



# SUBSCRIPTION EDITION



The original, classic, full-featured DNS software system - with special features available only to ISC support subscribers.

As a benefit to our support subscription customers, we have created a special unpublished branch of BIND called the Subscription Edition, or -S. We create this branch by carefully backporting selected features from our development branch, integrating them with an older stable base version of BIND.

## BIND 9 Open Source

- Provides standards-compliant, universally interoperable DNS
- Offers professional maintenance by a full-time team of skilled engineers
- Supports authoritative or recursive resolver operations
- Provides complete DNSSEC support for both authoritative (signing) and resolver (validating)
- Offers modern cryptographic standards via OpenSSL
- Gives the option of loading traditional static zone files, adding zones dynamically, or using the dynDB LDAP interface
- Supports the RNDP management protocol, suitable for automated provisioning operations, with read and read/write controls and a Python library
- Allows DNSTAP log file rolling
- Supports multiple DNS Cookie secrets
- Offers EDNS0 compliance in conformance with RFCs 7828 and 7830
- Loads fast with refactored Response Policy Zones (RPZ)

## Subscription Edition Features\*

- EDNS0 Client-Subnet Identifier for resolver operations
- Cisco Umbrella integration

\* Subscriber-only

## EDNS Client-Subnet Identifier

This feature, also known as “ECS,” is a very significant change from the open source. The client-subnet identifier is additional information about the client that the resolver provides to the authority when asking a question. With this information, the authority can provide a response that is specifically tailored for clients on that subnet. The premise is that the address the client is using to contact the resolver is a good indicator of the physical location of the client.

The BIND 9 -S edition includes **resolver-side** ECS. You can implement this in your resolvers, and configure them to include the client information with queries to Content Data Networks (CDNs). CDNs rely on this information to optimize the location the client connects to, particularly for large, media-rich content. In fact, the use of the EDNS Client Subnet Identifier was first implemented by a number of CDNs.

ECS has not been standardized by the IETF; there is concern about the privacy implication of providing additional information about the client to unrelated authorities all over the Internet. ISC has minimized the privacy risk by limiting the specificity of the subnet to a /24 and by implementing a feature that respects the client configuration if the client does not want to use ECS. The BIND -S edition offers a



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compile-time setting to eliminate the privacy fence; this can be useful in situations such as an internal-only network application. In such a case, a much more specific address that potentially identifies the specific client is appropriate.

ECS should be deployed only if the benefit outweighs the cost. Once you enable ECS in your BIND 9 resolver, the resolver will cache the different responses for each subnet, significantly inflating cache size.

The most important aspect of the ECS implementation in BIND 9 is that the resolver administrator can decide whom to send the client-subnet identifier to (specifying the IP addresses to expose this information to in an allowed list), and the resolver administrator can indicate how specific the subnet should be (e.g. /24).

For some examples of ECS use in CDNs, please see <https://support.umbrella.com/hc/en-us/articles/360021857552-Umbrella-and-EDNS-Client-Subnet-ECS->.

### Cisco Umbrella Integration

This subscriber-only feature adds appliance and device IDs to DNS queries forwarded to Umbrella for resolution. For more about Umbrella, see <https://docs.umbrella.com/umbrella-user-guide/docs/configure-dns-forwarder-for-umbrella>.

**named** supports forwarding of queries to Cisco Umbrella servers, if compiled with **configure --enable-umbrella**. Cisco Umbrella identifies customer queries via a custom "Protoss" EDNS option that is included with each query.

Protoss options may include any combination of three identification codes: a Virtual Appliance ID, an Organization ID, or a Device ID. These are configured in the `named.conf` file by setting the `umbrella-virtual-appliance`, `umbrella-organization`, and `umbrella-device` options. If any of these options is set, **named** can include a Protoss option in the query when forwarding a message to a Cisco Umbrella server.

Cisco Umbrella server addresses must be explicitly configured in a server statement with the **send-umbrella** option set to `yes`. Protoss options are not sent to any server that has not been explicitly configured to receive them.

Responses from Cisco Umbrella servers are specifically tailored to the client, and are therefore not cached by **named**, so that other clients can get other answers. The TTLs of these responses are automatically lowered to zero.

To see the differences between BIND 9 versions, please refer to the BIND 9 Significant Features Matrix at <https://kb.isc.org/docs/aa-01310>.



## FREQUENTLY ASKED QUESTIONS

### **Is the Subscription Edition open source? How is it licensed?**

The BIND 9 -S releases are distributed to subscribers in source code form. ISC does not place any restrictions on how our support subscribers use the software in their own networks. However, the -S edition is for ISC support subscriber use only. There is a clause in ISC's standard support contract that requires customers to treat the -S edition as ISC Confidential Information and not post, share, or redistribute it outside your organization.

### **Will the features in the Subscription Edition appear in the open source?**

Most of the features in the Subscription Edition are a preview of features coming to the open source. However, we do occasionally put features into the -S branch that may not ever appear in the open source; we may also withdraw attributes from the -S edition if they do not meet expectations in production.

### **How long does ISC support the current -S version for?**

The purpose of the -S edition is to provide early access to new features. We periodically rebase the -S edition on a newer release to provide new features or needed bug fixes. When we do that, we support the prior -S edition for 6 months to provide an upgrade window. We do not plan to support more than two -S versions at once, so users adopting the -S edition should be prepared to update as often as twice a year.

For details on which open source version of BIND the current -S edition is based on, please refer to ISC's Software Support Policy and Version Numbering, at <https://kb.isc.org/docs/aa-00896>.

### **What documentation is available?**

The features in the Subscription Edition are documented in the BIND Administrative Reference Manual (ARM), which is provided in the -S tarball, along with the release notes.

### **How can I get the Subscription Edition?**

Normally, support Subscribers at the Silver level and above are eligible to use the BIND 9 -S edition. When you first sign up for support and we set up your support queue, we will include information on getting the -S version if you are eligible. When ISC releases a new -S edition, customers receive download instructions for the new version.

### **What support is available?**

Annual support contracts are available at different levels, depending on the amount of support and the response time you require. We have a dedicated support engineering staff and can provide 24x7 support for critical issues. The BIND 9 Subscription Edition is normally included with all ISC BIND 9 support contracts at Silver level and above.