

# **BIND 10**

## **Introduction, Overview, Status**

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# Presentation Outline

- Background & Motivation
- Goals & Features
- Status



# What is BIND?

- DNS server software
  - Authoritative
  - Recursive
- Used by 80% of DNS servers
  - Not 80% of *domains*
  - Not 80% of *queries*



# Where Did BIND 9 Come From?

- Designed to solve BIND 8 problems
- Heavy emphasis on security
- Reference implementation for DNS



# Motivation for BIND 10

- BIND 9 is almost 10 years old
- The computing world has changed
- The networking world has changed
- DNS software “marketplace” evolved
- Need a new architecture for the next 10+ years



# BIND 10 Project

- ISC sought funders for BIND 10
- Generous sponsors provided initial funding:  
<https://www.isc.org/bind10/sponsors>
- Initial sponsors formed:  
*BIND 10 Steering Committee*
- Official kick-off date 2009-04-01



# (Rough) BIND 10 Timeline

- Year 1: Authoritative-only server
- Year 2: Recursive server
- Year 3: Fully functional server
- Year 4: Drop-in BIND 9 replacement
- Year 5: *Really* fun stuff



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# BIND 10 Technologies

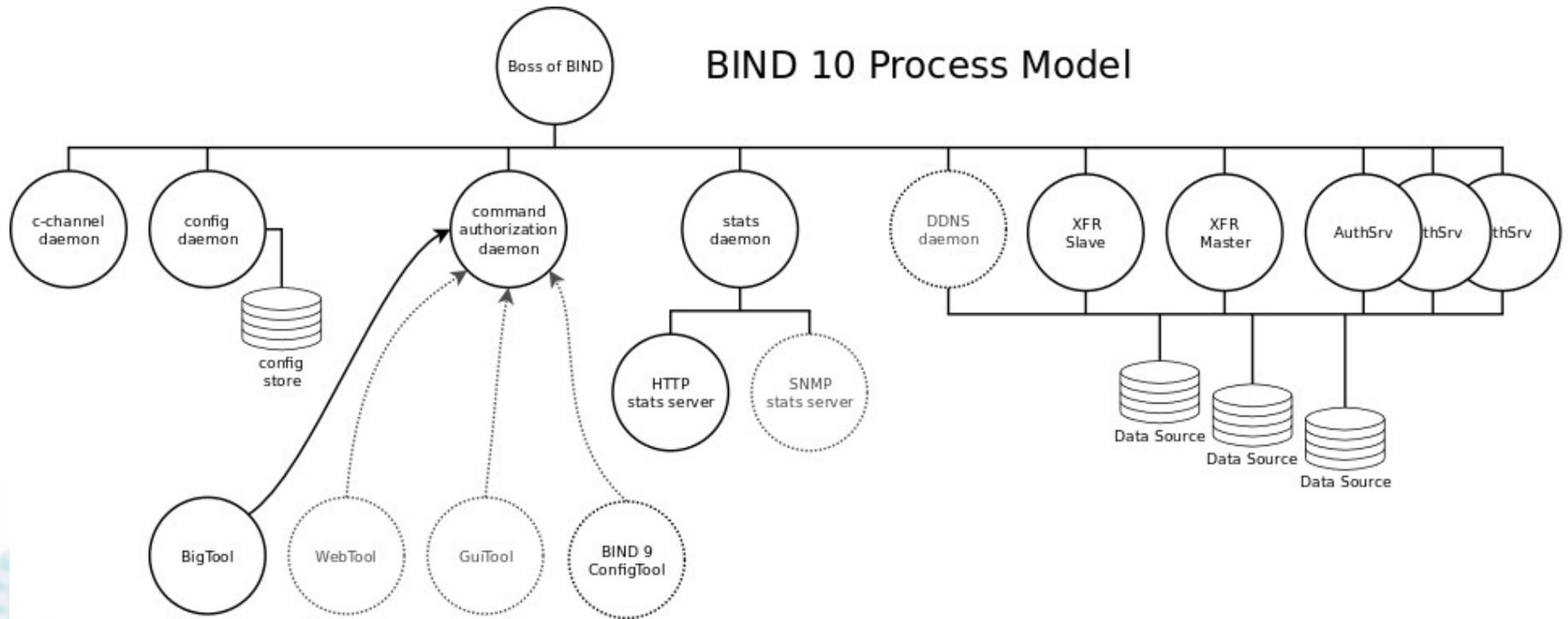
## Architecture & Design:

- Modularity
- Well-defined APIs and libraries
- Full runtime control

## Features:

- Customization
- Resilience to failures
- Cluster support

# BIND 10 Process Model



# Flexible Data Sources

- Zone files (of course)
- SQL (of course)
- BDB (Berkeley DataBase)
- LDAP
- File system
- djbdns?

*...generic data sources!*

# When you say “SQL”, what do you mean?

Motivations for SQL are varied...

- Out-of-memory data source
  - Reduced system requirements
  - Faster load time
- Integration with existing SQL systems
  - Custom provisioning systems
  - Single database for network information
- We bought an SQL database!

# Captive vs. Free SQL

- “Captive” SQL
  - BIND “owns” the SQL database
  - Allows for efficient caching
  - Simplifies IXFR, DDNS
- “Free” SQL
  - BIND is one user of an SQL database
  - Other users may update the database
  - Limited caching possible
  - Complicated data synchronization

# Recursion Improvements

Not our current goal, but some ideas...

- Cache persistence
- Shared caches
- Recursive lookup tracing
- DNSSEC debugging & control



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# Development

- BIND 10 development is *public*
  - <https://bind10.isc.org>
  - [bind10-dev@lists.isc.org](mailto:bind10-dev@lists.isc.org)
  - Public Subversion repository
- BIND 10 team coding away
  - 5 ISC staff
  - 2 JPRS staff
  - 2 CNNIC staff

# Status

- Developer prototypes available:
  - DNS message API
  - c-channel API & daemon
  - Configuration API & daemon
  - Statistics API & daemon
  - Administrator command-line tool



# Parking Lot

- Example server
- Output of face-to-face meeting
- Uses all components written
- Provides the same zone contents for all zones served
- Useful for domain parking
  - So we call it the Parking Lot

# AS112 Server

- Next deliverable
- AS112 is anycast server
  - Answers “bogus” queries
  - For example: `6.6.6.10.in-addr.arpa`
- Low-risk first production roll-out
- “Real” packaging
- Looking for AS112 operators to help!

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# Shameless Call for Support

- ISC is a small, non-profit company
- New sponsors would be great
  - We need money!
  - Varied *types* of sponsors also needed
- Contributors of any kind are useful
  - Requirements, wish-lists, sanity checks
  - DNS administrators, users, developers
  - Coders

<https://bind10.isc.org>

