Unbound

Unbound is a validating, recursive, and caching DNS resolver product from NLnet Labs. It is distributed free of charge in open-source form under the BSD license.

Package

```
sudo pacman -S unbound expat
```

Configuration

```
sudo nano /etc/unbound/unbound.conf
```

``` server:
    # If no logfile is specified, syslog is used
    # logfile: "/var/log/unbound/unbound.log"
    verbosity: 0

    # Enable port if you're going to use DNSCrypt/ADGuardhome.
    #    port: 5353
    do-ip4: yes
    do-udp: yes
    do-tcp: yes
    do-daemonize: no
    trust-anchor-file: /etc/unbound/trusted-key.key

    # May be set to yes if you have IPv6 connectivity
    do-ip6: no

    # Use this only when you downloaded the list of primary root servers!
    root-hints: "/etc/unbound/root.hints"

    # Trust glue only if it is within the servers authority
    harden-glue: yes

    # Require DNSSEC data for trust-anchored zones, if such data is absent,
    # the zone becomes BOGUS
    harden-dnssec-stripped: yes

    # Don't use Capitalization randomization as it known to cause DNSSEC
    # issues sometimes
    # see
    # https://discourse.pi-hole.net/t/unbound-stubby-or-dnscrypt-proxy/9378 for
    # further details
```
use-caps-for-id: no

# Reduce EDNS reassembly buffer size.
# Suggested by the unbound man page to reduce fragmentation reassembly problems
edns-buffer-size: 1472

# TTL bounds for cache
cache-min-ttl: 3600
cache-max-ttl: 86400

# Perform prefetching of close to expired message cache entries
# This only applies to domains that have been frequently queried
prefetch: yes

# One thread should be sufficient, can be increased on beefy machines
num-threads: 1

# Ensure kernel buffer is large enough to not lose messages in traffic spikes
so-rcvbuf: 1m

hide-identity: yes
hide-version: yes

root.hints

To recursively query a host that is not cached as an address, the resolver must start at the top of the server tree and query the root servers to learn where to find the top-level domain for the queried address. There are hints built into Unbound by default. Therefore, if the package is updated regularly, no manual intervention is required. Otherwise, it is advisable to use a root hint file, since the built-in hints may be outdated.

curl --output /etc/unbound/root.hints
https://www.internic.net/domain/named.cache

sudo nano /etc/systemd/system/roothints.service

[Unit]
Description=Update root hints for unbound
After=network.target

[Service]
ExecStart=/usr/bin/curl -o /etc/unbound/root.hints
https://www.internic.net/domain/named.cache

sudo nano /etc/systemd/system/roothints.timer

[Unit]
Description=Run root.hints monthly

[Timer]
OnCalendar=monthly
Persistent=true

[Install]
WantedBy=timers.target

Start

sudo systemctl enable --now unbound.service roothints.timer

Local DNS via NetworkManager

sudo nano /etc/NetworkManager/conf.d/dns-servers.conf

[global-dns-domain-]*
servers=127.0.0.1

sudo systemctl restart NetworkManager.service

DNSCrypt proxy

If you want to install our DNSCrypt tutorial, or you already have it, you still need to enable the port

```shell
# Enable port if you're going to use DNSCrypt/ADGuardhome.
port: 5353
```

and add the following to the bottom:

```shell
# dnscrypt-proxy
do-not-query-localhost: no
forward-zone:
  name: "."
forward-addr: 127.0.0.1@53
```

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