DNSSEC at Vidéotron

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Agenda

- Vidéotron's Presentation
- Recursive DNS
  - When?
  - Tests
  - Lessons Learned
  - Side effects
- Authoritative Servers
- Questions

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Vidéotron

- A Quebecor Media flagship company

- Leading Internet service provider in Quebec with 1 341 100 subscribers

- Cable phone service leader with 1 223 400 lines in Québec

- 347 600 subscriber connections to its mobile telephone service

- The largest cable operator in the Province of Québec

- A company that stands out for the quality of its service and its one-stop shopping convenience

- $2.2 billion in revenue (2010)

Recursive DNS: When?

- Original plan (fall 2011): recursive DNS first
  - It would have been easier than starting with authoritative DNS
  - Our registrar did not support DNSSEC (still unsupported)
  - CIRA had not signed .ca
- Good way of protecting our clients from various attacks.
- We currently plan to start implementing DNSSEC in production in 2014.
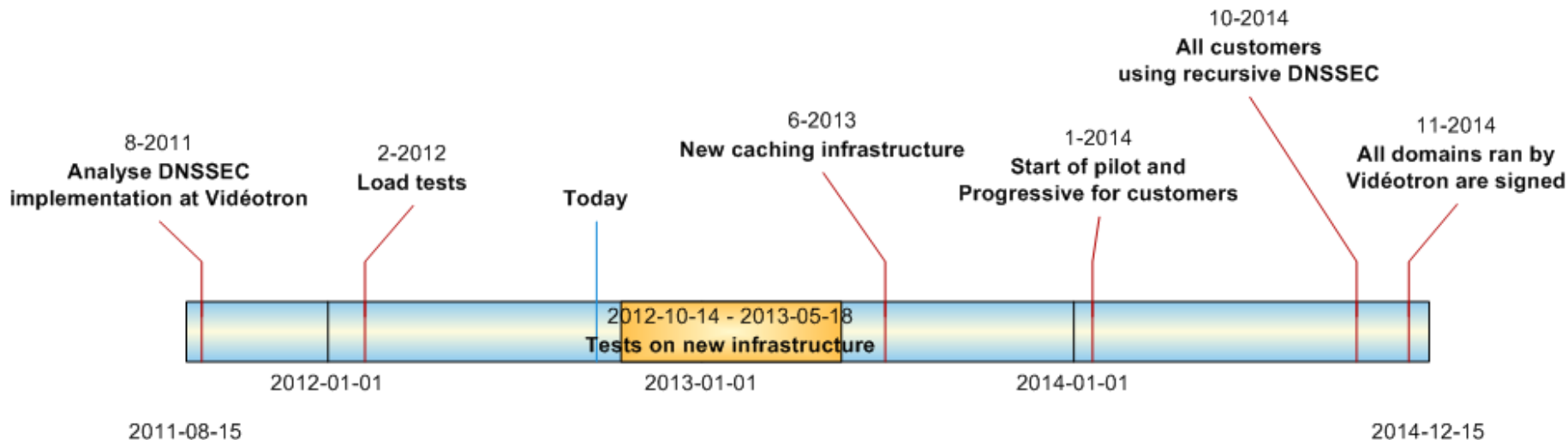
Recursive DNS: Lab tests

- When doing a load test we saw a huge CPU increase as the recursive server tries to authenticate every recursive query.
- The load exceeded the max threshold.
- Therefore, DNSSEC implementation requires a DNS infrastructure upgrade
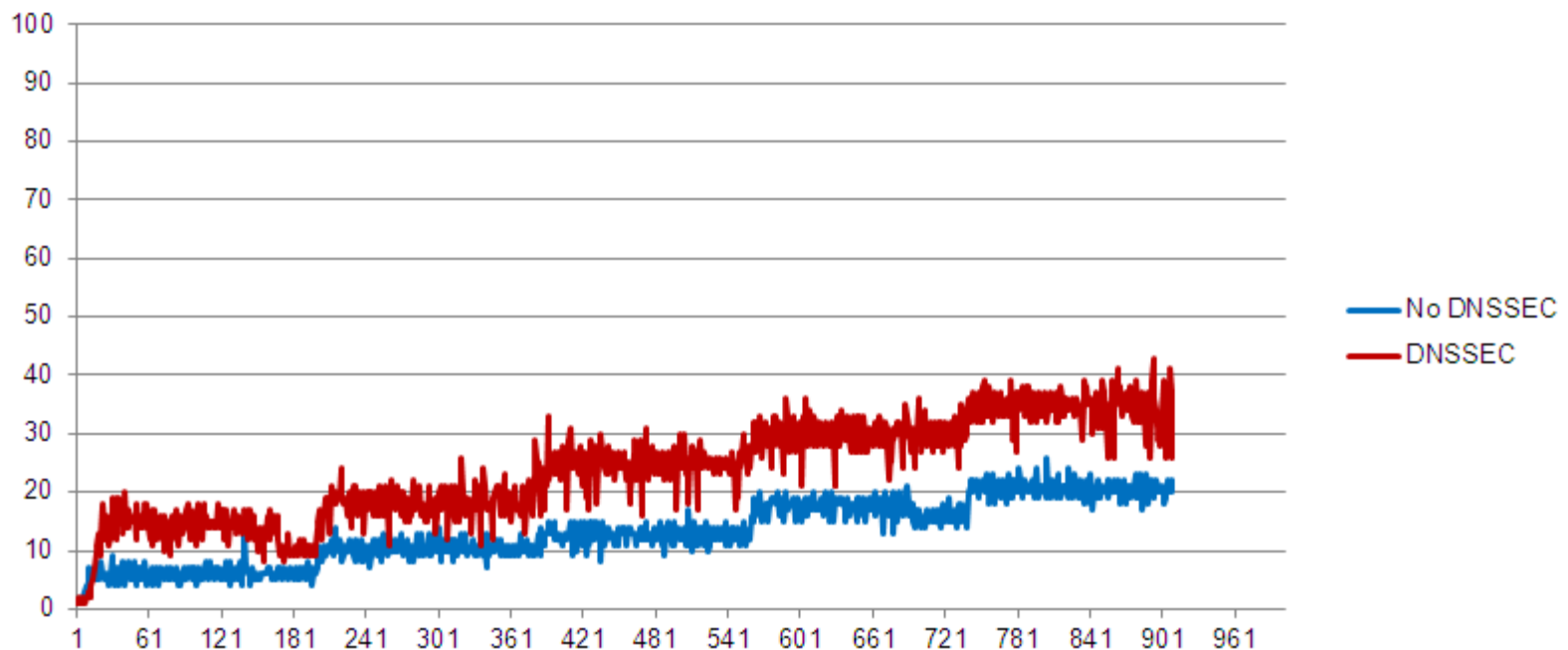
Recursive DNS: Lessons Learned

- **We underestimated the technical requirements**
  - CPU increase
  - Threshold exceeded
- **We under-evaluated the operational aspects.**
  - In case an authoritative server fails DNSSEC validation our customers might think we are the problem:
    - Generates load on our call center
    - Management of "negative trust anchors"
    - How do we get informed of failed authoritative servers ?
    - How to inform our customers?
- **There will be other unforeseen issues.**

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Recursive DNS: Side effects

- Work closely with our customer service:
  - Train them to be able to diagnose DNSSEC related problems
  - Use of dnsviz and other tools
  - Contact the domain administrator when DNSSEC validation fails
  - …
- Manage a blog like Comcast does
- Requirement of a pilot project with testers and progressive transfer of customers
  - Make sure our network is ready: UDP payload size
  - Monitor CPU usage while increasing the number of users
- Managing negative trust anchors:
  - How to get feedback for a domain that is failing dnssec validation?
  - How long to leave the domain in the negative trust anchor?

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Authoritative Servers

- We cannot afford to lose access to any of our domains.
    - Many of our services, like email, rely on authoritative servers.
    - We are also responsible for thousands of domains for our business costumers.
- We are waiting for our registrar to support DNSSEC.
    - Meanwhile we understand that we could send our keys to CIRA directly.
    - Have registrars asked for help from CIRA?

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Questions

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