



“Good artists copy, Great artists steal.” –
Pablo Picasso 



A Brief Study of

28 Peering Policies



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Peering Policies

- *This brief review of 28 peering policies*
- *commonality*
- *common groupings*
- *common clauses*
- *But can you construct a useful frankenstein peering policy from the popular clauses?*

“Good artists copy, great artists steal.”

Peering Inclinations



Peering Policies - Spectrum

- **Open** - will peer with anyone
- **Selective** - will peer but some pre-reqs
- **Restrictive** - inclination not to peer with anyone else
- **No-Peering** - inclination not to peer

In this session

- Identify which of these popular clauses we should include in our Peering Policy



28 Peering Policies

- 1. AT&T <http://www.corp.att.com/peering/>
- 2. Speakeasy <http://www.speakeasy.net/network/peeringpolicy.php>
- 3. Hurricane Electric <http://www.he.net/peering.html>
- 4. AboveNet <http://www.above.net/peering/>
- 5. Verizon <http://www.verizonbusiness.com/terms/peering/>
- 6. ATDN http://www.atdn.net/settlement_free_int.shtml
- 7. Qwest http://www.qwest.com/legal/peering_na.html
- 8. InterNAP <http://www.internap.com/peering/>
- 9. Net Access <http://www.nac.net/eng/peering.asp>
- 10. TWTelecom http://www.twtelecom.com/cust_center/public_peering_policy.html
- 11. WVFiber <http://peering.wvfiber.com>
- 12. nLayer <http://www.nlayer.net/network/peering/>
- 13. RCN <http://ptd.mbo.ma.rcn.net/peer-policy/>
- 14. EasyNet <http://peering.easynet.net/>
- 15. BBC <http://support.bbc.co.uk/support/peering/>
- 16. HopOne <http://www.hopone.net/peering.php>
- 17. Cox <http://www.cox.com/INETPeering/sfp.asp>
- 18. WBSConnect <http://peering.wbsconnect.com/>
- 19. DalNet <http://www.dal.net/?page=peering>
- 20. MZima <http://www.mzima.net/network.html>
- 21. Comcast <http://www.comcast.com/peering/>
- 22. Cablevision <http://www.cv.net/peering/requirements/>
- 23. Charter <http://www.charter.com/visitors/general.aspx?ownerid=25>
- 24. New Edge Networks http://www.newedgenetworks.com/about_us/coverage/peering_policies.xea
- 25. High Winds <http://www.highwinds.com/tabid/109/Default.aspx>
- 26. OpenAccess <http://www.openaccess.org/index.php?section=204>
- 27. LambdaNet <http://www.lambdanet.de/index.php?p=200&l=2&sid=4b0a1625ba0047b3c9cc8231c541d8c7>
- 28. tinet <http://www.as3257.net/peering-policy/>

Summary

- Peering Policies not only similar
- Peering Clauses almost Identical
- Lawyers reuse boilerplate
- We will create a policy, you will need a team

Summary Findings

- 3 Categories of Policy Clauses
 - Operations
 - Technical / Routing / Interconnect
 - General

Operations Clauses

- 24/7 NOC - 25 of 28
- Traffic volume requirement (20 of 28)
- Interconnect capacity requirements (19 of 28)
- Work to fix things (19 of 28 had this clause.)
- Interconnect Capacity, Geographic diversity and Peering in all places in common 13 of 28

Operations Clauses

- Traffic Ratio requirements 9 of 28
- Maintenance and Outage Notification and Interactions for network planning and Monitoring/Managing Interconnect (6 of 28)
- Escalation Path (5 of 28) Use of IRR - route registration wasn't as common as we expected (6 of 28).
- Registration in PeeringDB - only 2 of 28

Technical / Routing / Interconnect Clauses

- Consistent route announcements was a common clause (21 of 28).
- “Hot Potato” or “Shortest-Exit” clauses came up (8 of 28).
- MEDs don't seem to be widely used (2 of 28 mentioned them).
- MD5 - AboveNet, BBC, wbsconnect, and Charter 4of28


Technical / Routing / Interconnect Clauses

- Don't Abuse Peering - was a popular clause (18 of 28 had some of these clauses).
- Filtering clauses, Prefix Length minimum clauses came up along with a minimum number of prefix or ASes to announce clause - these and Single AS (8 of 28) requirements clump together.
- Provide us with tools clauses - in some cases the ISP required access to in-network tools to diagnose/check routing.

General Clauses

- Can't be a customer - (18 in 28 had this clause)
- Peering request clauses were very common in peering policies (17 of 28 mentioned how to request peering.)
- Peering may be suspended, terminated, and we can make exceptions at will. In here we also categorized the clauses about “meeting these requirements does not guarantee peering.” At least 15 of 28 policies had these clauses

General Clauses

- Paid Peering product (Comcast, AT&T, Cox, tinet).
 - Peering in Reciprocal Markets - (2 of 28).
 - Non-Disclosure Agreements and/or Peering contracts were required by 9 of 28.
 - This Policy May Change with some notice (10 in 28 had this one).
 - Financially Viable clauses showed up in 2 of 28 policies.
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Interesting Observations

- **Badly grammar and misspelling Award - is split three ways:**
- [Hurricane Electric](#) :
- “Only send us traffic that destined for the prefixes we announce to you.”
- [RCN](#):
- Agreements for best-exist or other forms of traffic exchange can be made in email”
- [TiNet](#):
- “Violation of these terms may result in immediate de-peering and other attention-getting mechanism”
- (DrPeering is imagining bunny on the stove. *Fatal Instinct* movie reference)

Interesting Observations

- **Honorable mention to the MSOs, CableVision and Comcast:**
- [CableVision](#):
- “Potential peer must be able to demonstrate usage history with an aggregate peak average usage rate greater than 70 Megabits/s or sustain an average of 4.32 Terabits/day; bi-directionally.
- Whichever is applicable.”
- [Comcast](#):
- “Applicants will be responded to within a reasonable timeframe to discuss their request.”
- This last one is only slightly different from the better language of AT&T’s Peering policy from which it was most likely derived:
- “Potential peers will be contacted within a reasonable timeframe to discuss their requests.” --AT&T

Interesting Observations

- **Redundancy has a Common Clause:**

- Peer must operate a fully redundant network capable of handling a single-node outage in each network without significantly affecting the traffic being exchanged.
– LambdaNet
- Each Network must operate a network with sufficient redundancy and capacity that the failure of a single node will not significantly affect performance. – AboveNet
- Each Internet Network must operate a fully redundant network, capable of handling a simultaneous single-node outage in each network without significantly affecting the performance of the traffic being exchanged. – Verizon
- Applicant must operate a fully redundant network capable of handling a single-node outage in each network without significantly affecting the traffic being exchanged. – ATDN
- Where did this clause come from and what is this single-node outage? DrPeering is guessing that this means that no single node on either network can go out and adversely affect peering. There was some discussion when we raised this with the peering community and there were a couple different views on what it meant, and the intention of the clause. Meaning : Redundancy is a good thing, we require it in peer networks.

Peering Team

- How many people
- multi-disciplines
- what roles do they play
- rotation to handle peering requests?
- weekly?
- Review Peering Session Process?



Process to make our peering policy

- Policy Clause List document
- Select the ones you like best
- OR
- Start with AT&T or Comcast Policy
- Add/Delete

Process

- Walk through peering policy clauses
- Decide if important clause
- Pick one as a placeholder
- Need: note taker to type it in
- Legal to review/refine to needs