

Global Peering Architecture – phase2

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Connectivity

Links

For transatlantic connectivity, the ANA100 circuits will be used:

- Netherlight (Amsterdam) to MANLAN (New York)
- GÉANT Open (London) to WIX (Ashburn) or Starlight (Chicago)

In the US, Internet2 will provide the connectivity between the East and West coasts and exchange points, if necessary.

Connection points

Europe

NORDUnet and GÉANT will connect to each other in Amsterdam and London, via the open exchanges, Netherlight and GÉANT Open, respectively. Alternatively, direct links with the necessary capacity between the two networks will be used. Regardless of the approach, both NORDUnet and GÉANT will need to connect to the open exchanges for access to the ANA100 links.

US

NORDUnet and Internet2 currently exchange commercial peering traffic over private interconnects in Ashburn and Chicago. The aim is to migrate these connection points to MANLAN and WIX or Starlight, with the current setup as an alternative solution.

GÉANT may also opt to use existing links to the mentioned R&E exchanges in order to connected with NORDUnet in the US and directly with Internet2.

On the US West coast Internet2, NORDUnet and AARNet currently meet at PacificWave. In the case that NORDUnet removes the West coast presence, Internet2 will provide a transport service between PacificWave and one of the East coast exchanges for AARNet and NORDUnet to peer directly.

Route leaking (peers bridging)

Before proceeding with further route leaking than what is already in place, traffic estimates need to be made by each network involved, to prevent links from becoming overloaded.

Furthermore, content networks with heavy outbound traffic patterns will not be leaked.

NORDUnet – GÉANT

Currently, NORDUnet leaks to GÉANT routes learned from Nordic IXs, plus a few selected peers from other European IXs.

This approach will be continued with NORDUnet announcing selected PNIs and unique European peers to GÉANT.

GÉANT will produce an estimation of traffic levels based on NORDUnet's peer list.

When GÉANT will expand its peering places, unique peers will be announced to NORDUnet.

NORDUnet – Internet2

A limited number of selected peers are currently being leaked between NORDUnet and Internet2. This approach will be continued until the NORDUnet peering infrastructure in the US will be restructured.

Peering traffic currently peaks around 5Gbps, and it can potentially double up with the announcement of more networks. The traffic ratio is in favor of Internet2.

Internet2 – GÉANT

Internet2 will announce the same peers to GÉANT as they currently do to NORDUnet, given adequate capacity on the Internet2 edge.

Traffic levels are to be estimated. The ratio is expected to be in favor of Internet2.

AARNet – Internet2

Route leaking between AARNet and Internet2 will be done on a peer-by-peer basis, given sufficient capacity and AUP compliance.

Traffic levels are to be estimated. The ratio is expected to be in favor of Internet2.

AARnet – NORDUnet

Route leaking between AARNet and NORDUnet will be done on a peer-by-peer basis, given sufficient capacity and AUP compliance.

Traffic levels are to be estimated. The ratio is expected to be in favor of NORDUnet.

Commercial peering

NORDUnet

NORDUnet will maintain the current peering presence in Europe, and might at a later stage restructure the US peering presence based on Internet2's capability to cover the existing peering points and leak routes between NORDUnet and US networks.

GÉANT

GÉANT will expand on the current peering presence, both in terms of IXs and commercial peers, with a focus on adding unique networks to the common peering matrix.

GÉANT will also add direct peering sessions to certain large commercial networks that they currently see behind NORDUnet.

Internet2

Internet2 are currently limited with regard to number of peers. Following the restructuring of the IP network, Internet2 will expand the US peering presence in terms of exchange points and peer count.

AARNet

AARNet will expand their presence in the Asia-Pacific region (outside Australia), given favorable capacity pricing.