

DNS Workbench



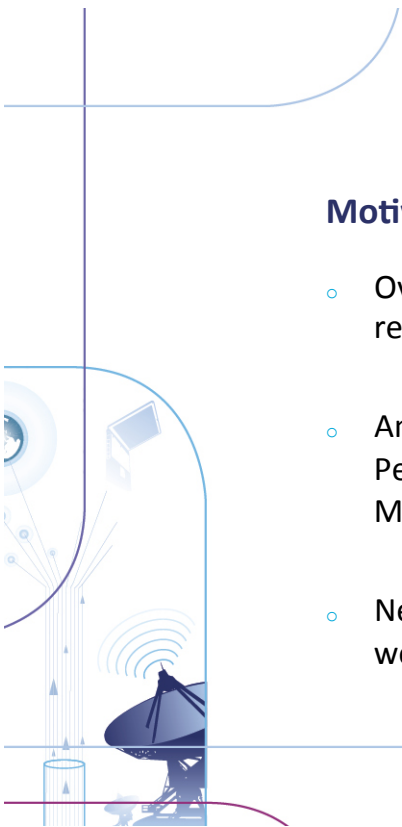
ccNSO Tech Day @ ICANN47
Durban, South Africa
Mon Jul 15, 2013
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SIDN Labs

- SIDN's R&D team
- SIDN = .nl registry (Netherlands)
- 5.2M domain names, 1.600 registrars
- Largest DNSSEC zone in the world (1.5M signed)





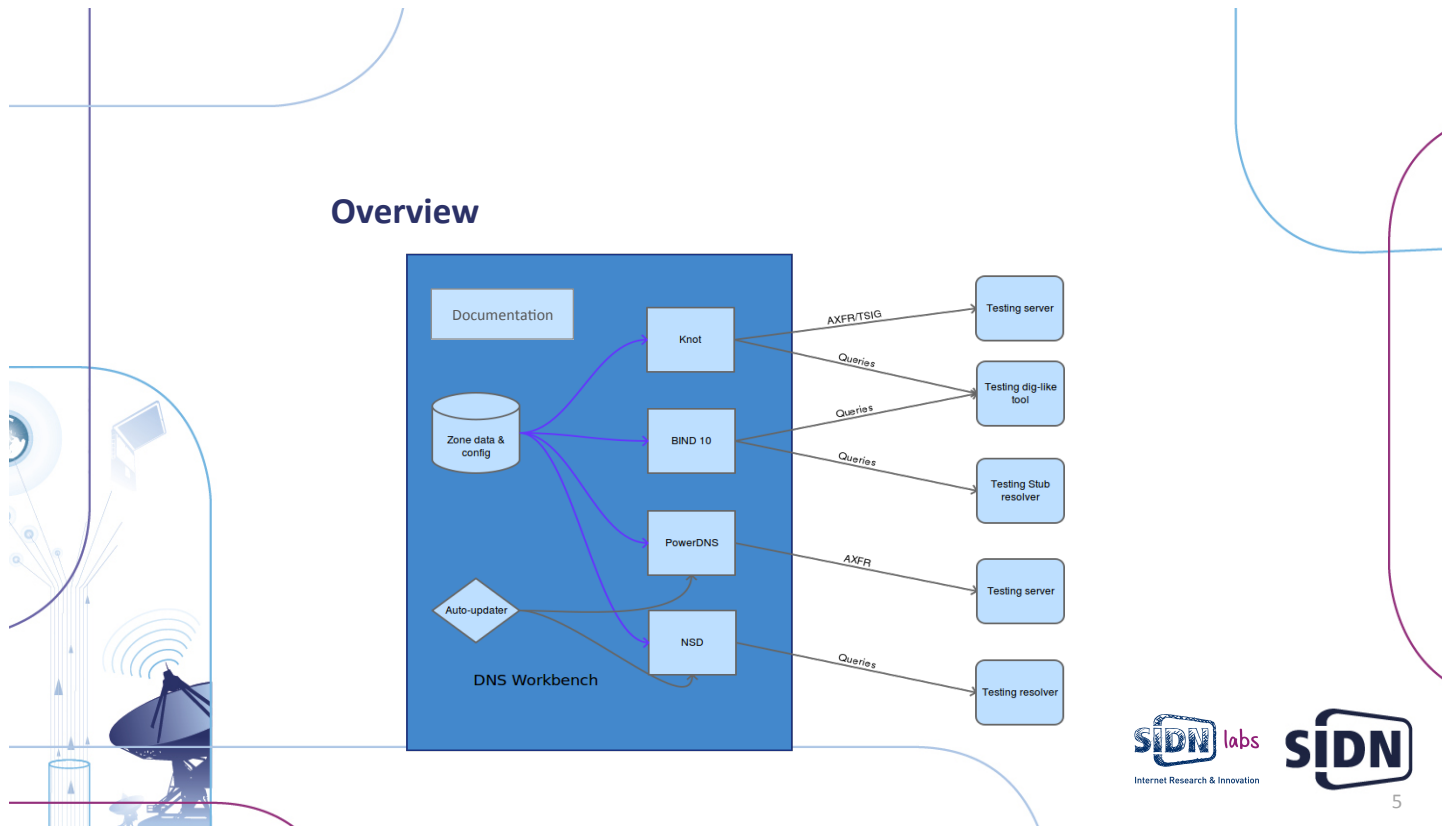
Motivation

- Overheard: “Does anyone know a public zone with a wildcard record, using opt-out, signed by Idns, served on BIND 9?”
- Answer: “Oh yeah, there’s one on that server, I think. Perhaps. Well at least there was one last year. I think. Maybe. I don’t know.”
- Need for a one-stop-shop for name server testing that is well-managed and supports multiple implementations

Enter the DNS Workbench



Overview

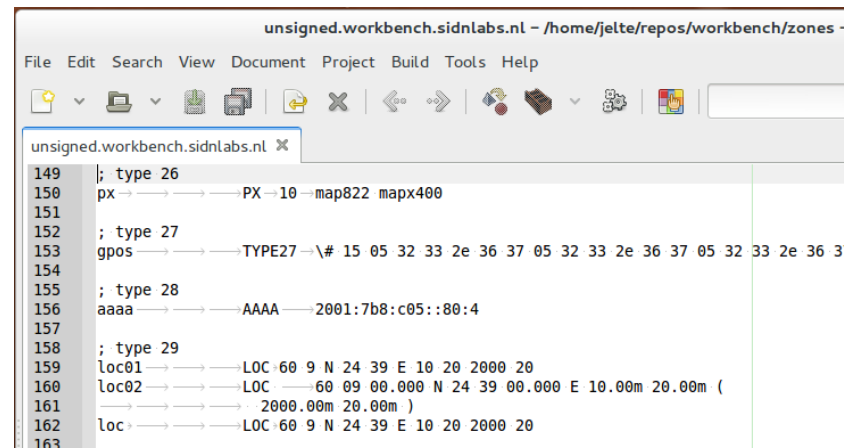




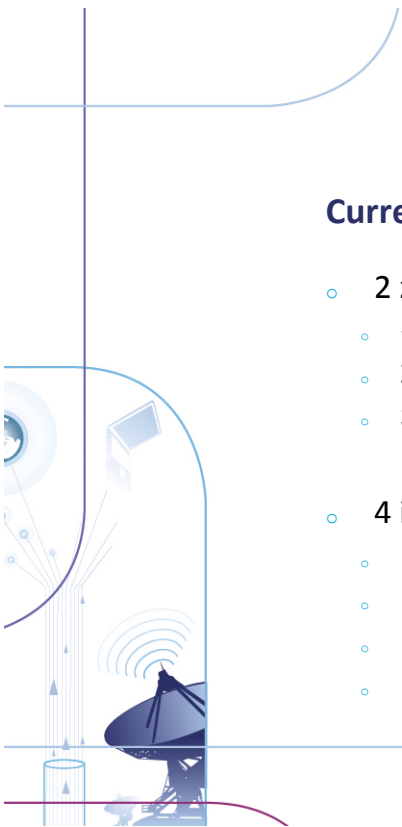
Added Value

- One-stop-shop and easy-to-use service for name server testing, supporting many RR types
- Well-documented set of zones, consistently available across multiple name server implementations
- DNS developers: interoperability testing, discovering and reporting bugs in name server software
- DNS operators: workbench as a reference point for production servers (compare responses)

Support for many RR Types



```
unsigned.workbench.sidnlabs.nl - /home/jelte/repos/workbench/zones -
File Edit Search View Document Project Build Tools Help
unsigned.workbench.sidnlabs.nl x
149 ; type 26
150 px -> -> -> PX - 10 - map822 mapx400
151
152 ; type 27
153 gpos -> -> TYPE27 - \# 15 05 32 33 2e 36 37 05 32 33 2e 36 37 05 32 33 2e 36 3
154
155 ; type 28
156 aaaa -> -> AAAA -> 2001:7b8:c05::80:4
157
158 ; type 29
159 loc01 -> -> LOC 60 9 N 24 39 E 10 20 2000 20
160 loc02 -> -> LOC -> 60 09 00.000 N 24 39 00.000 E 10.00m 20.00m (
161 -> -> 2000.00m 20.00m )
162 loc -> -> LOC 60 9 N 24 39 E 10 20 2000 20
163
```



Current Setup

- 2 zones
 - {unsigned, signed}.workbench.sidnlabs.nl
 - Zones transferable with and without TSIG
 - Several algorithms, keys public
- 4 implementations
 - NSD 3.2
 - BIND 10 1.1
 - Knot 1.2
 - PowerDNS 3.0

Some Example Uses

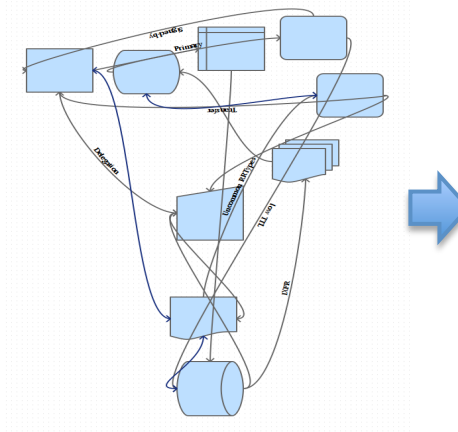
- Query directly:

```
dig +dnssec -t MINFO minfo.signed.workbench.sidnlabs.nl  
@knot.sidnlabs.nl
```

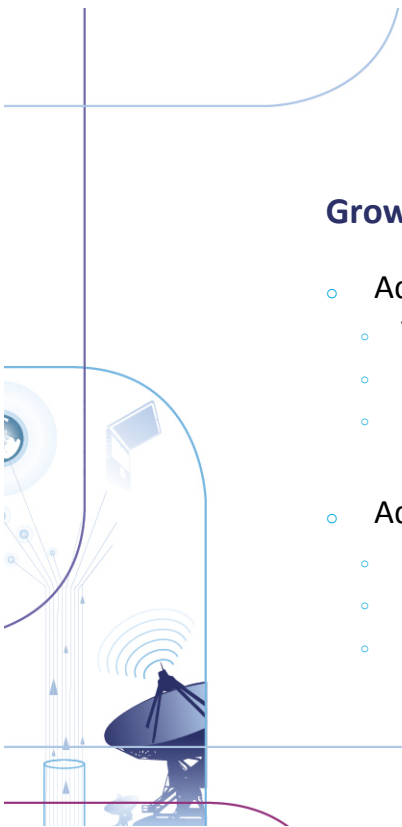
- Use knot.sidnlabs.nl as the primary for your secondary:

```
zone:  
  name: "unsigned.workbench.sidnlabs.nl"  
  request-xfr: 94.198.152.169 NOKEY
```

Challenge: Complexity



Approach: start small and let grow



Growth Path

- Additional servers
 - Yadifa
 - BIND 9
 - NSD 4
- Add (many) more zones
 - Different signers and parameters
 - 'Delegation' corner cases
 - Known bad data cases (e.g., erroneous signatures)



Experimental Service -> Feedback Wanted!

- Other testables: what else might be useful to add to the workbench?
- Did the workbench help you as a developer or operator? Let us know when and how!
- Current “score”
 - Fixed handling of uncommon RR types
 - Tested recent TSIG issue

Questions?

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