

# Operations Update



*i n e x*  
*i n t e r n e t n e u t r a l e x c h a n g e*

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# Operations Summary – Member Updates

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## New Connections:

Skytel - AS44451	1Gb LAN1, 100Mb LAN2
Wireless Connect - AS198988	100Mb LAN1 & 2
Conway BB – AS62059	1Gb LAN1
Wicklow BB – AS62455	1Gb LAN1



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Host Ireland, Novosco, Digital Planet, Atrato in progress...



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### Upgraded / Changed Connections:

Netflix	2 x 10Gb -> 2 x 20Gb (LAN1 & 2)
Another9	1 -> 10Gb LAN1 + new 10Gb LAN2
Servecentric	100Mb -> 1Gb LAN1
Microsoft	10 -> 20Gb LAN1



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SunGard in progress...



## **Disconnections :-)**

Virgin Media (Liberty Global / UPC acquisition)

Yahoo! (PoP move)



## Evolution of LAN2

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Two diverse networks for resiliency

Entice connections via:

- second port prices at 66% of first
- 100Mb port on LAN2 free with 100Mb/1Gb on LAN1

Typically top heavy with access providers

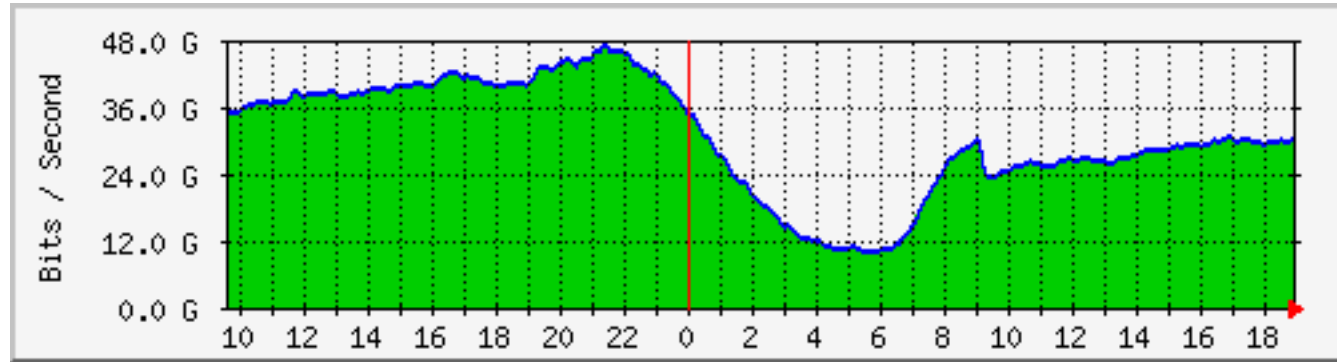
Traffic historically ~10% of LAN1's

That's changed significantly over the last 6 months...

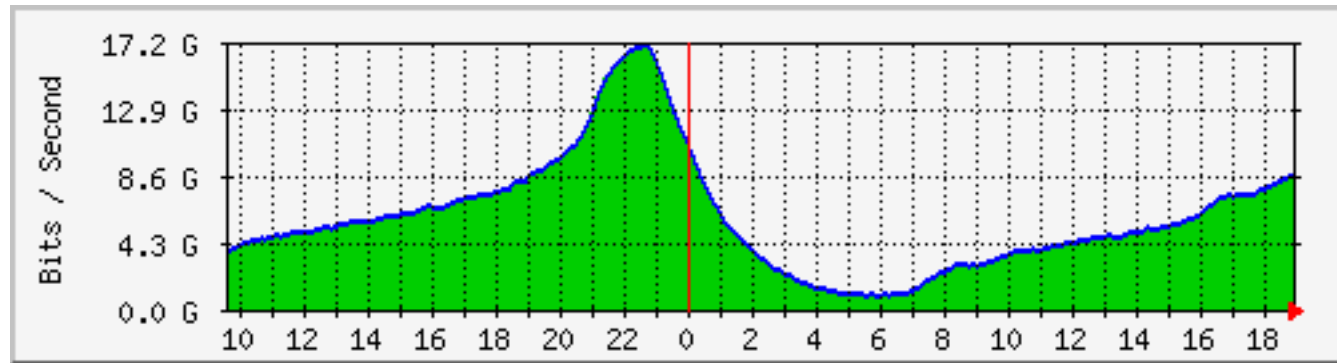


# Evolution of LAN2

LAN1:



LAN2:

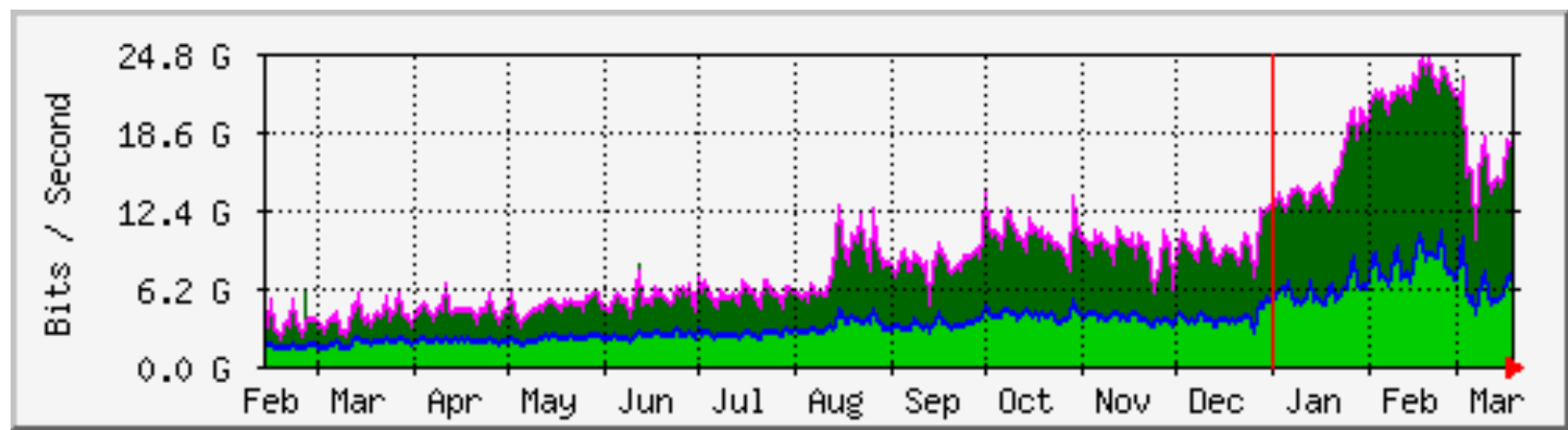






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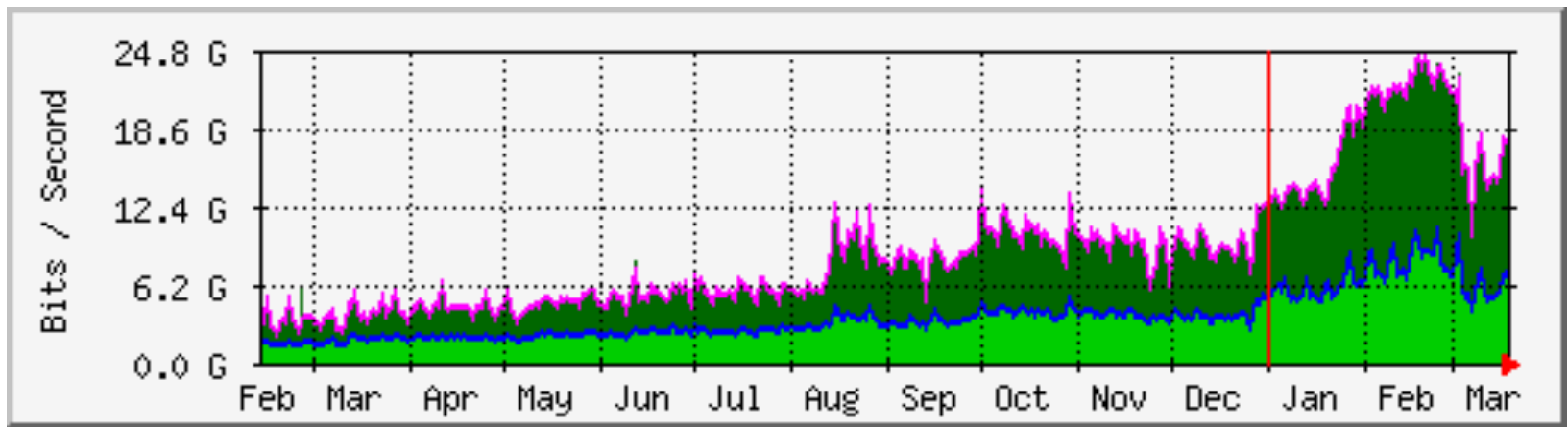
# Evolution of LAN2





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## Evolution of LAN2



Moral of this story:

- (re)evaluate your LAN2 capacity
- (re)consider a connection to LAN2 if you only have a connection to LAN1



# Route Server #2 Upgrade Report

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Forklift upgrade of RS2 last November

- shiny new hardware (old box had ~6 years production use)
- FreeBSD -> Linux (MD5 authentication that “just works”)
- still running Bird



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- brand new provisioning system via IXP Manager
  - strict prefix filtering moved to BGPQ3
  - RESTful API
  - GitHub -> Travis CI
  - config builds gone from ~40mins to <1sec



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Unfortunate side effect for IPv6 sessions without MD5 configured when it should have been...



## Route Server #1 Upgrade Plans

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Forklift upgrade of RS1 also required

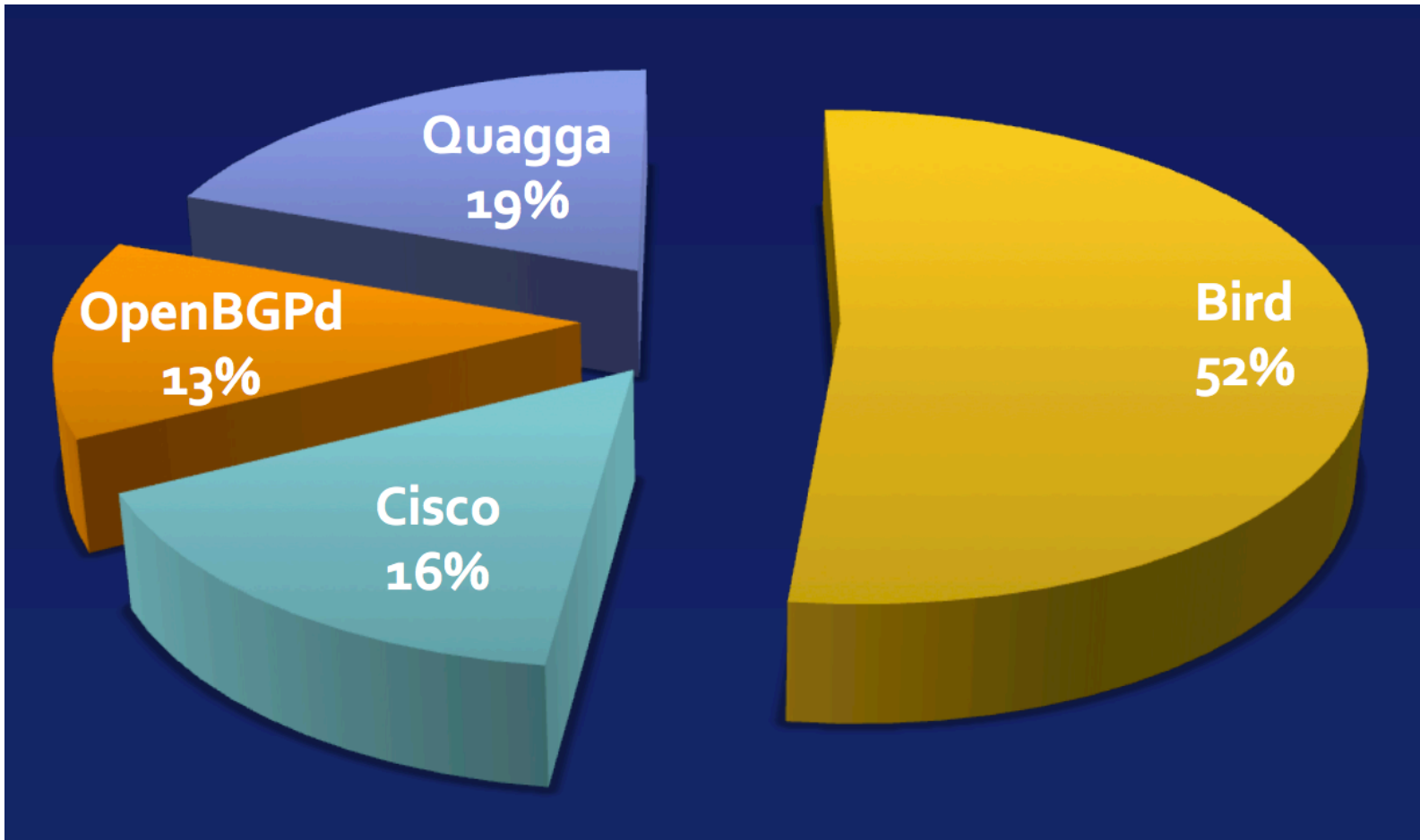
Currently running mainline Quagga

Evaluating Euro-IX Quagga branch, Cisco CSR 1000V



# Route Server #1 Upgrade Plans

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**Configuration will be via IXP Manager similar to RS2**

**Speaking of route servers, IETF last call has begun for:  
draft-ietf-grow-ix-bgp-route-server-operations**



## Reminder of INEX Tools for Members



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Route collector – ssh -1 user@rc1.inex.ie (IXP Manager credentials)

Looking glass: <https://www.inex.ie/lg/> (via rc1)



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IXP Manager:

- member and switch database
- peering matrices and *My Peering Manager*
- *port graphs (inc. errors, discards), p2p graphs, Smokeping*
- *route server prefix analysis tool*



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IRC for technical staff members

Mailing lists



# Network Architecture

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Current kit is at end of sales and planned life

Starting the process of designing and planning for the next five years

- stick with layer 2 / STP or move to VPLS? Something else?
- talking with multiple vendors
- talking with other IXPs

Vodafone Clonsaugh PoP live – first connections in progress

Interxion DUB2 is suddenly very busy

## Euro-IX Update



INEX well represented with 2 x Barry's and Nick

Hosted by IXLeeds, LINX and LONAP at AQL in Leeds, UK





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INEX well represented with 2 x Barry's and Nick

Hosted by IXLeeds, LINX and LONAP at AQL in Leeds, UK

St. Patrick's Day was not overlooked...



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But there was some work done:

- met a number of vendors to discuss our network upgrade
- discussed IXP Manager with ISOC for new African IXPs
- discovered new IXP Manager users – including DIX
- Nick presented on how IXPs can help with DDOS attacks
- interesting route server technical session (ExaBGP)
- other interesting presentations including:
  - LONAP introduced 1000BX / 10G-BX single fibre optics
  - EVPN (Greg Hankins, Alcatel-Lucent)



## Euro-IX Update – SecureVLAN @ NIX.CZ

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**This is not a proposal – just a report on what’s happening elsewhere.**

Week long series of DDOS attacks in March 2013 targeting  
online news, Seznam, banks, mobile operators

Huge impact on public opinion

As a result, NIX.CZ decided to create a *secure VLAN* at their exchange  
=> a *last resort island of critical Czech services*



## Euro-IX Update – SecureVLAN @ NIX.CZ

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High technical entry threshold which includes:

BCP-38

RTBH filtering via IXP route server

IPv6 & DNSSEC for vital domains

Resiliently connected to the IXP

Router control plane protection (RFC6192)

As well as organisational requirements:

- end user T&Cs
- good reputation and NIX.CZ member for >6 months
- 7 x 24 'real person' technical contact
- proposed and seconded



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