RPKI Origin Validation in real life

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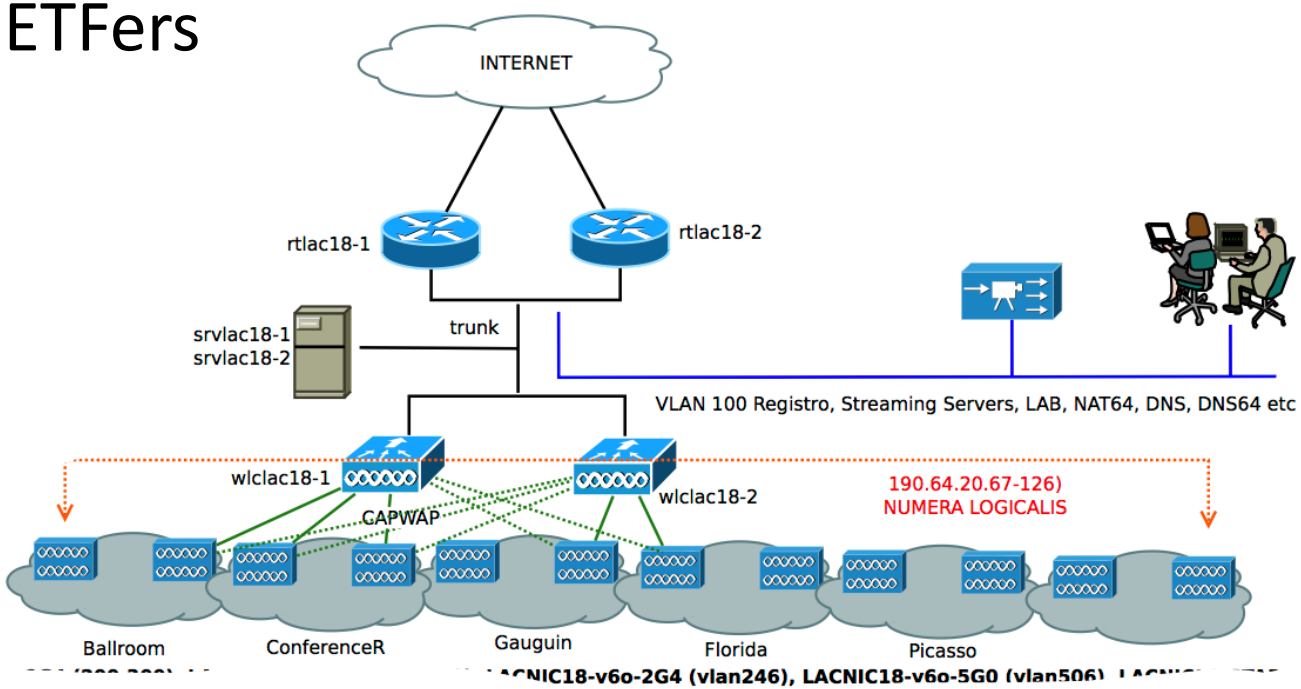
LACNOG – LACNIC Network

- Conventional network, mostly wireless. 450-500 attendees
  - A crowd as picky and whinny about the network as the IETFers



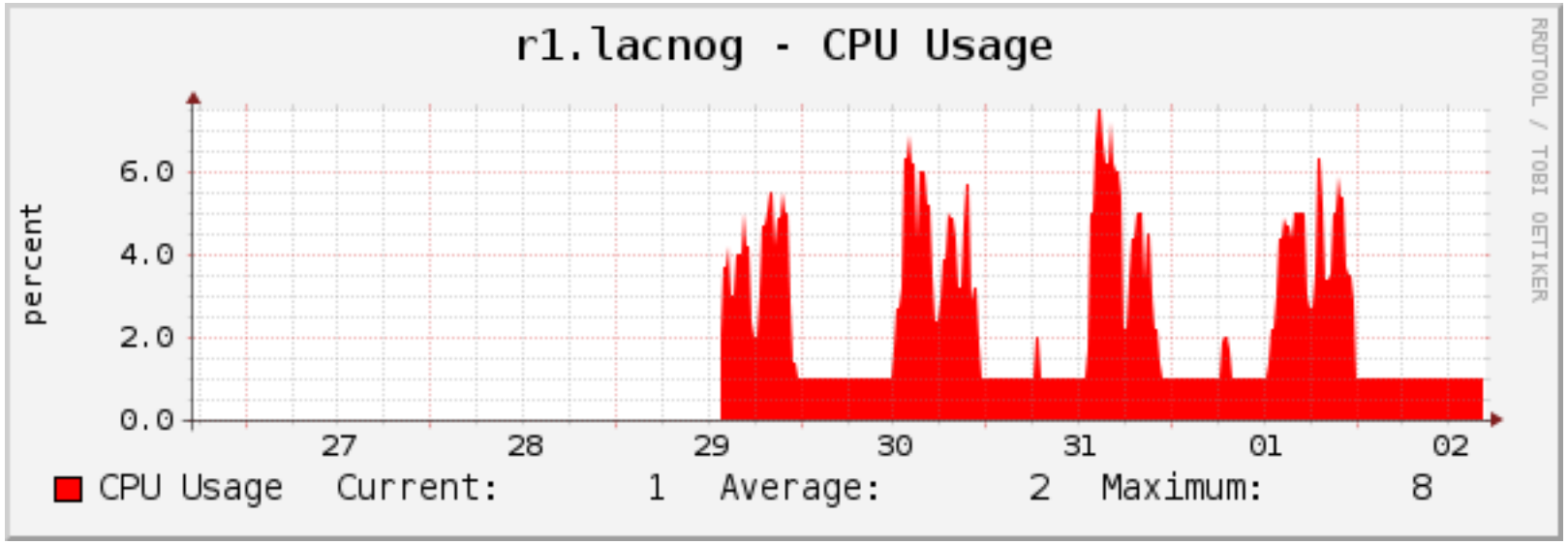
Motivation

- In short: *"eat our own dog food"*
- Try the technology in the field
  - Are there unknown 'surprises' to be found ?
  - What about the practicalities ?
    - Obtaining router software
    - Running the validators
- A followup to our LACNOG 2011 demo of origin validation on routers
- Known limitations:
  - No full IPv4 table available in the routers

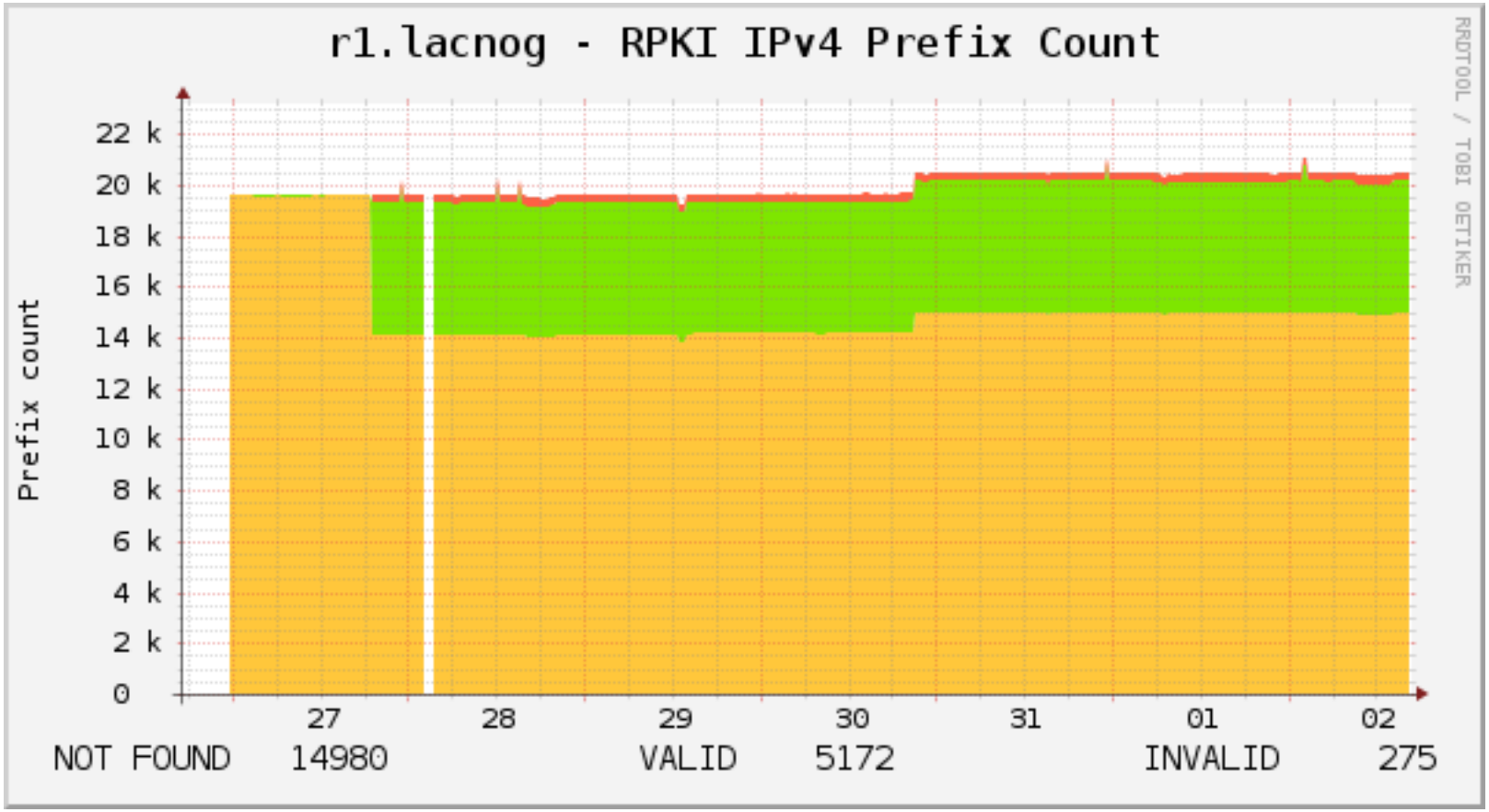
The RPKI Origin Validation Setup

- Routing:
  - 2 Cisco 7201 routers.
  - IOS was downloaded as any other image, no special code, no special version
- Validating cache:
  - 2 instances of RIPE NCC validator
  - TA from 5 RIRs repositories
  - ~20k IPv4 routes, ~11k routes IPv6 (full table)
- Dropping invalids after day 2

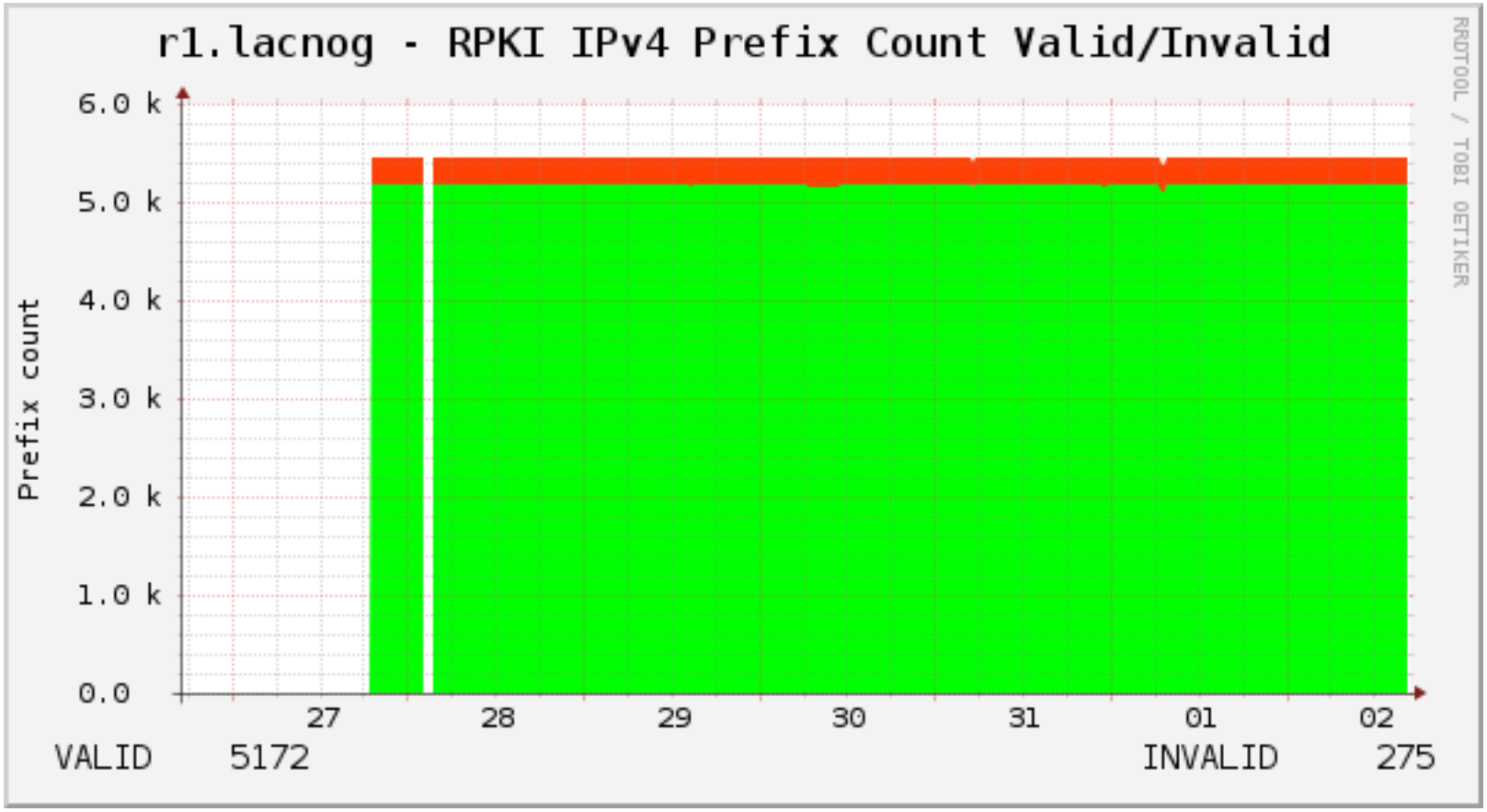
Routers CPU utilization



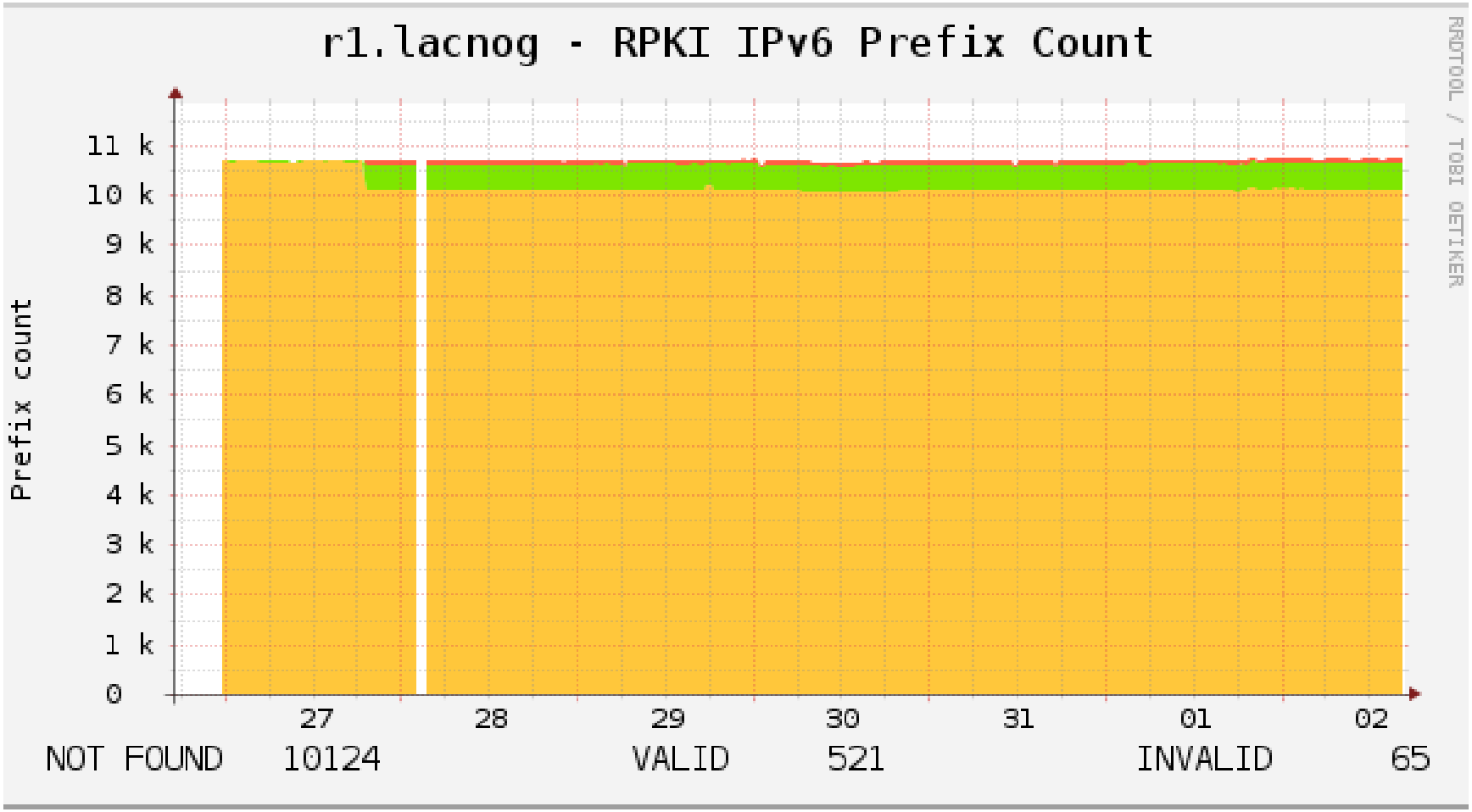
Validation IPv4



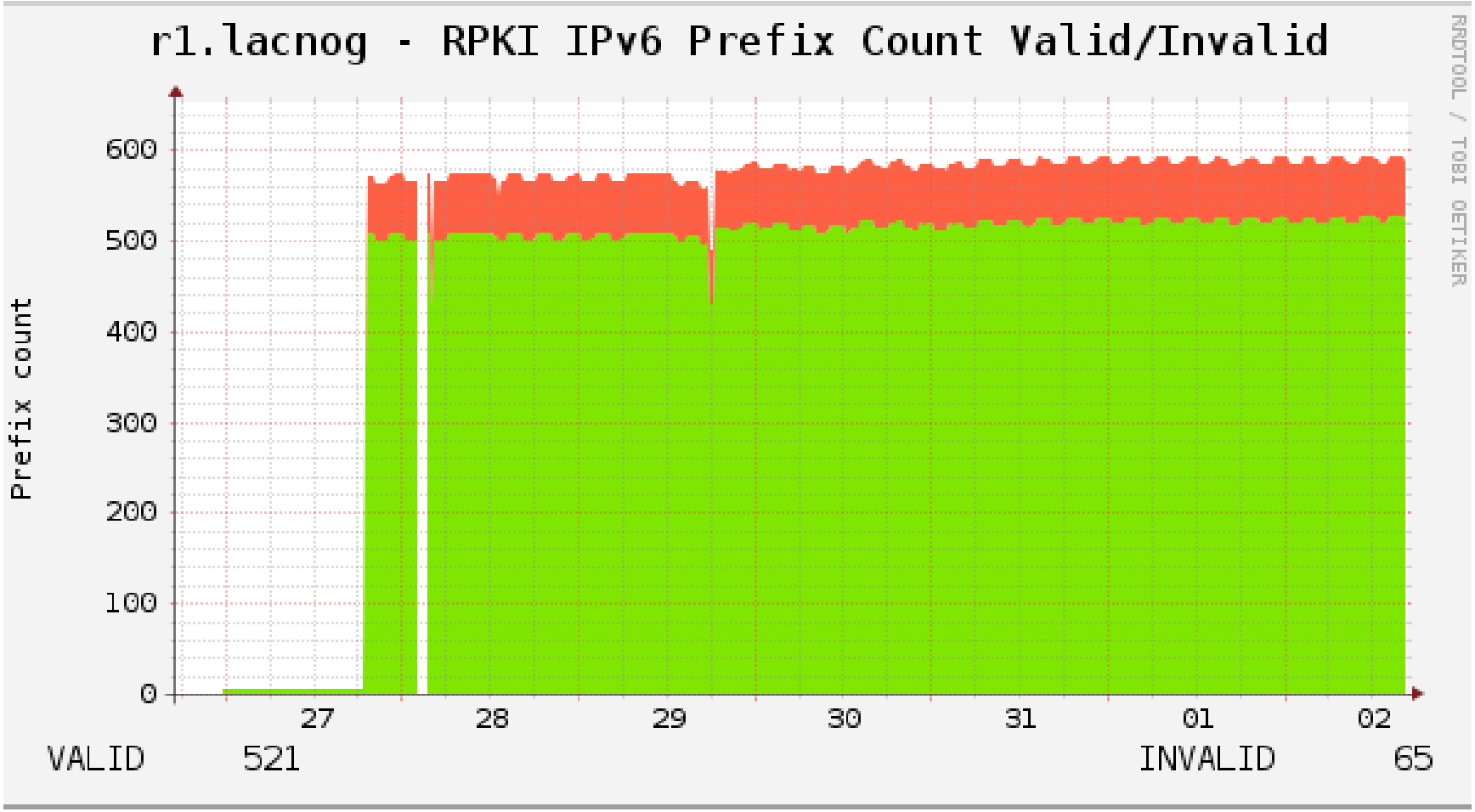
Validation IPv4



Validation IPv6



Validation IPv6



Our Experience

- Noticeable improvements compared to LACNOG 2011 demo
  - No RTR drops between validator and router
  - No router crashes (3 or 4 during the week in 2011)
- Repo validation performed well
  - Despite known issues
  - No ‘mass extinction’ events to be seen on graphs
- Dropping invalids cleaned up a lot of more specifics

THANK YOU !