

Traceroute Archive

To see the difference between the traceroute and rtt's for multiple days , we developed the traceroute archive. It can be accessed using the `traceroutearchive.cgi` script. It displays traceroute from a monitor node to a monitored node for any three days (which can be selected from a drop down menu). It checks loops within the traceroute and shows the changes observed in a link for the requested days. It is currently available from 5 PingER monitors including SLAC to world wide nodes monitored by SLAC at <http://www-wanmon.slac.stanford.edu/cgi-wrap/traceroutearchive.cgi>

Apart from SLAC, Historical traceroutes are available from the following monitors, from Feb 2014 onwards:

- www-wanmon.slac.stanford.edu
- pinger.cern.ch
- maggie1.seecs.edu.pk
- pinger.ictp.it
- pinger.fsktm.um.edu.my

Traceroute Archive Flow At SLAC

Following are scripts used for the traceroute archive

1. Collection of Traceroutes

1.1 `autotrace.pl`

This script can be found at </afs/slac/package/pinger/autotrace.pl>. It saves all traceroutes from the SLAC Pinger nodes to its monitored sites and runs as cronjob once every day on `pinger.slac.stanford.edu` under user `pinger..`

It uses for example <http://www-wanmon.slac.stanford.edu/cgi-bin/nph-traceroute.pl?target=www.fapesp.br> to make the traceroute

It gets the list of hosts to traceroute to by using `wget` and `pingtable.pl`.

Output is saved in `/afs/slac/package/pinger/chktrace/2011_08_24/www-wanmon.slac.stanford.edu_to_www.ab.kg_2011_08_28` as :

```
2011_08_28 15:21:43
</b></font></td></tr></table>
<pre>
Executing exec(traceroute, -m 30 -q 3, 195.38.166.130, 140)
traceroute to 195.38.166.130 (195.38.166.130), 30 hops max, 140 byte packets
 1 rtr-servcore1-serv01-webserv.slac.stanford.edu (134.79.197.130) 0.572 ms 0.640 ms 0.723 ms
 2 rtr-core1-p2p-servcore1.slac.stanford.edu (134.79.252.166) 0.403 ms 0.404 ms 0.475 ms
 3 rtr-border2-p2p-core1.slac.stanford.edu (134.79.252.141) 0.464 ms 0.545 ms 0.843 ms
 4 slac-mr2-p2p-rtr-border2.slac.stanford.edu (192.68.191.249) 0.297 ms 0.296 ms 0.286 ms
 5 sunnsdn2-ip-slacmr2.es.net (134.55.217.2) 0.626 ms 0.634 ms 0.648 ms
 6 sunnncr1-sunnsdn2.es.net (134.55.209.98) 0.720 ms 0.696 ms 0.690 ms
 7 eqxsjrt1-te-sunnncr1.es.net (134.55.38.146) 1.127 ms 1.117 ms 1.136 ms
 8 ***
 9 xe-4-0-0.stk30.ip4.tinet.net (89.149.184.50) 190.030 ms 197.594 ms 189.173 ms
10 rostelecom-gw.ip4.tinet.net (77.67.75.254) 204.450 ms 205.056 ms ojsc-rostelecom-gw.ip4.tinet.net (77.67.95.154) 217.573 ms
11 95.167.92.110 (95.167.92.110) 223.326 ms 226.803 ms 225.256 ms
12 customer-AS9198.xe-5-3-0.m10-ar3.msk.ip.rostelecom.ru (87.226.140.102) 264.618 ms 94.25.4.126 (94.25.4.126) 260.945 ms 261.182 ms
13 82.200.145.174 (82.200.145.174) 278.493 ms 278.657 ms 278.120 ms
14 217-29-30-198.saimanet.kg (217.29.30.198) 284.852 ms 286.737 ms 286.473 ms
15 pppoe.asiainfo.kg (195.38.168.90) 284.673 ms 282.241 ms 287.355 ms
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```

Traceroutes of all the nodes for a day are collected in date folders.

2. Display of traceroutes

2.1 `traceroutearchive.cgi`

This script is placed at `/afs/slac.stanford.edu/g/www/cgi-wrap-bin/net/offsite_mon`.

Example is

http://www-wanmon.slac.stanford.edu/cgi-wrap/traceroutearchive.cgi?from=www-wanmon.slac.stanford.edu&to=www.uda.ad&date1=2011_08_28&date2=2011_11_04&date3=2012_01_09

Note:

Difference is counted as per IP name and IP number (RTTs are excluded) between any two traceroutes.

Bandwidth needed

We estimated the bandwidth needed for historical traceroute.

- The packet sent is 140bytes and the TTL exceeded response is at least 36bytes.
- Assume an average of 20 hops and 3 tries per hop since the version of traceroute server is old and does not support options.
- Total targets is 700.
- The size of the http response page is about 5.5kb (assuming images are cached)

This totals to about 11.2 MBytes of bandwidth usage per day.