DNSSEC in NL
Testbed #2

Jaap Akkerhuis
Summary

Players
DNSSEC 101
Testbed #1
Testbed #2: SECREG
  Goals
  Set up
  Lessons learned

Future
Players

SIDN
Registry for NL
Bart Boswinkel
Yours truly

NLnetlabs
Research arm of NLnet foundation
Miek Gieben
Ted Lindgreen
DNSSEC 101

What DNSSEC does not

- Secure the internet
- Create a PKI
- Encrypt the IP layer
- Secure IP rights, such as © Ⓡ Ⓢ
  IP != IP™ lawyers

DNSSEC does

- Authenticate queries
- Allow spoofing detection
DNSSEC 101 (2)

Why DNSSEC?

- Trace to trusted source
- Helps to deploy security protocols
  - IPsec
  - PKI
- Raises quality of zone data
  - Authenticate denial of existence
    - Wild cards are hard!
Testbed #1

Operational done in a shadow tree: nl.nl
Classic RFC 2535
Crypto too expensive?
  Not
Key signing too hard
  Yes
    Sig@Parent → DS record
New RFC’s: DNSSEC-bis
Testbed #2: Goals

Hands on operational experience
What can be automated?
Impact on registry, registrar, registrant
Testbed #2 Operation

Separate “secure” registry: SECREG
Separate name servers
  Allows registrars to play
    Registrants as well
    and users?

Two Servers in nl, one in se
  One recursive
Limited lifetime (Yr 2003)
Testbed #2

Zone signed every day
   1½ Hour (800K domains, 1.8M Records)
Size
   350MB Zone file
   15 Minutes loading time
One DS per secured zone
   (One KSK)
One operational Problem
SECREG Operations

Securing a domain
  Getting the KSK signed

Key rollover
  Replacing existing key

Block
  Revoke security (back to normal)
    Key compromise
    Administrative reasons
SECREG Registrars

Registrar #1
  Production system
  15000 domains
  Same key for all

Registrar #2
  140 domains
  Different keys
Findings

No problem with
  Signing
  Serving
  Zone size
  Key rollover
Lot’s can be automated
Findings

Contact role needed
  Zone contact, signs updated zone file
Distributing Registry key
  Not needed when root is signed
More emphasis on security
Handling of key compromises
Findings

When not to do DNSSEC

Weak existing authentication of registrars or registrants

Too bold expectations

such as dnssec secures the network

...
Useful links

The full report:
  www.secreg.nlnetlabs.nl

Lots of links to DNSSEC material:
  www.dnssec.net
Questions

?????