

LINUX IXP Update @ RIPE 58

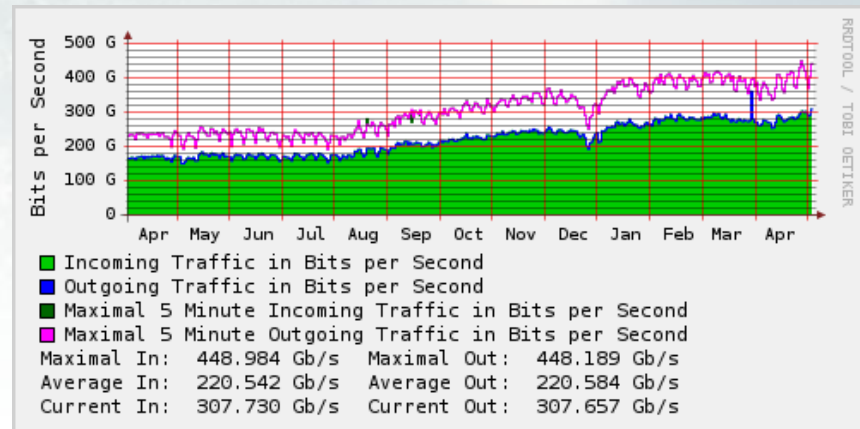
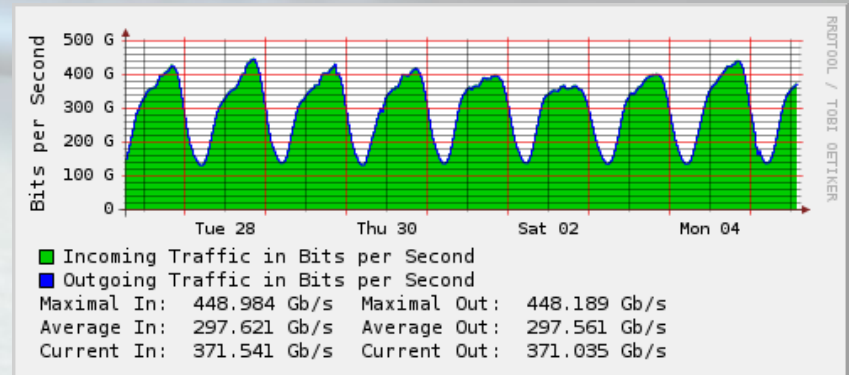
Mike Hughes

Agenda

- Stats and trends
- New PoP deployment completed
- MRP ring architecture redesign
- Enlargement of Telehouse PoP
- Route Server issues

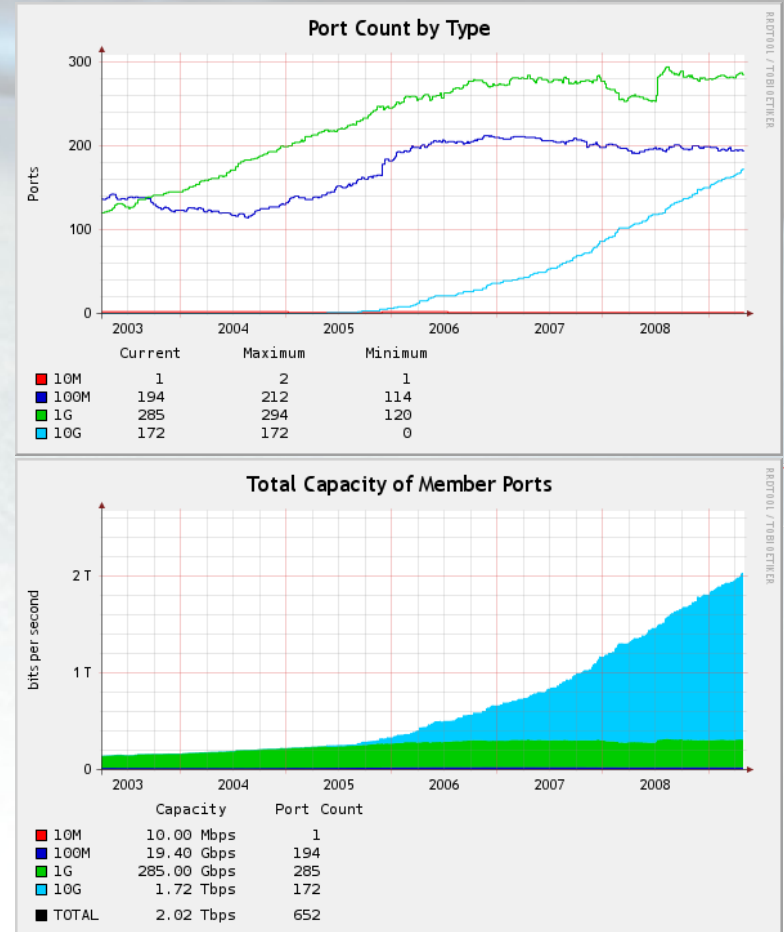
Traffic Stats

- Peak over 400G/sec
- Added ~100G traffic in last 6 months
- Foundry/Extreme traffic split is fairly constant
 - Around 65/35%

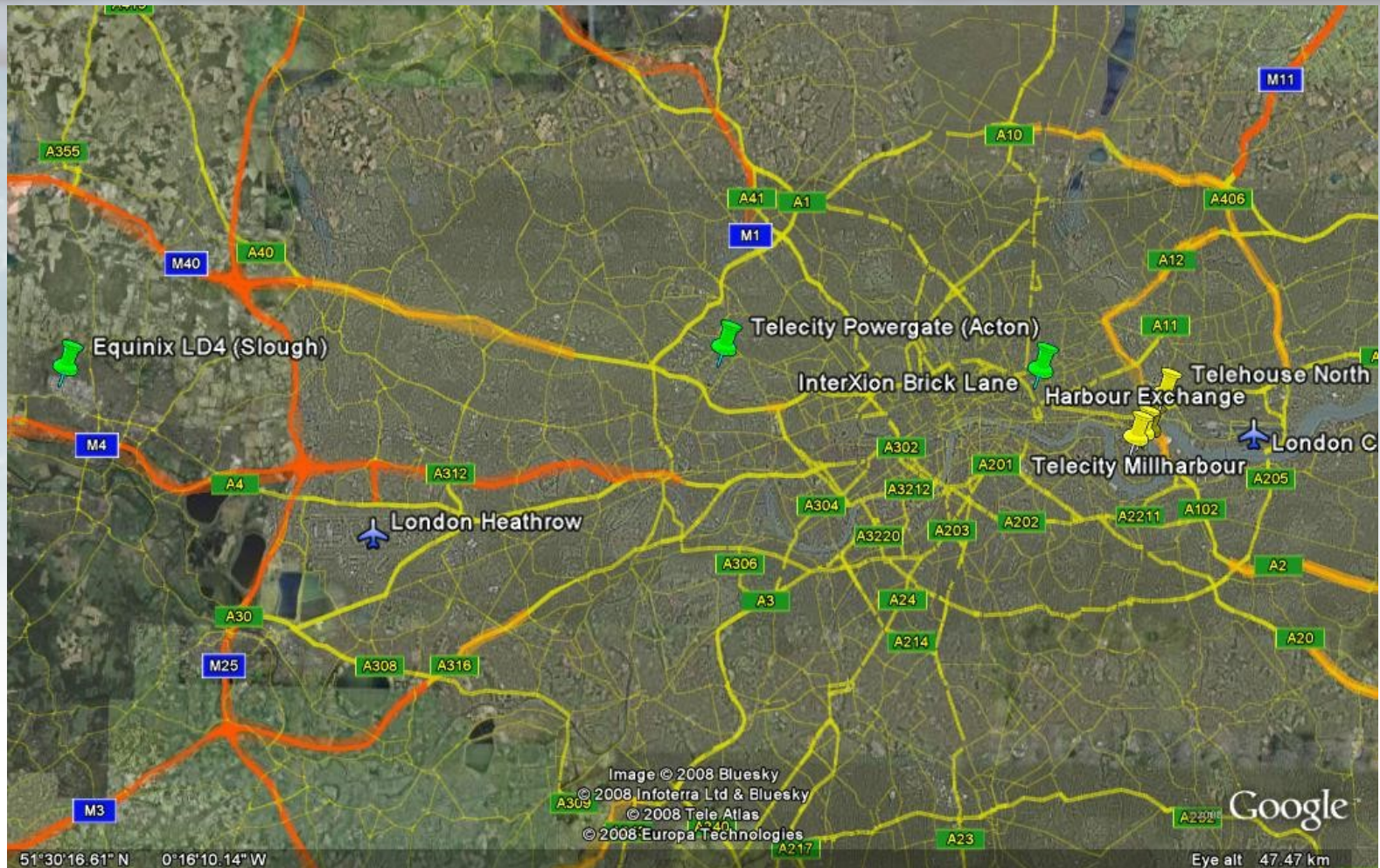


Connected Portage

- Growth remains significant in 10G portage
- Connected capacity at 2.02Tb/sec
- 172 member 10G ports (cf. 158 @ RIPE 57)



New PoP Deployment completed



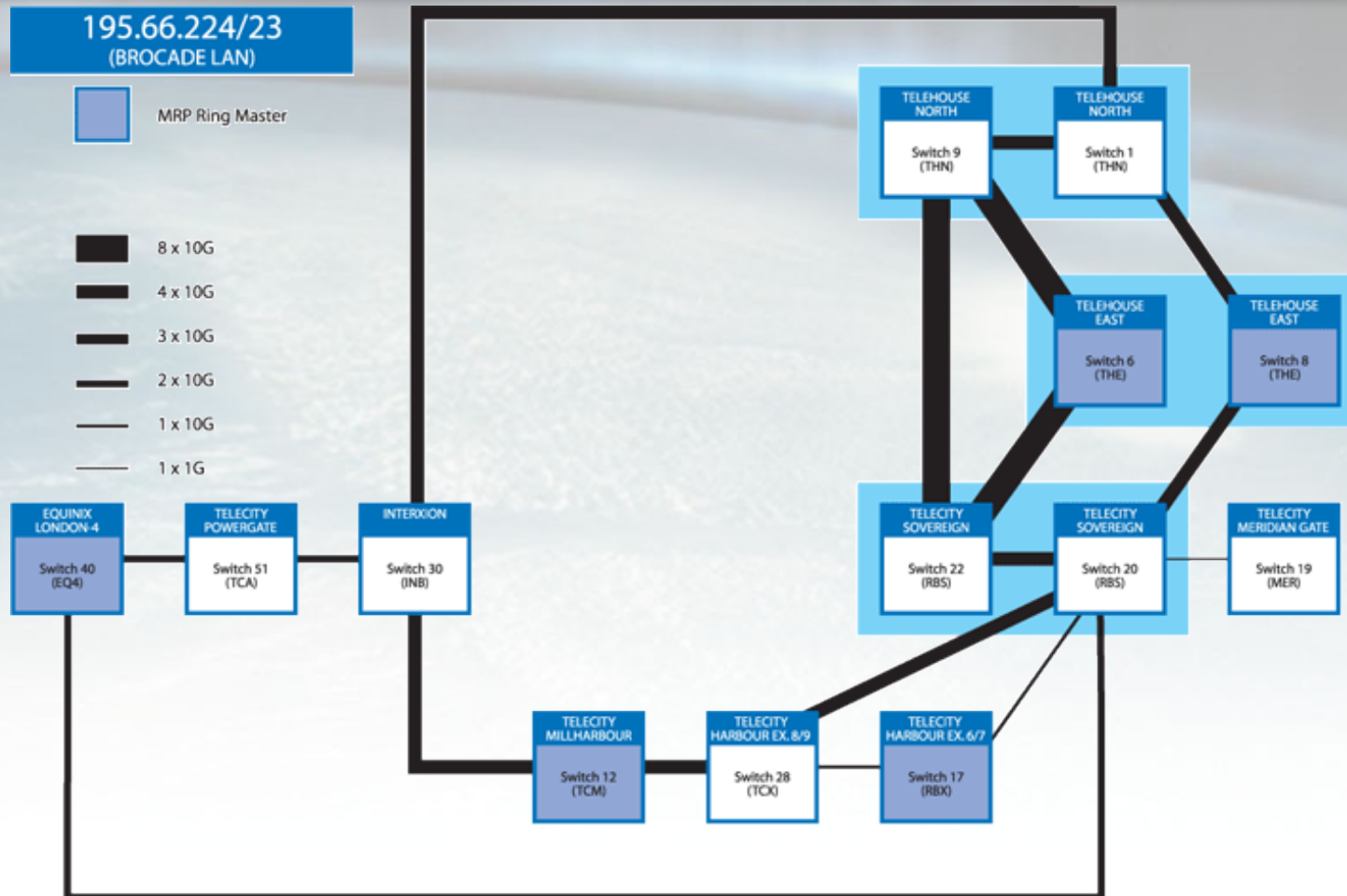
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MRP Core Ring Reconstruction

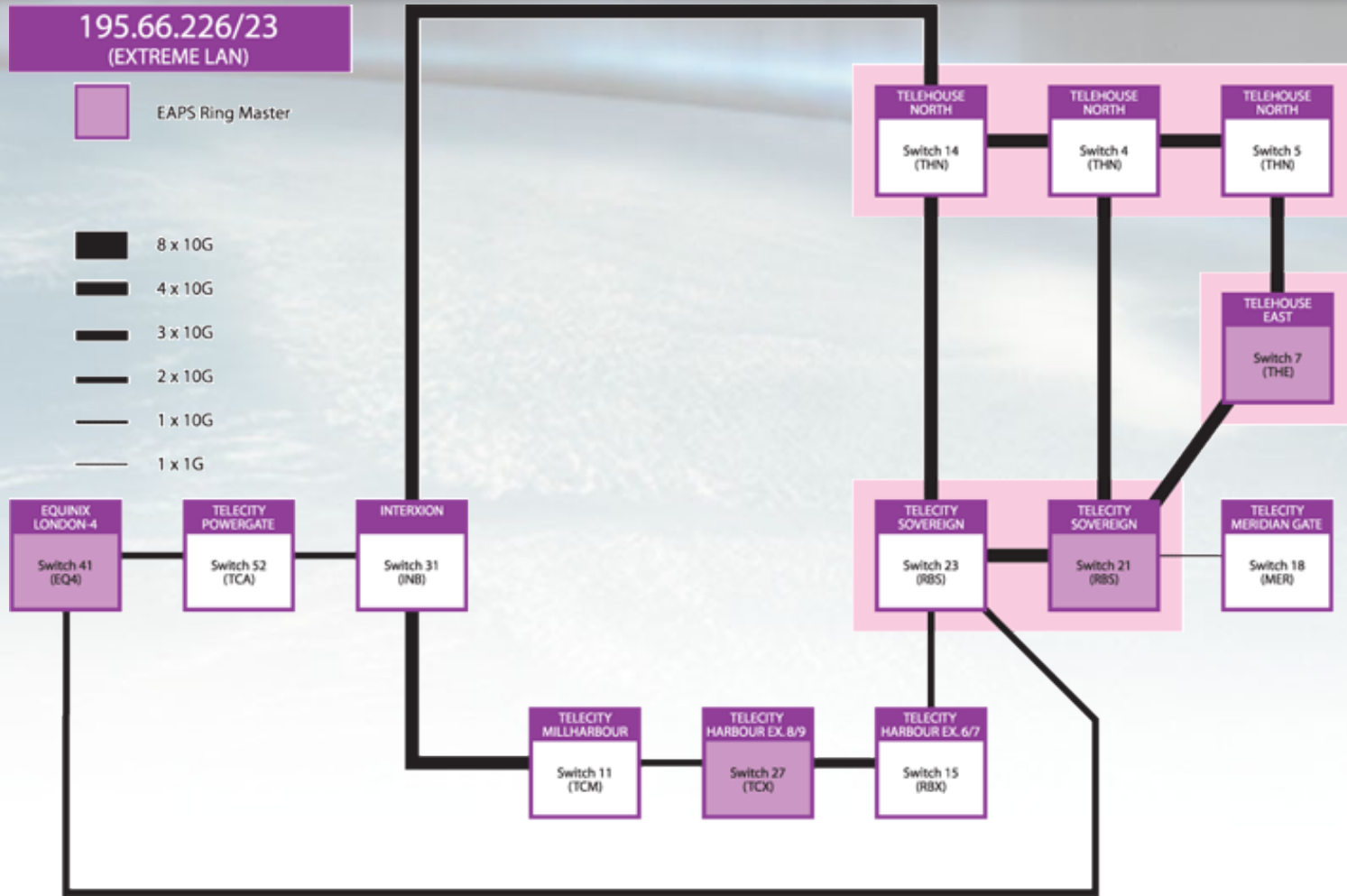
- Remaining with a ring topology
 - Protected with MRP as before
- MLX-type switches in a core ring
- Multiple rings connected off that
- Allows for >8x10G LAG in the core
 - 12/16x10G with DWDM optics
- Allows for “right-sizing” of rings to demand at groups of sites

Brocade (Foundry) Platform



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Extreme Platform



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Enlargement of Telehouse PoP

- Telehouse PoP dates back to 1996
- Design criteria was for ~150 members
- Switches got bigger, more members
- Large amount of building cabling terminated in existing room
 - Difficult to move it elsewhere!
- Adjacent room became available – built out into that

Enlargement of Telehouse PoP



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Route Server Usage Issues

	Server	Prefixes	Configured Peers	Actual Peers
Foundry LAN v4	RS1	22231	206	152
	RS3	22366	210	142
Extreme LAN v4	RS2	9100	134	94
	RS4	9331	141	92
Foundry LAN v6	RS1	135	43	34
	RS3	127	37	30
Extreme LAN v6	RS2	82	21	13
	RS4	85	21	15

Route Server Stability Measures

- Quagga has hit scalability issues
 - Single-threaded nature
 - “Features” such as “greedy” BGP scanning cause race conditions
- Especially noticeable on the busiest rs1 machine
- Temporary measures going in place
 - Separation of IPv4 and IPv6 BGPd processes

Route Server Scalability Ideas

- Evaluate other implementations
 - Free: BIRD, OpenBGPD, etc.
 - Commercial: Cisco, Juniper, Arbinet
- Contribute changes to Quagga source
 - Hope they get adopted?
- Sponsor further Quagga development
 - Enhance scalability and “IXP features”
 - Remove annoyances
 - Euro-IX as a means of sponsoring?

IPv6 Workshop

- LINX ran an IPv6 workshop in March
- Well attended: >100 attendees
- Webcast too (including 6 via IPv6!)
- Sharing of operational experience
- Video archives publically available:
 - <http://www.linx.net/ipv6>

Questions

- <http://www.linx.net/>
- Lots of LINX people here this week:
 - John Souter
 - Malcolm Hutty
 - Richard Yule
 - Jennifer Atherton
 - Sol Pearmain
 - Neana Singh
 - Christos Kaitatzis