Challenges and Opportunities in DNSSEC Deployment and Usage – A 2014 View

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ICANN 50, June 23, 2014, London England

(Original presentation in March 2012 at ICANN 43)
What Should The End User Experience Be?

Mixed. The end user experience is still not determined… but I sense a growing view that we don't want the TLS/SSL error warning experience.
DNSSEC-Validating Resolvers

Application Developer Libraries

Good News – DNSSEC appearing in more libraries – and the release of the getDNS API is a big step.

DNSSEC Developer Libraries

At the current time we are aware of the following libraries for developers seeking DNSSEC support to their applications:

C
- Icns from NLnet Labs
- libval from the DNSSEC-Tools Project
- libunbound, a component of the Unbound DNS resolver that can be used in applications

Erlang
- dns_erlang

Go
- godns

Java
- dnsjava
- DNSSEC4J (based on the DNSSEC primitives in dnsjava)

Perl
- Net::DNS and Net::DNS::SEC
- Perl modules from the DNSSEC-Tools Project

Python
- dnspython – available at dnspython.org and on Github
- python-dnssec
- PyUnbound – a python wrapper for the libunbound library (mentioned above under C)

Ruby
- dnsruby

Source: www.internetsociety.org/deploy360/resources/dnssec-developer-libraries/
Domain Name Registrars

### Deploying DNSSEC

Registars that support end user DNSSEC management, including entry of DS records in the DNS. Updated: 27 May 2014

<table>
<thead>
<tr>
<th>Registrar</th>
<th>Accepts DS records for</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>123domain.eu (DE)</td>
<td>de, eu, bo, se, ez, fr</td>
<td></td>
</tr>
<tr>
<td>AB Name ISP (SE)</td>
<td>be, biz, com, eu, net, org, se, us</td>
<td></td>
</tr>
<tr>
<td>Binero (SE)</td>
<td>se, eu</td>
<td></td>
</tr>
<tr>
<td>BIT B.V. (NL)</td>
<td>com, net, org, nl, be, de, eu, info, biz</td>
<td>(1) (DS via email)</td>
</tr>
<tr>
<td>CSL Computer Service</td>
<td>de, ni, com, net, cc, tv, me, org, biz, us, at, uk, eu</td>
<td>(2)</td>
</tr>
<tr>
<td>Langenbach GmbH dba JOKER.COM (DE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DK-Hostmaster (DK)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domaininfo AB (SE)</td>
<td>se, eu, us, biz, com, net</td>
<td></td>
</tr>
<tr>
<td>DYN (US)</td>
<td>com, net, org, biz, info, se</td>
<td>(1) (2)</td>
</tr>
<tr>
<td>Dynadot (US)</td>
<td>com, net, org, biz, be, cc, de, eu, in, com, net, org, in</td>
<td>(2)</td>
</tr>
</tbody>
</table>

All domains are automatically signed.

A list of DNSSEC DS supported domains cannot be located on the site.

Also supports DS record entries for domains you may host elsewhere.

2013 R.A.A. major source of action here.

User Experience at the Registrar / DNS Hosting?

Mixed. Web sites have only gotten MORE complex, but some of our tools have gotten better (ex. Bloodhound).
Awareness of DNSSEC Information

Good News – More and better information. Still more work to do, but getting better.
Rationale for Deploying DNSSEC?

Good News – DANE a major help. Seeing DANE/DNSSEC deployment in XMPP, SMTP, IM – and interest for web sites. Heartbleed vulnerability increased interest in securing TLS.

Snowden revelations also increased interest in overall Internet security.
(New) Solving The "DS Upload" Issue

How to communicate to the parent zone that a new DNSSEC key has been published

- Potential solutions
(New) Secure Transfer of Domains Between Registrars

Once a domain is signed, what is the best way to transfer it between registrars?

• Potential solution:
(New) Network Infrastructure

Roadblocks in terms of middle boxes, non-compliant resolvers, etc.

draft-ietf-dnsop-dnssec-roadblock-avoidance

What Else?
Thank You!