

# Who's Manning the L root?

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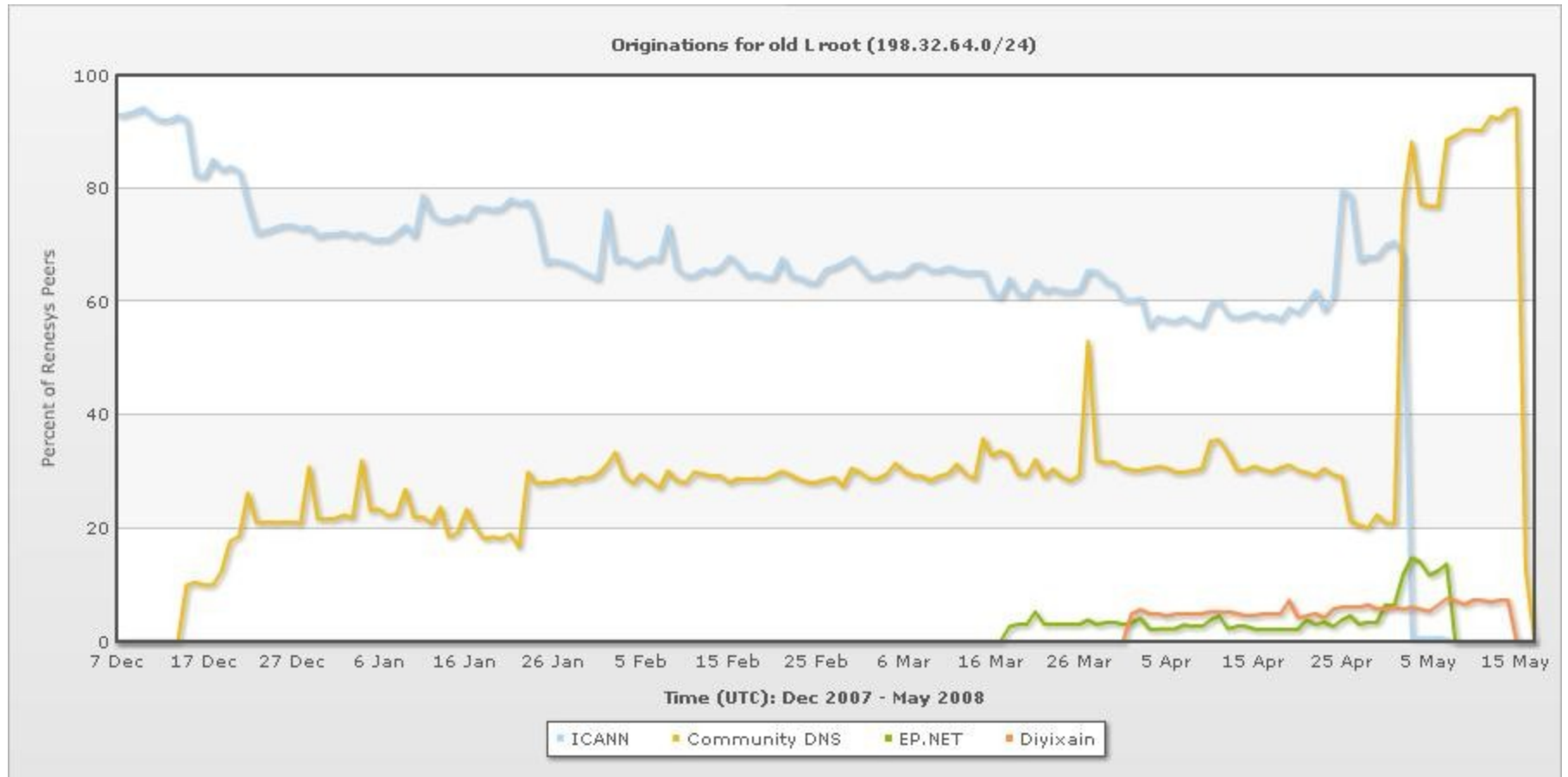
# Root Name Servers

- 13 root name server IP addresses
- Named by single letters: A, B, C, ... M.
- L root is run by ICANN
  - Old IP: 198.32.64.12
    - Used from 1997 until 2007
    - Prefix registered to Bill Manning, ep.net
  - New IP: 199.7.83.42
    - Effective 1 November 2007
    - Prefix registered to ICANN

# Old L Root Name Servers: 2007 – 2008

- ICANN runs the old L root for additional 6 months
- New *unauthorized* servers start appearing
  - Dec 15<sup>th</sup> – Community DNS (England)
  - Mar 18<sup>th</sup> – EP.NET (US – Bill Manning)
  - Apr 1<sup>st</sup> – Diyixian (Hong Kong)
- May 2<sup>nd</sup> – ICANN turns off its own old L root
- May 16<sup>th</sup> – All unauthorized L root servers turned off under pressure from ICANN

# Timeline for old L root servers



# Lots of unanswered questions

- Why was ICANN not using their own space?
  - Was it difficult to get IP space in 1997?
- Why the change after 10 years?
  - 11.7 million DNS servers worldwide (source: Infoblox)
  - How many of those do you think were updated?
- Why wasn't the space given to ICANN?
  - ARIN shows Manning has five /16s and a /22
  - This is equivalent to 1284 /24s
  - ICANN only needs a single /24 for the L root
- Why all the bogus L root servers?

# Is this much ado about nothing?

- What could **you** do with a root name server?
  - Provide *updated* list of **all** the root name servers
  - Provide *updated* NS records for **all** TLDs
  - Set TTL = 0 for your answers
  - Perform recursion by default
  - Log everything
  - Censor, misdirect
- No evidence of any of this in this case
  - But the duration of the event, the potential for mayhem, the complete absence of *any* safeguards are the cause for concern

# What can you do – today

- Check the ICANN web site at least twice a year
- Filter announcements (see Renesys blog)
  - Don't allow more specifics
  - Filter by origin AS
- Check your cached root server IPs daily
  - Automate a comparison to a known good list
- Globally monitor root name server announcements
- Encourage someone (ICANN?) to publish a signed root name server registry
  - Then filter by authorized origins and upstreams

# Thank You

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