When DNS fails

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First of all…

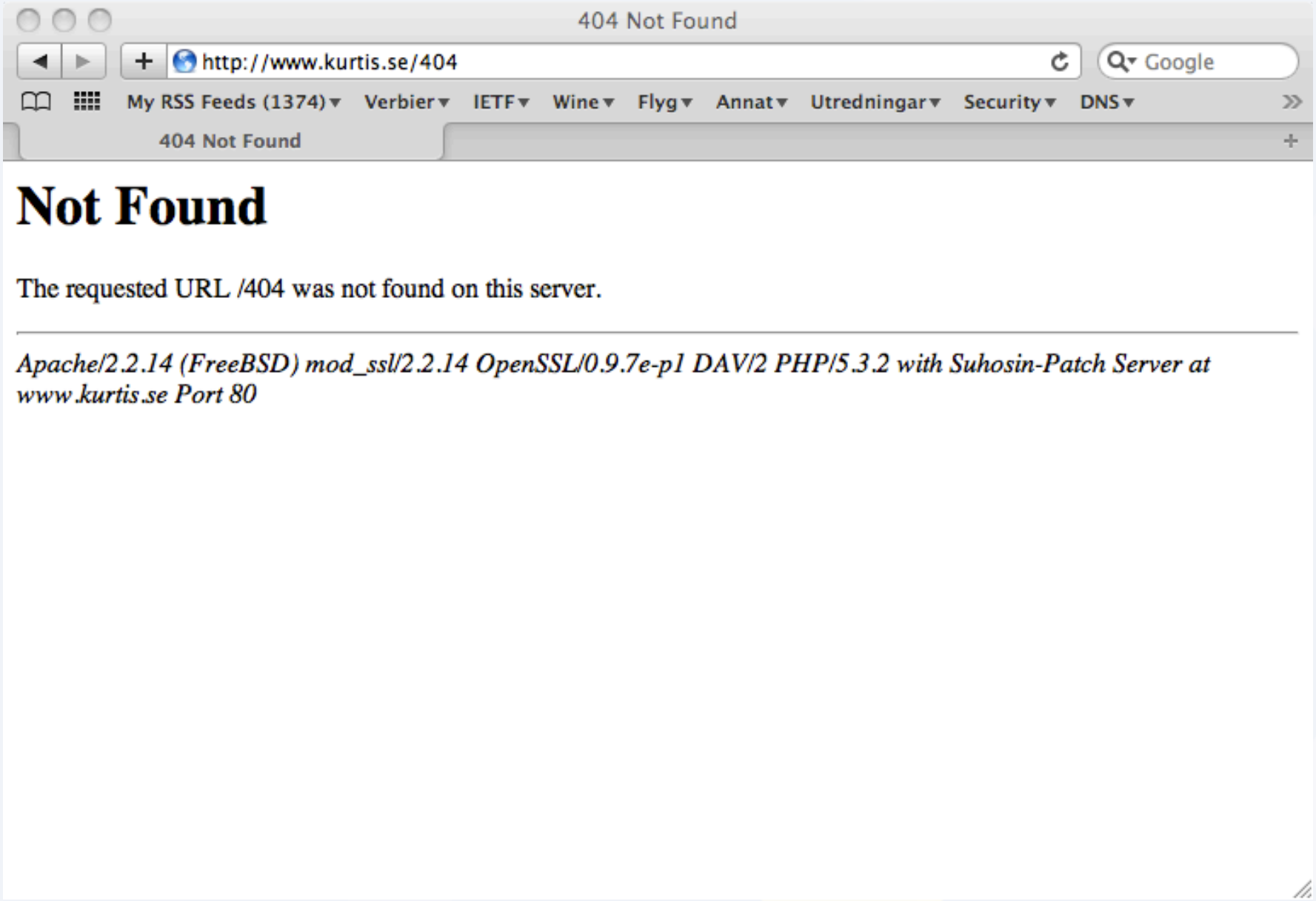
DNS will fail

BGP will fail

SIP will fail

HTTP will fail

DNS will fail

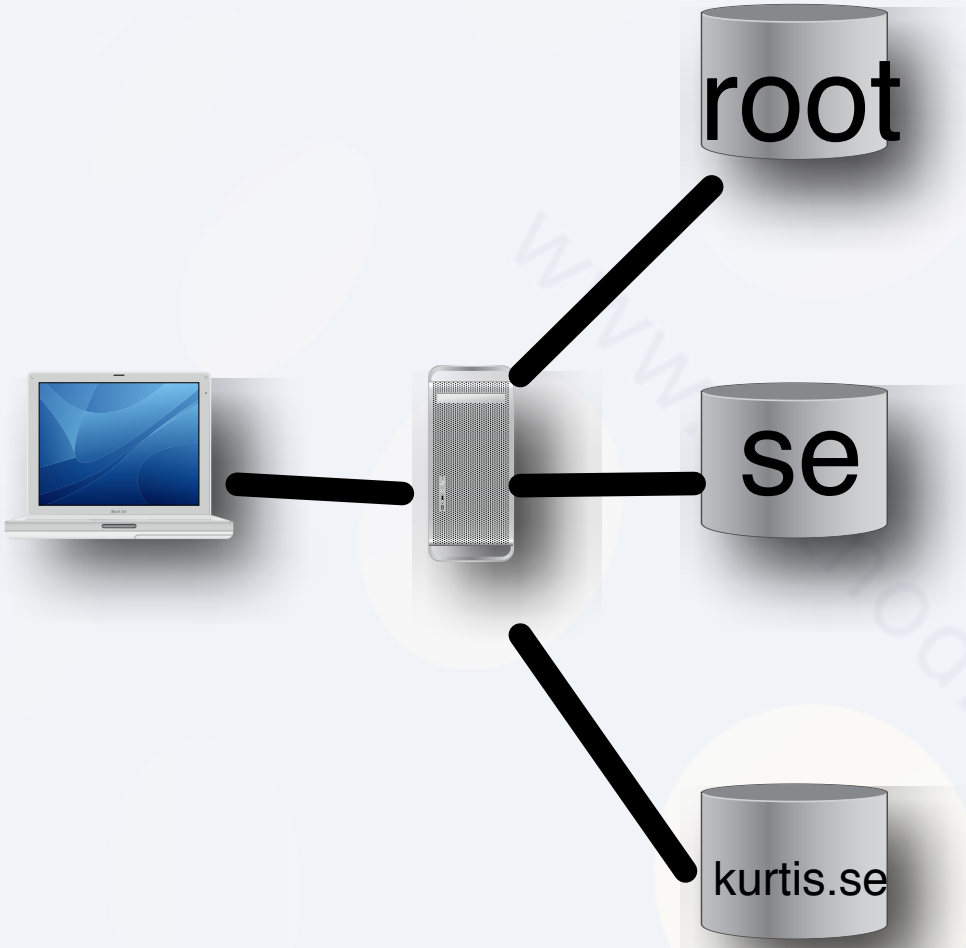


But what actually happend?

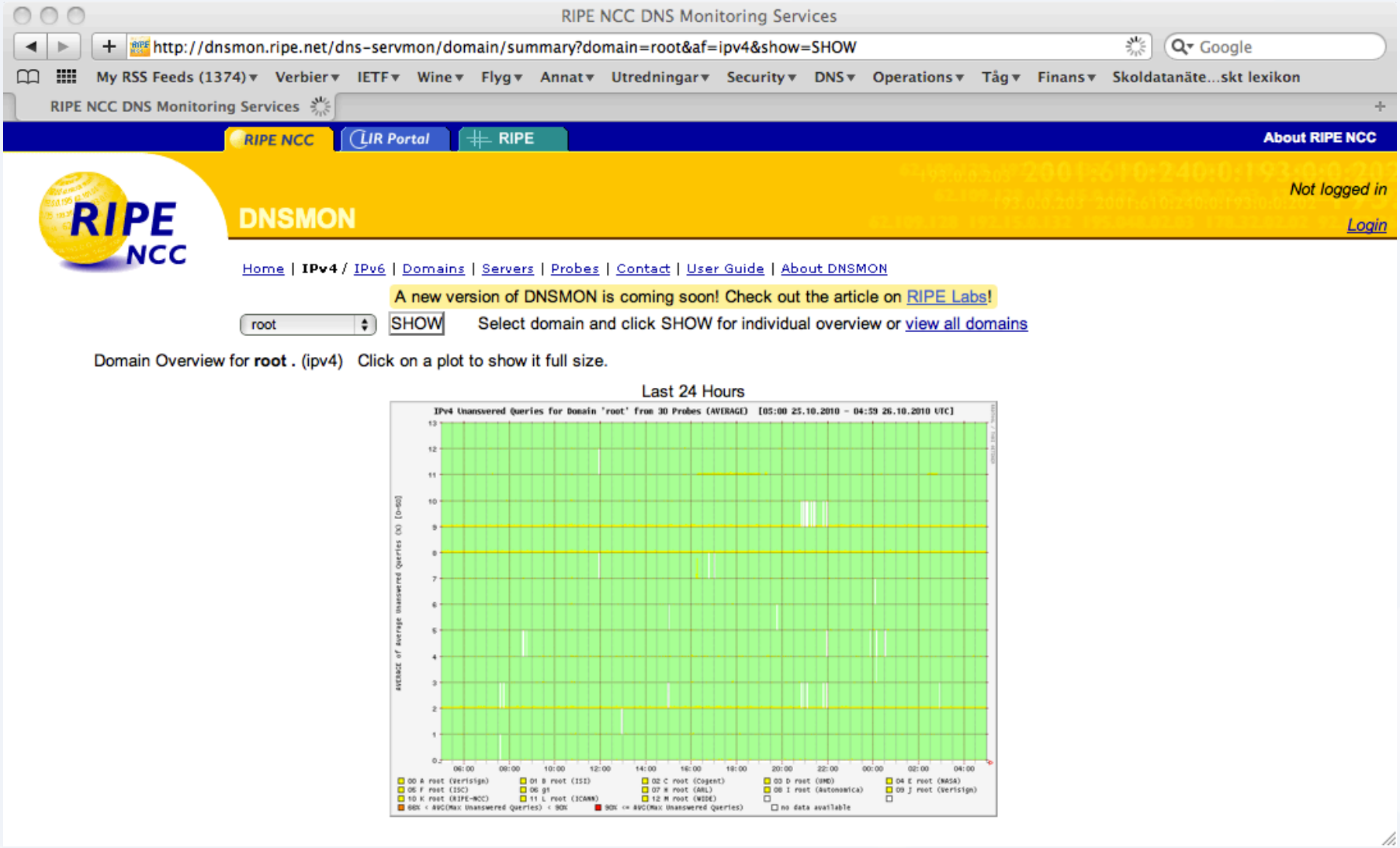
DNS

- Highly critical part of the Internet
- The Internet today is ***the*** authorative channel for information today
- DNS is a distributed system across the Internet
  - With many parts that needs to co-operate and interwork

DNS



Does anyone care?



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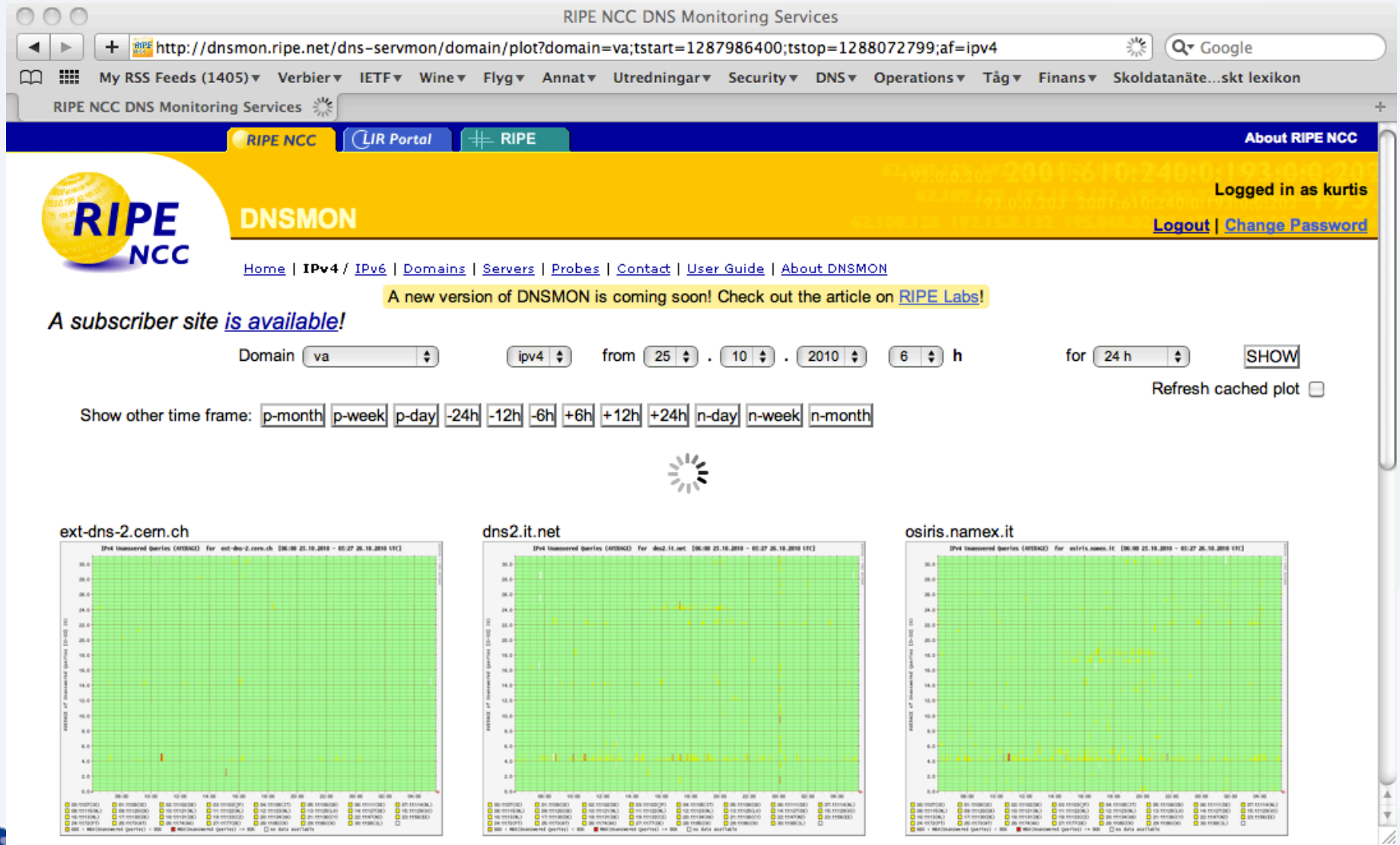

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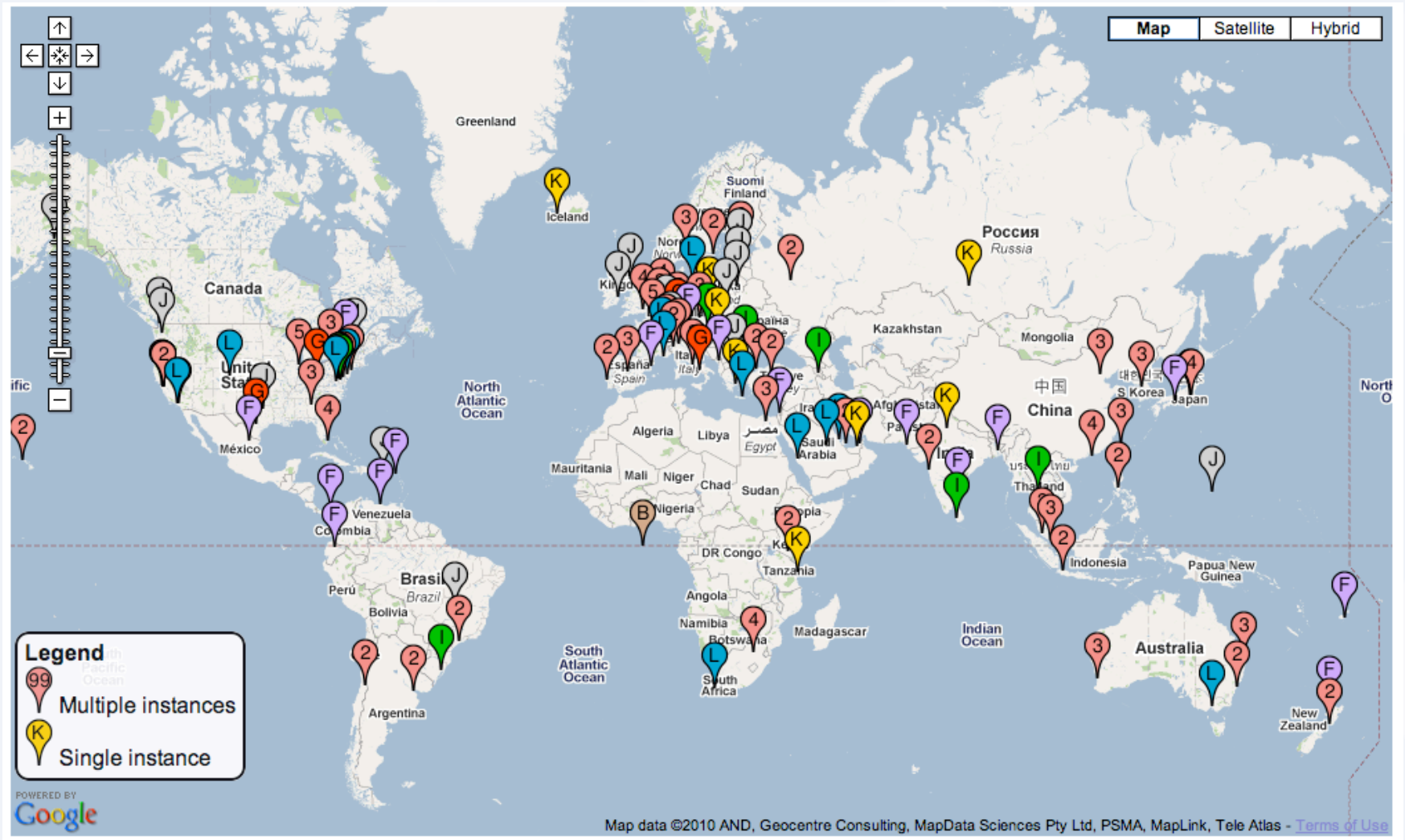

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Resilience of root-servers

- DDoS attack in 2003 partly helped speed up anycast deployment of root-servers
- Diverse set of
  - Operators
  - Equipmenty
  - Software
  - Persons
  - Authority

Resilience of TLDs

- Diverse set of registrars (mostly)
- Diverse set of slave servers (mostly)
- Diverse set of
  - Equipmenty
  - Software
  - Persons
  - Authority

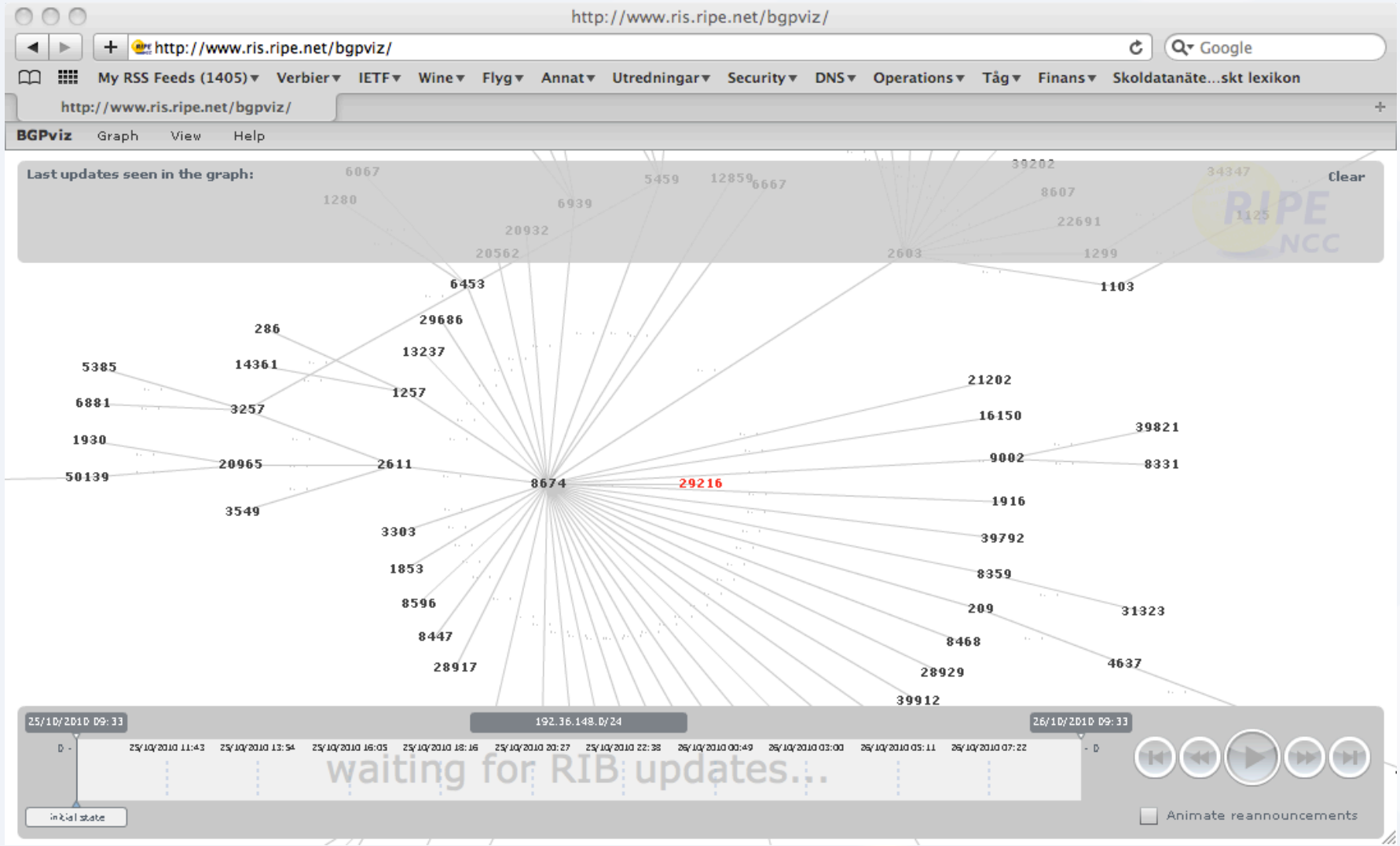
To the enduser?

- We need working transport
- We need working routing
- We need working ISP resolvers

The good news

- Peope are watching those components too!
- Not really visible
  - Problem with regulators
  - Problem with law makers
  - Problem with …

Does anyone care?



When it goes bad?

- Co-operation between ISPs, operators, CERTs etc
  - Works well
  - Is well established
  - Trusted
- We have tried this with
  - DDoS attacks
  - route-hijacks

What can/should be done?

- End users needs to be educated
- DNSSEC deployment
- Training of governments and the agencies
  - ISOC is doing a great job!
- Better understanding of DNS at CERTs and security companies
  - But that is true for many protocols

Last…

- Forces are working to ***make sure*** the DNS fails
- DNS based filtering
- DNS regulation and calls for regulation

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