

# A field guide to TCPDump

What is it? TCPDump is an extremely useful tool to inspect network traffic.

How do I call it? `tcpdump [options] [filter query]`

## 1. (Most useful) Command-line options

|                           |   |                              |   |
|---------------------------|---|------------------------------|---|
| <code>-X</code>           | Print the contents of each packet in hex and ascii  | <code>-v[v][v]</code>        | Turn on verbose output                      |
| <code>-i eth0</code>      | Only listen on eth0   | <code>-n</code>              | Don't convert IP addresses to domain names. |
| <code>-w file.pcap</code> | Write contents of dump to file.pcap. The contents can then be examined with a program like Wireshark. | <code>-F &lt;file&gt;</code> | Read filter expression from <file>          |
| <code>-k NP</code>        | Display process name and PID (🍏-only)   |                              |   |

## 2. Filter language

Filters tell TCPDump which part of the traffic it should display. You can chain filters using the `and`, `or` and `not` operators.

|  |   |
|--|---|
| <code>[tcp udp] port &lt;portnum&gt;</code>  | Match all TCP or UDP packets going through <portnum>      |
| <code>[src dst] host &lt;hostname&gt;</code>   | Match all the packets arriving or departing to <hostname> |
| <code>&lt;filter&gt; and &lt;filter&gt;   &lt;filter&gt; or &lt;filter&gt;   not &lt;filter&gt;</code> | Combine/negate filters                                    |

## 3. Examples

| Filter   | Explanation  | Filter                         | Explanation                                    |
|--|--|--------------------------------|--|
| <code>dst host <a href="http://example.com">example.com</a></code> | Capture all packets going to host <a href="http://example.com">example.com</a> | <code>tcp and port imap</code> | Capture all IMAP traffic                       |
| <code>src host <a href="http://google.com">google.com</a></code>   | Capture all packets coming from <a href="http://google.com">google.com</a>     | <code>portrange 443-447</code> | Capture all traffic on port numbers 443 to 447 |
| <code>dst port 80</code>   | Capture all packets going to port 80   |                                |  |