
- Very fast... how?



Box - Xeon E5-2609 @ 2.4 GHz (Linux 3.2.0)  
Zone file - 563MiB, ±5 000 000 RRs



# How to get it?

- Included in the sources of Knot (git)
- [www.knot-dns.cz](http://www.knot-dns.cz)
- May release separately if interested

# Any questions?



**CZ.nic**