

Traceroutes from SLAC to Egypt

The traceroutes from SLAC to Egypt changed dramatically between re-routing the traffic to avoid the fibre cut, see below. Before the cut the route went Eastwards across the US via ESnet then via GEANT in Europe, after the cut it still went Eastwards with a new commercial carrier across the US to London where it joined FLAG and then to Alexandria and Cairo , later it picked up FLAG in Palo Alto and went more directly (avoiding Europe) via Tokyo, Hong Kong and Cairo. The routes changed pretty frequently (some examples are below) and there is a [log](#).

Before (via ESnet & GEANT)

```
#command = /usr/sbin/traceroute -q 1 -w 2 -I frcu.eun.eg
#fromnode=iepm-bw.slac.stanford.edu
#date=Thu Dec 18 23:33:33 2008
#endtime=1229672013
#code=ok
#aliasname=frcu.eun.eg=5=152
#traceroute to 193.227.1.1 (193.227.xxx.xxx), 30 hops max, 38 byte packets
 1  rtr-iepm-test (134.79.243.1)  0.319 ms
 2  rtr-core1-p2p-iepm (134.79.252.5)  0.230 ms
 3  rtr-core2-p2p-core1old (134.79.252.178)  0.292 ms
 4  rtr-border1-p2p-core2 (134.79.252.137)  0.343 ms
 5  192.68.191.245 (192.68.191.245)  0.503 ms
 6  sunnsdn2-slacmrl.es.net (134.55.217.2)  0.863 ms
    MPLS Label=164320 CoS=0 TTL=1 S=1
 7  sunncr1-sunnsdn2.es.net (134.55.209.98)  0.821 ms
    MPLS Label=160128 CoS=0 TTL=1 S=1
 8  denvcrl-sunncr1.es.net (134.55.220.49)  27.851 ms
    MPLS Label=101680 CoS=0 TTL=1 S=1
 9  kanscrl-ip-denvcrl.es.net (134.55.209.46)  41.012 ms
    MPLS Label=117488 CoS=0 TTL=1 S=1
10  chiccrl-ip-kanscrl.es.net (134.55.221.58)  51.482 ms
    MPLS Label=726320 CoS=0 TTL=1 S=1
11  clevcrl-ip-chiccrl.es.net (134.55.217.53)  101.568 ms
    MPLS Label=122160 CoS=0 TTL=1 S=1
12  washcrl-ip-clevcrl.es.net (134.55.222.58)  68.246 ms
    MPLS Label=110736 CoS=0 TTL=1 S=1
13  aofacr2-washcrl.es.net (134.55.218.78)  73.389 ms
    MPLS Label=102912 CoS=0 TTL=1 S=1
14  aofasdn1-ip-aofacr2.es.net (134.55.38.50)  73.263 ms
15  esnet.rtl.vie.at.geant2.net (62.40.125.93)  172.090 ms
16  so-3-0-0.rtl.mil.it.geant2.net (62.40.112.18)  184.851 ms
Icmp checksum is wrong
Icmp checksum is wrong
17  *
Icmp checksum is wrong
18  *
19  frcu.eun.eg (193.227.xxx.xxx)  237.170 ms
```

Immediately After (Eastwards via NTT & FLAG)

```

#command = /usr/sbin/traceroute -q 1 -w 2 -I frcu.eun.eg
#fromnode=iepm-bw.slac.stanford.edu
#date=Thu Dec 18 23:43:45 2008
#endtime=1229672625
#code=ok
#aliasname=frcu.eun.eg=5=152
#traceroute to 193.227.1.1 (193.227.xxx.xxx), 30 hops max, 38 byte packets
 1  rtr-iepm-test (134.79.243.1)  0.386 ms
 2  rtr-core1-p2p-iepm (134.79.252.5)  0.227 ms
 3  rtr-core2-p2p-core1old (134.79.252.178)  0.336 ms
 4  rtr-border1-p2p-core2 (134.79.252.137)  0.357 ms
 5  192.68.191.245 (192.68.191.245)  0.566 ms
 6  sunnsdn2-slacmrl.es.net (134.55.217.2)  0.610 ms
 7  sunncrl1-sunnsdn2.es.net (134.55.209.98)  0.809 ms
    MPLS Label=136032 CoS=0 TTL=1 S=1
 8  eqxsjrtl1-sunncrl.es.net (134.55.220.85)  1.434 ms
 9  xe-0.equinix.snjsca04.us.bb.gin.ntt.net (206.223.116.12)  1.596 ms
10  ae-0.r20.snjsca04.us.bb.gin.ntt.net (129.250.2.96)  1.734 ms
    MPLS Label=234529 CoS=0 TTL=1 S=1
    MPLS Label=584707 CoS=0 TTL=1 S=0
11  p64-1-3-0.r21.chcgil09.us.bb.gin.ntt.net (129.250.5.21)  57.095 ms
    MPLS Label=429364 CoS=0 TTL=1 S=1
    MPLS Label=584707 CoS=0 TTL=2 S=0
12  ae-0.r20.chcgil09.us.bb.gin.ntt.net (129.250.3.97)  57.276 ms
    MPLS Label=481027 CoS=0 TTL=1 S=1
    MPLS Label=584707 CoS=0 TTL=3 S=0
13  p64-0-0-0.r21.nycmny01.us.bb.gin.ntt.net (129.250.5.5)  82.672 ms
    MPLS Label=731634 CoS=0 TTL=1 S=1
    MPLS Label=584707 CoS=0 TTL=4 S=0
14  ae-0.r20.nycmny01.us.bb.gin.ntt.net (129.250.2.25)  82.751 ms
    MPLS Label=502517 CoS=0 TTL=1 S=1
    MPLS Label=584707 CoS=0 TTL=5 S=0
15  as-1.r22.londen03.uk.bb.gin.ntt.net (129.250.3.255)  179.554 ms
    MPLS Label=584707 CoS=0 TTL=1 S=1
16  xe-4-4.r01.londen03.uk.bb.gin.ntt.net (129.250.2.66)  152.824 ms
17  ge-0.flagtelecom.londen03.uk.bb.gin.ntt.net (83.231.181.194)  152.463 ms
18  ge-1-1-0.0.cjr02.ldn004.flagtel.com (62.216.129.65)  152.990 ms
    MPLS Label=169313 CoS=0 TTL=1 S=1
19  so-1-0-0.0.cjr04.alx001.flagtel.com (62.216.128.162)  222.486 ms
    MPLS Label=100160 CoS=0 TTL=1 S=1
20  so-0-0-0.0.cjr03.alx001.flagtel.com (62.216.129.206)  223.931 ms
    MPLS Label=101488 CoS=0 TTL=1 S=1
21  so-1-3-0.0.ejr02.cai001.flagtel.com (62.216.129.218)  231.020 ms
22  cust-linkdotnet-egcai.flagtel.com (80.77.0.14)  237.864 ms
23  *
24  *
    Icmp checksum is wrong
25  *
26  frcu.eun.eg (193.227.xxx.xxx)  233.885 ms

```

Later (Westwards via NTT & FLAG)

```
#command = /usr/sbin/traceroute -q 1 -w 2 -I frcu.eun.eg
#fromnode=iepm-bw.slac.stanford.edu
#date=Sat Dec 20 08:52:57 2008
#endtime=1229791977
#code=ok
#aliasname=frcu.eun.eg=5=152
#traceroute to 193.227.1.1 (193.227.xxx.xxx), 30 hops max, 38 byte packets
 1  rtr-iepm-test (134.79.243.1)  0.281 ms
 2  rtr-core1-p2p-iepm (134.79.252.5)  0.223 ms
 3  rtr-core2-p2p-core1old (134.79.252.178)  0.258 ms
 4  rtr-border1-p2p-core2 (134.79.252.137)  0.363 ms
 5  192.68.191.245 (192.68.191.245)  1.115 ms
 6  sunnsdn2-slacmrl.es.net (134.55.217.2)  0.554 ms
 7  sunncr1-sunnsdn2.es.net (134.55.209.98)  0.758 ms
    MPLS Label=136032 CoS=0 TTL=1 S=1
 8  eqxsjrtl-sunncr1.es.net (134.55.220.85)  1.444 ms
 9  xe-0.equinix.snjsca04.us.bb.gin.ntt.net (206.223.116.12)  1.497 ms
10  as-0.r20.lsanca03.us.bb.gin.ntt.net (129.250.4.97)  9.505 ms
    MPLS Label=115989 CoS=0 TTL=1 S=1
11  po-1.r01.lsanca03.us.bb.gin.ntt.net (129.250.3.126)  9.998 ms
12  ge-0.flagtelecom.lsanca03.us.bb.gin.ntt.net (129.250.10.210)  9.632 ms
13  so-0-3-0.0.ejr02.pao001.flagtel.com (62.216.128.78)  23.960 ms
    MPLS Label=100192 CoS=0 TTL=1 S=1
14  so-3-0-0.0.cjr03.tok002.flagtel.com (62.216.128.65)  144.319 ms
    MPLS Label=100624 CoS=0 TTL=1 S=1
15  so-6-0-0.0.cjr04.hkg003.flagtel.com (62.216.128.129)  194.726 ms
    MPLS Label=103152 CoS=0 TTL=1 S=1
16  so-1-2-0.0.ejr02.cai001.flagtel.com (62.216.128.177)  369.003 ms
17  *
18  *
19  *
20  *
21  frcu.eun.eg (193.227.xxx.xxx)  404.627 ms
```

Another Route Westwards via TATA Tokyo and Singapore (AS 6453)

```
#command = /usr/sbin/traceroute -q 1 -w 2 -I frcu.eun.eg
#fromnode=iepm-bw.slac.stanford.edu
#date=Sat Dec 20 17:22:03 2008
#endtime=1229822523
#code=ok
#aliasname=frcu.eun.eg=5=152
#traceroute to 193.227.1.1 (193.227.xxx.xxx), 30 hops max, 38 byte packets
 1  rtr-iepm-test (134.79.243.1)  0.317 ms
 2  rtr-core1-p2p-iepm (134.79.252.5)  0.258 ms
 3  rtr-core2-p2p-core1old (134.79.252.178)  0.327 ms
 4  rtr-border1-p2p-core2 (134.79.252.137)  0.311 ms
 5  192.68.191.245 (192.68.191.245)  0.333 ms
 6  sunnsdn2-slacmrl.es.net (134.55.217.2)  0.567 ms
 7  sunncr1-sunnsdn2.es.net (134.55.209.98)  0.748 ms
    MPLS Label=136032 CoS=0 TTL=1 S=1
 8  eqxsjrtl-sunncr1.es.net (134.55.220.85)  3.361 ms
 9  if-3-0.core2.SanJose.Teleglobe.net (206.223.116.81)  1.472 ms
10  if-14-0-0.core3.SQN-SanJose.as6453.net (216.6.30.26)  1.574 ms
    MPLS Label=2852 CoS=0 TTL=1 S=1
11  if-9-0-0.mcore4.PDI-PaloAlto.as6453.net (216.6.33.6)  2.496 ms
    MPLS Label=3241 CoS=0 TTL=1 S=1
12  if-13-0-0.core1.TV2-Tokyo.as6453.net (216.6.86.26)  111.517 ms
    MPLS Label=1346 CoS=0 TTL=1 S=1
13  if-11-0-0-804.core2.S9R-Singapore.as6453.net (209.58.61.58)  179.178 ms
14  ix-2-0-0.core2.S9R-Singapore.as6453.net (209.58.96.30)  323.346 ms
Icmp checksum is wrong
15  host-163.121.185.30.tedata.net (163.121.185.30)  353.939 ms
16  host-196.219.214.42.tedata.net (196.219.214.42)  329.796 ms
17  frcu.eun.eg (193.227.xxx.xxx)  330.356 ms
```