IXP Operations Update

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INEX Operations

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Went live with the official launch on April 7th 2016

6 trafficking members - averaging >30Mbps

5 members pending (inc. eir, BT Ireland, HEAnet)

RIPE Atlas Anchor

RIPE DNS K Root nameserver

B - via HE (AS6939)	~150ms	ISI (Uni. Southern Cal.)
D, E - PCH (AS42)	<1ms	UMD, NASA
F - via HE (AS6939)	<12ms	ISC
J - Verisign	<1ms	Verisign
K - 4 paths	best ~12ms	RIPE NCC
L - 4 paths	best ~32ms	ICANN

WDM Upgrade

Server Upgrades

~~INEX Cork~~

100GE

INEX LAN1 renumbering

Kilcarbery PoP rebuild

IXP Manager Around the World

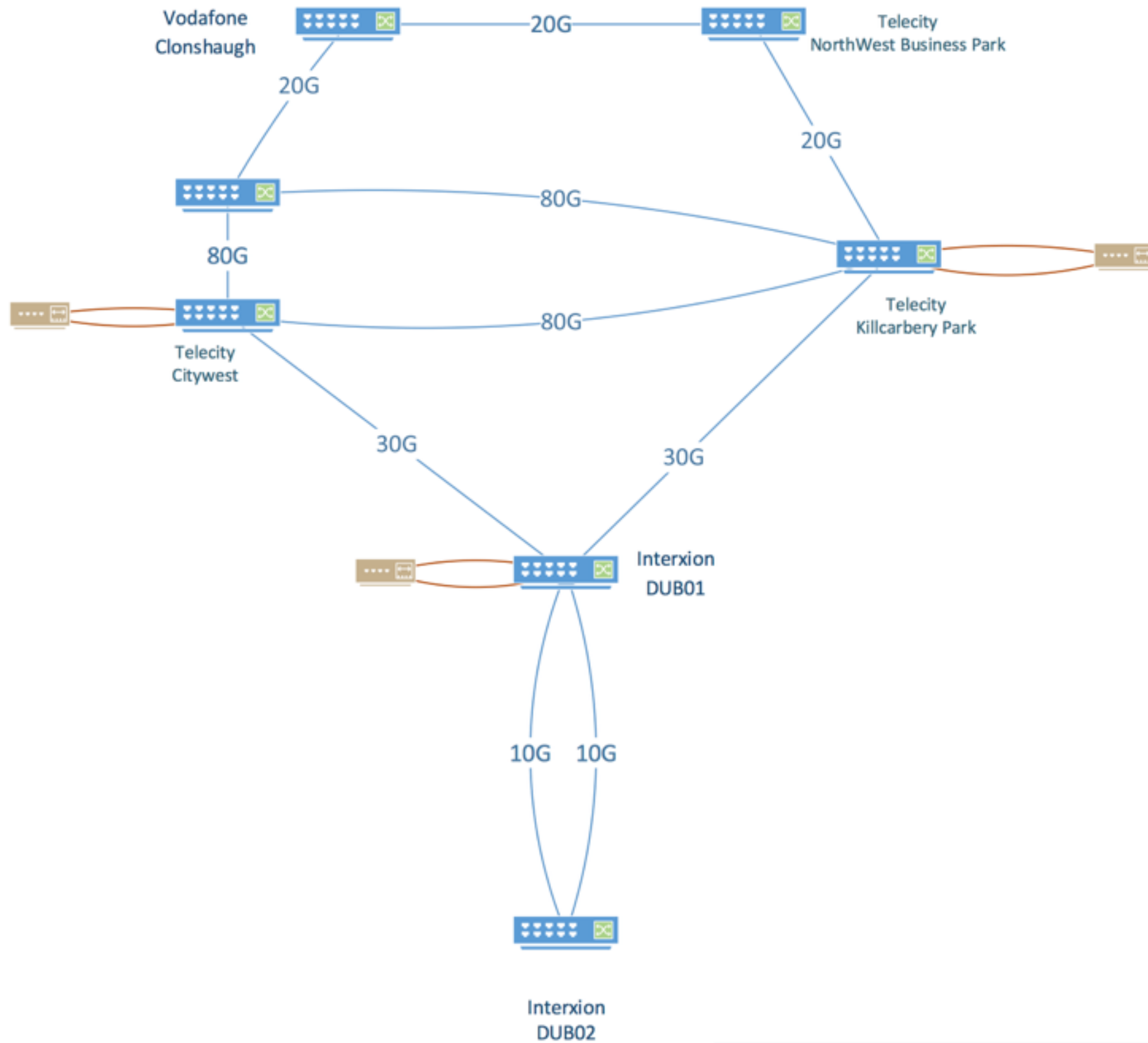We're proud to say that, at last count, there are **31** IXPs using IXP Manager around the world

Leaflet | Map data © OpenStreetMap contributors, CC-BY-SA, Imagery © Mapbox

New project website: www.ixpmanager.org (and @ixpmanager)
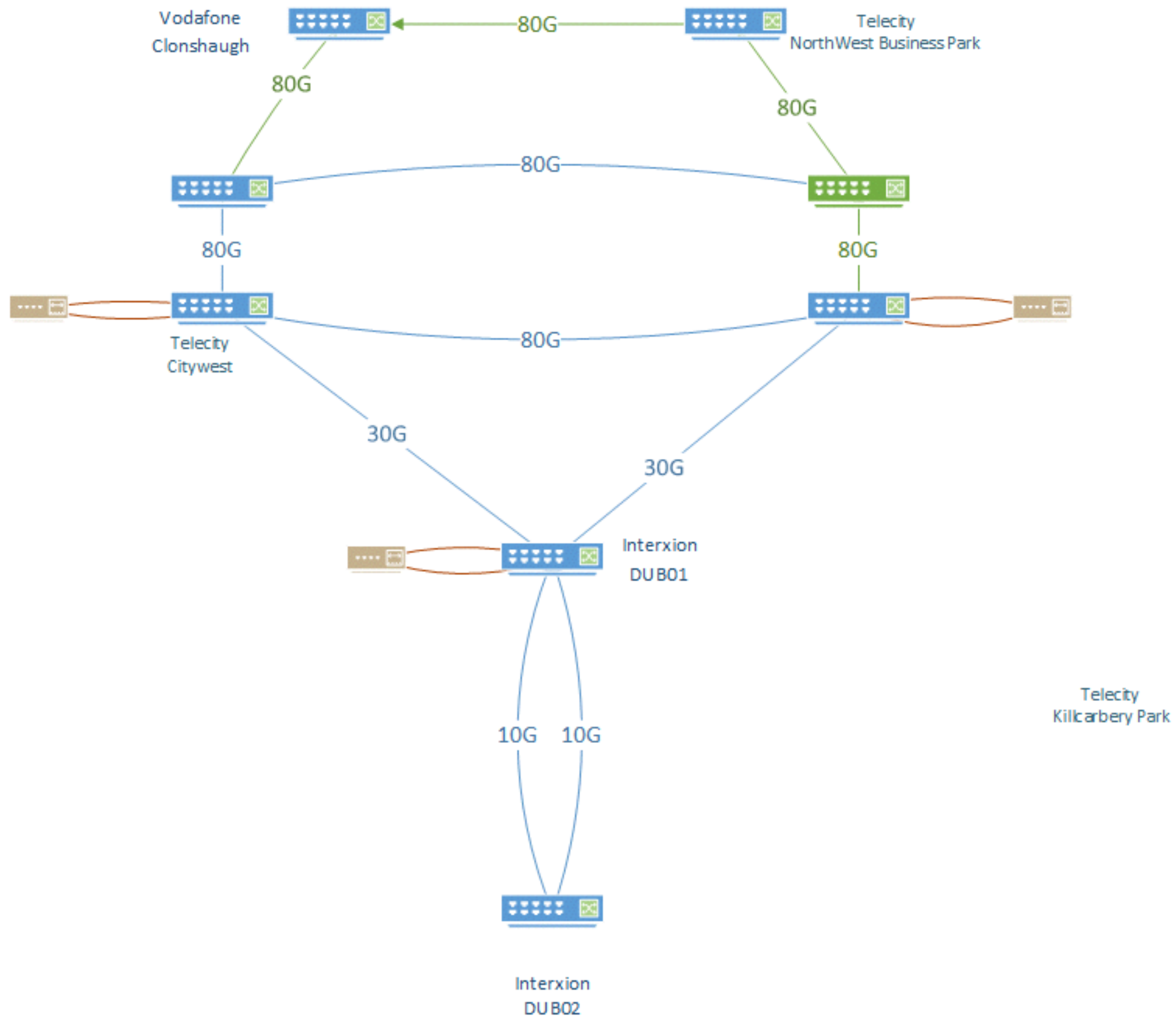
Have issued a call for sponsors - two at *Platinum* level already

　　　ISOC, swissix

Looking for a full-time PHP developer #jobfairy

Have a one year development plan (plus three year outlook)

Vodafone Clonshaugh

Telecity NorthWest Business Park

20G

20G

20G

80G

80G

80G

Telecity Citywest

Telecity Killcarbery Park

30G

30G

Interxion DUB01

10G 10G

Interxion DUB02

INEX LAN1 Topology Overview			
2016-02	Denis Nolan	2016-02	DN

Vodafone
Clonshaugh

Telecity
NorthWest Business Park

80G

80G

80G

80G

80G

80G

Telecity
Citywest

80G

30G

30G

Interxion
DUB01

Telecity
Killcarbery Park

10G   10G

Interxion
DUB02

INEX LAN1 Topology Overview			
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I attended the RIPE Atlas Hackaton before RIPE72 in Copenhagen, Denmark

Asymmetric Routing Over IXPs

A tool to detect asymmetric routing over IXPs using bi-directional traceroutes from RIPE Atlas probes.

http://ard.inex.ie/

https://github.com/inex/ixp-as

Not perfect - you need to interpret the results!

Won't detect asymmetric routing over different IXPs / PNIs

By convention, ICMP is sourced from the ingress interface
=> this is why traceroute *generally* works

But RFC1812 (Requirements for IPv4 Routers) states that the source must be the egress interface. Not *generally* obeyed.

Results for: Telcom (AS60277) @ INEX (IPv4)

Verizon Business (AS702) [v] `NOT INEX`

HEAnet (AS1213) [v] `SYMMETRIC`

Cable & Wireless Worldwide (AS1273) [v] `NOT INEX`

BT Ireland (AS2110) [v] `SYMMETRIC`

INEX (AS2128) [v] `TRACE FAILED`

Eircom Net (AS5466) [v] `SYMMETRIC`

Hibernia Networks (AS5580) [v] `NOT INEX`

Virgin Media Ireland Ltd (AS6830) [v] `PENDING`

Hurricane Electric (AS6939) [v] `SYMMETRIC`

Colt Technology Services (AS8220) [v] `SYMMETRIC`

euNetworks (AS13237) [v] `SYMMETRIC`

Vodafone Ireland Limited (AS15502) [v] `ASYMMETRIC OUT`

SunGard (AS15533) (AS15533) [v] `NOT INEX`

imag!ne (AS25441) [v] `SYMMETRIC`

Airspeed Telecom (AS29644) [v] `SYMMETRIC`

Viatel (AS31122) [v] `ASYMMETRIC IN`

That's all folks...

...any questions?