

# The Root Canary

Measuring the (postponed) rollover of the Root KSK



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# Canary in the virtual coalmine



picture from academia.dk

<https://rootcanary.org/>

# Canary in the virtual coalmine

- Goals:
  - **Track operational impact** of the root KSK rollover, act as a warning signal that validating resolvers are failing to validate with the new key
  - **Measure validation during the KSK rollover** from a global perspective **to learn from this type of event**

# Measurement methodology

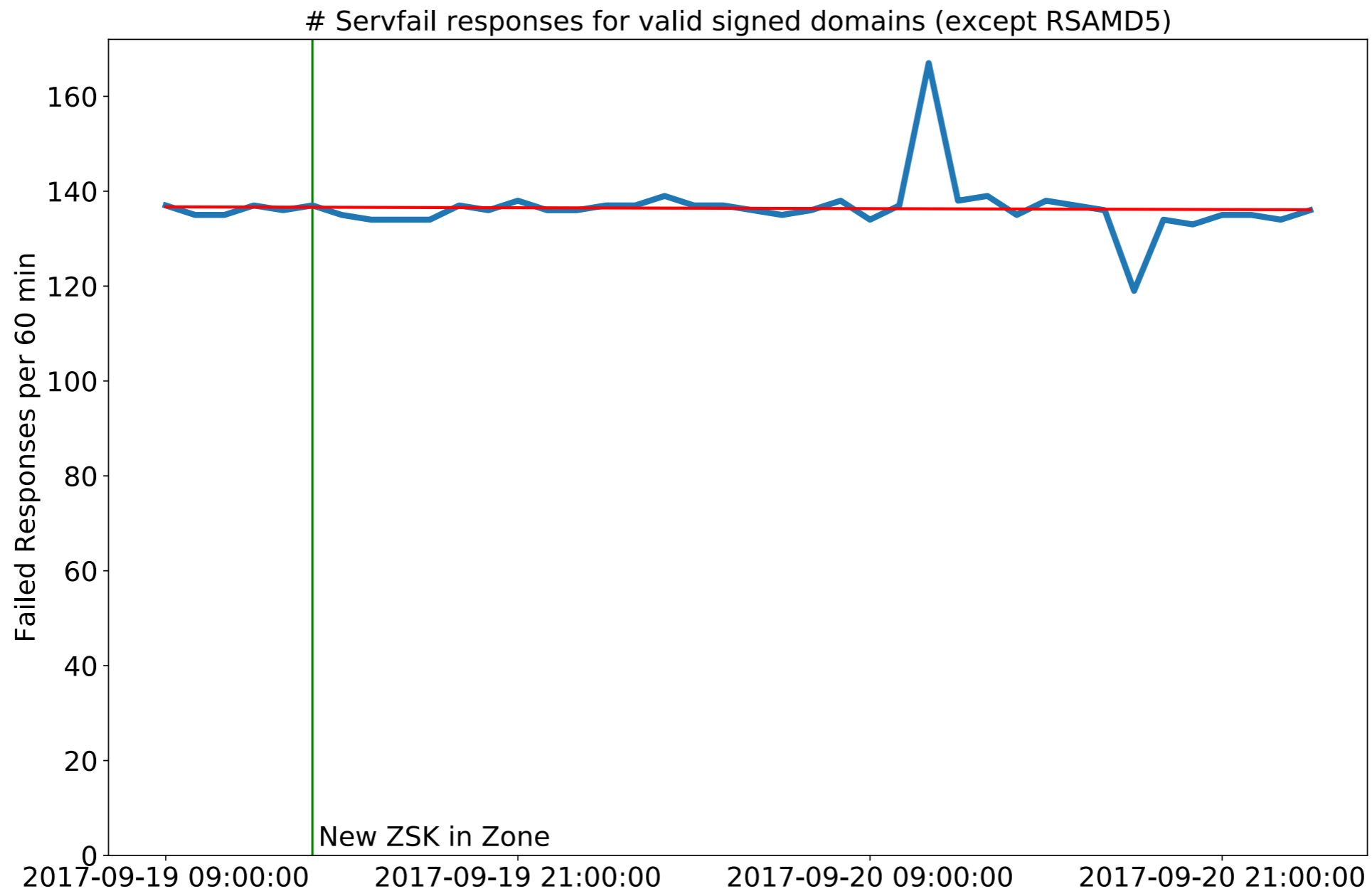
- Use four perspectives:
  - Online perspectives:
    - RIPE Atlas
    - Luminati
    - APNIC DNSSEC measurement  
(current thinking: use data during evaluation)
  - “Offline” perspective (analysed after measuring)
    - Traffic to root name servers (multiple letters)

# Measurement methodology

- We have **signed and bogus** records for **all algorithms** and **most DS algorithms**
- This gives us one of three outcomes:
  - Resolver **validates correctly**
  - Resolver **fails to validate** (SERVFAIL)
  - Resolver **does not validate**
  - (yes, there are **corner cases** probably **not covered** by these three options)

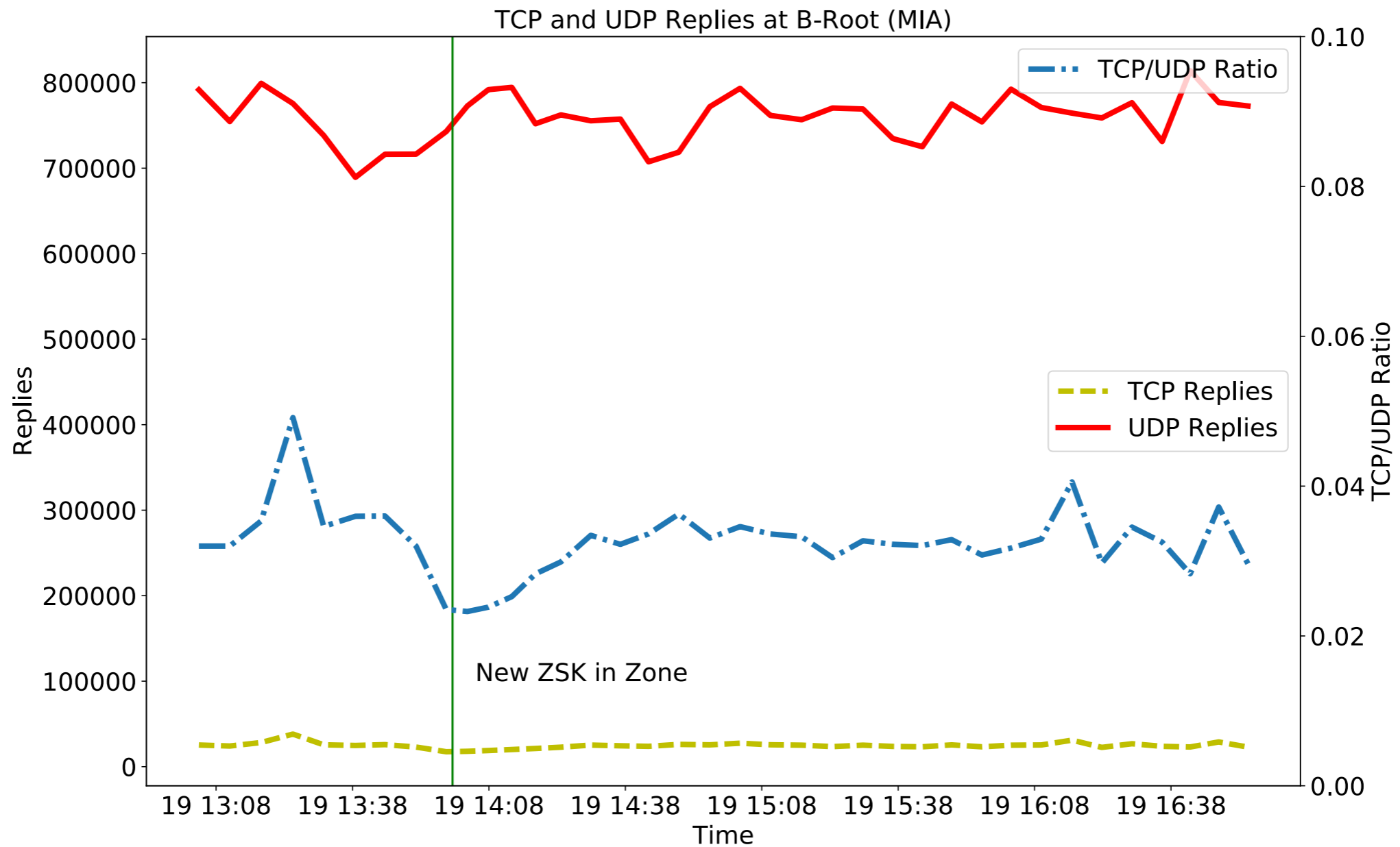
# 1414 byte DNSKEY

- Does it break stuff?



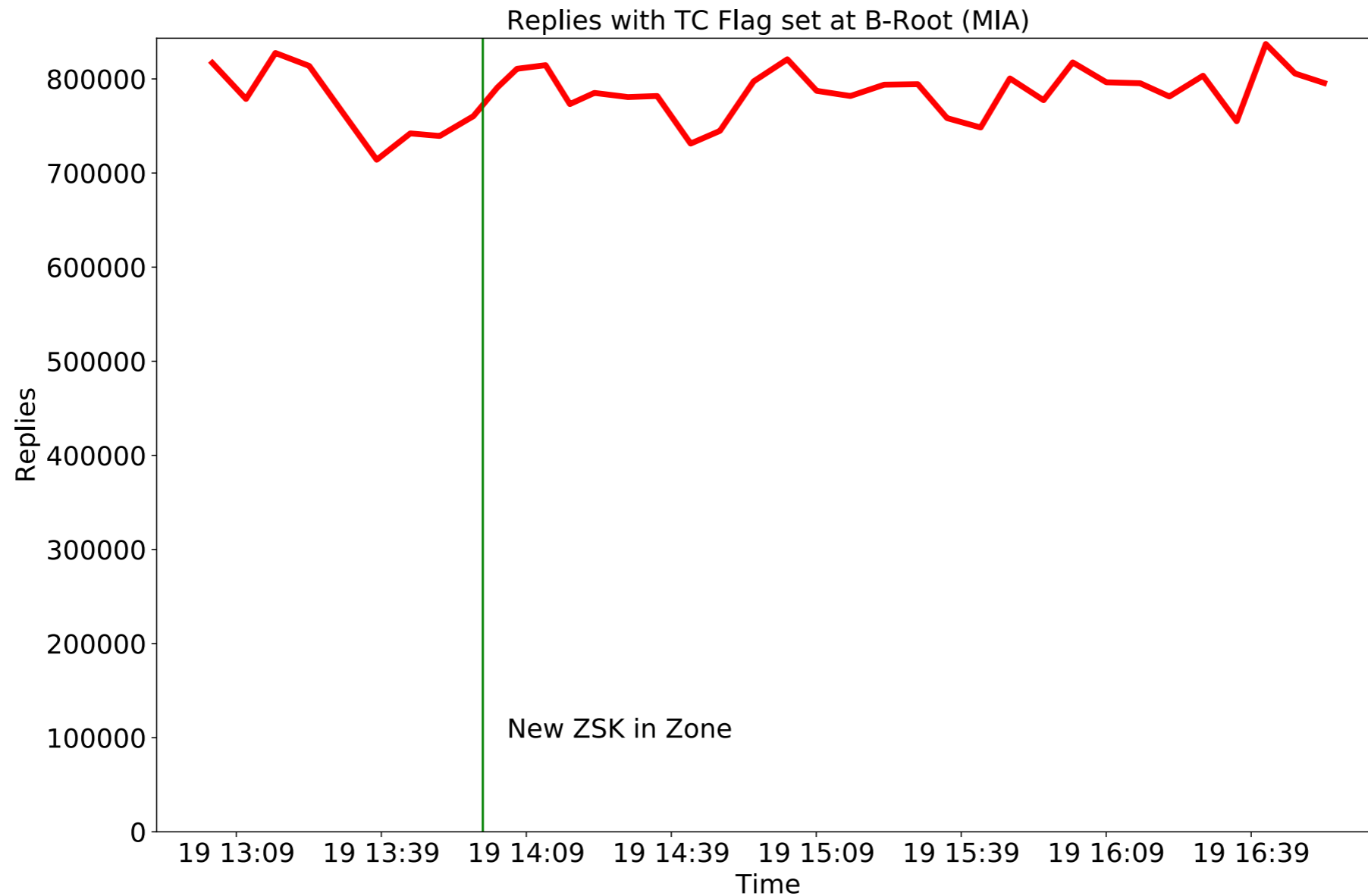
# 1414 byte DNSKEY

- From the perspective of the root servers



# 1414 byte DNSKEY

- From the perspective of the root servers





# Improving our Measurements

- Would you be willing to help us improving our measurements?
- Proposal:
  - Run small shell scripts that uses *dig* to query our test domains from within your network
  - Using the default resolvers
  - Every hour or more frequently

**<https://github.com/moritzcm/root-canary-custom-msm>**

**<https://rootcanary.org/>**

# More info

- Current results for RIPE Atlas-based measurement: <https://portal.rootcanary.org/rcmstats.html>
- Live feed for RIPE Atlas-based measurement: <https://monitor.rootcanary.org/live.html>
- BASH measurement script: <https://github.com/moritzcm/root-canary-custom-msm>
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