DNSSEC
Context and background

Staffan Hagnell
staffan.hagnell@iis.se
.SE’s Development of Internet

Information
- .SE Internet Guides
- Internet statistics

Specific segments
- Internet in school
- Internet for everyone

Technical deployment
- DNSSEC
- IPv6

Tending the Common
- Reliable e-mail (Antispam)
- Health check of Internet in Sweden
- Broadband tests of Internet accesses

Events
- IETF75
- internetdagarna ’09 Annual conference .se
- Internet Fund
Reasoning

• We believe in perimeter defense
  • We shall do our part
  • We shall provide a high quality DNS service for .SE
    • The DNS should be robust and deliver correct data.

• The need for reliable DNS data
  • By e-mail and Web
  • Future - as a repository for security information for IPsec, SSH, PGP, DKIM …?
DNSSEC Development steps

- Project start, 2001
- Signing of the .SE zone, Sep 2005
- Feb 16, 2007
- Sept, 2007
- Mar, 2009
- Fall, 2009

- Standard Development
- Soft launch with Friendly users
- Commercial launch with Manual administration
- Automation of the admin to provide volumes
- New business model for .SE With EPP
- New system for key management and zone signing With OpenDNSSEC
DNSSEC needs
Market Development
“the value chain for the DNS”
ALL on board from the start!

ICANN/IANA

Registrants → Registrars → .SE registry → DNS Name Service Provider

DNS the Domain Name tree

DNS Resolver

Applications

i.e. ISP’s

Internet users
## Key findings February 2009

<table>
<thead>
<tr>
<th>Registrants</th>
<th>There exists an interest in DNS and adopting DNSSEC, but obstacles exist to get it.</th>
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</thead>
<tbody>
<tr>
<td>.SE Registrar</td>
<td>A growing interest for DNSSEC, but many are still missing out.</td>
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<tr>
<td>DNS Name Service Provider</td>
<td>The lack of tools for key management and administration of DNSSEC are still an obstacle.</td>
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<tr>
<td>.SE</td>
<td>Ongoing system development and efforts to promote DNSSEC among Registrars and key Registrants.</td>
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</table>
| Resolvers | A wide operational experience exists.  
There is an interest to find common solutions for TLD public key distribution. |
| Applications | *Future work with DNSSEC support for DKIM milter* |
| Users | *No end user applications.*  
*How to handle end user awareness?* |
Does anybody want DNSSEC?

Market research, November 2006

- Survey to .SE domain name holders
- 1 406 randomly selected, and 259 answers (20%).
.SE is planning the commercial launch of .SE-DNSSEC.
How interesting is this to you/your company?

- Interested: 51%
- Very: 14%
- Not particularly: 29%
- Not at all: 6%

259 answers
Are you willing to pay?

How would you react to an annual charge of €50 for this service? Is it high or low?

- Rather high 54%
- Very high 22%
- Very low 2%
- Quite low 22%

259 answers

The survey indicated €20-€30 to be reasonable price.
Pricing strategy

- An additional service
- Kick-backs and establishment subsidiaries to registrars
- No add-on, natural part of the domain

Yearly fee
2007: 240 SEK (€ 26)
2008: 80 SEK (€ 8,5)
2009: 0 SEK

Rebate?
.SE domains with DNSSEC
End user value?

<table>
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<tr>
<th>Domain name holders</th>
<th>.SE registrars</th>
<th>DNS Name Service Providers</th>
<th>.SE</th>
<th>Resolver operators</th>
<th>Applications</th>
<th>Internet users</th>
</tr>
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<tbody>
<tr>
<td></td>
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<td>Phase 1</td>
<td></td>
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<td>Phase 2</td>
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Resolvers

- Registrants
- Registrars
- ICANN/IANA
- .SE registry
- DNS Name Service Provider
- DNS Resolver (i.e. ISP's)
- Applications
- Internet users

DNS the Domain Name tree
DNS Name Service Provider

Registrants → Registrars → .SE registry → ICANN/IANA → DNS Name Service Provider → DNS Resolver → i.e. ISP's → Applications → Internet users

DNS the Domain Name tree
Share of .SE domains held by largest DNS Name Service Providers (2008)
.SE registars are DNS Name Service Providers as well

Estimated share of .se domains run by registrars

- .SE Registrars
- Non .SE Registrars
.SE’s registrars

- Five registrars from day 1
- Drive for getting more Registrars
  - Kick-back on first 5,000 registrations
  - Financial establishment support
- Today
  - Frobbit AB
  - Interlan Gefle AB
  - Gotlandica Internet (BRS - Intron AB)
  - Leissner Data AB
  - Loopia AB
  - NEware AB
  - Melbourne IT CBS
  - Yask
  - City Network Hosting AB
  - Larsen Data v/Peter Larsen
  - TDC Sverige AB
Expectation?
2010 Vision for DNSSEC

- DNSSEC is considered a natural part of DNS
- DNSSEC is fully deployed
  - by many important domains
  - into many useful applications
- Ongoing work to increase End User Value