



netnod

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When DNS fails

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First of all...



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DNS will fail



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BGP will fail



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SIP will fail



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HTTP will fail

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DNS will fail



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404 Not Found

http://www.kurtis.se/404

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404 Not Found

Not Found

The requested URL /404 was not found on this server.

Apache/2.2.14 (FreeBSD) mod_ssl/2.2.14 OpenSSL/0.9.7e-p1 DAV/2 PHP/5.3.2 with Suhosin-Patch Server at www.kurtis.se Port 80



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But what actually
happend?



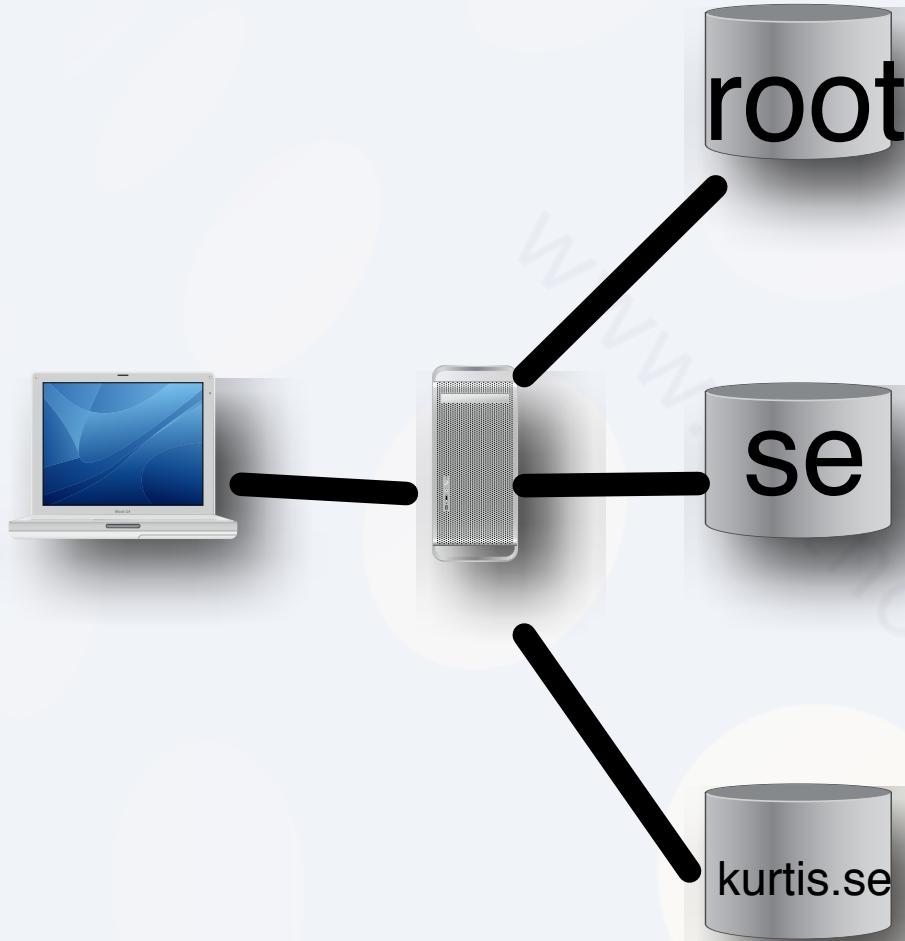
DNS

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



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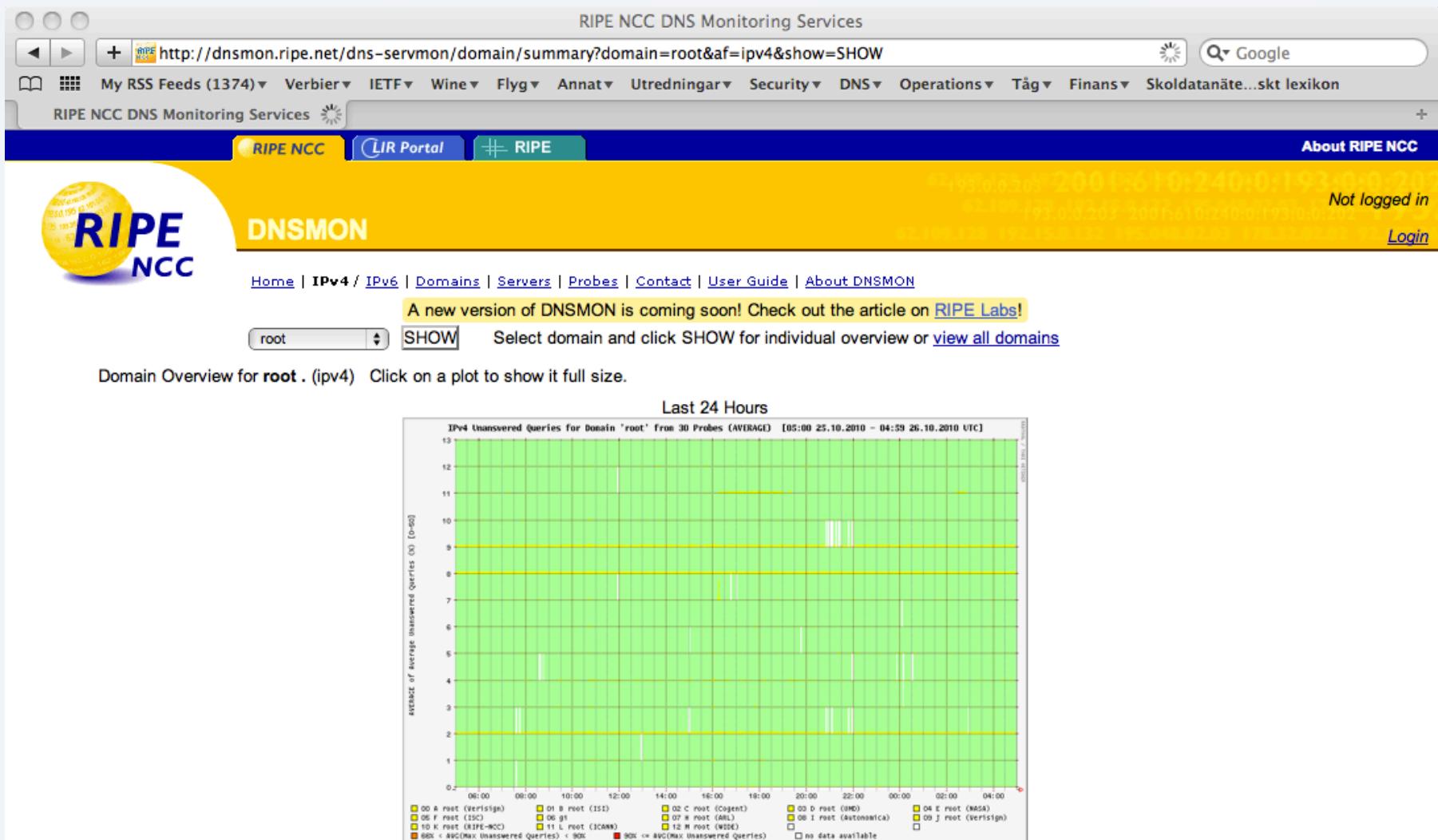
DNS



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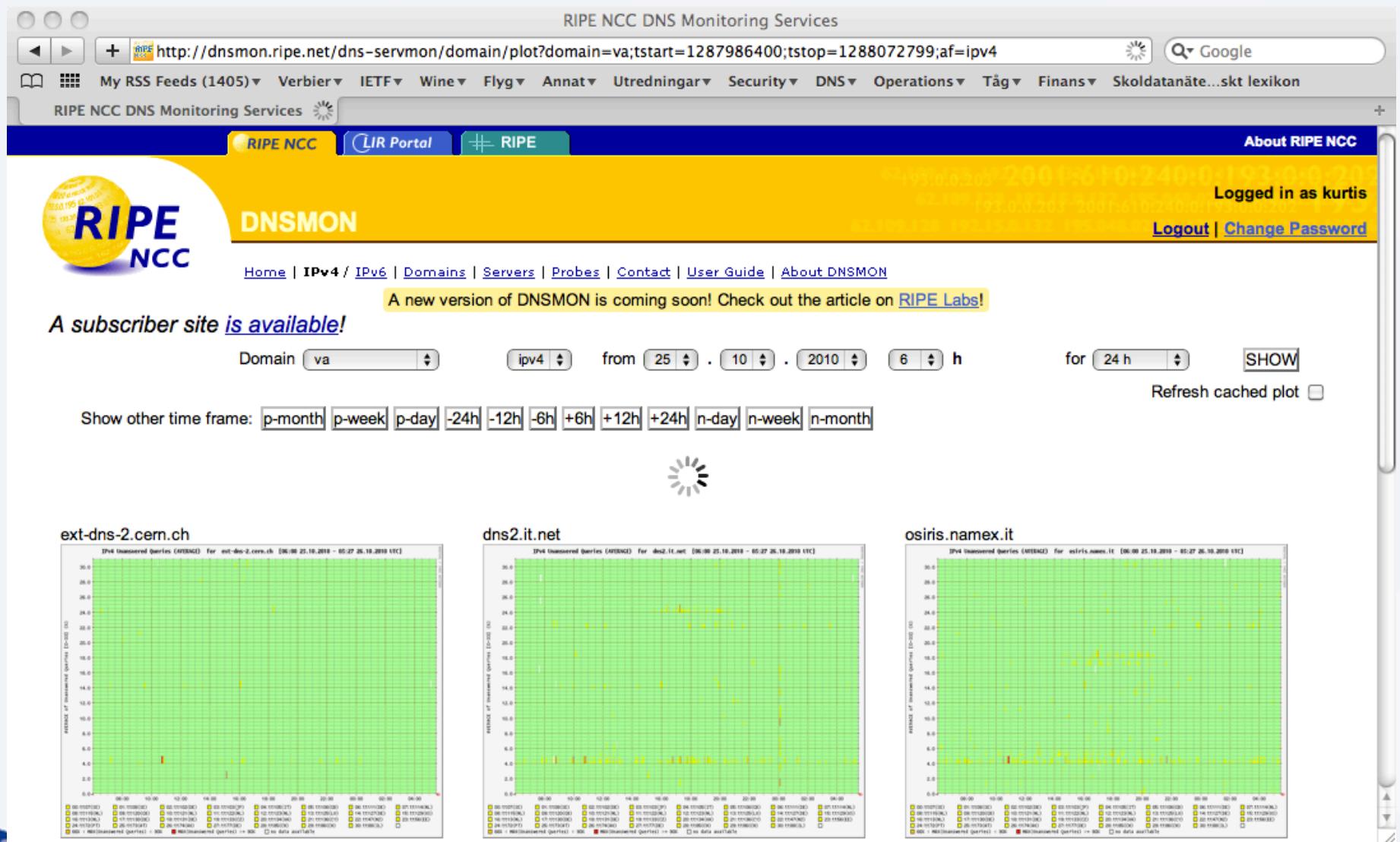
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Does anyone care?

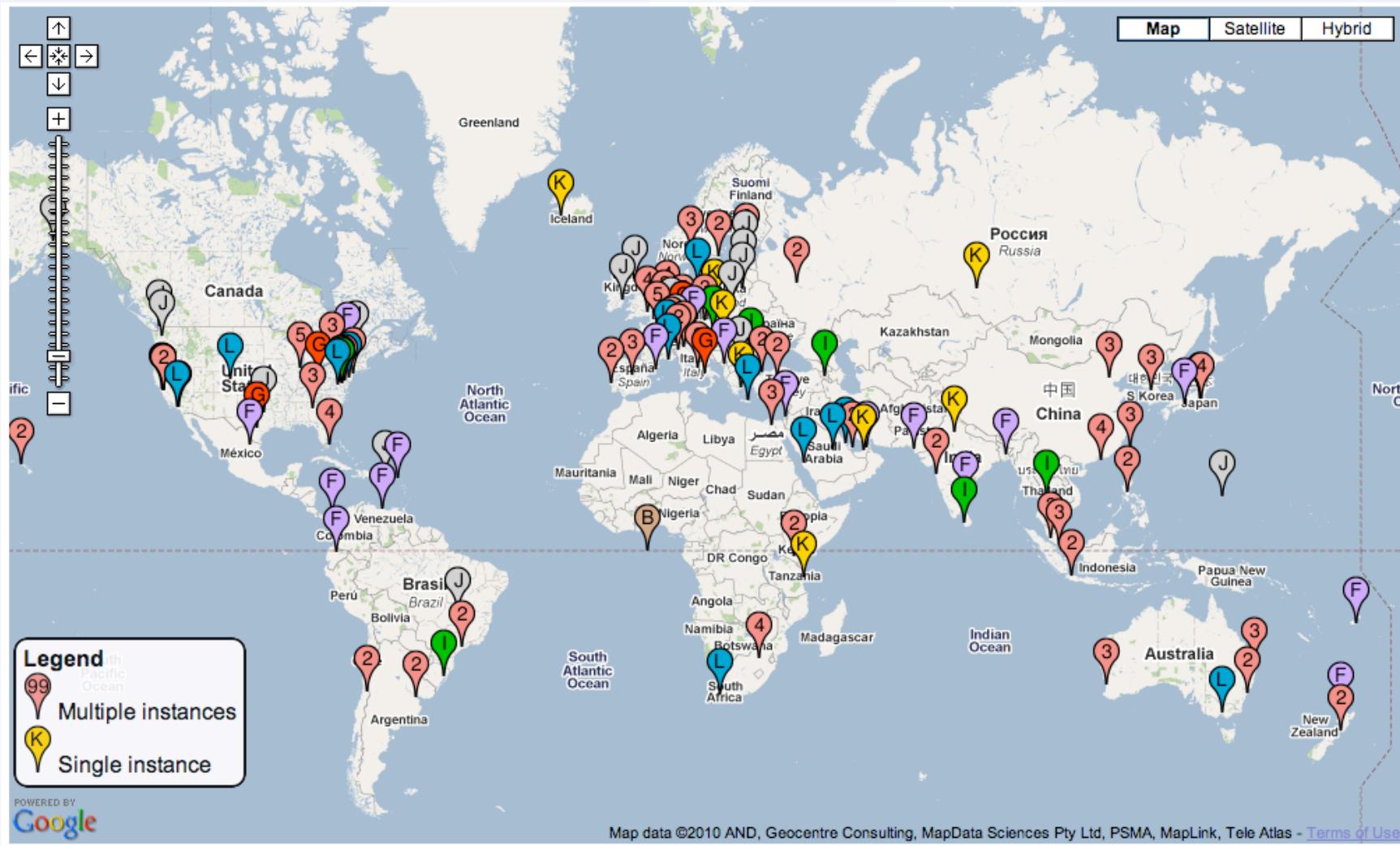


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Does anyone care?



Does anyone care?



Resilience of root-servers

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



Resilience of TLDs

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



To the enduser?

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

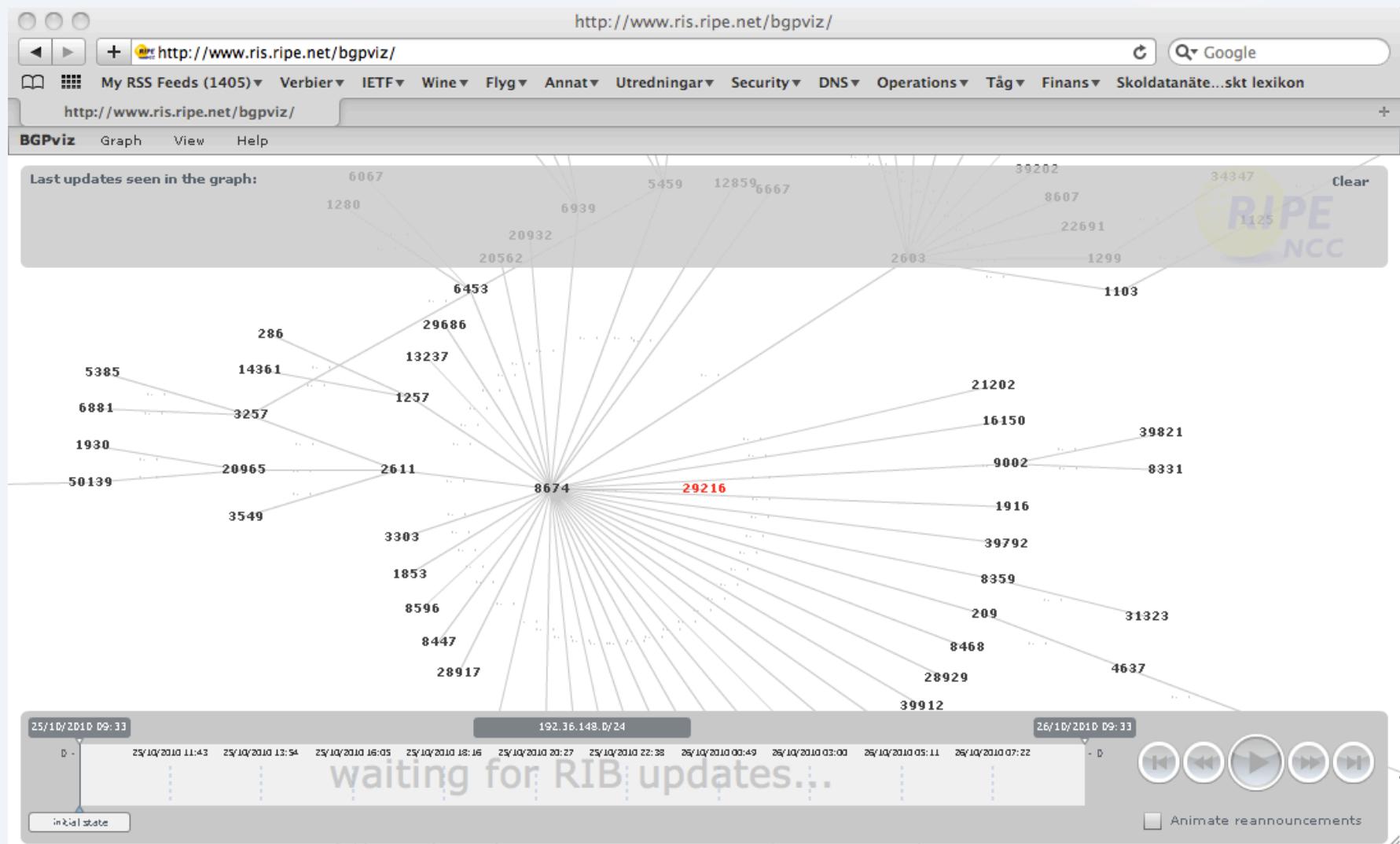


The good news

- People are watching those components too!
- Not really visible
 - Problem with regulators
 - Problem with law makers
 - Problem with ...



Does anyone care?



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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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