```
traceroute to ucalgary.ca (136.159.96.125), 30 hops max, 60 byte packets
 1  _gateway (192.168.0.1)  5.119 ms  5.071 ms  6.201 ms
 2  70.77.0.1 (70.77.0.1)  21.584 ms  21.815 ms  22.298 ms
 3  rc3no-be116-1.cg.shawcable.net (64.59.134.133)  22.337 ms  22.535 ms  22.759 ms
 4  24.244.57.181 (24.244.57.181)  22.809 ms  116.337 ms  116.249 ms
 5  24.244.57.5 (24.244.57.5)  116.237 ms  116.192 ms  116.433 ms
 6  rc3no-be214.cg.shawcable.net (24.244.57.1)  116.068 ms  13.369 ms  17.215 ms
 7  * * *
 8  * * *
 9  fw1uofc.cg.bigpipeinc.com (206.174.203.106)  18.212 ms  23.613 ms  23.536 ms
10  h66-244-233-20.bigpipeinc.com (66.244.233.20)  24.312 ms  23.928 ms  23.873 ms
11  h77.gpvpn.ucalgary.ca (136.159.199.77)  24.915 ms  27.547 ms  27.385 ms
12  10.59.226.25 (10.59.226.25)  35.351 ms  17.586 ms  13.475 ms
13  * * *
14  10.17.184.1 (10.17.184.1)  19.965 ms  23.647 ms  21.250 ms
15  www.ucalgary.ca (136.159.96.125)  22.177 ms  135.576 ms  135.597 ms
```

traceroute to utoronto.ca (128.100.166.120), 30 hops max, 60 byte packets
 1 _gateway (192.168.0.1) 2.481 ms 3.503 ms 3.486 ms
 2 70.77.0.1 (70.77.0.1) 19.609 ms 21.290 ms 21.874 ms
 3 rc3no-be116-1.cg.shawcable.net (64.59.134.133) 21.923 ms 22.209 ms 22.183 ms
 4 24.244.57.181 (24.244.57.181) 202.875 ms 203.117 ms 202.977 ms
 5 24.244.57.5 (24.244.57.5) 26.460 ms 26.523 ms 26.747 ms
 6 rc3no-be214.cg.shawcable.net (24.244.57.1) 23.703 ms 14.311 ms *
 7 rc3so-be23.cg.shawcable.net (66.163.71.118) 75.934 ms 75.925 ms 76.103 ms
 8 rc1wt-be82.wa.shawcable.net (66.163.76.9) 76.101 ms 76.091 ms 76.092 ms
 9 100ge14-2.core1.sea1.he.net (206.81.80.40) 76.079 ms 76.074 ms 76.069 ms
10 100ge1-2.core1.msp1.he.net (184.104.194.22) 76.064 ms 76.059 ms 76.049 ms
11 100ge13-1.core2.chi1.he.net (184.105.223.177) 76.173 ms 76.379 ms 76.359 ms
12 port-channel4.core3.chi1.he.net (184.104.196.218) 175.233 ms 235.619 ms 235.679 ms
13 port-channel1.core2.tor1.he.net (184.104.196.246) 234.989 ms 234.980 ms 234.948 ms
14 100ge9-1.core1.tor1.he.net (184.104.196.245) 235.084 ms 235.054 ms 234.791 ms
15 gtanet-networking.10gigabitethernet3-1.core1.tor1.he.net (216.66.30.114) 234.778
ms 234.759 ms 234.875 ms
16 utoronto2-ut-hub-if-internet.gtanet.ca (205.211.94.134) 234.754 ms 234.735 ms 234.716
ms
17 * * *
18 * * *
19 * * *
20 128.100.166.120 (128.100.166.120) 235.784 ms 235.697 ms 235.931 ms

70.77.0.1
64.59.134.133
24.244.57.181
24.244.57.5
24.244.57.1
66.163.71.118
66.163.76.9
206.81.80.40
184.104.194.22
184.105.223.177
184.104.196.218
184.104.196.246
184.104.196.245
216.66.30.114
205.211.94.134
128.100.166.120

```
traceroute to mcgill.ca (132.216.177.160), 30 hops max, 60 byte packets
 1  _gateway (192.168.0.1)  3.443 ms  3.963 ms  4.640 ms
 2  70.77.0.1 (70.77.0.1)  16.630 ms  19.446 ms  20.041 ms
 3  rc3no-be116-1.cg.shawcable.net (64.59.134.133)  19.979 ms  20.923 ms  21.400 ms
 4  24.244.57.181 (24.244.57.181)  23.232 ms  23.200 ms  25.544 ms
 5  24.244.57.5 (24.244.57.5)  26.602 ms  29.196 ms  28.831 ms
 6  rc3no-be214.cg.shawcable.net (24.244.57.1)  26.246 ms  12.396 ms  17.000 ms
 7  rc3so-be23.cg.shawcable.net (66.163.71.118)  16.971 ms  23.805 ms  23.728 ms
 8  rc1wt-be82.wa.shawcable.net (66.163.76.9)  87.709 ms  87.671 ms  87.532 ms
 9  ae22.cr4-sea2.ip4.gtt.net (209.120.141.209)  87.563 ms  87.542 ms  87.520 ms
10  ae16.cr0-mtl1.ip4.gtt.net (89.149.186.134)  102.922 ms  101.716 ms  102.630 ms
11  ip4.gtt.net (208.116.159.206)  104.697 ms  107.626 ms  106.978 ms
12  imtrl-rq-ic-dmtrl-rq.risq.net (192.77.63.70)  94.936 ms  95.455 ms  95.417 ms
13  mcgill-gw.risq.net (132.202.62.90)  94.767 ms  235.857 ms  235.774 ms
14  mcgill-internet-membre1.risq.net (206.167.128.42)  235.735 ms  235.705 ms  235.594 ms
15  * * *
16  * * *
17  * * *
18  www.mcgill.ca (132.216.177.160)  212.800 ms  212.822 ms  235.461 ms


70.77.0.1
64.59.134.133
24.244.57.181
24.244.57.5
24.244.57.1
66.163.71.118
66.163.76.9
209.120.141.209
89.149.186.134
208.116.159.206
192.77.63.70
132.202.62.90
206.167.128.42
132.216.177.160
```

traceroute to ubc.ca (206.87.224.15), 60 hops max, 60 byte packets
 1 _gateway (192.168.0.1) 2.468 ms 3.685 ms 3.607 ms
 2 70.77.0.1 (70.77.0.1) 16.291 ms 16.214 ms 16.138 ms
 3 rc3no-be116-1.cg.shawcable.net (64.59.134.133) 18.349 ms 18.269 ms 18.845 ms
 4 24.244.57.181 (24.244.57.181) 18.761 ms 18.681 ms 18.574 ms
 5 24.244.57.5 (24.244.57.5) 21.433 ms 21.346 ms 24.537 ms
 6 rc3no-be214.cg.shawcable.net (24.244.57.1) 24.872 ms 11.151 ms 15.658 ms
 7 rc1st-be11-1.vc.shawcable.net (66.163.72.70) 28.817 ms 27.760 ms 28.167 ms
 8 * * *
 9 208.98.209.22 (208.98.209.22) 33.613 ms 32.009 ms 32.539 ms
10 cr2-100g-bb3928ae1.vncv1.bc.net.bc.net (207.23.253.118) 33.214 ms 32.531 ms 32.213 ms
11 134.87.30.149 (134.87.30.149) 34.497 ms 40.860 ms 41.721 ms
12 137.82.88.122 (137.82.88.122) 31.382 ms 28.457 ms 29.856 ms
13 a22-a0.net.ubc.ca (137.82.123.113) 29.802 ms * 27.090 ms
14 * * *
15 ubc.ca (206.87.224.15) 30.472 ms 30.618 ms 26.526 ms

70.77.0.1
64.59.134.133
24.244.57.181
24.244.57.5
24.244.57.1
66.163.72.70
208.98.209.22
207.23.253.118
134.87.30.149
137.82.88.122
137.82.123.113
206.87.224.15

```
traceroute to nyu.edu (216.165.47.10), 30 hops max, 60 byte packets
 1  _gateway (192.168.0.1)  3.817 ms  3.793 ms  4.679 ms
 2  70.77.0.1 (70.77.0.1)  172.191 ms  172.192 ms  172.074 ms
 3  rc3no-be116-1.cg.shawcable.net (64.59.134.133)  172.039 ms  172.012 ms  171.903 ms
 4  24.244.57.181 (24.244.57.181)  171.883 ms  171.845 ms  171.825 ms
 5  24.244.57.5 (24.244.57.5)  171.795 ms  171.658 ms  171.630 ms
 6  rc3no-be214.cg.shawcable.net (24.244.57.1)  171.562 ms  12.112 ms  17.379 ms
 7  rc3so-be23.cg.shawcable.net (66.163.71.118)  17.939 ms  19.126 ms  19.120 ms
 8  rc1wt-be82.wa.shawcable.net (66.163.76.9)  233.988 ms  233.963 ms  233.938 ms
 9  six.zayo.com (206.81.80.19)  233.775 ms  233.819 ms  233.794 ms
10  ae27.cs1.sea1.us.eth.zayo.com (64.125.29.0)  234.139 ms ae28.cs2.sea1.us.eth.zayo.com
(64.125.29.104)  234.106 ms ae27.cs1.sea1.us.eth.zayo.com (64.125.29.0)  233.994 ms
11  * * *
12  * * ae3.cs2.lga5.us.eth.zayo.com (64.125.29.212)  215.160 ms
13  * * *
14  209.66.118.177.IDIA-282827-ZYO.zip.zayo.com (209.66.118.177)  235.252 ms  235.201
ms  235.183 ms
15  * * *
16  * * *
17  nyufw-outside-ngfw-vl3080.net.nyu.edu (128.122.254.116)  233.769 ms  233.707
ms  173.205 ms
18  * * *
19  wsqdcgwa-vl901.net.nyu.edu (128.122.1.6)  204.046 ms  204.013 ms  204.000 ms
20  nyu.edu (216.165.47.10)  203.773 ms  175.550 ms  86.853 ms
```

```
traceroute to stanford.edu (171.67.215.200), 30 hops max, 60 byte packets
 1  _gateway (192.168.0.1)  3.070 ms  4.893 ms  4.893 ms
 2  70.77.0.1 (70.77.0.1)  18.526 ms  20.174 ms  20.223 ms
 3  rc3no-be116-1.cg.shawcable.net (64.59.134.133)  20.516 ms  20.512 ms  21.479 ms
 4  24.244.57.181 (24.244.57.181)  30.561 ms  31.168 ms  31.475 ms
 5  24.244.57.5 (24.244.57.5)  31.820 ms  31.739 ms  33.032 ms
 6  rc3no-be214.cg.shawcable.net (24.244.57.1)  31.555 ms  13.754 ms *
 7  rc3so-be23.cg.shawcable.net (66.163.71.118)  100.499 ms  100.476 ms  100.440 ms
 8  rc1wt-be82.wa.shawcable.net (66.163.76.9)  100.430 ms  100.389 ms  100.280 ms
 9  100ge14-2.core1.sea1.he.net (206.81.80.40)  100.258 ms  100.242 ms  100.209 ms
10  port-channel1.core2.sea1.he.net (184.104.197.46)  100.197 ms  100.175 ms  100.072 ms
11  100ge15-1.core1.pdx1.he.net (184.105.64.138)  99.992 ms  99.911 ms  99.799 ms
12  100ge5-2.core1.pao1.he.net (184.104.193.25)  135.458 ms  235.160 ms  235.114 ms
13  stanford-university.100gigabitethernet5-1.core1.pao1.he.net (184.105.177.238)  235.063
ms  235.036 ms  234.930 ms
14  woa-west-rtr-vl3.SUNet (171.66.255.132)  234.880 ms  234.932 ms  234.889 ms
15  * * *
16  web.stanford.edu (171.67.215.200)  234.720 ms  234.679 ms  234.590 ms
```

traceroute to london.ac.uk (128.86.130.42), 30 hops max, 60 byte packets
 1 _gateway (192.168.0.1) 3.018 ms 4.700 ms 4.698 ms
 2 70.77.0.1 (70.77.0.1) 17.571 ms 19.118 ms 19.787 ms
 3 rc3no-be116-1.cg.shawcable.net (64.59.134.133) 20.102 ms 20.323 ms 20.572 ms
 4 24.244.57.181 (24.244.57.181) 21.302 ms 24.839 ms 25.502 ms
 5 24.244.57.5 (24.244.57.5) 81.834 ms 81.788 ms 81.735 ms
 6 rc3no-be214.cg.shawcable.net (24.244.57.1) 81.662 ms 16.019 ms 19.902 ms
 7 rc3so-be23.cg.shawcable.net (66.163.71.118) 21.446 ms 19.793 ms 21.358 ms
 8 rc1wt-be82.wa.shawcable.net (66.163.76.9) 171.451 ms 171.273 ms 171.306 ms
 9 sea-b2-link.ip.twelve99.net (213.248.67.224) 171.406 ms 171.259 ms 171.231 ms
10 * nyk-bb2-link.ip.twelve99.net (62.115.119.228) 171.235 ms ldn-b2-link.ip.twelve99.net
(62.115.120.239) 182.322 ms
11 port-b2-link.ip.twelve99.net (62.115.139.132) 182.285 ms 182.223 ms nyk-bb2-
link.ip.twelve99.net (62.115.119.228) 171.037 ms
12 port-b1-link.ip.twelve99.net (62.115.142.88) 151.558 ms ldn-bb4-link.ip.twelve99.net
(62.115.112.245) 171.516 ms ash-bb2-link.ip.twelve99.net (62.115.136.201) 183.070 ms
13 ldn-b2-link.ip.twelve99.net (62.115.122.189) 170.198 ms * ldn-b2-link.ip.twelve99.net
(62.115.120.239) 170.637 ms
14 ae16-0.londsh.rbr2.ja.net (146.97.37.134) 170.114 ms jisc-ic345131-ldn-b2.ip.twelve99-
cust.net (62.115.175.131) 170.160 ms nyk-bb1-link.ip.twelve99.net (62.115.118.110) 105.679
ms
15 ae24.londhx-sbr1.ja.net (146.97.35.197) 176.491 ms nyk-bb1-link.ip.twelve99.net
(62.115.118.110) 106.697 ms 106.951 ms
16 ae29.londpg-sbr2.ja.net (146.97.33.2) 179.369 ms 180.505 ms 176.493 ms
17 ae24.londhx-sbr1.ja.net (146.97.35.197) 189.644 ms ldn-b2-link.ip.twelve99.net
(62.115.122.189) 175.880 ms *
18 jisc-ic345131-ldn-b2.ip.twelve99-cust.net (62.115.175.131) 186.919 ms gw.ulcc.net
(146.97.139.210) 172.848 ms jisc-ic345131-ldn-b2.ip.twelve99-cust.net
(62.115.175.131) 165.970 ms
19 fw.ulcc.net (128.86.200.178) 169.029 ms 166.522 ms 171.244 ms
20 ae29.londpg-sbr2.ja.net (146.97.33.2) 170.274 ms 128.86.200.210
(128.86.200.210) 177.923 ms ae29.londpg-sbr2.ja.net (146.97.33.2) 170.477 ms
21 uolweb6.london.ac.uk (128.86.130.42) 173.967 ms 170.076 ms ae16-0.londsh.rbr2.ja.net
(146.97.37.134) 169.706 ms

```
traceroute to u-paris.fr (195.220.128.193), 30 hops max, 60 byte packets
 1  _gateway (192.168.0.1)  3.457 ms  3.757 ms  4.353 ms
 2  70.77.0.1 (70.77.0.1)  172.378 ms  172.398 ms  172.372 ms
 3  rc3no-be116-1.cg.shawcable.net (64.59.134.133)  172.285 ms  172.258 ms  172.230 ms
 4  24.244.57.181 (24.244.57.181)  172.199 ms  172.182 ms  172.031 ms
 5  24.244.57.5 (24.244.57.5)  171.956 ms  171.927 ms  171.899 ms
 6  rc3no-be214.cg.shawcable.net (24.244.57.1)  171.750 ms  11.068 ms  19.970 ms
 7  rc3so-be23.cg.shawcable.net (66.163.71.118)  26.043 ms  27.008 ms  25.922 ms
 8  rc4ec-be13.il.shawcable.net (66.163.65.18)  202.437 ms  202.354 ms  202.325 ms
 9  * * *
10  be2766.ccr42.ord01.atlas.cogentco.com (154.54.46.177)  202.199 ms
be2765.ccr41.ord01.atlas.cogentco.com (154.54.45.17)  202.084 ms  201.995 ms
11  be2717.ccr21.cle04.atlas.cogentco.com (154.54.6.222)  201.970 ms
be2718.ccr22.cle04.atlas.cogentco.com (154.54.7.130)  201.933 ms
be2717.ccr21.cle04.atlas.cogentco.com (154.54.6.222)  201.831 ms
12  be2878.ccr21.alb02.atlas.cogentco.com (154.54.26.130)  182.384 ms  175.203 ms  175.129
ms
13  be3599.ccr31.bos01.atlas.cogentco.com (66.28.4.238)  175.015 ms
be3600.ccr32.bos01.atlas.cogentco.com (154.54.0.222)  172.699 ms
be3599.ccr31.bos01.atlas.cogentco.com (66.28.4.238)  172.803 ms
14  be2101.ccr42.lon13.atlas.cogentco.com (154.54.82.37)  172.765 ms  172.736 ms  172.695
ms
15  be12489.ccr42.par01.atlas.cogentco.com (154.54.57.70)  172.663 ms  172.575 ms
be12497.ccr41.par01.atlas.cogentco.com (154.54.56.130)  172.545 ms
16  be2780.ccr32.mrs02.atlas.cogentco.com (154.54.72.226)  172.514 ms
be2779.ccr31.mrs02.atlas.cogentco.com (154.54.72.110)  172.486 ms
be2780.ccr32.mrs02.atlas.cogentco.com (154.54.72.226)  172.457 ms
17  be2752.ccr22.mrs01.atlas.cogentco.com (154.54.38.33)  172.427 ms  172.339 ms  167.630
ms
18  be2345.agr21.mrs01.atlas.cogentco.com (154.54.38.170)  167.546 ms
be2346.agr21.mrs01.atlas.cogentco.com (154.54.38.174)  167.488 ms
be2345.agr21.mrs01.atlas.cogentco.com (154.54.38.170)  167.442 ms
19  geant.demarc.cogentco.com (149.6.155.234)  167.367 ms  167.494 ms  167.469 ms
20  xe-1-0-9-lyon1-rtr-131.noc.renater.fr (193.51.177.223)  167.449 ms xe-1-0-0-ren-nr-lyon1-
rtr-131.noc.renater.fr (193.55.204.109)  167.410 ms xe-1-0-9-lyon1-rtr-131.noc.renater.fr
(193.51.177.223)  167.302 ms
21  et-3-1-7-ren-nr-paris1-rtr-131.noc.renater.fr (193.51.180.166)  167.201 ms  167.149
ms  167.145 ms
22  te-0-1-0-11-ren-nr-odeon-rtr-091.noc.renater.fr (193.55.204.4)  241.191 ms te-0-0-0-11-ren-
nr-odeon-rtr-091.noc.renater.fr (193.51.180.20)  241.137 ms  241.098 ms
23  xe-0-3-0-odeon-rtr-111.noc.renater.fr (193.51.180.156)  241.112 ms  241.078 ms  241.063
ms
24  195.221.127.6 (195.221.127.6)  240.917 ms  240.896 ms  240.857 ms
25  195.220.129.174 (195.220.129.174)  240.853 ms  240.821 ms  240.814 ms
26  195.220.129.214 (195.220.129.214)  240.712 ms  235.546 ms  235.587 ms
27  proxy-web.u-paris.fr (195.220.128.193)  235.517 ms  235.520 ms  235.470 ms
```