Resolving DNS on FreeBSD
Past, present, future

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Past

- History
  - named at least since FreeBSD 2.0 with NAMED 4.9.3-beta
  - libc res_* at least since 4.3BSD

- Complete BIND in base
  - nslookup, host, dig, nsupdate
  - named
    - recursor
    - authoritative
  - dnssec-keygen, dnsec-signzone, etc.
Why not BIND?

Technical, not political!

ISC is a major sponsor of FreeBSD Project infrastructure
Why not BIND?

- Smaller codebase
  - recursor only
- Security Advisories
  - see smaller codebase
  - highly scrutinised
    - not necessarily related to code quality
- Support lifecycle
  - upgrading or backporting
  - not better in other projects
- BIND10
  - external dependencies
    - python
    - botan
  - BIND9 EOL?
- Historic implementation on FreeBSD
  - Too many options to support
Abbreviated wish list

- DNSSEC-aware resolver library
- Caching recursor daemon
- CLI tools
- Liberal license (BSD or similar)
Ecosystem

- BIND
- knot
- Powerdns
- djbdns
- dnsmasq
- ldns / unbound
- ...

Danmarks plads på Internettet
If not BIND, then…

- BIND
- knot (GPL, utilities only)
- Powerdns (GPL)
- djbdns
- dnsmasq (GPL)
- ldns / unbound
- …
Present

- unbound
- ldns
- host-wrapper, drill

- Local caching recursor daemon only
  - Any resolver supported as 3rd party package
- Simple setup
  - For complicated setup, install package
- DNSSEC validating
- SSHFP
- Easy to replace
  - FreeBSD 11
Future

- DNSSEC-aware resolver library
- Caching resolver daemon
- CLI tools (host, dig, (nsupdate))
- Liberal license (BSD or similar)
- low footprint
- fast
- thread safe
- compartmentalised (Capsicum, Casper)
- standardised API
  - DANE, SSHFP, …
  - [get-api (Hoffmann)]
  - draft-hayatnagarkar-dnsext-validator-api
- In production in 1,5 years
Questions?

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Wiki: https://wiki.freebsd.org/DNSBase

Slides: 
http://people.freebsd.org/~erwin/presentations/20131118-ICANN-FreeBSD-DNS.pdf