DNSSEC education

CZ.NIC
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Contents

- Activities
- Approaches
- Lessons learned
- Technical / Administrative / Marketing

- How to make DNSSEC deployment successful?
  
  - **86 888** .cz domains DNSSEC signed
  - **13.1 %** of all .cz
Once upon a time ...

• … long before DNSSEC deployment

• T – 8 months
• “Start early, release often” strategy
• Regular meeting with registrars “Contact days”
• Test systems
  – Signed zones first
  – End user records later …. but not much later

• Check and discuss progress
Registrars feedback

- Survey 6 weeks before public launch
- “What are the plans?”

- Launch day: all registrars (30) supported DNSSEC!
Where is the trick?

- FRED client software since 2007
- Registrars use it directly (instead of API)
- FRED client was upgraded to DNSSEC (no other changes)
- Upgrade mandatory!
- All registrars virtually support DNSSEC … manually
- On the other hand … just few other fields in the registry
- Seriously
  - Registrars with 35% market share at launch
  - Registrars with 80% market share today
Keep it simple & stupid

- What if the user operates more domains?
- Is the DNSSEC voodoo really necessary for each domain?
- 50% of domains: registrar = DNS provider

- Could that be improved?

- Standard DS ...
- “Domain sensitive” - calculated from key and domain name
- Let's see ...
.cz registry data structure

Voila! Keys can be reused!
Resolvers side

- ISPs
- Co-operation with NIX.CZ
- Good response on the workshop …
- … just a few deployed
- No major ISP onboard yet :( 
- DNS / DNSSEC trainings
- DNSSEC users mailing list
- Government?
Pricing

- Feature, not service
- No fee

- Seen as a service on the market
  - Active 24 – “Secure domain” product
  - 2 EUR / year (+25% of the price)
  - ROI: 4 months

- Now the security feature
  - Signed all operated domains
  - Web4u (3,3%)
  - Active 24 (16,4%)
Co-marketing

- Registrar & CZ.NIC together
- Cost split 50:50
- Maximum limit is based on registrar performance
- DNSSEC bonus
- 10% of price given back
- One DNSSEC campaign already during 2009

- Co-operative communication with registrars or even (significant) end users
- Mainly press releases … print & TV few times
End user education

- Increase the awareness … always good
- Spread the word – “How to attack DNS in 21 minutes”
- Marketing communication – Dobra domena
- Together with registrars … how to enable DNSSEC

- Upcoming: more marketing & PR communication
- DNSSEC tools @ beta stage
- Research Labs http://labs.nic.cz
- Open source … get, use and spread!
• Test DNSSEC compatibility – device (and network)
• Live demo ...
• Online database

<table>
<thead>
<tr>
<th>ZYXEL – LIST OF DEVICES</th>
<th>Reports</th>
<th>Score</th>
<th>CZ.NIC score</th>
<th>DNSSEC compatibility</th>
<th>Last test</th>
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<tbody>
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</tbody>
</table>

• Windows / Linux / Mac OS supported
• Download at www.dnssectester.cz
DNSSEC Validator

- Firefox add-ons
- Validates domain name in the address bar
- Key ikon
- No DNSSEC, broken DNSSEC, functional DNSSEC
- Option to change DNS resolvers
- Live demo …
- Download at: https://addons.mozilla.org/en-US/firefox/addon/64247
Open validating resolvers

- Do you have a validating resolver?
- Go to www.dnssec.cz and check ...

Public DNSSEC validating resolvers

<table>
<thead>
<tr>
<th></th>
<th>IPv4</th>
<th>IPv6</th>
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</thead>
<tbody>
<tr>
<td>DNS 1</td>
<td>217.31.204.130</td>
<td>2001:1488:800:400::130</td>
</tr>
<tr>
<td>DNS 2</td>
<td>217.31.204.131</td>
<td>2001:1488:800:400::131</td>
</tr>
</tbody>
</table>
Thank you

Questions?

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