



Where to Peer

This section of the Toolbox describes the where a network operator would seek peering.

Private Peering

Private peering is where there is a private connection between the two network operators for the purpose of exchanging traffic.

Meaning of Private

Private means that the physical link between the two network operators is organised by them (by one operator or by both), is only for their use, and is usually jointly owned (costs are shared) by both operators.

Location

It is up to the two operators who wish to peer privately to agree the location that would suit them best. If they are in the same physical datacentre, a link between their equipment cabinets may be enough. If parts of their respective networks are in the same metropolitan area, perhaps local capacity can be leased from an infrastructure operator. But if they are far apart, or in different countries, a wide area network link will need to be used, chosen according to what makes most economic sense.

Physical connectivity of a Private Peering

The physical link can take many forms, including: - copper ethernet or fibre optic cable patching between each operators routers in difference equipment racks in the same datacentre - fibre optic leased from an infrastructure provider between the two operators datacentres - wireless media (the various 802.11 standards) connecting over the air across distances up to 10km (usually where fibre interconnect is not possible) - satellite infrastructure (whether low earth orbit, medium earth orbit, geosynchronous or geostationary) connecting over large distances where neither fibre nor wireless can service the need.

Configuration of a Private Peering

At a high level, the configuration applied to each network operator's router ensures that each operator only sends the routes (public IP address space) they and their customers use for Internet access, and only accept the routes that their peer (and their customers) use for Internet access. All other routing information is blocked on this private link (a very important requirement for routing security).

The routes that a network operator learns from a private peer must not be passed on to any other autonomous network **unless** and **only** if there is agreement with the private peer that this is desirable.

A detailed configuration example is covered elsewhere in the Toolbox.

Private Peering Agreement

Operators who enter a Private Peering usually will exchange documentation which details the peering agreement between them. This agreement usually contains information such as:

- which routes will be exchanged
- the process by which changes to the routes being exchanged will be informed to the peer
- an undertaking to upgrade the interconnect capacity (bandwidth) in a timely manner (timely will be defined at what percentage of capacity is used before an upgrade is needed)
- contact details of the Peering Coordinator (the administrative contact) in each operator
- contact details of the Network Operations Centre at each operator (not customer helpdesk!)
- escalation process in case of faults on the interconnect
- any other relevant information relating to the interconnect to ensure its continuous and reliable operation

Not all operators enter into such an agreement although it is recommended simply so there is a documentation trail and that each operator knows what to do if any issues need to be resolved.

Public Peering / Internet Exchange Point

References

This content is sourced from many contributors, including:

- [Value of Peering Presentation](#) - Philip Smith
- Network Startup Resource Center
- Input from Mark Tinka, Kurt Erik Lindqvist, etc

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