

The Peering Database

The <https://www.peeringdb.com/> is a freely available, user-maintained database of networks which take part in the global Internet. It is considered the authoritative source of all information relating to network operators who participate in peering around the world.

The database facilitates the global interconnection of networks at Internet Exchange Points (IXPs), data centres, and other interconnection facilities, and is the first step in making interconnection decisions.

Background

In the early Internet (of the 1990s) there were few network operators and interconnect points around the world that interconnections were relatively straightforward to seek out and implement (in the author's experience anyway). In March 1999 there were 4640 ASNs in the Internet with only 800 providing transit. This compares with today's total exceeding 73000 ASNs and over 10000 ASNs providing transit, never mind that almost every country in the world now has at least one Internet Exchange Point if not a datacentre facilitating commercial interconnects.

In the 1990s establishing new interconnects by attending in major Internet operations meetings (NANOG, RIPE, AfNOG, APRICOT and so on), with network information passed on by word of mouth or email or even by letter!

With the rapid growth of the Internet in the late 1990s and early 2000s, there needed to be a more scalable way for a Network Operator to get their "peering information" out to the global Internet operations community. And hence the PeeringDB was born.

What is the Peering DB

The Peering DB is a repository of the important information that network operators need to determine whether an interconnection is feasible, makes commercial sense, makes technical sense, and is even technically feasible. While the Peering DB website has much more detailed information, the Peering Toolbox is highlighting the key points.

Here are some example entries to show what is possible. The first example (publicly accessible) is of LINX, the London Internet Exchange:

Last update:
2022/05/06
05:05

peering-toolbox:the_peering_database https://bgp4all.com.au/pfs/peering-toolbox/the_peering_database?rev=1651813520

Peers at this Exchange Point

Peer Name	ASIN	Speed	Policy
(as) networks	33920	2G	Selective
01 Telecom (01.T)	201933	10G	Open
012 Smile Telecom	9116	10G	Open
1&1 Versatel Deutschland GmbH	6881	100G	Selective
100 Percent IT	20916	1G	Open
23M GmbH	47447	10G	Open
24Shellz Inc	55061	10G	Open
31173 Services AB	38351	10G	Open
4D Data Centres Ltd	31463	10G	Selective

which shows a screen capture of what is available at their LON1 site, a scrollable list of the participants, how to contact LINX, etc.

The second example below shows that of a AWS (Amazon Web Services), one of the major content networks on the Internet:

Public Peering Exchange Points

Exchange	ASIN	Speed	RS Peer
AKL-IX (Auckland NZ)	16509	100G	
AMS-IX	16509	600G	
AMS-IX Chicago	16509	100G	
AMS-IX Hong Kong	16509	10G	
AMS-IX Mumbai	16509	10G	
Any2Denver	16509	100G	
Any2West	16509	100G	

This one shows the Public peering and Private peering facilities AWS is present at. So a potential peer can check which locations they share with AWS, and then contact them about peering. The page for AWS contains data about number of prefixes, traffic ratios, etc, plus the IP addressing used at the various public Internet connect points. All this is designed to make it easier for prospective peers to assess and reach out to AWS for peering.

And the final example shows Aereion (formerly Telia Carrier), the operator of AS1299, one of the international transit carriers serving the global Internet:

The screenshot shows the PeeringDB entry for AS1299, operated by Aereion. The left sidebar lists organization details such as 'Organization: Aereion', 'Also Known As: Aereion, Uvia Telia Carrier', 'Long Name', 'Company Website: https://www.aereion.com/', 'ASN: 1299', 'IRR as-set/route-set: RIPE::AS-TELIANET RIPE::AS-TELIANET-V8', 'Route Server URL', 'Looking Glass URL: https://lg.twelve99.net/', 'Network Type: NSP', 'IPv4 Prefixes: 550000', 'IPv6 Prefixes: 100000', 'Traffic Levels: 100+Tbps', 'Traffic Ratios: Balanced', 'Geographic Scope: Global', 'Protocols Supported: Unicast IPv4, Multicast, IPv6, Never via route servers', 'Last Updated: 2022-02-04T13:28:51Z', 'Public Peering Info Updated', 'Peering Facility Info Updated: 2022-04-28T18:22:56', and 'Contact Info Updated: 2021-09-09T14:07:44'. A 'Notes' section mentions that AS1299 is matching RPKI validation state and rejecting invalid prefixes. The main content area is divided into 'Public Peering Exchange Points' (currently showing no matches) and 'Private Peering Facilities' (listing various data centers and locations like 123.NET - DC1 - 24700 Northeastern Hwy, 1299, United States of America Southfield; 1530 Swift, 1299, United States of America North Kansas City; 1623 Farnam, 1299, United States of America Omaha; 365 Data Centers Buffalo (BU1), 1299, United States of America Buffalo; 365 Data Centers Detroit (DT1), 1299, United States of America Southfield; 365 Data Centers Nashville (NA1), 1299, United States of America Nashville; 365 Data Centers Tampa (TA1), 1299, United States of America Tampa; 3U Rechenzentrum Berlin, 1299, Germany Berlin; 915Telecom Denver, 1299, United States of America Denver; st1 Frankfurt, 1299, Germany Frankfurt; Aereion Düsseldorf DDF/B, 1299, Germany Düsseldorf; Aereion London HEX, 1299, United Kingdom London; and Aereion Moscow MSK/O1, 1299, Russia).

again showing the type of data that are published in the PeeringDB.

Creating a PeeringDB Entry

The Peering Toolbox recommends (strongly) that any entity with their own AS Number and address space should create an entry in the Peering DB. There is no cost to doing so.

A tutorial on how to create an entry is currently beyond the scope of the Peering DB - but the best advice is to look at other PeeringDB entries and use what those entries have to guide what is needed for your own one.

Why a PeeringDB entry

Today very few network operators will considering peering with an entity that has no PeeringDB entry. In fact, many will make it a requirement before they will even respond to a peering request. Indeed, some operators will go as far as using information in the PeeringDB for configuring peering sessions with their peers, making it essential that the entries are kept up to date.

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