

PicoDNS User Manual

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1 Introduction

PicoDNS is a tiny DNS server programmed by Adam Risi. It is currently being distributed as part of the torus project, a distributed peer to peer program for resource sharing. PicoDNS was developed in order to allow peers on the torus network to resolve usernames into IP addresses transparently with programs other than the original torus peer to peer client.

PicoDNS was designed with several features in mind. PicoDNS had to be small (target compile size under 1M), fast, and programmed using portable standards. Portability was achieved by using the GNU GLibc library for C support routines. As for program size, PicoDNS currently compiles to just over 800K statically.

2 Installation

PicoDNS can be installed either by building it from source using the supplied makefile, or by downloading and executing a statically compiled version of the program. Versions of PicoDNS are labeled by their main SVN revision. At the time this document was authored, the current version is 34.

2.1 Building from source

Getting the source

The source for PicoDNS can be gathered from the dns directory of its parent project, torus. Torus is located at www.torusp2p.com, and has a SVN server located at `svn co http://torusp2p.com/svn/`. To check out a copy of the most current version of the software, execute the command:

```
svn co http://torusp2p.com/svn/trunk/src/dns ./picodns
```

Once you have checked out the source code, navigate into the picodns folder and execute:

```
make
sudo make install
```

This will install a copy of the program 'picodns' under the /usr/bin folder.

Requirements

Picodns was written using GLib, the GNU c library, version 2.18. libConfuse was used for reading the configuration files. If on a debian based system (a linux system that uses aptitude), you can install the necessary libraries by executing:

```
sudo apt-get install glibc libconfuse-dev
```

2.2 Binary installation

A copy of PicoDNS is available statically linked and stripped at <http://torusp2p.com/index.php?title=Picodns>. That website also contains the most recent information about versions, requirements, and software updates. Once a copy of PicoDNS has been downloaded from that website, it can be installed by copying it to your /usr/bin directory.

3 Configuration

PicoDNS was designed with easy configuration in mind. Although the majority of the configuration is done via file entries, some command line configurations are also possible.

3.1 Command line

If PicoDNS is executed with the -help option, then the available command line configurations are displayed to the screen:

Usage:

```
picodns [OPTION...] - PicoDNS server program
```

Help Options:

```
-?, --help          Show help options
```

Application Options:

```
-d, --daemon        Enter daemon mode
--log-file           Set log file for this session
```

<code>-c, --config-file</code>	Set the configuration file to use for this session
<code>--force-port</code>	Force set the UDP port for the DNS server

Although the options are fairly self explanatory, they are explained in more depth below

Daemon Mode

Instructs the program to enter "daemon mode" where it disconnects from the terminal it was spawned from and runs without any messages being displayed to the user. Here is an example of starting the program in daemon mode:

```
$ picodns --daemon &  
[1] 1234
```

Using a specific log file

If the program should be started using a specific file for logging errors/information, that file can be specified with the `-log-file` option. Note that if the log file can not be created or opened, PicoDNS will alert you and shut down.

3.2 Configuration files

The majority of the configuration for a PicoDNS server is done via the "pnds" configuration files. A demonstration copy of these files are supplied with all downloads of PicoDNS. Picodns officially supports 4 different record types - A, AAAA, PTR, and MX (as of version 34).

3.2.1 A Records

3.2.2 AAAA Records

3.2.3 MX Records

3.2.4 PTR Records

4 Usage

5 Testing

In order to test your installation of PicoDNS, nslookup, DiG, or any other DNS querying tool can be used. DiG is recommended because it gives more information (and serves as a better debugging tool). The following sections will instruct you on how to test your running picodns installation.

5.1 Testing with nslookup

5.2 Testing with DiG

DiG will give the most accurate test results of your PicoDNS server. To use DiG for server testing, issue the **dig** command on any supported system. Here is an example of the DiG command:

```
dig @localhost myserver.com A
```

6 Credits

7 Licence

PicoDNS was authored under the GNU General Public Licence, allowing any user to download, modify or use the software. The full body of the licence can be found at:

<http://www.gnu.org/licenses/gpl.html>

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