NTAC Peering and Routing Working Group
01/21/2020 Call Notes

1. Agenda Bash
    a. Farmer: add to CII conversation
    b. Jeff Bartig: Microsoft routes
    c. E-sports peering
2. Update on peering and I2PX
    a. Start of semester traffic now evident
    b. Capacity updates: Apple 100G at STL, NY. Attempted 100G at Ashburn, had interface errors, backed out. Public Equinix exchanges at 100G @ Ashburn, Chicago
    c. James Deaton: Is there a good visual on I2PX pipes – before, after?
        i. Jeff will update one and send it out soon and add to NOC pages.
3. Network weather update – trends and coming events
    a. See above
4. I2 network update
    a. See above
5. CII conversation
    a. Farmer: has been looking at where CII is and how it is reachable. Has put together large google spreadsheet that he will share with the group soon.
    b. There are interesting opportunities from a peering perspective.
    c. Looking at TLDs for major (and not so major) domains and where their root servers are located network-wise.
    d. Farmer: once data is out, folks will likely want to chew on it.
    e. Brock: what other CII? NTP.
    f. Lambert: NTP: Could I2 run Stratum 1 servers.
        i. Farmer: yes, but we should coordinate peering amongst the ones we have now.
        ii. Brock: could look at listing NTP by region.
        iii. Farmer: could have a working group to coordinate NTP peering.
        iv. At least several institutions would be open to exposing NTP servers to Internet2 peers.
        v. Brock: Does this pool domain seem to be a reasonable approach? Could I2 facilitate?
        vi. I2 would require expensive roof access, so they would likely look to other institutions/colleges to host.
        vii. Schmiedt: We have agreed that campuses are the best hosts. But, how to coordinate?
            1. Farmer: likely through the regionals.
        viii. Does anyone care about NTP?
            1. Yes.
        ix. Internet2 has been running a stratum 1 unit for some time. Not sure how available it is.

          x.   Brock: Can Linda Roos discuss with Matt Z. Yes.

         xi.   Farmer: also consider reaching out through the Quilt to find existing infrastructure.

        xii.   Roos: will start with Matt Z.

6. Microsoft routes
    a. Bartig: Have been discussing for some time that Microsoft will need to move out of R&E table as they are not a Net+ member.
    b. Microsoft also existed in I2PX for some time.
    c. Jeff has been working to build capacity and now feels comfortable that I2PX peers are satisfactory for this change.
    d. **Microsoft routes will soon be leaving the R&E table** – Jeff will be working on timing with Microsoft.
    e. If any concerns, please contact Jeff directly.
    f. Will other organizations follow?
        i. Yes, as/if Net+ participation ends. Eg: Oracle and Box.
        ii. Brock: intent is to get commercial/cloud providers out of R&E table.

7. E-sports peering
    a. Farmer: Jeff had set of peers he was looking at. Timeline for implementation.
    b. Bartig: have established peering with Gcore and I3d. Waiting on others to get capacity augment with the SIX peering exchange in Seattle (20G to 100G).
    c. Matt: what specific connectivity is needed? P2P or to servers?
        i. Both. It is best for the players if latency should be predictable.
    d. Brock: any "special" peering requirements with these peers.
        i. Bartig: not really.
        ii. Farmer: peering is often regionalized; all routes may not be announced at all peers.
    e. Has anyone had any complaints from Esports players or is this proactive.
        i. Mostly proactive.
    f. Many smaller schools fine ESports to be a differentiator and therefore see enabling it as a priority.
    g. Owens: Updates for gaming computers in arenas can be very bandwidth intensive.
        i. Farmer: correctly implemented rate-limits can help here.
    h. Roos: last NTAC call asked for volunteers to be on Esports working group. Would be mostly technical discussion.
    i. Would be good to have this working group investigate latency impact of ESports peering.

8. Any other business?
    a. Call ended at 5:02 EST