## DOS

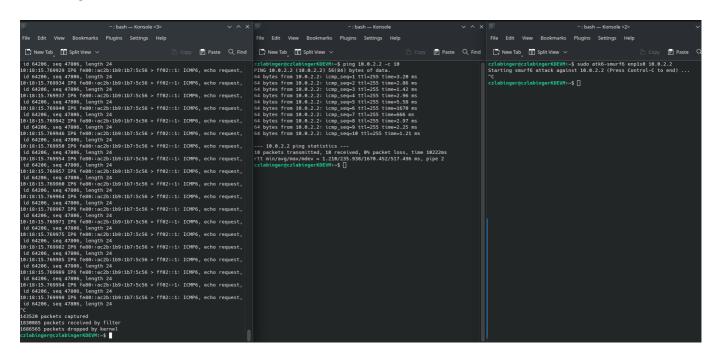
Christof Zlabinger 3.3.2023

## Ping of Death

```
czlabinger@czlabingerKDEVM:~$ route -n
Kernel IP routing table
Destination
                 Gateway
                                                   Flags Metric Ref
                                                                        Use Iface
                                  Genmask
0.0.0.0
                 10.0.2.2
                                  0.0.0.0
                                                   UG
                                                         100
                                                                 0
                                                                          0 enp1s0
10.0.2.0
                 0.0.0.0
                                  255.255.255.0
                                                                           0 enp1s0
                                                   U
                                                          100
                                                                 0
169.254.0.0
                 0.0.0.0
                                  255.255.0.0
                                                   U
                                                          1000
                                                                 0
                                                                           0 enp1s0
```

```
czlabinger@czlabingerKDEVM:~$ ping -s 65507 -c 10 10.0.2.2
PING 10.0.2.2 (10.0.2.2) 65507(65535) bytes of data.
65515 bytes from 10.0.2.2: icmp_seq=1 ttl=255 time=0.392 ms
65515 bytes from 10.0.2.2: icmp_seq=2 ttl=255 time=0.409 ms
65515 bytes from 10.0.2.2: icmp_seq=3 ttl=255 time=0.372 ms
65515 bytes from 10.0.2.2: icmp_seq=4 ttl=255 time=0.495 ms
65515 bytes from 10.0.2.2: icmp_seq=5 ttl=255 time=0.374 ms
65515 bytes from 10.0.2.2: icmp_seq=6 ttl=255 time=0.214 ms
65515 bytes from 10.0.2.2: icmp_seq=7 ttl=255 time=0.487 ms
65515 bytes from 10.0.2.2: icmp_seq=8 ttl=255 time=0.369 ms
65515 bytes from 10.0.2.2: icmp_seq=9 ttl=255 time=0.246 ms
65515 bytes from 10.0.2.2: icmp_seq=10 ttl=255 time=0.498 ms
--- 10.0.2.2 ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9199ms
rtt min/avg/max/mdev = 0.214/0.385/0.498/0.092 ms
czlabinger@czlabingerKDEVM:~$ ping -s 10 -c 10 10.0.2.2
PING 10.0.2.2 (10.0.2.2) 10(38) bytes of data.
18 bytes from 10.0.2.2: icmp_seq=1 ttl=255
18 bytes from 10.0.2.2: icmp_seq=2 ttl=255
18 bytes from 10.0.2.2: icmp_seq=3 ttl=255
18 bytes from 10.0.2.2: icmp_seq=4 ttl=255
18 bytes from 10.0.2.2: icmp_seq=5 ttl=255
18 bytes from 10.0.2.2: icmp_seq=6 ttl=255
18 bytes from 10.0.2.2: icmp_seq=7 ttl=255
18 bytes from 10.0.2.2: icmp_seq=8 ttl=255
18 bytes from 10.0.2.2: icmp_seq=9 ttl=255
18 bytes from 10.0.2.2: icmp_seq=10 ttl=255
--- 10.0.2.2 ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9209ms
czlabinger@czlabingerKDEVM:~$
```

### **Smurf Attacks**



# **SYN Flood Attacks**

```
curl 10.0.106.246
<!DOCTYPE html PUBLIC "-//W3C//DTD XH
TML 1.0 Transitional//EN" "http://www
.w3.org/TR/xhtml1/DTD/xhtml1-transiti
onal.dtd">
<html xmlns="http://www.w3.org/1999/x</pre>
html">
  ←!--
    Modified from the Debian original
 for Ubuntu
    Last updated: 2022-03-22
    See: https://launchpad.net/bugs/1
966004
  <head>
    <meta http-equiv="Content-Type" c</pre>
ontent="text/html; charset=UTF-8" />
    <title>Apache2 Ubuntu Default Pag
e: It works</title>
    <style type="text/css" media="scr</pre>
een">
    margin: Opx Opx Opx Opx;
    padding: Opx Opx Opx Opx;
  body, html {
    padding: 3px 3px 3px 3px;
    background-color: #D8DBE2;
    font-family: Ubuntu, Verdana, san
s-serif;
    font-size: 11pt;
    text-align: center;
  ļ
  div.main_page {
    position: relative;
    display: table;
    width: 800px;
```

```
The default Ubuntu do cument root is <tt>\text{\sumbalangle} \text{\sumbalangle} \text
```

```
ip=10.0.106.246 ttl=64 DF
                                                                                                                                   id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
                                                                              len=46
                                                                                         ip=10.0.106.246 ttl=64
                                                                                                                                    id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0
             <div class="section_header">
                <div id="bugs"></div>
    Reporting Problems
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
len=46 ip=10.0.106.246 ttl=64 DF
                                                                                                                                    id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
                                                                                                                                   id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
             </div>
                                                                                         ip=10.0.106.246 ttl=64 DF
                                                                                                                                    id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0
                                                                                                                                   id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
             <div class="content section t
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
len=46 ip=10.0.106.246 ttl=64 DF
ext">
                                                                                                                                   id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
len=46 ip=10.0.106.246 ttl=64 DF
                          Please use the <tt>ub
untu-bug</tt> tool to report bugs in
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
len=46 ip=10.0.106.246 ttl=64 DF
                                                                                                                                   id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
                          Apache2 package with
Ubuntu. However, check <a
href="https://bugs.la
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
                                                                                                                                    id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
                                                                                                                                   id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
len=46 ip=10.0.106.246 ttl=64 DF
unchpad.net/ubuntu/+source/apache2
                          rel="nofollow">existi
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
                                                                                                                                    id=0 sport=80 flags=SA seq=0 win=64240
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
len=46 ip=10.0.106.246 ttl=64 DF
                                                                                                                                   id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
ng bug reports</a> before reporting a
  new bug.
                                                                                         ip=10.0.106.246 ttl=64 DF
                                                                                                                                    id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0
                len=46
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
len=46 ip=10.0.106.246 ttl=64 DF
                                                                                                                                   id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
                >
                          Please report bugs sp
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
len=46 ip=10.0.106.246 ttl=64 DF
len=46 ip=10.0.106.246 ttl=64 DF
                                                                                                                                   id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
ecific to modules (such as PHP and ot
hers)
                          to their respective p
                                                                                                                                   id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
len=46 ip=10.0.106.246 ttl=64 DF
ackages, not to the web server itself
                                                                                         ip=10.0.106.246 ttl=64 DF
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
len=46 ip=10.0.106.246 ttl=64 DF
                                                                                                                                   id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
             </div>
                                                                                                                                   id=0 sport=80 flags=SA seq=0 win=64240 rtt=0.0 ms
id=0 sport=80 flags=SA seq=3199 win=64240 rtt=0.9 ms
id=0 sport=80 flags=SA seq=3200 win=64240 rtt=1.8 ms
          </div>
                                                                                        ip=10.0.106.246 ttl=64 DF
                                                                              len=46 ip=10.0.106.246 ttl=64 DF
len=46 ip=10.0.106.246 ttl=64 DF
      <div class="validator">
</div>
                                                                              len=46 ip=10.0.106.246 ttl=64 DF id=0 sport=80 flags=SA seq=3201 win=64240 rtt=0.8 ms
len=46 ip=10.0.106.246 ttl=64 DF id=0 sport=80 flags=SA seq=3202 win=64240 rtt=1.8 ms
len=46 ip=10.0.106.246 ttl=64 DF id=0 sport=80 flags=SA seq=3203 win=64240 rtt=0.8 ms
    </body>
</html>
```

### zlabinger@czlabinger-virtualbox:~\$ netstat -n Active Internet connections (w/o servers) Proto Recv-Q Send-Q Local Address State Foreign Address 0 0 10.0.106.246:80 192.168.10.99:2048 SYN\_RECV tcp6 0 tcp6 0 10.0.106.246:80 192.168.10.99:8677 SYN\_RECV 0 0 10.0.106.246:80 SYN\_RECV tcp6 192.168.10.99:1761 tcp6 0 0 10.0.106.246:80 192.168.10.99:8766 SYN RECV tcp6 0 0 10.0.106.246:80 192.168.10.99:1901 SYN\_RECV 0 10.0.106.246:80 192.168.10.99:8673 SYN\_RECV tcp6 0 tcp6 0 0 10.0.106.246:80 192.168.10.99:8691 SYN\_RECV 0 0 10.0.106.246:80 192.168.10.99:8686 SYN\_RECV tcp6 tcp6 0 0 10.0.106.246:80 192.168.10.99:8783 SYN\_RECV 0 0 10.0.106.246:80 192.168.10.99:8685 tcp6 SYN\_RECV SYN\_RECV 0 0 10.0.106.246:80 192.168.10.99:1783 tcp6 tcp6 0 0 10.0.106.246:80 192.168.10.99:2017 SYN\_RECV 0 0 10.0.106.246:80 192.168.10.99:1909 SYN RECV tcp6 tcp6 0 10.0.106.246:80 192.168.10.99:1739 SYN\_RECV SYN\_RECV 0 0 10.0.106.246:80 192.168.10.99:1919 tcp6 10.0.106.246:80 0 SYN\_RECV 0 192.168.10.99:1983 tcp6 SYN\_RECV tcp6 0 0 10.0.106.246:80 192.168.10.99:1770 tcp6 0 0 10.0.106.246:80 192.168.10.99:8730 SYN\_RECV 0 SYN\_RECV tcp6 0 10.0.106.246:80 192.168.10.99:8704 tcp6 0 0 10.0.106.246:80 192.168.10.99:1897 SYN\_RECV 0 0 10.0.106.246:80 192.168.10.99:1965 SYN\_RECV tcp6 0 0 10.0.106.246:80 192.168.10.99:1744 SYN\_RECV tcp6 0 tcp6 0 10.0.106.246:80 192.168.10.99:1746 SYN RECV 0 0 10.0.106.246:80 SYN\_RECV tcp6 192.168.10.99:2014 0 0 10.0.106.246:80 192.168.10.99:1826 SYN RECV tcp6 10.0.106.246:80 tcp6 0 0 192.168.10.99:2052 SYN\_RECV 0 10.0.106.246:80 192.168.10.99:2054 SYN\_RECV tcp6 0 tcp6 0 0 10.0.106.246:80 192.168.10.99:8753 SYN\_RECV 0 0 10.0.106.246:80 192.168.10.99:1832 tcp6 SYN\_RECV tcp6 0 0 10.0.106.246:80 192.168.10.99:2024 SYN\_RECV 0 tc¤6 0 10.0.106.246:80 192.168.10.99:1863 SYN RECV