Peering BOF XV at NANOG 40 in Bellevue, Washington

June 5, 2007 4PM Meeting Notes
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Here are my meeting notes taken a few days after NANOG40 in Bellevue, Washington. I am sure there are errors and sections that should have more text, so let's call this a draft. Please send additions and corrections to bill.norton at gmail.com.

We convened the 15th Peering BOF at 4PM.

Agenda Bashing and Observations – 10 min

1. **Welcome - 10 min - Bill Norton - Agenda Bashing and Observations**
2. **Anonymous Survey - 5 min - Bill Norton**
3. **Peering BOF HotSeat Topic - Transit Survey(s) - 10 min - Joe Provo**
4. **PeeringDB.com - 10 min - Terry Rodery (BitGravity)**
5. **UnderHanded Peering Techniques - 10 min - Jim Deleskie (VSNL)**
6. **Peering in Seattle – 10 min - Patrick Gilmore (Akamai)**
7. **TTL Survey Results – Ren Provo (AT&T) – 5 min**

8. **Peering Personals – scattered throughout**

We started the Peering BOF on time with about 225 people in the room. Over the next 15 minutes the group grew to maybe 275 people, many standing or sitting on the floor. It was a very tight fit but the concentric circles of seats tends to work well for the Peering BOF since people can see and hear each other better than the conventional everyone-faces-the-front seating. I started by explaining the seating rationale and the protocol for interaction, that is, standing up and if needed, to use the microphone to make a point.

I made a few observations leading to the most popular question in our little Peering Community: "Does Peering Make Sense Anymore?" With the Tier 1 ISP mergers reducing the number of ISPs and perhaps making their peering policies more restrictive, I attempted to probe the group to find out if peering was more difficult now than it had been before the mergers (AT&T with PacBell, Ameritech, BellSouth, etc, MCI with UUNet and Verizon, Level 3 with BroadWing etc). Ren Provo (AT&T) pointed out that the AT&T peering policy is on the web (http://www.corp.att.com/peering/) and is selective but attainable, therefore not "restrictive" by my definition. Patrick Gilmore (Akamai) reinforced her point by observing that the AT&T peering policy is more open than the most of the other large ISPs.

Anonymous Survey on Graceful Restart

One community member who was not allowed to speak publicly at the BOF asked me to put forward a couple questions to the group:

- 1) Who is using graceful restart on their BGP peering sessions?

  Maybe half the audience raised their hands
- 2) Why is graceful restart is a good idea?

  Richard Steenbergen (nLayer) first chimed in explaining that graceful restart is an option for a BGP speaker that allows the forwarding plane to continue functioning while the BGP protocol processing is suspended.
- 3) Why graceful restart is a bad idea?

Scott Liebrand (InterNAP) commented that (thanks for emailing the argument Scott!): "With regards to BGP graceful restart, the problem we've seen with implementing it (and which I tried to explain during the discussion) is that Cisco's implementation of graceful restart assumes that you have NSF (non-stop forwarding), and then basically tells your peers, "if I

ever drop this BGP session, it's because I'm failing over from the primary to redundant supervisors, and will keep passing packets, so keep sending them my way". That's all well and good if that's what actually happens. However, if the router really does go down (because you don't have hitless IOS upgrades and have to reload it, or because it loses power, or whatever), then the neighboring router continues sending traffic its way (and blackholing it) for many minutes, rather than simply failing over to a working path.

There are several things that Cisco is working on to help with this (hitless upgrades were mentioned, and deploying SSO and NSF across-the-board helps as well), but I think one thing that's missing is to have the router actually withdraw all the routes it's announcing over a graceful-restart session before reloading.

So graceful restart is a neat feature that we're interested in using, but our testing indicates the implementations available to us are not yet ready to be turned on across the board (which is the only option: AFAIK there's no per-neighbor graceful restart configuration available until the upcoming SRC release of IOS 12.2)."

Imeem Peering Personal

We scattered the Peering Personals throughout the Peering BOF as suggested at the Toronto NANOG by Jeffrey Papen (Peak Web Hosting).

Bryan Berg <**bryan@imeem.com**> was the first to introduce himself to the group as AS36119 with peering presences in **Equinix San Jose, PAIX Palo Alto (private peering only), Equinix Ashburn** and with planned deployments (3-6 months): **PAIX Palo Alto (public), Equinix Chicago, Singapore .** The traffic volume exceeds 12 Gbps today suggesting that there are a few Gbps of traffic that could be peered with imeem for many people in the group.

Peter Peering Personal

For a little humor, we put together a peering personal for Peter Cohen, the former restrictive peering coordinator for Telia. See the video at http://www.youtube.com/watch?v=g8ePHtuXius.

Peering BOF Hotseat – Transit Surveys – 10 min – Joe Provo

The question “Does Peering make sense anymore?” requires an evaluation and comparison of transit costs and peering costs. Joe placed the survey forms on the seat so attendees who purchased transit and peering services could contribute their answers to the question. This is valuable to the community since we continue to see transit prices drop, and we also see transport prices drop as new peerable video traffic grows. The hope is that we can collect data that can help the community compare notes and explore this question.

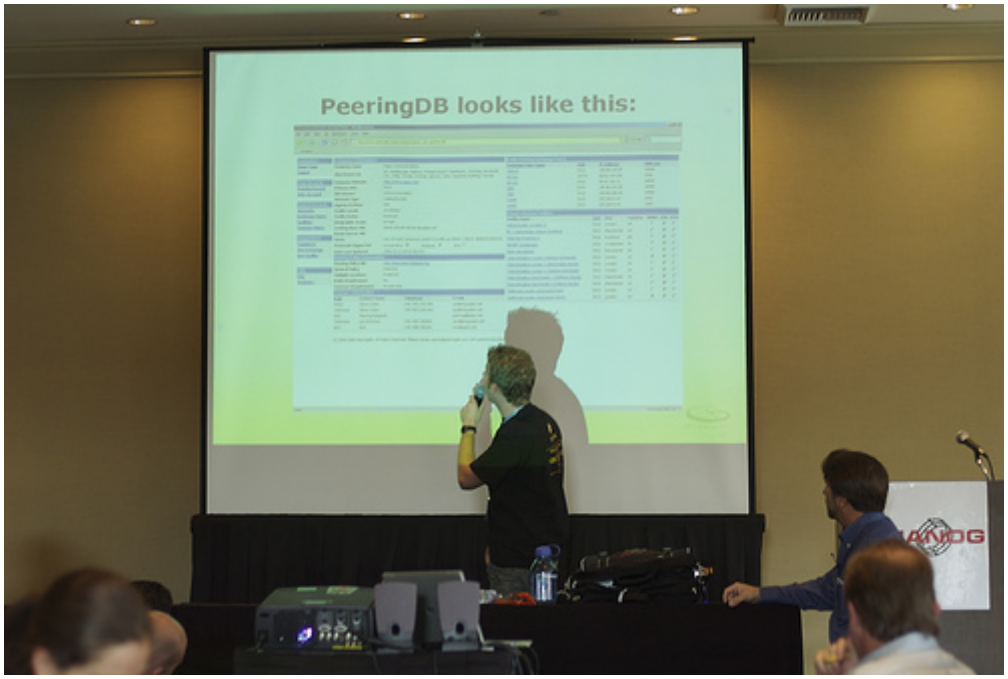
NTELOS Peering Personal (AS7795)

Tom Watkins **twatkins@ntelos.net** stepped in to introduce himself as an open peer regional last mile provider who is peering in Ashburn with plans for peering in New York, Chicago and Atlanta.

VideoBox Peering Personal (AS36472)

Matt Peterson matt@peterson.org led a lively and interesting discussion of the lessons learned peering content that transcends the language barrier. They are peering at the SFMIX and PAIX Palo Alto with plans to peer at Equinix San Jose.

Peeringdb.com Update – Terry Rodery – 10 mins



Terry Rodery (BitGravity) shared screenshots with the group for the peering contact databased (www.peeringdb.com) as a way for all of us to keep contact information fresh in one place. His slides are available.

PhotoBucket Peering Personals (AS14173)

Greg Hartung **ghartung@photobucket.com** introduced himself to the group along with his company which shares photos to the tune of 30Gbps. He is currently testing the waters for peering but is still only located in Denver. He shared the very steep curve of traffic destinations that will not peer which led to a discussion of collecting the list of end ASes that should be pursued for peering, aka the end-run peering tactic. In any case, 30 Gbps is a lot of traffic that could be peered.

Peering Personals for Ultra Services (AS12008)

John Kristoff **jtk@ultradns.net** introduced himself and presented the case for peering with a DNS company. While there is not a lot of volume of traffic, there is a strategic reason to peer with Ultra as a way to reduce the likelihood of a DOS attack taking out the DNS. This led to a few others reinforcing this argument as valid.

Underhanded Peering Tactics – Jim Deleskie

Jim facilitated the discussion of tactics used to obtain peering that folks in the community have seen.

This information sharing discussion was interesting as the tactics appear to be very common these days. Specifically, the fake NOC outage tactic documented in the “Art of Peering” had been seen by dozens of companies in the room.

This turned into a discussion about MD5. Many in the group turned on MD5 on their peering sessions. Some did so because they were required to by their peers, others because they wanted to. MD5 provides some degree of integrity on the data passed over the session but Patrick explained that the MD5 processing overhead made a router that did MD5 more vulnerable to attack that without it.

Peering Personal Pando Networks (AS26779)

Keith O'Neill keith@pando.com stepped up to share the Pando networks open peering policy and that they peer at 111 8th at the PAIX and are considering peering at 56 Marietta in Atlanta.

Peering Personal InterNAP (AS22212)

Scott Leibrand <sleibrand@internap.com> introduced himself and InterNAP to the peering community with about 60Gbps of peering traffic. They are peering at **Equinix Ashburn, Chicago, Los Angeles, Newark, and San Jose, NYIIX, Any2 and have planned (3-6 months): SIX, NOTA, Equinix Dallas, ATLIX**

Peering in Seattle – Patrick Gilmore – 10 mins

Patrick Gilmore (Akamai) stepped up to share what it is like to peer in Seattle. His slides are available.

Both Chris Caputo (SIX) and the PAIX folks had some additional data points to share with the group.

TTL Survey Results – Ren Provo

Ren shared the results of the survey taken at the Global Peering Forum earlier this year surround some peering activities. Slides were not available at the time I hacked these notes together.

Final Notes

We finished about 10 minutes late as some of the discussions ran over the allotted time but folks hung around for another 10-15 minutes as people exchanged cards and chatted about what was discussed. Joe Provo collected and assimilated the surveys which presumably can be shared back to the group at the next Peering BOF.

These photos were taken by Matt Peterson and available on Flickr http://www.flickr.com/photos/dork with the tag of NANOG40. Thanks to a few folks who gave this an early edit and corrected my spelling mistaks: Dna Gldaing, Terrry Radery, Scot Liebrand, Mat Petersen.