1.

host [www.uwo.ca](http://www.uwo.ca)

www.uwo.ca is an alias for web3.uwo.ca.

web3.uwo.ca has address 129.100.0.79

web3.uwo.ca has IPv6 address 2605:500:420:1:129:100::79

host 129.100.0.79

79.0.100.129.in-addr.arpa domain name pointer web3.uwo.ca.

It’s class B

Prefix: 129.100.0.0

Number of address of class B: 65536 (216)

2.

129.100.45.2

129.100.0.1

129.100.45.25

129.100.4.251

129.100.0.192

129.100.0.229

129.100.8.51

129.100.89.1

129.100.9.123

129.100.90.13

129.100.120.13

129.100.210.123

129.100.0.11

129.100.10.3

129.100.77.178

129.100.47.78

129.100.1.186

129.100.150.16

129.100.50.160

129.100.5.60

Network size: 9/20 \* 65536 (216) = 29491

3.

4.traceroute [www.google.com](http://www.google.com)

Max hops:64

1. hitronhub.home (192.168.0.1) 4.904 ms 4.106 ms 3.279 ms

2 \* \* \*

3 67.231.222.133 (67.231.222.133) 12.331 ms 12.469 ms 14.452 ms

Location: Toronto, Rongers Communications Canadas Inc

4 9916-cgw01.wlfdle.rmgt.net.rogers.com (209.148.230.161) 16.407 ms

Location: Quebec, Montreal

0-4-0-8-cgw01.wlfdle.rmgt.net.rogers.com (209.148.230.173) 17.072 ms

0-5-0-8-cgw01.wlfdle.rmgt.net.rogers.com (209.148.230.177) 15.817 ms

5 209.148.235.34 (209.148.235.34) 28.855 ms

Location: Brampton, Ontario

209.148.233.38 (209.148.233.38) 15.191 ms

209.148.235.34 (209.148.235.34) 18.155 ms

6 72.14.209.126 (72.14.209.126) 19.207 ms \*

Location: California, Mountain View

72.14.222.87 (72.14.222.87) 17.295 ms

7 \* 108.170.250.241 (108.170.250.241) 22.599 ms \*

Location: California, Mountain View

8 yyz10s14-in-f4.1e100.net (172.217.1.4) 19.047 ms

Location: California, Mountain View

216.239.35.235 (216.239.35.235) 17.094 ms 25.478 ms

5.

The probability that won’t happen a second collision: 2/3

K rounds: (1/3)^k-1

6.

First 34 bytes:

90 50 ca 1a 37 42 6c 96 cf dd 3a 0f 08 00 45 00 03 b6 00 00 40 00 40 06 e4 e8 c0 a8 00 0b 81 64 10 42

MAC Address:

Source: 6c:96:cf:dd:3a:0f

Destination: 90:50:ca:1a:37:42

Internet protocol version 4

Header length: 20 bytes

Total length of frame: 950

Time to live: 64

Source IP: 192.168.0.11

Destination IP: 129.100.16.66

7.

|  |  |
| --- | --- |
| Destination | Next Hop |
| 192.10.4.2 | 164.80.22.31 |
| 164.80.22.31 | Deliver direct |
| 196.3.7.4 | 194.8.11.55 |
| 194.8.11.55 | Deliver direct |
| 129.1.44.12 | 194.8.11.55 |
| 194.8.11.55 | Deliver direct |
| 132.32.16.10 | Deliver direct |

8.