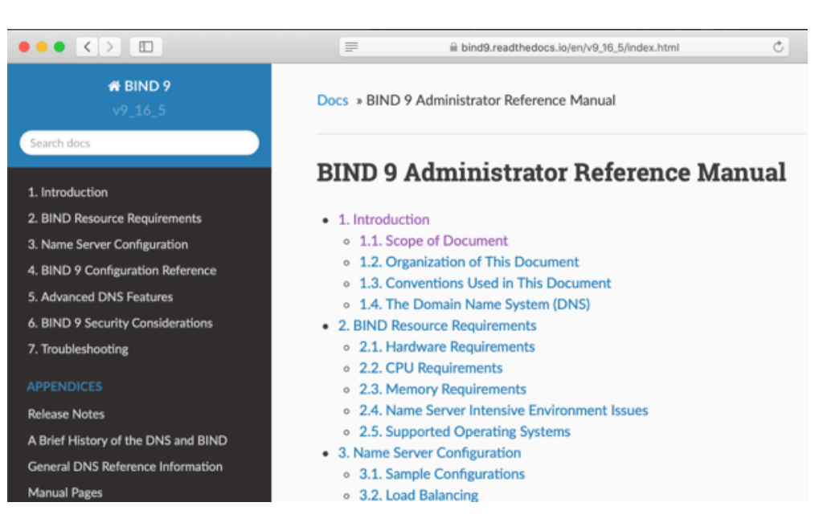
ISC Support Subscriber News

2020 Q3

For ISC's BIND 9, ISC DHCP, and Kea DHCP support subscribers.

BIND/DNS News

The BIND Administrator Reference Manual (ARM) is now available on ReadTheDocs.io! Note the option to select the BIND version in the lower left panel. We have started appending the release notes for the branch to the ARM for easy reference.


BIND 9
v9_16_5
Search docs
1. Introduction
2. BIND Resource Requirements
3. Name Server Configuration
4. BIND 9 Configuration Reference
5. Advanced DNS Features
6. BIND 9 Security Considerations
7. Troubleshooting
APPENDICES
Release Notes
A Brief History of the DNS and BIND
General DNS Reference Information
Manual Pages

Docs » BIND 9 Administrator Reference Manual

BIND 9 Administrator Reference Manual

- 1. Introduction
  - 1.1. Scope of Document
  - 1.2. Organization of This Document
  - 1.3. Conventions Used in This Document
  - 1.4. The Domain Name System (DNS)
- 2. BIND Resource Requirements
  - 2.1. Hardware Requirements
  - 2.2. CPU Requirements
  - 2.3. Memory Requirements
  - 2.4. Name Server Intensive Environment Issues
  - 2.5. Supported Operating Systems
- 3. Name Server Configuration
  - 3.1. Sample Configurations
  - 3.2. Load Balancing

New 9.16 ESV Coming this Fall
BIND 9.16 will be designated as our next Extended Support Version (ESV) this fall, probably with the October release. At that time, we will also produce a **9.16-S** edition. **9.11** will be supported through the end of 2021, but we will only be doing critical maintenance on that branch in 2021. There will be a full year of overlap between the two ESV branches to allow for an orderly migration.

New ISC Prometheus Exporter for BIND
We have had multiple requests for an ISC-supported solution for exporting BIND statistics to the popular Prometheus time-series database. The Stork distribution from ISC now includes an agent that, when installed on the BIND server, exports query statistics to Prometheus, including TCP vs. UDP transport type, record type, response type, etc. This data can then be graphed easily in the Grafana visualization tool, helping you to analyze large amounts of query data very efficiently. This feature does not require a BIND update, but it does require configuring BIND to produce stats in JSON format.

Feedback on Resolver Serve Stale Feature
We implemented Serve Stale in BIND 9.11.4-S and subsequently in 9.12, in response to the DNS outage caused by the DDOS attack on Dyn in 2016. In versions with the Serve Stale feature, BIND keeps stale entries in cache, in case they are needed later, regardless of whether the user has enabled Serve Stale. In upcoming development versions we plan to make it possible to disable the extended caching of stale data entirely, and also to end caching for TTL=0 data. We would love to hear of any instances where Serve Stale has helped during a service outage at the authority server.

Encrypted DNS Status
Work is proceeding on implementing DoT and DoH in BIND 9.17. We have extended the new networking code to the client side of BIND; very soon we will have committed support for dig to query DoH resolvers. We are making steady progress on this, although the feature is not yet complete. Once DoH and DoT are stable in our development branch, we plan to provide it for users of the 9.16 Extended Support Version.

DNS Flag Day 2020 will be October 1

This year's change should not cause the level of concern among your users that the EDNS change last year caused. This year the focus is on reducing packet fragmentation by setting the default MTU size to 1232. See dnsflagday.net for updates.

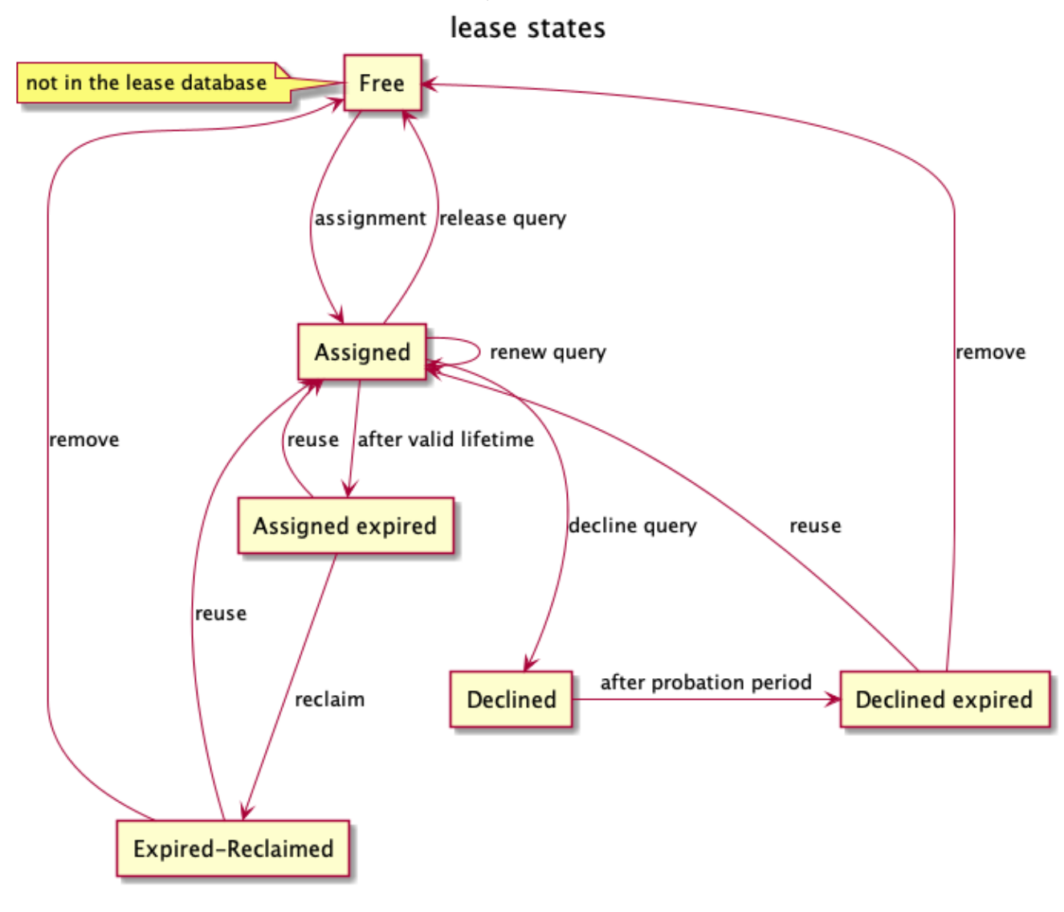
Kea/DHCP News

Kea 1.7.10 and 1.6.3 Released

Kea 1.8 Progress

We have been very happy with the performance improvements in Kea due to multithreading, with one important exception: the HA feature. The lease updates between HA server pairs cap performance, limiting the overall benefit from multithreading where HA is required. We have been working to mitigate this as much as possible, and are now seeing a significant performance improvement across ALL scenarios. Follow this link to see our latest performance test report. Our current plan is to produce the next stable version, 1.8.0, at the end of August. We recommend this KB article for those Kea users interested in maximizing performance.

Kea Logical Flow Diagrams
We are in the process of adding some logical flow diagrams to our Kea documentation to clarify the process of selecting and assigning addresses and options. We hope to have these in the Kea ARM for our next release, 1.7.11.



Kea 1.9 - Application Security and RBAC

Currently we recommend deployment of a reverse HTTP proxy on the Kea server to provide application security, but this can be cumbersome for operators with large numbers of DHCP servers. We have been working on a design for including authentication for system administrators in Kea itself, with support for role-based access control (RBAC). This feature is targeted at Kea 1.9.x. We welcome review comments and requirements.

Stork Management Dashboard Update

Recent additions to the Stork monitoring application include an Event Manager and a Log Viewer. The user interface is changing rapidly and we welcome any feedback from early adopters. Kea 1.6.3 adds support for a required system call so that you can use Stork with Kea 1.6.3. We have been updating our easy-to-install packages for major operating systems monthly with new releases.

Updates from Support

The current global increase in home-working has led to new challenges for many businesses and Internet Service Providers. Expanding and changing infrastructure has led to an increase in requests for assistance and advice with BIND, ISC DHCP and Kea DHCP.

We are interviewing for an experienced network engineer, to help us better support you, by extending our DHCP QA testing capabilities with realistic customer network scenarios. This engineer will replicate issues you are reporting and help us provide advice on improving performance.

Here are some of the screening questions we've been using to assess the candidates' networking knowledge and troubleshooting expertise. How would you do*?

- Take a look at the following command output: https://gitlab.isc.org/isc-projects/bind9/snippets/866. What is happening here? What are the possible reasons for this outcome?
- A customer reports that his DHCP server mostly works, but some of his devices do not accept Offers and keep sending Discovers. What could be happening and what would you recommend doing to solve this problem?
- A panicking customer reports that the software crashes. What would you suggest as the next steps for troubleshooting the problem?
- Our internal tests show that a specific version of Kea software can provide roughly 1000 leases per second. A customer deploying the software reported only 10 leases per second. What would you do?
- How would you measure the performance of a HA pair of DHCP servers?

* We don't want to give away any answers, but we can say that "ping" is not a good response to any of these.

ISC Webinars

We are working on developing a Kea training class, to be delivered as a series of free webinars this fall. If you would like to be notified when registration opens, please sign onto training-info@lists.isc.org, or monitor our social media or web site.

On July 22, 2020, we presented *Designate, the DNS component of OpenStack*: Designate is one open source provisioning system for on-going BIND zone file provisioning. There is a graphical interface for explicitly adding zones, and of course through the OpenStack integration, Designate can automatically create zones and reverse PTR records for virtual machines in the OpenStack cloud.

If you missed it, check out the slides and recording on our website.

All our webinars are archived in ISC's YouTube channel and on our website.

ISC Updates

ISC is hiring. We are currently interviewing candidates for a combined QA/Support engineer.

As of April 30, 2020, we have a new business correspondence address:

Internet Systems Consortium, Inc.
PO Box 360
Newmarket, NH 03857

View this email in your browser