# Traceroute at UMT

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## Summary:

### Traceroute from UTM to SLAC

- traceroute -m 30 -q 3 134.79.196.165 140 took 135 secs. (Stop at 11th hop)
- traceroute -m 30 -q 3 -f6 134.79.196.165 140 took 110 secs. (reached at its destination)
- traceroute -m 30 -q 3 -n -f6 134.79.196.165 140 took 15 secs. (reached at its destination)

**From Command Line:**

- traceroute from UTM Pinger command line to SLAC (Stop at 11th hop)
- traceroute from UTM Pinger command line to SLAC Option -f6 (reached at its destination)
- traceroute from UTM Pinger command line to SLAC Option -f6 -n (reached at its destination)
- **sudo traceroute -I www6.slac.stanford.edu (reached at its destination successfully without using -f6)**

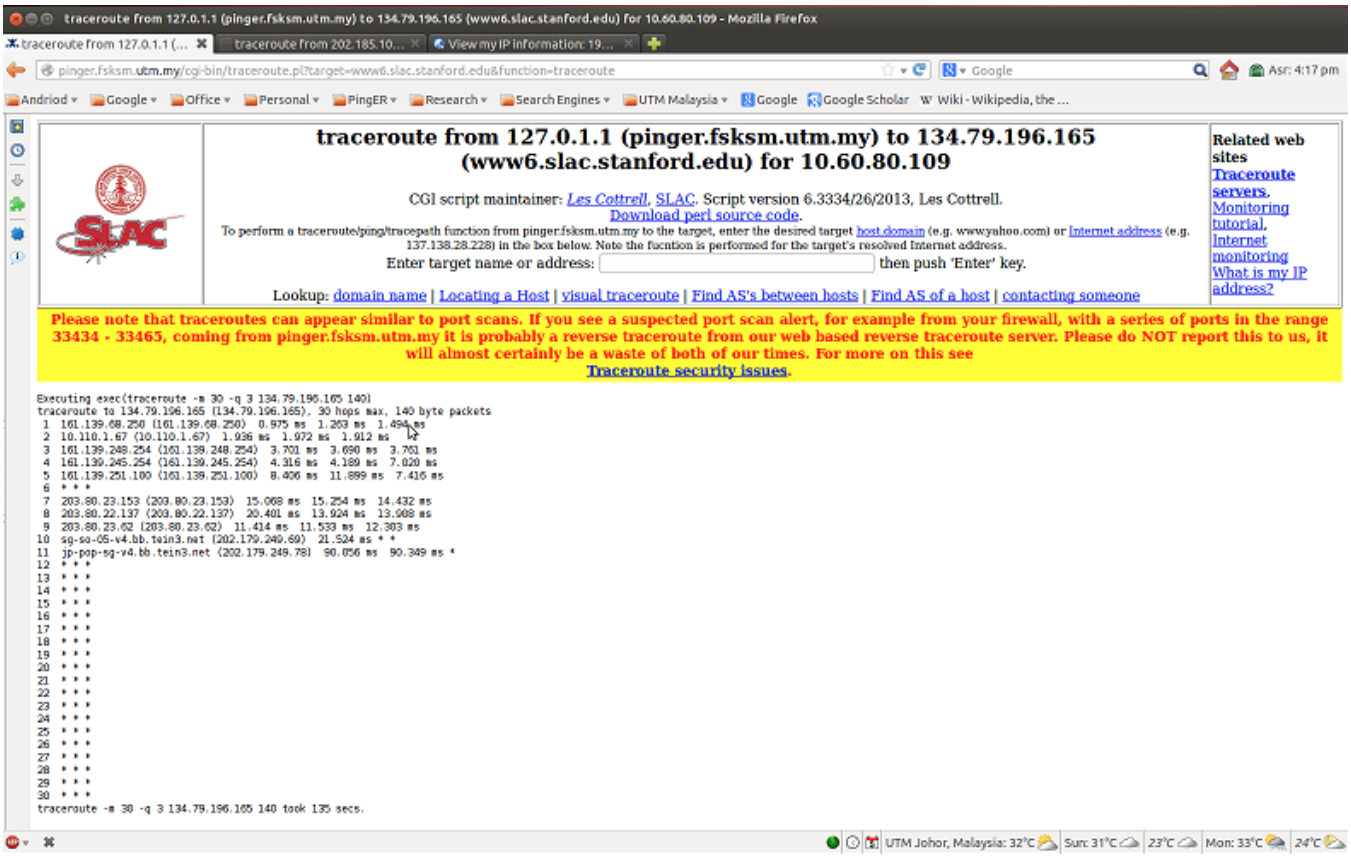
### Traceroute from UM to SLAC

- traceroute -m 30 -q 3 134.79.196.165 140 took 19 secs.
- traceroute -m 30 -q 3 -f6 134.79.196.165 140 took 21 secs.
- traceroute -m 30 -q 3 -n -f6 134.79.196.165 140 took 20 secs.

## Details with screenshots:

### Traceroute from UTM to SLAC

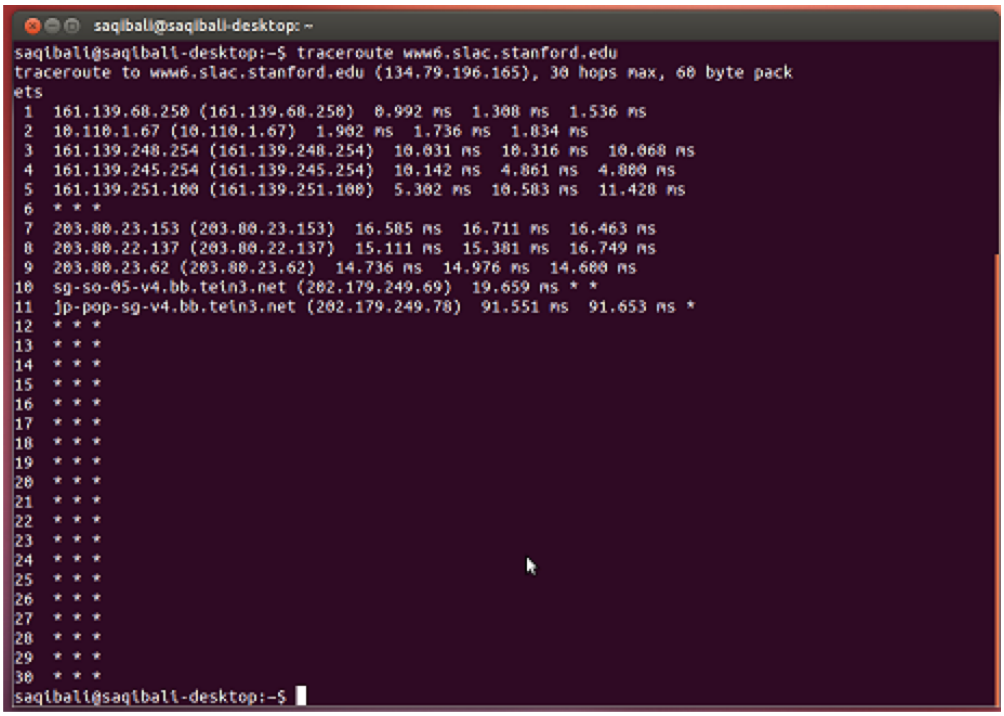
traceroute -m 30 -q 3 134.79.196.165 140 took 135 secs. (Stop at 11th hop)




Traceroute from UM to SLAC

traceroute -m 30 -q 3 134.79.196.165 140 took 19 secs.

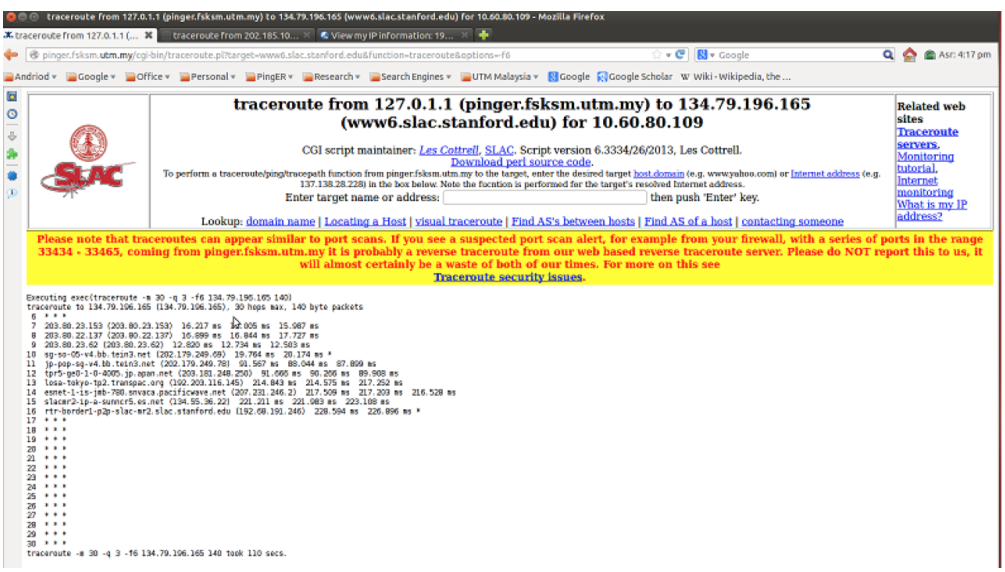

Traceroute from UTM Pinger command line to SLAC (Stop at 11th hop)



```
saqibali@saqiball-desktop: ~
saqibali@saqiball-desktop:~$ traceroute www6.slac.stanford.edu
traceroute to www6.slac.stanford.edu (134.79.196.165), 30 hops max, 60 byte pack
ets
 1  161.139.68.250 (161.139.68.250)  0.992 ms  1.308 ms  1.536 ms
 2  10.110.1.67 (10.110.1.67)  1.902 ms  1.736 ms  1.834 ms
 3  161.139.248.254 (161.139.248.254)  10.031 ms  10.316 ms  10.068 ms
 4  161.139.245.254 (161.139.245.254)  10.142 ms  4.861 ms  4.880 ms
 5  161.139.251.100 (161.139.251.100)  5.302 ms  10.583 ms  11.420 ms
 6  * * *
 7  203.80.23.153 (203.80.23.153)  16.585 ms  16.711 ms  16.463 ms
 8  203.80.22.137 (203.80.22.137)  15.111 ms  15.381 ms  16.749 ms
 9  203.80.23.62 (203.80.23.62)  14.736 ms  14.976 ms  14.680 ms
10  sg-so-05-v4.bb.tein3.net (202.179.249.69)  19.659 ms * *
11  jp-pop-sg-v4.bb.tein3.net (202.179.249.78)  91.551 ms  91.653 ms *
12  * * *
13  * * *
14  * * *
15  * * *
16  * * *
17  * * *
18  * * *
19  * * *
20  * * *
21  * * *
22  * * *
23  * * *
24  * * *
25  * * *
26  * * *
27  * * *
28  * * *
29  * * *
30  * * *
saqibali@saqiball-desktop:~$
```

## Traceroute from UTM to SLAC Option -f6 (reached at its destination)

traceroute -m 30 -q 3 -f6 134.79.196.165 140 took 110 secs.



traceroute from 127.0.1.1 (pinger.fsksm.utm.my) to 134.79.196.165 (www6.slac.stanford.edu) for 10.60.80.109 - Mozilla Firefox

pinger.fsksm.utm.my/cgi-bin/traceroute.pl?target=www6.slac.stanford.edu&function=traceroute&options=f6

**traceroute from 127.0.1.1 (pinger.fsksm.utm.my) to 134.79.196.165 (www6.slac.stanford.edu) for 10.60.80.109**

CGI script maintainer: *Les Cottrell*, SLAC. Script version 6.3334/26/2013, Les Cottrell.
Download perl source code.
To perform a traceroute/ping/tracepath function from pinger.fsksm.utm.my to the target, enter the desired target host.domain (e.g. www.yahoo.com) or Internet address (e.g. 137.138.28.228) in the box below. Note the function is performed for the target's resolved Internet address.
Enter target name or address: then push 'Enter' key.

Lookup: domain name | Locating a Host | visual traceroute | Find AS's between hosts | Find AS of a host | contacting someone

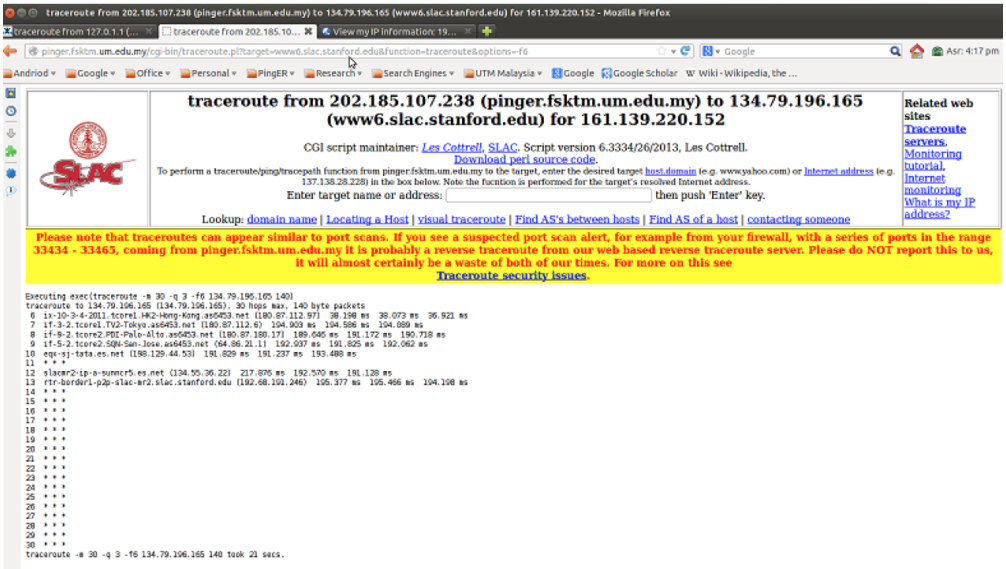
Related web sites
Traceroute servers.
Monitoring tutorial.
Internet monitoring
What is my IP address?

Please note that traceroutes can appear similar to port scans. If you see a suspected port scan alert, for example from your firewall, with a series of ports in the range 33434 - 33465, coming from pinger.fsksm.utm.my it is probably a reverse traceroute from our web based reverse traceroute server. Please do NOT report this to us, it will almost certainly be a waste of both of our times. For more on this see
Traceroute security issues.

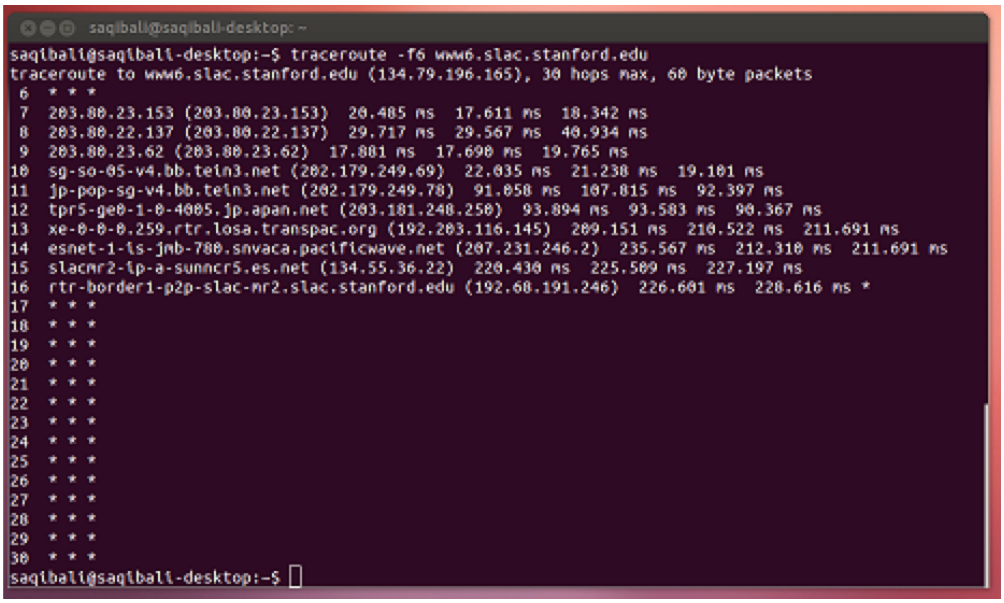
```
Executing exec(traceroute -m 30 -q 3 -f6 134.79.196.165 140)
traceroute to 134.79.196.165 (134.79.196.165), 30 hops max, 140 byte packets
 6  * * *
 7  203.80.23.153 (203.80.23.153)  16.217 ms  12.005 ms  15.987 ms
 8  203.80.22.137 (203.80.22.137)  16.899 ms  16.844 ms  17.727 ms
 9  203.80.23.62 (203.80.23.62)  12.820 ms  12.734 ms  12.503 ms
10  sg-so-05-v4.bb.tein3.net (202.179.249.69)  19.764 ms  20.174 ms *
11  jp-pop-sg-v4.bb.tein3.net (202.179.249.78)  91.567 ms  88.044 ms  87.899 ms
12  tpr5-ge0-1-0-4005.jp.apan.net (203.181.248.250)  91.666 ms  90.206 ms  89.908 ms
13  losa-tokyo-tp2.transpac.org (192.203.116.145)  214.843 ms  214.576 ms  217.252 ms
14  esnet-1-is-jmb-780.snvaca.pacificwave.net (207.231.246.2)  217.509 ms  217.203 ms  216.528 ms
15  slacmr2-ip-a-sunncr5.es.net (134.55.36.22)  221.211 ms  221.983 ms  223.108 ms
16  rtr-border1-p2p-slac-mr2.slac.stanford.edu (192.68.191.246)  228.594 ms  226.896 ms *
17  * * *
18  * * *
19  * * *
20  * * *
21  * * *
22  * * *
23  * * *
24  * * *
25  * * *
26  * * *
27  * * *
28  * * *
29  * * *
30  * * *
traceroute -m 30 -q 3 -f6 134.79.196.165 140 took 110 secs.
```

## Traceroute from UM to SLAC Option -f6

traceroute -m 30 -q 3 -f6 134.79.196.165 140 took 21 secs.




Traceroute from UTM Pinger command line to SLAC Option -f6 (reached at its destination)

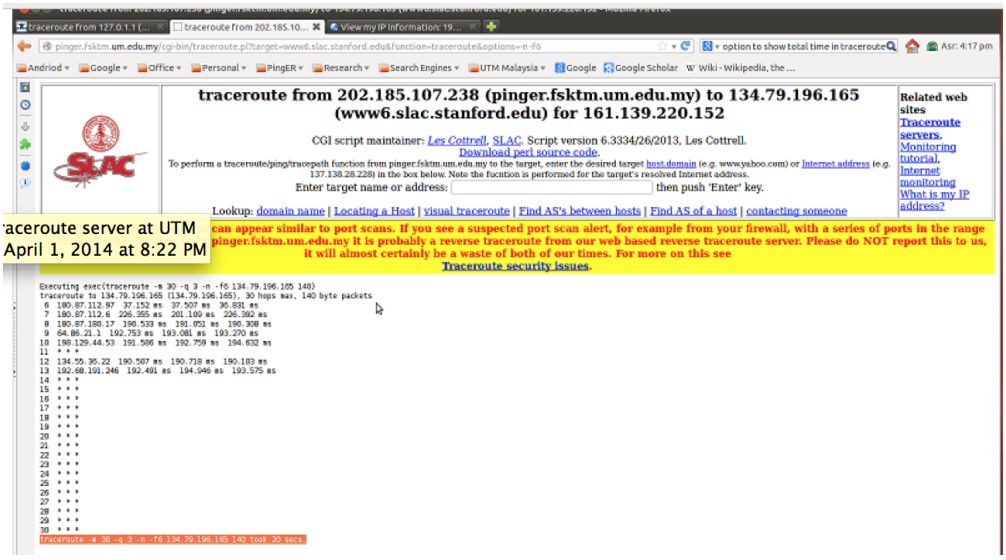



Traceroute from UTM to SLAC Option -f6 -n (reached at its destination)

traceroute -m 30 -q 3 -n -f6 134.79.196.165 140 took 15 secs.


Traceroute from UM to SLAC Option -f6 -n  (reached at its destination)

traceroute -m 30 -q 3 -n -f6 134.79.196.165 140 took 20 secs.




Traceroute from UTM Pinger command line to SLAC Option -f6 -n (reached at its destination)

```
saqibali@saqibali-desktop: ~
saqibali@saqibali-desktop:~$ traceroute -n -f6 www6.slac.stanford.edu
traceroute to www6.slac.stanford.edu (134.79.196.165), 30 hops max, 60 byte packets
 6  * * *
 7  203.80.23.153  27.674 ms  25.845 ms  25.630 ms
 8  203.80.22.137  24.530 ms  21.168 ms  23.204 ms
 9  203.80.23.62  20.793 ms  23.544 ms  26.881 ms
10  202.179.249.69  26.310 ms  30.714 ms  30.880 ms
11  202.179.249.78  119.981 ms  105.178 ms  104.467 ms
12  203.181.248.250  105.324 ms  108.837 ms  107.179 ms
13  192.203.116.145  222.649 ms  223.193 ms  222.755 ms
14  207.231.246.2  230.793 ms  232.987 ms  229.788 ms
15  134.55.36.22  246.096 ms  214.475 ms  215.571 ms
16  192.68.191.246  212.880 ms  215.581 ms *
17  * * *
18  * * *
19  * * *
20  * * *
21  * * *
22  * * *
23  * * *
24  * * *
25  * * *
26  * * *
27  * * *
28  * * *
29  * * *
30  * * *
saqibali@saqibali-desktop:~$
```

sudo traceroute -I www6.slac.stanford.edu (reached at its destination)

```
saqibali@saqibali-desktop: ~

New release 'precise' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Sun Apr  6 15:23:39 2014 from 10.60.80.109
saqibali@saqibali-desktop:~$ sudo traceroute -I  www6.slac.stanford.edu
[sudo] password for saqibali:
traceroute to www6.slac.stanford.edu (134.79.196.165), 30 hops max, 60 byte packets
 1  161.139.68.250 (161.139.68.250)  0.868 ms  1.167 ms *
 2  * * *
 3  * * *
 4  * * *
 5  * * *
 6  * * *
 7  203.80.23.153 (203.80.23.153)  15.702 ms  15.872 ms  15.793 ms
 8  203.80.22.137 (203.80.22.137)  19.577 ms  19.792 ms  19.480 ms
 9  203.80.23.62 (203.80.23.62)  14.079 ms  13.978 ms  14.127 ms
10  sg-so-05-v4.bb.tein3.net (202.179.249.69)  20.369 ms  19.723 ms  19.664 ms
11  jp-pop-sg-v4.bb.tein3.net (202.179.249.78)  89.333 ms  89.419 ms  86.207 ms
12  tpr5-ge0-1-0-4005.jp.apan.net (203.181.248.250)  86.165 ms  86.249 ms  86.641 ms
13  losa-tokyo-tp2.transpac.org (192.203.116.145)  203.668 ms  203.571 ms  202.658 ms
14  esnet-1-is-jmb-780.snvaca.pacificwave.net (207.231.246.2)  249.285 ms  248.450 ms  249.666 ms
15  slacmr2-ip-a-sunncr5.es.net (134.55.36.22)  210.297 ms  209.982 ms  210.062 ms
16  rtr-border1-p2p-slac-mr2.slac.stanford.edu (192.68.191.246)  210.339 ms  212.898 ms  212.397 ms
17  * * *
18  * * *
19  drupal-prod.slac.stanford.edu (134.79.196.165)  211.724 ms  215.760 ms  215.046 ms
saqibali@saqibali-desktop:~$
```

## Traceroute from UTM Cisco border router to CERN

```
Translating "www.cern.ch"...domain server (202.188.0.133) [OK]

Type escape sequence to abort.
Tracing the route to webrlb02.cern.ch (188.184.9.235)
VRF info: (vrf in name/id, vrf out name/id)
  1 161.139.244.6 1 msec 1 msec 0 msec
  2 203.80.23.153 [AS 24514] [MPLS: Label 1048533 Exp 0] 743 msec 757 msec 770 msec
  3 203.80.22.137 [AS 24514] [MPLS: Label 16047 Exp 0] 751 msec 791 msec 740 msec
  4 203.80.23.242 [AS 24514] 757 msec 749 msec 737 msec
  5 202.179.249.85 [AS 24490] 724 msec 717 msec 712 msec
  6 mb-so-01-v4.bb.tein3.net (202.179.249.54) [AS 24490] 776 msec 781 msec 843 msec
  7 eu-mad-pr-v4.bb.tein3.net (202.179.249.118) [AS 24490] 971 msec 958 msec 929 msec
  8 ae3.mx1.par.fr.geant.net (62.40.98.65) [AS 20965] 939 msec 954 msec 937 msec
  9 switch-bckp-gw.mx1.par.fr.geant.net (62.40.124.82) [AS 20965] 216 msec 216 msec 217 msec
 10 e513-e-rbrxl-2-te20.cern.ch (192.65.184.70) [AS 513] 924 msec 958 msec 981 msec
 11  *  *  *
 12  *  *  *
 13  *  *  *
 14  *  *  *
 15  *  *  *
 16  *  *  *
 17  *  *  *
 18  *  *  *
 19  *  *  *
 20  *  *  *
 21  *  *  *
 22  *  *  *
 23  *  *  *
 24  *  *  *
 25  *  *  *
 26  *  *  *
 27  *  *  *
 28  *  *  *
 29  *  *  *
 30  *  *  *
```

Since this router can see cern in 10 hops there are no blocks for the first 10 UDP ports starting at 33434. There may be blocks in higher number UDP ports that is unknown from this result.

Typically when one blocks a set of ports in an ACL one blocks them both for TCP and UDP. If this is the case you may be able to use the telnet <cern-host> <tcp port command and see if you get a response as you increase the <tcp-port> starting at 33433 where <cern-host> = e513-e-rbx1-2-te20.cern.ch

You might also play around with the -p option in the traceroute command

## Traceroute from UTM to CERN on a Mac

This gives the same result as on Linux. This is not unexpected since the Mac OS is Unix based and so uses UDP probes unlike Windows that uses ICMP probes and hence does not see the effect.

## Possible Explanation

Traceroute uses UDP to send the requests (see http://en.wikipedia.org/wiki/Traceroute). The first request is sent to a particular port (33434), with a ttl to tell it how many hops to go to. The ttl starts at 1 is incremented as it tries the next hop, also the port is incremented (up to 33465). It looks like the first few UDP ports are enabled and then they are blocked. The blocking could be at the border or in the ISP. Can you try a traceroute from just outside the border (e.g. in the border router itself), or if you can get access to the routers try traceroute from them to the destination. Note Windows tracert uses ICMP and not UDP to send the probes and so should not suffer this problem.