DNS/DNSSEC Workshop Software Overview

DNS software overview

- Many vendors and software platforms out there
- Commercial and Open Source solutions
- Good overview here

https://en.wikipedia.org/wiki/Comparison_of_DNS_server_software

- On the Internet, historically Berkeley/ISC BIND has been the dominant software platform

DNS software mini-comparison

Software	Authoritative	Recursive	DNSSEC	HSM	Auto-Signing
ISC BIND	X	X	X	X	X
Unbound		X	X	-	
KNOT	X		X	In development	X
kresd		X	X	-	
Microsoft	X	X	X	X	X
NSD	X		X		
PowerDNS	X	X	X	?	X
Secure64	X		X	Built in h/w	X

There are many more. Tis is not meant to be a full summay

DNS software overview (2)

- BIND is the most popular
- NSD popular authoritative
- Unbound is popular recursive
- But KNOT is gaining
- We'll focus on
  - BIND
  - NSD
  - KNOT

DNS software: BIND

- Version 4 released with BSD 4.3 in 1986
- Currently 9.11
- Most feature rich DNS implantation out there
- Often considered "the reference"
  - BIND zone file format is the de-facto standard
- Used in many commercial product (e.g., InfoBlox)

DNS software: BIND (2)

- Features include
  - ACLs
  - Views
  - DB API
  - Dynamic DNS support
  - DNSSEC signing and validation
  - Many more…

DNS software: NSD

- Developed by NLNetLabs
- Authoritative only
- Developed to mitigate risk os a single bug taking out all BIND implementations
- Root servers use BIND, NSD, and now KNOT
- Zones are "compiled" into a precalculated "on the wire" format
  - All possible answers are calculated, then stored into a binary DB, ready to send out
  - Very fast

DNS software: Unbound

- Developed by NLNetLabs
- Caching only
- Developed with performance in mind
- Much more lightweight than BIND
  - More efficient memory usage
  - More features to control caching
  - Fast

DNS software: KNOT/kresd

- Developed by CZ NIC
- KNOT: authoritative, kresd: Recursive
- Developed from scratch with performance in mind
- Lightweight and extensible with LUA scripts
  - New but fast
  - Gaining adoption

Questions?