

Findings and Analysis of Slowdowns on the Comcast Network

By Backblaze Inc.

November 2014

From November 2013 through February 2014, Comcast and Netflix engaged in a war over network bandwidth. During that time services across the Internet were dramatically impacted. This analysis documents how the Backblaze Online Backup service was affected.

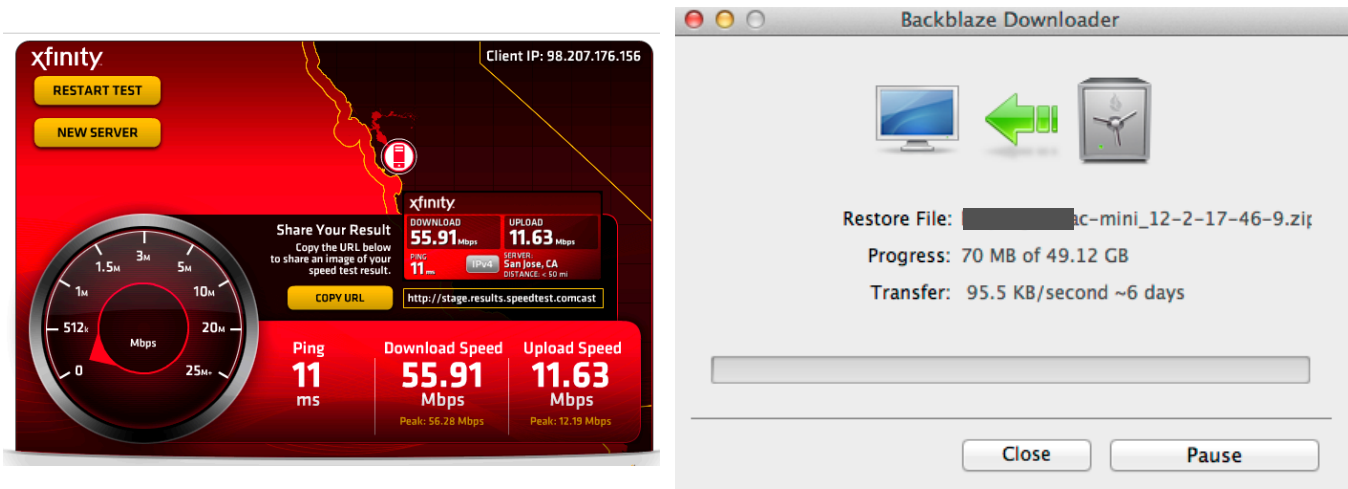
Findings and Analysis of Slowdowns on the Comcast Network

Over the course 4 months in late 2013 and early 2014, some Backblaze customers were reporting poor download speeds when they restored their data. What follows is the chronology as we discovered the problem, identified the root cause and then solved the problem the best we could.

Timeline

- 11/7/13 The Backblaze support team starts hearing from customers complaining about unusually slow downloads of their restores. This is dramatically slower than what they were expecting based on the bandwidth they were paying for each month.
- 12/2/13 Backblaze assumes it is a Backblaze issue and develops and deploys new caching code. Complaints of slow restore downloads continue. A Backblaze developer (on a 50 Mbps Comcast connection at home) tries a restore in the evening and finds he's downloading at a mere **0.8 Mbps**, while seeing other users able to restore at over 30 Mbps. The Backblaze developer runs a *traceroute* and finds the slow down is happening between Comcast/Cogent connections.

Below are screen shots of the Backblaze developer's 50 Mbps connection versus the actual speed of the restore via Backblaze (96 KB/s is 0.8 Mbps).



Digging into the logs, we found that it took about 100 seconds to serve a 10 MB chunk from the cache.

INFO 2013-12-02 21:34:18	510 Took 96507 ms to serve. bytes: 10485760
INFO 2013-12-02 21:35:58	694 Took 99037 ms to serve. bytes: 10485760
INFO 2013-12-02 21:37:29	512 Took 89951 ms to serve. bytes: 10485760

Conversely, other users took about 10 seconds to serve a 40 MB chunk from cache = > 40x faster.

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The results of the *traceroute* the Backblaze developer ran from his home system to the Sacramento data center:

```
1 www.asusnetwork.net (192.168.168.1) 1.051 ms 0.733 ms 0.652 ms
2 98.207.176.1 (98.207.176.1) 17.415 ms 12.144 ms 9.008 ms
3 te-0-2-0-4-sur03.sanjoose.ca.sfb.comcast.net (68.85.191.249) 12.991 ms 18.686 ms 12.442 ms
4 te-1-13-0-0-ar01.sfsutro.ca.sfb.comcast.net (69.139.198.58) 13.727 ms
  te-1-13-0-13-ar01.sfsutro.ca.sfb.comcast.net (69.139.198.150) 21.236 ms
  te-1-13-0-12-ar01.sfsutro.ca.sfb.comcast.net (69.139.198.146) 11.637 ms
5 he-1-8-0-0-cr01.sanjoose.ca.ibone.comcast.net (68.86.91.229) 16.318 ms 15.539 ms 19.953 ms
6 pos-0-3-0-0-pe01.529bryant.ca.ibone.comcast.net (68.86.87.142) 17.186 ms 16.992 ms 19.898 ms
7 te0-0-0-12.ccr21.sjc04.atlas.cogentco.com (154.54.13.17) 60.253 ms 67.489 ms 65.139 ms
8 be2015.ccr21.sfo01.atlas.cogentco.com (154.54.7.173) 64.077 ms 65.352 ms
  be2018.mpd22.sfo01.atlas.cogentco.com (154.54.28.81) 69.793 ms
9 te9-7.ccr01.oak01.atlas.cogentco.com (154.54.3.33) 67.812 ms 125.534 ms 408.310 ms
10 te8-1.ccr01.smf01.atlas.cogentco.com (154.54.45.22) 68.262 ms
   te9-1.ccr01.smf01.atlas.cogentco.com (154.54.26.229) 66.437 ms
   te8-1.ccr01.smf01.atlas.cogentco.com (154.54.45.22) 69.192 ms
11 te0-0-2-1.rcr12.smf03.atlas.cogentco.com (154.54.43.254) 69.440 ms
   154.24.10.74 (154.24.10.74) 73.758 ms
   154.24.10.66 (154.24.10.66) 72.408 ms
12 tenge1-1-cr01-rnchcrdv-smf.unwiredltd.net (38.104.140.86) 65.676 ms 68.955 ms
   38.104.141.98 (38.104.141.98) 66.724 ms
13 38.108.170.50 (38.108.170.50) 76.062 ms 70.076 ms 71.370 ms
```

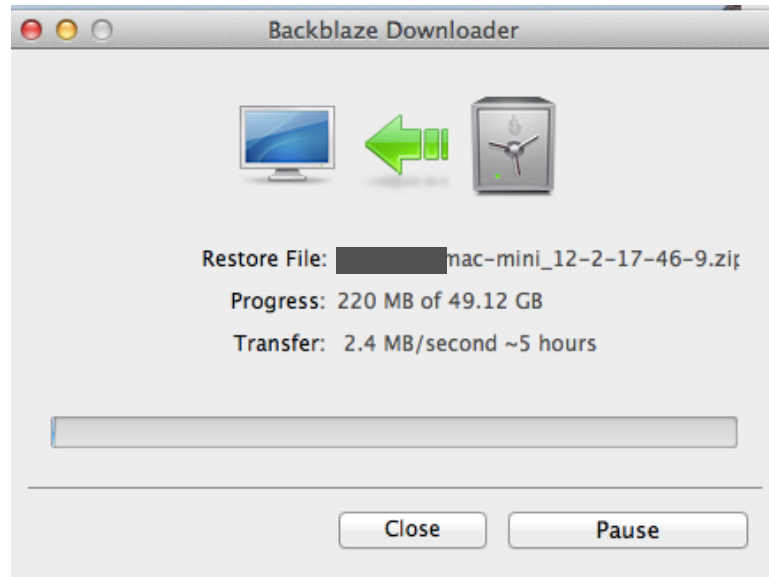
What you'll notice is that most of the hops between servers are quite quick, typically taking just a few milliseconds. However, the hop between Cogent and Comcast adds a full 40+ milliseconds, dramatically slowing down the connection.

2/4/13 The Backblaze developer decides to see if this varies by time of day and found that he was seeing 2.4 MB/second (19 Mbps) in the morning versus 95 KB/second (0.8 Mbps) in the evening => a 24x difference along the same network paths. All of these restores were done from the Backblaze Sacramento data center. The Backblaze developer ran the same tests over the next couple of days for our Sacramento data center and for our Oakland data center, finding the slowdown only happened from the Sacramento data center, in the evenings, and seemed to be caused by a connection between Comcast and Cogent.

The restore speed was 24x faster in the morning than in the evening.

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Here we see the same machine in the morning restoring data at a rate of 2.4MB/second.



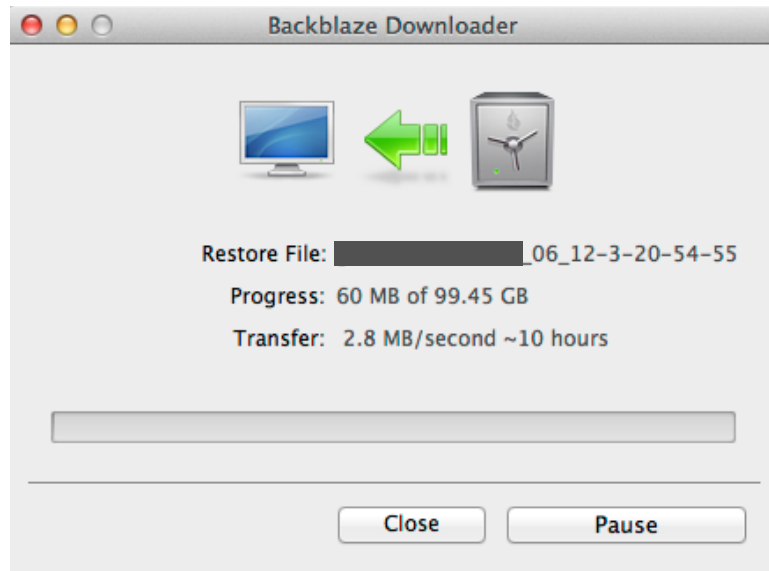
Running a *traceroute* to the Sacramento data center in the morning produces the following:

- 1 [www.asusnetwork.net](#) (192.168.168.1) 0.655 ms 0.464 ms 0.433 ms
- 2 [98.207.176.1](#) (98.207.176.1) 8.902 ms 9.166 ms 8.771 ms
- 3 [te-0-2-0-4-sur03.sanjose.ca.sfba.comcast.net](#) (68.85.191.249) 9.077 ms 8.456 ms 9.797 ms
- 4 [te-1-13-0-5-ar01.sfsutro.ca.sfba.comcast.net](#) (68.85.155.217) 11.369 ms
[te-1-13-0-4-ar01.sfsutro.ca.sfba.comcast.net](#) (68.85.155.42) 12.574 ms
[te-1-13-0-3-ar01.sfsutro.ca.sfba.comcast.net](#) (68.85.155.38) 16.976 ms
- 5 [he-1-8-0-0-cr01.sanjose.ca.ibone.comcast.net](#) (68.86.91.229) 14.060 ms 12.597 ms 13.970 ms
- 6 [pos-0-3-0-0-pe01.529bryant.ca.ibone.comcast.net](#) (68.86.87.142) 13.445 ms 15.643 ms 15.838 ms
- 7 [te0-0-0-12.ccr21.sjc04.atlas.cogentco.com](#) (154.54.13.17) 20.585 ms 12.522 ms 12.598 ms
- 8 [be2017.mpd21.sfo01.atlas.cogentco.com](#) (154.54.2.165) 13.157 ms 13.335 ms
[be2015.ccr21.sfo01.atlas.cogentco.com](#) (154.54.7.173) 14.151 ms
- 9 [te7-4.ccr01.oak01.atlas.cogentco.com](#) (154.54.1.197) 14.008 ms 14.551 ms
[te3-4.ccr01.oak01.atlas.cogentco.com](#) (154.54.29.249) 14.303 ms
- 10 [te8-1.ccr01.smf01.atlas.cogentco.com](#) (154.54.45.22) 16.733 ms
[te9-1.ccr01.smf01.atlas.cogentco.com](#) (154.54.26.229) 16.725 ms
[te8-1.ccr01.smf01.atlas.cogentco.com](#) (154.54.45.22) 47.744 ms
- 11 [te0-0-2-1.rcr12.smf03.atlas.cogentco.com](#) (154.54.43.254) 17.934 ms
[154.24.10.74](#) (154.24.10.74) 17.753 ms
[154.24.10.66](#) (154.24.10.66) 17.344 ms
- 12 [tenge1-1-cr01-rnchcrdv-smf.unwiredltd.net](#) (38.104.140.86) 20.464 ms 17.198 ms
[38.104.141.98](#) (38.104.141.98) 16.988 ms
- 13 [38.108.170.50](#) (38.108.170.50) 17.028 ms 16.835 ms 16.911 ms

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What you'll notice is that taking the same paths, the time between hops within Cogent are mostly 10 to 20 milliseconds, which is reasonable and 3 – 5x faster than during the evening.

Finally, the developer changed the download server from Sacramento to Oakland and then ran a restore in the evening. The results are a reasonably fast download at 2.8MB/second.



The *traceroute* showed the improved routing and speed as well.

```
1 192.168.168.1 (192.168.168.1) 13.808 ms 2.895 ms 0.537 ms
2 98.207.176.1 (98.207.176.1) 21.529 ms 10.034 ms 11.625 ms
3 te-0-2-0-4-sur03.sanjose.ca.sfba.comcast.net (68.85.191.249) 12.257 ms 9.416 ms 9.548 ms
4 te-1-13-0-9-ar01.sfsutro.ca.sfba.comcast.net (69.139.198.234) 14.174 ms
  te-1-13-0-8-ar01.sfsutro.ca.sfba.comcast.net (69.139.198.230) 15.895 ms
  te-1-13-0-7-ar01.sfsutro.ca.sfba.comcast.net (69.139.199.118) 12.731 ms
5 he-1-8-0-0-cr01.sanjose.ca.ibone.comcast.net (68.86.91.229) 22.585 ms 18.453 ms 15.687 ms
6 pos-0-9-0-0-pe01.11greatoaks.ca.ibone.comcast.net (68.86.88.110) 19.393 ms 19.923 ms 19.581 ms
7 as6461.11greatoaks.ca.ibone.comcast.net (75.149.228.134) 19.236 ms 15.004 ms 14.870 ms
8 xe-4-0-0-cr2.sjc2.us.above.net (64.125.24.5) 22.971 ms 16.882 ms 16.037 ms
9 xe-0-1-0-mpr4.sfo7.us.above.net (64.125.26.61) 17.005 ms 38.111 ms 17.017 ms
10 xe-0-1-0-mpr1.sfo2.us.above.net (64.125.27.69) 17.383 ms 17.274 ms 24.421 ms
11 tenge1-1-cr02-jls-oak.unwiredltd.net (64.125.195.198) 19.435 ms 17.479 ms 17.750 ms
12 208.87.220.247 (208.87.220.247) 18.543 ms 17.489 ms 17.959 ms
```

The conclusion, downloading a restore to the same Comcast home using a different path, through Backblaze's Oakland data center, shows no impact on the restore even during the evening hours.

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12/7/13 Backblaze starts wondering if this issue is more widespread and finds discussions online about the Comcast/Cogent/Netflix battle.

<http://forums.businesshelp.comcast.com/t5/Connectivity/Cogent-throttled/td-p/8459>

"... We've spoken to Cogent about this and they told us that Comcast and Cogent are waging an ideological battle over Netflix (which also hosts on Cogent) and the tremendous amount of traffic Netflix generates...

...My ping goes from 17ms to 70ms between those two hops. It only occurs after 5pm..."

Also this: <http://forums.comcast.com/t5/Basic-Internet-Connectivity-And/Cogent-and-Comcast-issues/td-p/1805678>

"....Cogent's response was to their congested peering issues with Comcast in the San Francisco Bay area between 3:30PM-12:30AM PST every day:"

"The latency and/or packet loss that you are experiencing to this destination is due to occasional high traffic with Comcast. We have repeatedly requested augments to these congestion points and hope Comcast will comply soon. While this has been escalated internally to the CEO level..."

Backblaze finds various discussions around the issue and decides that this is not isolated to a single piece of equipment or location and the company needs to think of alternate solutions to the problem.

12/16/13 To solve the problem for our customers, Backblaze attempts to route traffic from our Sacramento data center over our other provider, XO.

12/29/13 Backblaze analyzes the data and continues to see the same slowdown pattern in Sacramento between XO/Comcast, but not from Oakland between Abovenet/Comcast.

The Backblaze developer tests restores and finds that:

- Restores from Sacramento on the XO/Comcast path were very slow (2-3 Mbps) in the evening.
- The same restores from the same servers on the same path were seeing 50 Mbps at 8am.
- Using "smokeping", the speeds start slowing down at 12:00pm and normalize at 12:00am.

The results can be clearly seen in the log files from a Restore Server listed on the next page.

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Restore Server (at 8:00 am)

=====

INFO 2013-12-28 08:07:05,939 Took **6889 ms (46.5 Mbps)** to serve. bytes: 41943040

INFO 2013-12-28 08:07:13,941 Took **7393 ms (43.3 Mbps)** to serve. bytes: 41943040

INFO 2013-12-28 08:07:21,652 Took **6762 ms (47.3 Mbps)** to serve. bytes: 41943040

Restore Server (at 10:00 pm)

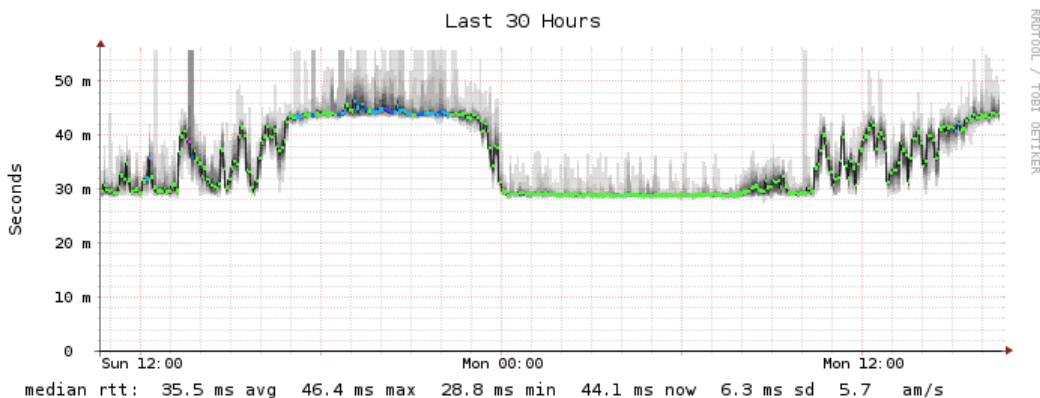
=====

INFO 2013-12-29 22:32:25,979 Took **45276 ms (1.8 Mbps)** to serve. bytes: 10485760

INFO 2013-12-29 22:32:57,262 Took **30381 ms (2.6 Mbps)** to serve. bytes: 10485760

INFO 2013-12-29 22:33:27,572 Took **29400 ms (2.7 Mbps)** to serve. bytes: 10485760

Smokeying results showing afternoon/evening slowdown:



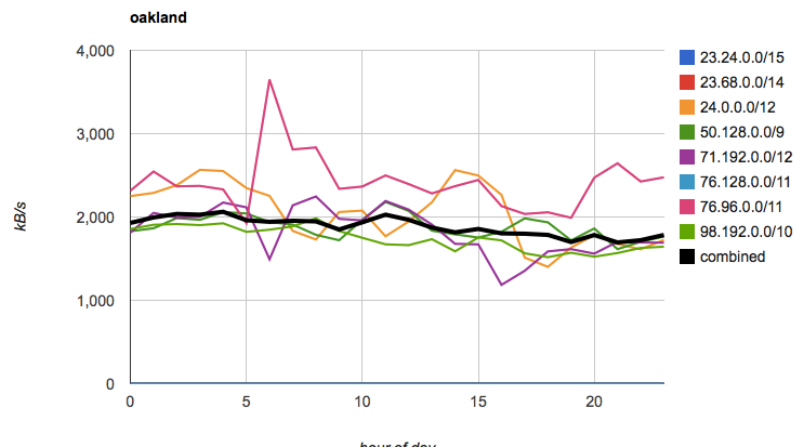
The developer observes that at the same time, the speed from Oakland using the Abovenet/Comcast route is continually fast regardless of the time of day.

1/9/14 Backblaze prepares charts (shown on next page) comparing the download speeds by data center by hour of day. Oakland speeds are nearly flat. Sacramento speeds fall rapidly starting around 2pm everyday, hit a low point around 8pm, and then climb back to normal shortly after midnight.

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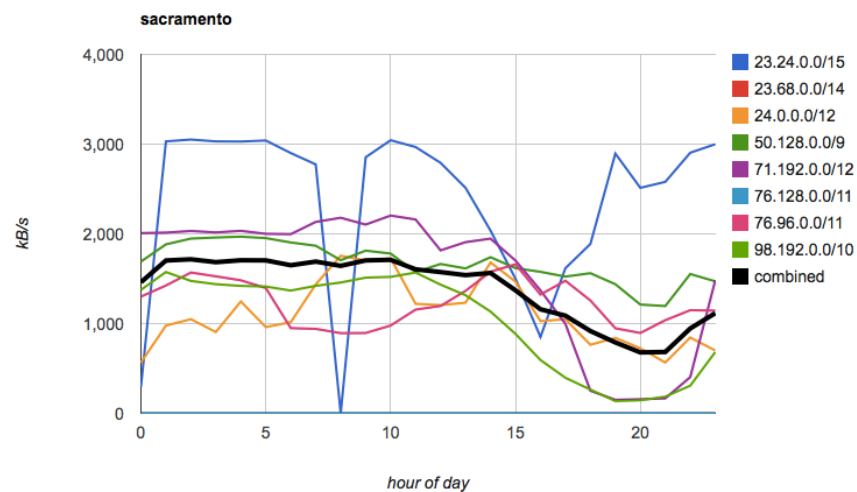
oakland

network	speed_kBps	total_GB
23.24.0.0/15	0	0
23.68.0.0/14	0	0
24.0.0.0/12	2003	626
50.128.0.0/9	1873	2987
71.192.0.0/12	1770	430
76.128.0.0/11	0	0
76.96.0.0/11	2345	809
98.192.0.0/10	1751	2401



sacramento

network	speed_kBps	total_GB
23.24.0.0/15	2311	213
23.68.0.0/14	0	0
24.0.0.0/12	1132	407
50.128.0.0/9	1656	2822
71.192.0.0/12	1564	549
76.128.0.0/11	0	0
76.96.0.0/11	1308	333
98.192.0.0/10	988	1528



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1/20/14 Backblaze uses a proxy server to reroute data restore traffic from the Sacramento data center over to Oakland and then out through Abovenet. Download speeds of customer restores increase 10x.

With Proxy

=====

INFO 2014-01-20 16:27:17,552 Took **14323 ms (18.7 Mbps)** to serve. bytes: 33554432, 1389927694850_billy-ngs-mac-mini.zip from cache, rid: 1389917156204sftree-0001879925, ip: 98.207.176.156

INFO 2014-01-20 16:27:31,985 Took **13456 ms (21.2 Mbps)** to serve. bytes: 35651584, 1389927694850_billy-ngs-mac-mini.zip from cache, rid: 1389917156204sftree-0001879925, ip: 98.207.176.156

INFO 2014-01-20 16:27:45,779 Took **12808 ms (23.6 Mbps)** to serve. bytes: 37748736, 1389927694850_billy-ngs-mac-mini.zip from cache, rid: 1389917156204sftree-0001879925, ip: 98.207.176.156

traceroute

```
1 www.asusnetwork.net (192.168.168.1) 0.680 ms 0.342 ms 0.329 ms
2 98.207.176.1 (98.207.176.1) 10.182 ms 16.557 ms 10.740 ms
3 te-0-2-0-4-sur03.sanjose.ca.sfba.comcast.net (68.85.191.249) 9.636 ms 10.187 ms 10.825 ms
4 te-1-13-0-2-ar01.sfsutro.ca.sfba.comcast.net (68.85.155.34) 15.944 ms
  te-1-13-0-1-ar01.sfsutro.ca.sfba.comcast.net (69.139.198.66) 12.876 ms
  te-1-13-0-0-ar01.sfsutro.ca.sfba.comcast.net (69.139.198.58) 15.595 ms
5 he-1-8-0-0-cr01.sanjose.ca.ibone.comcast.net (68.86.91.229) 14.136 ms 15.765 ms 16.054 ms
6 pos-0-5-0-0-pe01.11greatoaks.ca.ibone.comcast.net (68.86.87.162) 21.054 ms 16.863 ms 20.635 ms
7 as6461.11greatoaks.ca.ibone.comcast.net (75.149.228.134) 17.809 ms 19.416 ms 17.450 ms
8 xe-4-0-0-cr2.sjc2.us.above.net (64.125.24.5) 29.917 ms 16.019 ms 17.437 ms
9 xe-0-1-0-mpr4.sfo7.us.above.net (64.125.26.61) 16.767 ms 16.880 ms 21.206 ms
10 xe-0-1-0-mpr1.sfo2.us.above.net (64.125.27.69) 25.437 ms 17.772 ms 17.345 ms
11 tenge1-1-cr02-jls-oak.unwiredltd.net (64.125.195.198) 17.533 ms 21.324 ms 16.730 ms
12 sfrestore-10.backblaze.com (208.87.220.81) 20.865 ms 17.042 ms 16.760 ms
```

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Without Proxy

=====

INFO 2014-01-20 16:30:42,404 Took **31078 ms (2.7 Mbps)** to serve. bytes: 10485760, 1389927694850_billy-ngs-mac-mini.zip from disk, rid: 1389917156204sftree-0001879925, ip: 98.207.176.156
INFO 2014-01-20 16:31:16,539 Took **33587 ms (2.5 Mbps)** to serve. bytes: 10485760, 1389927694850_billy-ngs-mac-mini.zip from cache, rid: 1389917156204sftree-0001879925, ip: 98.207.176.156
INFO 2014-01-20 16:31:57,295 Took **39497 ms (2.1 Mbps)** to serve. bytes: 10485760, 1389927694850_billy-ngs-mac-mini.zip from cache, rid: 1389917156204sftree-0001879925, ip: 98.207.176.156

traceroute

1 [www.asusnetwork.net \(192.168.168.1\)](#) 0.584 ms 0.518 ms 0.340 ms
2 98.207.176.1 (98.207.176.1) 8.435 ms 9.502 ms 25.087 ms
3 [te-0-2-0-4-sur03.san jose.ca.sfba.comcast.net \(68.85.191.249\)](#) 9.341 ms 8.868 ms 8.912 ms
4 [te-1-13-0-11-ar01.sfsutro.ca.sfba.comcast.net \(69.139.198.142\)](#) 14.044 ms
[te-1-13-0-10-ar01.sfsutro.ca.sfba.comcast.net \(69.139.198.138\)](#) 12.425 ms
[te-1-13-0-9-ar01.sfsutro.ca.sfba.comcast.net \(69.139.198.234\)](#) 12.387 ms
5 [he-3-7-0-0-cr01.san jose.ca.ibone.comcast.net \(68.86.93.213\)](#) 15.535 ms 12.525 ms 15.980 ms
6 [pos-0-3-0-0-pe01.529bryant.ca.ibone.comcast.net \(68.86.87.142\)](#) 15.584 ms 15.534 ms 19.769 ms
7 [ix-0-2-1-0.tcore1.pdi-paloalto.as6453.net \(66.198.127.37\)](#) 14.679 ms 14.296 ms 12.043 ms
8 [if-2-2.tcore2.pdi-paloalto.as6453.net \(66.198.127.2\)](#) 68.366 ms 38.602 ms 40.668 ms
9 [if-5-2.tcore2.sqn-sanjose.as6453.net \(64.86.21.1\)](#) 37.086 ms 40.335 ms 37.592 ms
10 209.58.116.14 (209.58.116.14) 35.486 ms 36.451 ms 35.510 ms
11 [207.88.14.225.ptr.us.xo.net \(207.88.14.225\)](#) 43.585 ms 48.462 ms 41.699 ms
12 [ae0d0.mcr1.roseville-ca.us.xo.net \(216.156.0.154\)](#) 42.375 ms 63.749 ms 42.048 ms
13 [tenge6-4-cr02-rnchcrdv-smf.unwiredltd.net \(216.55.44.158\)](#) 43.596 ms 43.664 ms *

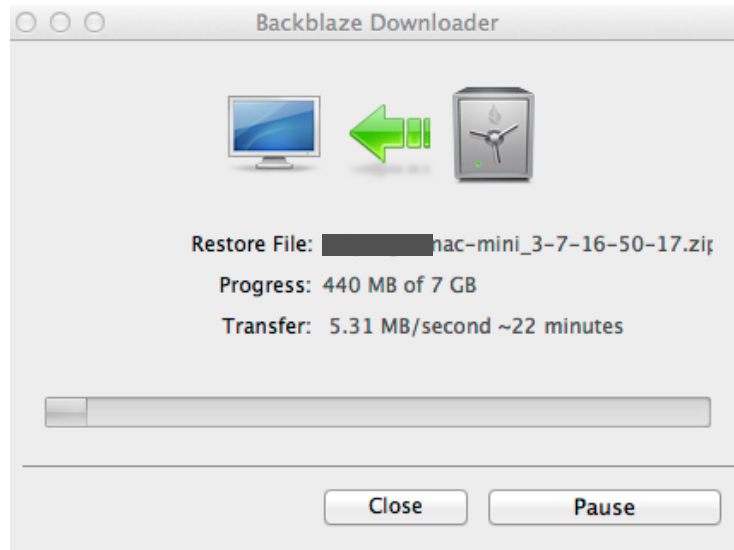
To summarize, Backblaze initially thought our systems were responsible for the slowdown, but then found definitively that it was caused by slow connectivity (long latency in hops) between Cogent and Comcast and between XO and Comcast. We assumed this was simply caused by the overloaded systems in Comcast's network and came up with a solution to solve this for our customers. At no point did we assume the slowdown was intentional.

2/23/14 News reports come out that Comcast and Netflix reach a deal.

3/1/14 Backblaze decides to see if this has affected restore speeds. We remove the proxy server and route all Sacramento traffic back through its original routes. Speeds return to normal with no slow down in the evenings. Backblaze has been running this way since 3/1/14 and continues to see normal speeds with no slowdowns.

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The developer's restore from Sacramento in the evening hours at a very fast 5.3 MB/s (43 Mbps):



Traceroutes all show low-latency hops and fast speeds for restore.

traceroute from Oakland data center

```
1 192.168.168.1 (192.168.168.1) 1.059 ms 1.111 ms 0.619 ms
2 98.207.176.1 (98.207.176.1) 9.415 ms 10.104 ms 9.544 ms
3 te-0-2-0-4-sur03.san jose.ca.sfba.comcast.net (68.85.191.249) 9.516 ms 9.631 ms 9.517 ms
4 te-1-13-0-1-ar01.sfsutro.ca.sfba.comcast.net (69.139.198.66) 14.350 ms
  te-1-13-0-0-ar01.sfsutro.ca.sfba.comcast.net (69.139.198.58) 11.288 ms
  te-1-13-0-13-ar01.sfsutro.ca.sfba.comcast.net (69.139.198.150) 11.598 ms
5 he-1-7-0-0-cr01.san jose.ca.ibone.comcast.net (68.86.90.153) 17.278 ms 15.855 ms 16.056 ms
6 pos-0-1-0-0-pe01.529bryant.ca.ibone.comcast.net (68.86.87.2) 16.464 ms 21.052 ms 18.099 ms
7 te0-0-0-12.ccr21.sjc04.atlas.cogentco.com (154.54.13.17) 18.362 ms 15.097 ms 20.932 ms
8 be2016.ccr22.sfo01.atlas.cogentco.com (154.54.0.177) 14.415 ms 15.627 ms
  be2015.ccr21.sfo01.atlas.cogentco.com (154.54.7.173) 13.895 ms
9 te4-2.ccr01.sfo02.atlas.cogentco.com (154.54.3.122) 21.197 ms 17.602 ms 214.768 ms
10 38.104.130.106 (38.104.130.106) 16.342 ms 16.742 ms 16.614 ms
11 112.tenge2-1-cr02-jls-oak.unwiredltd.net (204.11.106.78) 16.496 ms 16.716 ms 18.399 ms
12 208.87.220.247 (208.87.220.247) 15.930 ms 15.728 ms 16.101 ms
```

traceroute

```
1 192.168.168.1 (192.168.168.1) 1.128 ms 0.652 ms 0.607 ms
2 98.207.176.1 (98.207.176.1) 9.269 ms 9.563 ms 9.225 ms
3 te-0-2-0-4-sur03.san jose.ca.sfba.comcast.net (68.85.191.249) 9.252 ms 9.687 ms 17.515 ms
4 te-1-13-0-11-ar01.sfsutro.ca.sfba.comcast.net (69.139.198.142) 13.515 ms
  te-1-13-0-10-ar01.sfsutro.ca.sfba.comcast.net (69.139.198.138) 11.255 ms
```

Findings and Analysis of Slowdowns on the Comcast Network

te-1-13-0-9-ar01.sfsutro.ca.sfb.comcast.net (69.139.198.234) 11.774 ms
5 he-1-8-0-0-cr01.sanjoose.ca.ibone.comcast.net (68.86.91.229) 23.393 ms 15.621 ms 20.037 ms
6 pos-0-3-0-0-pe01.529bryant.ca.ibone.comcast.net (68.86.87.142) 14.521 ms 15.070 ms 15.691 ms
7 ix-0-1-1-0.tcore1.pdi-palo-alto.as6453.net (66.198.127.33) 12.920 ms 12.929 ms 12.642 ms
8 if-2-2.tcore2.pdi-palo-alto.as6453.net (66.198.127.2) 14.123 ms * 15.439 ms
9 if-5-2.tcore2.sqn-san-jose.as6453.net (64.86.21.1) 13.667 ms 14.203 ms 14.251 ms
10 209.58.116.14 (209.58.116.14) 13.927 ms 13.857 ms 14.427 ms
11 207.88.14.225.ptr.us.xo.net (207.88.14.225) 27.893 ms 28.612 ms 19.561 ms
12 ae0d0.mcr1.roseville-ca.us.xo.net (216.156.0.154) 18.019 ms 18.599 ms 17.977 ms
13 tenge6-4-cr02-rnchcrdv-smf.unwiredltd.net (216.55.44.158) 18.135 ms 18.283 ms 18.528 ms
14 38.108.169.80 (38.108.169.80) 18.877 ms 19.229 ms 18.964 ms

Smokeping shows no slowdown by hour:



After Comcast spent months claiming how incredibly difficult and expensive it would be to provide sufficient bandwidth for Netflix traffic due to the need for heavy investment in infrastructure, being able to completely deploy all necessary equipment and fix all these issues in the span of one week after signing a deal seems suspect.
