

=====BIND=====

[BIND](#) (Berkeley internet name domain) is one of the most widely used DNS servers; it comes standard in most Unix like operating systems.

Check BIND version information.

```
named -v
```

Sample output:

```
BIND 9.11.4-P2-RedHat-9.11.4-17.P2.el8_0.1 (Extended Support Version) <id:7107deb>
```

To check the version number and build options

```
named -V
```

```
linuxbabe@centos8:~$ named -V
BIND 9.11.4-P2-RedHat-9.11.4-17.P2.el8_0.1 (Extended Support Version) <id:7107deb>
running on Linux x86_64 4.18.0-80.11.2.el8_0.x86_64 #1 SMP Tue Sep 24 11:32:19 UTC 2019
built by make with '--build=x86_64-redhat-linux-gnu' '--host=x86_64-redhat-linux-gnu' '--program-prefix=' '--disable-dependency-tracking' '--prefix=/usr' '--exec-prefix=/usr' '--bindir=/usr/bin' '--sbindir=/usr/sbin' '--sysconfdir=/etc' '--datadir=/usr/share' '--includedir=/usr/include' '--libdir=/usr/lib64' '--libexecdir=/usr/libexec' '--sharedstatedir=/var/lib' '--mandir=/usr/share/man' '--infodir=/usr/share/info' '--with-python=/usr/libexec/platform-python' '--with-libtool' '--localstatedir=/var' '--enable-threads' '--enable-ipv6' '--enable-filter-aaa' '--with-pic' '--disable-static' '--includedir=/usr/include/bind9' '--with-tuning=large' '--with-libidn2' '--enable-openssl-hash' '--enable-native-pkcs11' '--with-pkcs11=/usr/lib64/pkcs11/libsofthsm2.so' '--with-dlopen=yes' '--with-dlz-ldap=yes' '--with-dlz-postgres=yes' '--with-dlz-mysql=yes' '--with-dlz-filesystem=yes' '--with-dlz-bdb=yes' '--with-gssapi=yes' '--disable-isc-spnego' '--with-lmdb=no' '--with-atf=yes' '--enable-fixed-rrset' '--with-docbook-xsl=/usr/share/sgml/docbook/xsl-stylesheets' '--enable-full-report' 'build_alias=x86_64-redhat-linux-gnu' 'host_alias=x86_64-redhat-linux-gnu' 'CFLAGS=-O2 -g -pipe -Wall -Werror=format-security -Wp,-D_FORTIFY_SOURCE=2 -Wp,-D_GLIBCXX_ASSERTIONS -fexceptions -fstack-protector-strong -grecord-gcc-switches -specs=/usr/lib/rpm/redhat/redhat-hardened-cc1 -specs=/usr/lib/rpm/redhat/redhat-annobin-cc1 -m64 -mtune=generic -fasynchronous-unwind-tables -fstack-clash-protection -fcf-protection' 'LDFLAGS=-Wl,-z,relro -Wl,-z,now -specs=/usr/lib/rpm/redhat/redhat-hardened-ld' 'CPPFLAGS=-DDIG_SIGCHASE'
compiled by GCC 8.2.1 20180905 (Red Hat 8.2.1-3)
compiled with OpenSSL version: OpenSSL 1.1.1 FIPS 11 Sep 2018
linked to OpenSSL version: OpenSSL 1.1.1 FIPS 11 Sep 2018
compiled with libxml2 version: 2.9.7
linked to libxml2 version: 20907
compiled with zlib version: 1.2.11
linked to zlib version: 1.2.11
threads support is enabled
```

The BIND server will run as the `named` user, which is created during installation, and listens on TCP and UDP port 53, as can be seen by running the following command:

```
#dnf install net-tools
#netstat -lnptu | grep named
```

```
linuxbabe@centos8:~$ sudo netstat -lnptu | grep named
tcp        0      0 127.0.0.1:53          0.0.0.0:*             LISTEN      31304/named
tcp        0      0 127.0.0.1:953        0.0.0.0:*             LISTEN      31304/named
tcp6       0      0 :::1:53              :::*                   LISTEN      31304/named
tcp6       0      0 :::1:953             :::*                   LISTEN      31304/named
udp        0      0 127.0.0.1:53          0.0.0.0:*             LISTEN      31304/named
udp6       0      0 :::1:53              :::*                   LISTEN      31304/named
linuxbabe@centos8:~$
```

Usually, DNS queries are sent to the UDP port 53. The TCP port 53 is for responses size larger than 512 bytes.

The BIND daemon is called **named**. (A daemon is a piece of software that runs in the background.) The `named` binary is installed by the `bind` package and there's another important binary: `rndc`, the remote name daemon controller. The `rndc` binary is used to reload/stop and control other aspects of the BIND daemon. Communication is done over TCP port 953.

For example, we can check the status of the BIND name server.

```
#rndc status
```

```
linuxbabe@centos8:~$ sudo rndc status
version: BIND 9.11.4-P2-RedHat-9.11.4-17.P2.el8_0.1 (Extended Support Version) <id:7107deb>
running on centos8: Linux x86_64 4.18.0-80.11.2.el8_0.x86_64 #1 SMP Tue Sep 24 11:32:19 UTC 2019
boot time: Tue, 07 Jan 2020 11:42:41 GMT
last configured: Tue, 07 Jan 2020 11:42:41 GMT
configuration file: /etc/named.conf
CPUs found: 1
worker threads: 1
UDP listeners per interface: 1
number of zones: 103 (97 automatic)
debug level: 0
xfers running: 0
xfers deferred: 0
soa queries in progress: 0
query logging is OFF
recursive clients: 0/900/1000
tcp clients: 2/150
server is up and running
```