

tracert to ucalgary.ca (136.159.96.125), 30 hops max, 60 byte packets

```
1 _gateway (10.12.73.1) 2.606 ms 2.531 ms 2.522 ms
2 * * *
3 10.16.122.1 (10.16.122.1) 2.837 ms 3.271 ms 3.651 ms
4 10.16.122.4 (10.16.122.4) 2.468 ms 2.367 ms 2.236 ms
5 10.16.121.1 (10.16.121.1) 2.194 ms 2.145 ms 2.093 ms
6 10.59.226.21 (10.59.226.21) 2.044 ms 2.196 ms 2.147 ms
7 10.59.226.14 (10.59.226.14) 2.495 ms 2.228 ms 2.169 ms
8 10.59.226.25 (10.59.226.25) 2.465 ms 2.433 ms 2.396 ms
9 * * *
10 10.17.184.1 (10.17.184.1) 3.289 ms 2.732 ms 2.503 ms
11 www.ucalgary.ca (136.159.96.125) 3.322 ms 2.580 ms 2.954 ms
```

tracert to utoronto.ca (128.100.166.120), 30 hops max, 60 byte packets

```
1 _gateway (10.12.73.1) 1.766 ms 2.271 ms 2.266 ms
2 * * *
3 10.16.122.1 (10.16.122.1) 1.785 ms 1.780 ms 3.154 ms
4 10.16.122.4 (10.16.122.4) 2.158 ms 2.149 ms 2.127 ms
5 10.16.121.1 (10.16.121.1) 2.544 ms 2.538 ms 2.528 ms
6 10.59.226.21 (10.59.226.21) 2.071 ms 2.142 ms 1.634 ms
7 h84.gpvpn.ucalgary.ca (136.159.199.84) 2.571 ms 1.824 ms 3.496 ms
8 h99.gpvpn.ucalgary.ca (136.159.199.99) 1.995 ms 4.417 ms 4.393 ms
9 clgr2rtr1.network.canarie.ca (205.189.32.212) 2.933 ms 2.940 ms 4.246 ms
10 rgn1rtr1.network.canarie.ca (205.189.32.234) 11.616 ms 11.550 ms 11.187 ms
11 wnpg2rtr1.network.canarie.ca (205.189.32.239) 17.694 ms 16.858 ms 18.153 ms
12 wnpg1rtr1.network.canarie.ca (205.189.32.61) 18.351 ms 17.805 ms 18.278 ms
13 otwa4rtr1.network.canarie.ca (205.189.32.180) 47.200 ms 46.593 ms 46.508 ms
14 205.189.32.229 (205.189.32.229) 47.654 ms 46.736 ms 47.308 ms
15 66.97.16.53 (66.97.16.53) 51.866 ms 46.562 ms 49.357 ms
16 66.97.23.58 (66.97.23.58) 134.707 ms 134.841 ms 134.575 ms
17 * utoronto1-ut-hub-if-re.gtanet.ca (205.211.94.234) 120.010 ms 120.016 ms
18 * * *
19 * * *
20 * * *
21 128.100.166.120 (128.100.166.120) 100.549 ms 79.110 ms 78.703 ms
```

tracert to mcgill.ca (132.216.177.160), 30 hops max, 60 byte packets

```
1 _gateway (10.12.73.1) 1.452 ms 1.416 ms 2.143 ms
2 * * *
3 10.16.122.1 (10.16.122.1) 2.834 ms 3.658 ms 3.688 ms
4 10.16.122.4 (10.16.122.4) 1.987 ms 2.407 ms 2.369 ms
5 10.16.121.1 (10.16.121.1) 2.347 ms 2.290 ms 2.257 ms
6 10.59.226.21 (10.59.226.21) 2.875 ms 2.445 ms 1.929 ms
7 h84.gpvpn.ucalgary.ca (136.159.199.84) 2.176 ms 2.138 ms 2.795 ms
8 h99.gpvpn.ucalgary.ca (136.159.199.99) 2.418 ms 7.049 ms 3.131 ms
9 clgr2rtr1.network.canarie.ca (205.189.32.212) 4.289 ms 3.857 ms 4.222 ms
10 rgna1rtr1.network.canarie.ca (205.189.32.234) 32.088 ms 32.656 ms 31.202 ms
11 wnpg2rtr1.network.canarie.ca (205.189.32.239) 30.733 ms 30.679 ms 30.655 ms
12 wnpg1rtr1.network.canarie.ca (205.189.32.61) 30.382 ms 30.039 ms 29.617 ms
13 otwa4rtr1.network.canarie.ca (205.189.32.180) 47.183 ms 45.945 ms 46.301 ms
14 205.189.32.57 (205.189.32.57) 46.768 ms 127.894 ms 127.816 ms
15 * * *
16 * * *
17 * * *
18 * * *
19 * * *
20 * * *
21 * * *
22 www.mcgill.ca (132.216.177.160) 114.838 ms 115.125 ms 115.168 ms
```

tracert to ubc.ca (206.87.224.15), 30 hops max, 60 byte packets

```
1 _gateway (10.12.73.1) 1.784 ms 2.425 ms 2.423 ms
2 * * *
3 10.16.122.1 (10.16.122.1) 1.977 ms 1.970 ms 2.514 ms
4 10.16.122.4 (10.16.122.4) 2.257 ms 2.234 ms 2.209 ms
5 10.16.121.1 (10.16.121.1) 2.749 ms 2.743 ms 2.721 ms
6 10.59.226.21 (10.59.226.21) 2.058 ms 2.520 ms 2.236 ms
7 h84.gvpn.ualgary.ca (136.159.199.84) 2.652 ms 7.469 ms 3.777 ms
8 h99.gvpn.ualgary.ca (136.159.199.99) 3.388 ms 7.727 ms 4.985 ms
9 clgr2rtr1.network.canarie.ca (205.189.32.212) 38.668 ms 7.607 ms 4.880 ms
10 vncv1rtr1.network.canarie.ca (205.189.32.174) 22.903 ms 22.856 ms 21.741 ms
11 205.189.32.173 (205.189.32.173) 21.658 ms 21.286 ms 20.419 ms
12 cr2-100g-bb3900ae2.vncv1.bc.net (206.12.0.121) 20.094 ms 18.709 ms 18.667 ms
13 343-oran-cr2-ubcab.vncv1.bc.net (134.87.2.49) 15.996 ms 15.577 ms 16.097 ms
14 137.82.88.122 (137.82.88.122) 14.932 ms 75.829 ms *
15 * a22-a0.net.ubc.ca (137.82.123.113) 14.451 ms 14.439 ms
16 * * *
17 ubc.ca (206.87.224.15) 14.902 ms 15.479 ms 15.984 ms
```

tracert to nyu.edu (216.165.47.10), 30 hops max, 60 byte packets

```
1 _gateway (10.12.73.1) 1.485 ms 1.742 ms 2.155 ms
2 * * *
3 10.16.122.1 (10.16.122.1) 1.665 ms 1.647 ms 2.147 ms
4 10.16.122.4 (10.16.122.4) 1.963 ms 1.931 ms 1.880 ms
5 10.16.121.1 (10.16.121.1) 2.645 ms 2.592 ms 2.542 ms
6 10.59.226.21 (10.59.226.21) 2.468 ms 2.766 ms 2.454 ms
7 h84.gvpvn.ucalgary.ca (136.159.199.84) 3.718 ms 5.023 ms 4.560 ms
8 h99.gvpvn.ucalgary.ca (136.159.199.99) 8.385 ms 5.680 ms 5.206 ms
9 clgr2rtr1.network.canarie.ca (205.189.32.212) 5.159 ms 5.635 ms 5.613 ms
10 rgna1rtr1.network.canarie.ca (205.189.32.234) 13.342 ms 12.998 ms *
11 wnpgr2rtr1.network.canarie.ca (205.189.32.239) 17.337 ms 17.177 ms 17.788 ms
12 toro1rtr1.network.canarie.ca (205.189.32.165) 100.265 ms 100.036 ms 99.983 ms
13 nyc-9208-canet-tor.nysernet.net (199.109.4.137) 99.856 ms 99.760 ms 99.419 ms
14 nyu-nyc-9208.nysernet.net (199.109.5.6) 96.832 ms 91.767 ms 91.718 ms
15 * * *
16 * * *
17 nyufw-outside-ngfw-vl3080.net.nyu.edu (128.122.254.116) 94.996 ms 93.552 ms 94.972
ms
18 * * *
19 wsqdcgwa-vl901.net.nyu.edu (128.122.1.6) 93.802 ms 93.784 ms 92.950 ms
20 nyu.edu (216.165.47.10) 94.632 ms 103.161 ms 103.230 ms
```

tracert to stanford.edu (171.67.215.200), 30 hops max, 60 byte packets

```
1 _gateway (10.12.73.1) 1.789 ms 1.744 ms 2.363 ms
2 * * *
3 10.16.122.1 (10.16.122.1) 1.880 ms 2.164 ms 2.585 ms
4 10.16.122.4 (10.16.122.4) 2.188 ms 2.176 ms 2.131 ms
5 10.16.121.1 (10.16.121.1) 2.901 ms 2.862 ms 2.840 ms
6 10.59.226.21 (10.59.226.21) 2.795 ms 1.970 ms 1.873 ms
7 h84.gvpn.ualgary.ca (136.159.199.84) 2.350 ms 1.989 ms 1.953 ms
8 h99.gvpn.ualgary.ca (136.159.199.99) 2.271 ms 2.739 ms 3.160 ms
9 clgr2rtr1.network.canarie.ca (205.189.32.212) 3.151 ms 3.117 ms 3.097 ms
10 vncv1rtr1.network.canarie.ca (205.189.32.174) 22.236 ms 22.233 ms 21.160 ms
11 srry1rtr1.network.canarie.ca (205.189.32.8) 21.111 ms 20.860 ms 20.798 ms
12 sttl1rtr1.network.canarie.ca (205.189.32.1) 20.513 ms 20.462 ms 20.030 ms
13 cenichpr-1-is-jmb-778.snvaca.pacificwave.net (207.231.245.129) 34.949 ms 36.117
ms 35.698 ms
14 hpr-stan--svl-hpr3-100ge.cenic.net (137.164.27.61) 37.065 ms 94.525 ms 93.417 ms
15 woa-west-rtr-vl3.SUNet (171.66.255.132) 93.352 ms 99.468 ms 98.629 ms
16 * * *
17 web.stanford.edu (171.67.215.200) 99.392 ms 99.285 ms 99.446 ms
```

tracert to london.ac.uk (128.86.130.42), 30 hops max, 60 byte packets

```
1 _gateway (10.12.73.1) 1.980 ms 2.415 ms 2.420 ms
2 * * *
3 10.16.122.1 (10.16.122.1) 1.907 ms 1.893 ms 3.478 ms
4 10.16.122.4 (10.16.122.4) 1.789 ms 2.241 ms 2.232 ms
5 10.16.121.1 (10.16.121.1) 2.860 ms 2.866 ms 2.854 ms
6 10.59.226.21 (10.59.226.21) 2.162 ms 1.973 ms 1.922 ms
7 h84.gpvpn.ucalgary.ca (136.159.199.84) 3.391 ms 4.137 ms 1.908 ms
8 h99.gpvpn.ucalgary.ca (136.159.199.99) 4.677 ms 2.190 ms 2.595 ms
9 clgr2rtr1.network.canarie.ca (205.189.32.212) 4.055 ms 3.342 ms 4.523 ms
10 rgn1rtr1.network.canarie.ca (205.189.32.234) 11.246 ms 11.268 ms 11.305 ms
11 wnp2rtr1.network.canarie.ca (205.189.32.239) 17.832 ms 18.243 ms 17.862 ms
12 toro1rtr1.network.canarie.ca (205.189.32.165) 42.545 ms 42.460 ms 42.372 ms
13 canarie.mx1.par.fr.geant.net (62.40.124.221) 129.121 ms 129.560 ms 128.971 ms
14 ae5.mx1.lon2.uk.geant.net (62.40.98.178) 130.501 ms 131.031 ms 130.986 ms
15 ae6.mx1.lon.uk.geant.net (62.40.98.36) 131.660 ms 145.822 ms 145.788 ms
16 janet-gw.mx1.lon.uk.geant.net (62.40.124.198) 146.399 ms 146.347 ms 145.483 ms
17 ae29.londpg-sbr2.ja.net (146.97.33.2) 145.430 ms 145.406 ms 145.372 ms
18 ae16-0.londsh.rbr2.ja.net (146.97.37.134) 145.358 ms 161.441 ms 204.181 ms
19 gw.ulcc.net (146.97.139.210) 204.121 ms 204.091 ms 205.262 ms
20 fw.ulcc.net (128.86.200.178) 203.977 ms 203.267 ms 203.268 ms
21 128.86.200.210 (128.86.200.210) 205.094 ms 205.055 ms 205.035 ms
22 uolweb6.london.ac.uk (128.86.130.42) 204.895 ms 204.771 ms 204.774 ms
```

traceroute to u-paris.fr (195.220.128.193), 30 hops max, 60 byte packets

```
1 _gateway (10.12.73.1) 1.876 ms 2.252 ms 2.244 ms
2 * * *
3 10.16.122.1 (10.16.122.1) 1.726 ms 3.460 ms 5.054 ms
4 10.16.122.4 (10.16.122.4) 2.778 ms 2.727 ms 2.657 ms
5 10.16.121.1 (10.16.121.1) 2.654 ms 2.612 ms 2.590 ms
6 10.59.226.21 (10.59.226.21) 6.276 ms 2.008 ms 2.363 ms
7 h84.gpvpn.ucalgary.ca (136.159.199.84) 2.516 ms 4.085 ms 3.802 ms
8 h99.gpvpn.ucalgary.ca (136.159.199.99) 4.607 ms 4.558 ms 4.956 ms
9 clgr2rtr1.network.canarie.ca (205.189.32.212) 3.228 ms * *
10 rgn1rtr1.network.canarie.ca (205.189.32.234) 17.964 ms 17.940 ms 16.385 ms
11 wnpgrtr1.network.canarie.ca (205.189.32.239) 17.865 ms 19.879 ms 17.913 ms
12 toro1rtr1.network.canarie.ca (205.189.32.165) 50.624 ms 48.082 ms 49.826 ms
13 canarie.mx1.par.fr.geant.net (62.40.124.221) 2123.873 ms 2123.589 ms 2079.168 ms
14 ae5.mx1.gen.ch.geant.net (62.40.98.182) 2079.081 ms 2079.045 ms 2078.989 ms
15 renater-gw.mx1.gen.ch.geant.net (62.40.124.62) 2078.974 ms 2077.345 ms 2077.290 ms
16 et-3-1-7-ren-nr-paris1-rtr-131.noc.renater.fr (193.51.180.166) 2080.415 ms 2080.356
ms 2080.360 ms
17 te-0-0-0-12-ren-nr-odeon-rtr-091.noc.renater.fr (193.55.204.2) 2077.373 ms 2076.663 ms
te-0-0-0-11-ren-nr-odeon-rtr-091.noc.renater.fr (193.51.180.20) 2073.468 ms
18 xe-0-3-0-odeon-rtr-111.noc.renater.fr (193.51.180.156) 2076.349 ms 204.036 ms 203.905
ms
19 195.221.127.6 (195.221.127.6) 205.068 ms 205.004 ms 204.960 ms
20 195.220.129.174 (195.220.129.174) 204.926 ms 204.838 ms 204.824 ms
21 195.220.129.214 (195.220.129.214) 203.245 ms 204.032 ms 204.936 ms
22 proxy-web.u-paris.fr (195.220.128.193) 204.896 ms 204.897 ms 204.865 ms
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