



Codeblock class: protocol

```
cd ~/installs/git-repos
git clone https://github.com/luismartingarcia/protocol.git
python setup install
https://github.com/luismartingarcia/protocol.git
```

```
runs:
> protocol {im_opt} code-text
```

```
class->cmd
protocol -> protocol
```

Metadata options

```
image.im_out: img, fcb
image.im_log: 4
image.protocol.im_out: stdout, fcb
```

## Local installation

```
GNU/Linux
4.15.0-70-generic #79-Ubuntu SMP Tue Nov 12 10:36:11 UTC 2019
cat ~/installs/protocol/setup.py
```

```
#!/usr/bin/python
#####
#
#
#      _--_ \ _--_--_--_ | _--_--_--_ \ _--_--_--_ |
#      | | ) | ' / _ \ | / _ \ / _ \ / _ \ |
#      | _ _ / | | ( ) | | ( ) | ( _ ( ) | |
#      | _ | _ | \ _ _ / \ _ \ _ _ / \ _ \ _ _ / |
#
#
#      == A Simple ASCII Header Generator for Network Protocols ==
#
#####
#
#   Written by:
#
#       Luis MartinGarcia.
#       -> E-Mail: luis.mgarc@gmail.com
#       -> WWW:   http://www.luismg.com
#       -> GitHub: https://github.com/luismartingarcia
#
#####
#
#   This file is part of Protocol.
#
#
#   Copyright (C) 2014 Luis MartinGarcia (luis.mgarc@gmail.com)
#
#
#   This program is free software: you can redistribute it and/or modify
#   it under the terms of the GNU General Public License as published by
#   the Free Software Foundation, either version 3 of the License, or
#   (at your option) any later version.
#
#
#   This program is distributed in the hope that it will be useful,
#   but WITHOUT ANY WARRANTY; without even the implied warranty of
#   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
#   GNU General Public License for more details.
#
#
#   You should have received a copy of the GNU General Public License
#   along with this program. If not, see <http://www.gnu.org/licenses/>.
#
#
#   Please check file LICENSE.txt for the complete version of the license,
```

```

# as this disclaimer does not contain the full information. Also, note      #
# that although Protocol is licensed under the GNU GPL v3 license, it may   #
# be possible to obtain copies of it under different, less restrictive,     #
# alternative licenses. Requests will be studied on a case by case basis.   #
# If you wish to obtain Protocol under a different license, please contact  #
# the email address mentioned above.                                       #
#                                                                           #
#####
#                                                                           #
# Description:                                                              #
#                                                                           #
# This is the installer script for Protocol. This can be run from the      #
# command-line as follows:                                                 #
#                                                                           #
#     sudo ./setup.py install                                              #
#                                                                           #
#####

from distutils.core import setup, Extension
setup(name='protocol',
      version='0.1',
      scripts=['protocol', 'constants.py', 'specs.py']
      )

```

## *Protocol*

ip

```

0                               1                               2                               3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|Version|  IHL  |Type of Service|                Total Length      |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|                Identification            |Flags|    Fragment Offset    |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|  Time to Live  |    Protocol    |                Header Checksum    |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|                Source Address                |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|                Destination Address                |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|                Options                |    Padding    |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
```

```protocol

ip  
```

tcp

```

0               1               2               3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|               Source Port               | Destination Port       |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|               Sequence Number           |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|               Acknowledgment Number    |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
| Offset| Res. |   Flags   |           Window           |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|               Checksum                   | Urgent Pointer           |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|               Options                     | Padding                 |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+

```protocol
tcp
```
```

udp

```

      0               1               2               3
    0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|               Source Port               |               Destination Port               |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|               Length                     |               Checksum                     |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+

```protocol
udp
```
```

## Custom packet

and even custom layouts:

```
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|           Source           |           TTL           |           |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|                               Reserved                               |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+

```{.protocol im_opt="--no-numbers"}
Source:16,TTL:8,Reserved:40
```
```

# Documentation

## protocol -h

Protocol v0.1.0

Copyright (C) 2019, Luis MartinGarcia (luis.mgarc@gmail.com).

This software comes with ABSOLUTELY NO WARRANTY.

Usage: /usr/local/bin/protocol {<protocol> or <spec>} [OPTIONS]

PARAMETERS:

<protocol> : Name of an existing protocol  
<spec> : Field by field specification of non-existing protocol

OPTIONS:

-b, --bits <n> : Number of bits per line  
-f, --file : Read specs from a text file  
-h, --help : Displays this help information  
-n, --no-numbers : Do not print bit numbers on top of the header  
-V, --version : Displays current version  
--evenchar <char> : Character for the even positions of horizontal table borders  
--oddchar <char> : Character for the odd positions of horizontal table borders  
--startchar <char> : Character that starts horizontal table borders  
--endchar <char> : Character that ends horizontal table borders  
--sepchar <char> : Character that separates protocol fields

## man page

There's no man page, but here are the supported protocols last seen on the website:

"ethernet" : Ethernet  
"8021q" : IEEE 802.1q  
"dot1q" : IEEE 802.1q  
"tcp" : Transmission Control Protocol (TCP)  
"udp" : User Datagram Protocol (TCP)  
"ip" : Internet Protocol (IP), version 4.  
"ipv6" : Internet Protocol (IP), version 6.  
"icmp" : Internet Control Message Protocol (ICMP)  
"icmp-destination": : ICMP Destination Unreachable  
"icmp-time" : ICMP Time Exceeded  
"icmp-parameter" : ICMP Parameter Problem  
"icmp-source" : ICMP Source Quench  
"icmp-redirect" : ICMP Redirect  
"icmp-echo" : ICMP Echo Request/Reply  
"icmp-timestamp" : ICMP Timestamp Request/Reply



|                      |   |
|----------------------|---|
| "icmp-information"   | : ICMP Information Request/Reply                      |
| "icmpv6"             | : Internet Control Message Protocol for IPv6 (ICMPv6) |
| "icmpv6-destination" | : ICMPv6 Destination Unreachable                      |
| "icmpv6-big"         | : ICMPv6 Packet Too Big                               |
| "icmpv6-time"        | : ICMPv6 Time Exceeded                                |
| "icmpv6-parameter"   | : ICMPv6 Parameter Problem                            |
| "icmpv6-echo"        | : ICMPv6 Echo Request/Reply                           |
| "icmpv6-rsol"        | : ICMPv6 Router Solicitation                          |
| "icmpv6-radv"        | : ICMPv6 Router Advertisement                         |
| "icmpv6-nsol"        | : ICMPv6 Neighbor Solicitation                        |
| "icmpv6-nadv"        | : ICMPv6 Neighbor Advertisement                       |
| "icmpv6-redirect"    | : ICMPv6 Redirect                                     |