BIND 10

Beijing, 2012-06-04

Shane Kerr

<shane@isc.org>

What is BIND?

- BIND is DNS software
- Current version is BIND 9
  - Runs on Unix-like systems and Windows
  - A multi-threaded, monolithic application
- Used by many DNS servers worldwide
  - Probably most. Possibly more than 70%.
- Supports DNS protocols as defined by IETF
  - RFC 1034/1035, XFR, DDNS, DNSSEC, …
- Maintained and supported by ISC

Why BIND 10?

- BIND 9 is more than 10 years old
- The computing world has changed
  - Multi-core machines, massive RAM, ...
- The networking world has changed
  - Fiber everywhere, mobile devices, ...
- DNS software "marketplace" has evolved
  - Special-purpose servers, new ideas
- An architecture for the next 10+ years
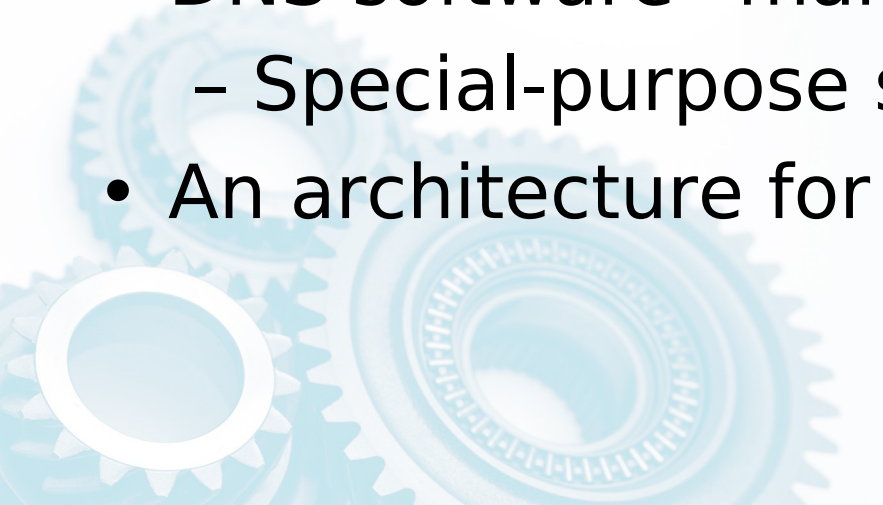
What is BIND 10?

- Authoritative DNS server
  - DNSSEC-enabled
  - SQL or in-memory data sources
  - Master and/or slave mode
- Recursive DNS server
  - No DNSSEC, few benefits over BIND 9
  - Expect almost complete rewrite!
- DNS libraries
  - C++ and Python

BIND 10 History 101

- Original idea from Paul Vixie
- *Motivation for BIND 10* written by Paul Vixie & João Damas
- 10 TLDs agreed to be initial sponsors
    https://www.isc.org/bind10/sponsors
- 2009-04-01 (April 1st, really!) start

What is Special about BIND 10?

- Customizable
  - Both "out of the box" and bespoke
  - Full run-time control (no restarts)
- Scalable
- Reliable
  - Well-tested
  - Resilient to failures and software errors
- Re-usable
  - Well-defined APIs and libraries

Cool BIND 10 Technologies?

- Cooperating processes
  - Helps customization, scaling, ...
- Generic data sources
  - SQLite and in-memory now, more later
- Full run-time configuration
  - New modules can use easily
  - RESTful HTTP/SSL interface
- Best logging system around

Putting the *Open* Back in *Open Source*

- BIND 10 development is *public*
- https://bind10.isc.org
  - Plans, designs, meeting minutes, …
  - Build reports, bug tickets, …
  - Public Git repository
- Working with other open source
  - Giving back to upstream
- Today!
- Goal: a product *and* a community

5 Year Plan (Original)

- Year 1: Authoritative-only server
- Year 2: Recursive server
- Year 3: Production-ready
- Year 4: Drop-in BIND 9 replacement
- Year 5: Really fun stuff
  - Cluster support
  - Embedded support
  - Smart, adaptive DNS behavior

5 Year Plan (Current)

- Year 1: Authoritative-only server
- Year 2: Recursive server
- Year 3: Authoritative enhancement
- Year 4: Official Production Release; Recursive performance
- Year 5: Refinements
  - Hooks
  - Views
  - Alternate data sources

BIND 10 History 201

- 2010-03-19 1st prototype release
  - Following releases about every 6 weeks
- 2010-04-22 Mascot contest!
- 2011-02-24 recursive resolver release
- 2011-05-19 TSIG arrives
- 2011-07-05 ACLs arrive
- 2011-08-19 More TSIG, ACL, RR types
- 2011-10-13 IXFR-in, DHCP
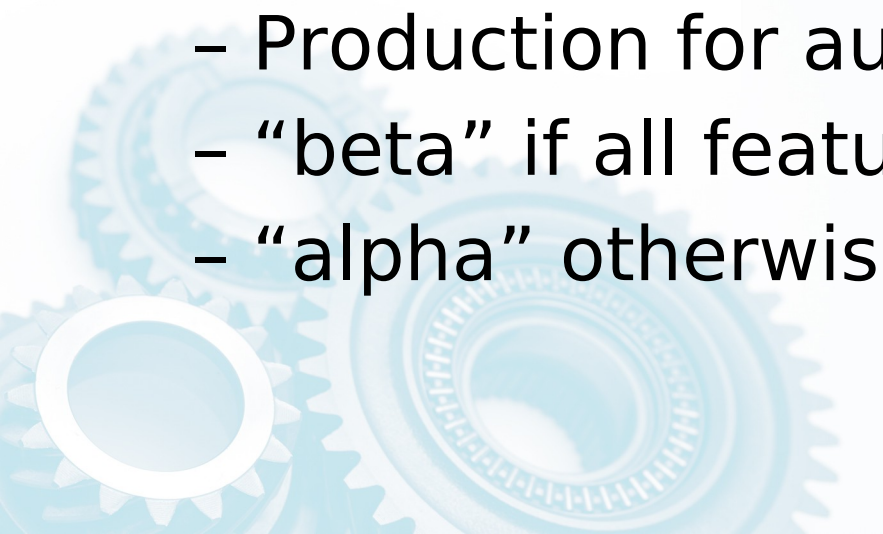- 2011-11-24 IXFR-out

BIND 10 History 202

- 2012-xx-xx NSEC3 in-memory
- 2012-xx-xx Faster than BIND 9
- 2012-06-21 NSEC in-memory, DDNS

Current Status 1/2

- Working DNS server
  - In-production AS112 server
  - Several small production users
- Current focus: Usability
- Expect release end of 2012-09
  - Production for authoritative
  - "beta" if all features available
  - "alpha" otherwise

Current Status 2/2

- Resolver work re-starting
  - Performance
  - Query traceability
  - Performance
  - DNSSEC validation
  - Performance
  - Performance