

---

**iwinfo**

***Release 2.0.2***

**Gene C**

**Apr 13, 2024**



## CONTENTS:

<b>1</b>	<b>iwinfo</b>	<b>1</b>
1.1	Overview . . . . .	1
1.2	Key features . . . . .	1
1.3	New / Interesting . . . . .	1
<b>2</b>	<b>Getting Started</b>	<b>3</b>
2.1	iwinfo application . . . . .	3
<b>3</b>	<b>Appendix</b>	<b>5</b>
3.1	Note on CET Shadow Stack . . . . .	5
3.2	Installation . . . . .	5
3.3	Dependencies . . . . .	5
3.4	Philosophy . . . . .	6
3.5	License . . . . .	6
<b>4</b>	<b>Changelog</b>	<b>7</b>
<b>5</b>	<b>MIT License</b>	<b>9</b>
<b>6</b>	<b>How to help with this project</b>	<b>11</b>
6.1	Important resources . . . . .	11
6.2	Reporting Bugs or feature requests . . . . .	11
6.3	Code Changes . . . . .	11
<b>7</b>	<b>Contributor Covenant Code of Conduct</b>	<b>13</b>
7.1	Our Pledge . . . . .	13
7.2	Our Standards . . . . .	13
7.3	Our Responsibilities . . . . .	13
7.4	Scope . . . . .	14
7.5	Enforcement . . . . .	14
7.6	Attribution . . . . .	14
7.7	Interpretation . . . . .	14
<b>8</b>	<b>Indices and tables</b>	<b>15</b>



## 1.1 Overview

*iwinfo* : Provide useful information about wireless network(s)

This is a command line program which is run in any terminal. It shows some information about existing wireless connections along with the result of an optional scan for wireless devices. Scan is turned on using *-s* option.

Scanning wireless networks requires elevated privileges, which means either by running as root or by being provided with the required *cap\_net\_\** capabilities.

This package provides the application, written in python, along with a small C-program which is installed with *cap\_net\_raw* and *cap\_net\_admin* and it provides the capabilities for the program to be run non-root.

The applicion, *iwinfo*, sets the ambient capabilities<sup>3</sup> needed by the application and then runs it. The capabilities required are *cap\_net\_raw* and *cap\_net\_admin*. Since this does add some risk, it is limited to root and *wheel* group members only.

Others will still be able to get local wireless device and connection info, but will not be able to scan the network(s).

## 1.2 Key features

- Shows local wireless device(s) and connection info.
- Show summary of wireless hardware capabilities
- Scans wireless network(s) and provides compact report

## 1.3 New / Interesting

- First public release

---

<sup>3</sup> See man capabilities.



## GETTING STARTED

- Run *iwinfo* or *iwinfo -ns*

### 2.1 iwinfo application

#### 2.1.1 Usage

Run it from a terminal:

```
iwinfo --help
```

#### 2.1.2 Configuration

The optional configuration file for *iwinfo* is ...

```
/etc/iwinfo/wifi.db
```

The file is a way to provide additional information about wireless devices on the network. It is in *toml* format and a sample file is */etc/iwinfo/wifi.db.sample*.

Each device in the file has an entry of the form:

```
[ap0]
ip = '10.0.0.10'
mac_map = [['5Ghz', 'x:x:x:x:x:x'],
            ['24Ghz', 'x:x:x:x:x:x'],
            ['lan', 'x:x:x:x:x:x'],
            ]
model = 'Netgear R9000'
info = 'Location Office 1'
```

The `mac_map` is a list of pairs of [key, mac-address]. Each key can be any convenient string.

### 2.1.3 Options

By default no network scan is performed. To turn this on use:

- (-s, -scan)

### 2.1.4 Sample Output

Sample output:

```
Interfaces:
wlan0:
  ap_bssid : xx:xx:xx:xx:xx:xx : Netgear xr500 Location Office 1
  ssid : MagicalPlaces
  freq : 5745.0
  signal : -53 dBm
  rx_bitrate : 866.7 MBit/s VHT-MCS 9 80MHz short GI VHT-NSS 2
  tx_bitrate : 866.7 MBit/s VHT-MCS 9 80MHz short GI VHT-NSS 2

Devices:
  phy0:
    wifi-6E (802.11ax)  3-bands : 2.4-GHz 5-GHz 6-GHz
```

With -scan:

```
Scan Results:
wlan0:
  xx:xx:xx:xx:xx:xx: MagicalPlaces-24      2432.0    -32.00 dBm : Netgear 9000 Office 1
* xx:xx:xx:xx:xx:xx: MagicalPlaces          5745.0    -49.00 dBm : Netgear 9000 Office 1
  yy:yy:yy:yy:yy:yy: MyNeighbor-24        5955.0    -55.00 dBm : Asus GT11000 Test Lab
  ...
```

The asterisk indicates machine is currently connecte to that AP



## 3.1 Note on CET Shadow Stack

The code is compiled with this turned on. If for some reason you get an error compiling then you may turn it off by changing the load flag to 'cet-report=warning'. This may happen if you have old glibc (pre 2.39)

## 3.2 Installation

### Available on

- [Github](#)
- [Archlinux AUR](#)

On Arch you can build using the provided PKGBUILD in the packaging directory or from the AUR. To build manually, clone the repo and :

```
rm -f dist/*  
/usr/bin/python -m build --wheel --no-isolation  
root_dest="/"   
./scripts/do-install $root_dest
```

When running as non-root then set root\_dest a user writable directory

## 3.3 Dependencies

- Run Time :
  - python (>= 3.11)
- Building Package:
  - git
  - hatch
  - wheel
  - build
  - installer
  - rsync

- gcc
  - make
  - libcap-ng
- Optional to build docs:
  - sphinx
  - texlive-latexextra (archlinux packaguing of texlive tools)

## 3.4 Philosophy

We follow the *live at head commit* philosophy. This means we recommend using the latest commit on git master branch. We also provide git tags.

This approach is also taken by Google<sup>1,2</sup>.

## 3.5 License

Created by Gene C. and licensed under the terms of the MIT license.

- SPDX-License-Identifier: MIT
- Copyright (c) 2023 Gene C

---

<sup>1</sup> <https://github.com/google/googletest>

<sup>2</sup> <https://abseil.io/about/philosophy#upgrade-support>

## CHANGELOG

### [2.0.2] — 2024-04-13

Change gitname **in** PKGBUILD  
update Docs/Changelog.rst Docs/iwinfo.pdf

### [2.0.1] — 2024-04-13

Improve package description  
Initial public release



## MIT LICENSE

Copyright © 2023 Gene C

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the “Software”), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED “AS IS”, WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.



## HOW TO HELP WITH THIS PROJECT

Thank you for your interest in improving this project. This project is open-source under the MIT license.

### 6.1 Important resources

- [Git Repo](#)

### 6.2 Reporting Bugs or feature requests

Please report bugs on the issue tracker in the git repo. To make the report as useful as possible, please include

- operating system used
- version of python
- explanation of the problem or enhancement request.

### 6.3 Code Changes

If you make code changes, please update the documentation if it's appropriate.





## **CONTRIBUTOR COVENANT CODE OF CONDUCT**

### **7.1 Our Pledge**

In the interest of fostering an open and welcoming environment, we as contributors and maintainers pledge to making participation in our project and our community a harassment-free experience for everyone, regardless of age, body size, disability, ethnicity, sex characteristics, gender identity and expression, level of experience, education, socio-economic status, nationality, personal appearance, race, religion, or sexual identity and orientation.

### **7.2 Our Standards**

Examples of behavior that contributes to creating a positive environment include:

- Using welcoming and inclusive language
- Being respectful of differing viewpoints and experiences
- Gracefully accepting constructive criticism
- Focusing on what is best for the community
- Showing empathy towards other community members

Examples of unacceptable behavior by participants include:

- The use of sexualized language or imagery and unwelcome sexual attention or advances
- Trolling, insulting/derogatory comments, and personal or political attacks
- Public or private harassment
- Publishing others' private information, such as a physical or electronic address, without explicit permission
- Other conduct which could reasonably be considered inappropriate in a professional setting

### **7.3 Our Responsibilities**

Maintainers are responsible for clarifying the standards of acceptable behavior and are expected to take appropriate and fair corrective action in response to any instances of unacceptable behavior.

Maintainers have the right and responsibility to remove, edit, or reject comments, commits, code, wiki edits, issues, and other contributions that are not aligned to this Code of Conduct, or to ban temporarily or permanently any contributor for other behaviors that they deem inappropriate, threatening, offensive, or harmful.

## 7.4 Scope

This Code of Conduct applies both within project spaces and in public spaces when an individual is representing the project or its community. Examples of representing a project or community include using an official project e-mail address, posting via an official social media account, or acting as an appointed representative at an online or offline event. Representation of a project may be further defined and clarified by project maintainers.

## 7.5 Enforcement

Instances of abusive, harassing, or otherwise unacceptable behavior may be reported by contacting the project team at [<arch@sapience.com>](mailto:arch@sapience.com). All complaints will be reviewed and investigated and will result in a response that is deemed necessary and appropriate to the circumstances. The Code of Conduct Committee is obligated to maintain confidentiality with regard to the reporter of an incident. Further details of specific enforcement policies may be posted separately.

## 7.6 Attribution

This Code of Conduct is adapted from the Contributor Covenant, version 1.4, available at <https://www.contributor-covenant.org/version/1/4/code-of-conduct.html>

## 7.7 Interpretation

The interpretation of this document is at the discretion of the project team.

## INDICES AND TABLES

- `genindex`
- `modindex`
- `search`