

IX future: AMS-IX example

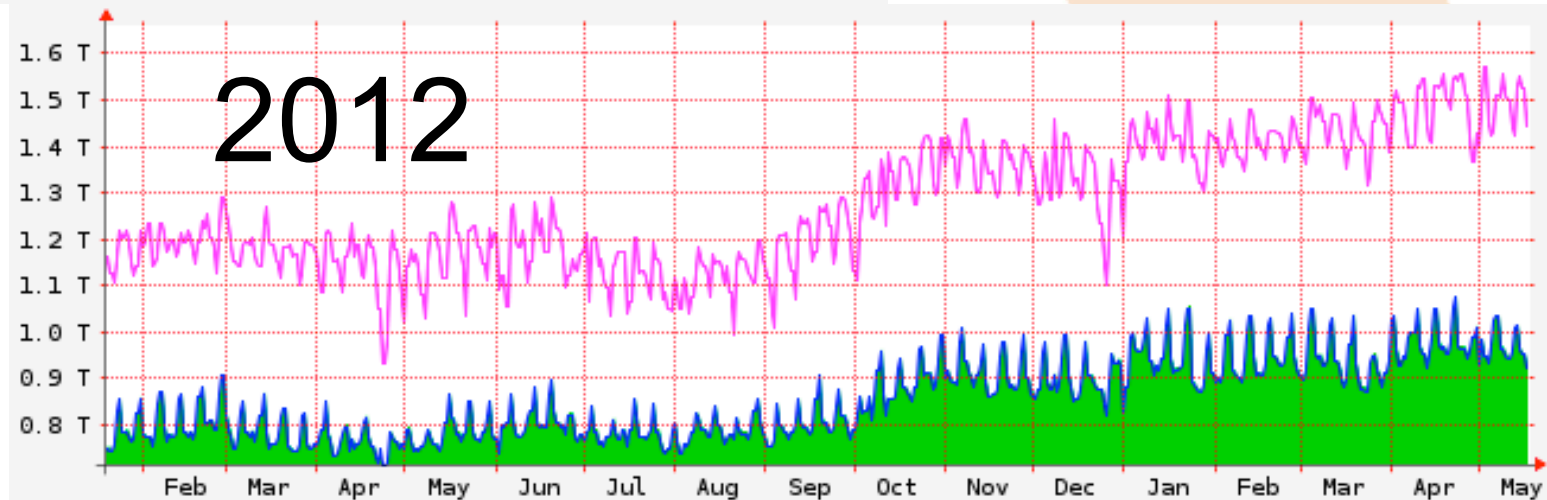
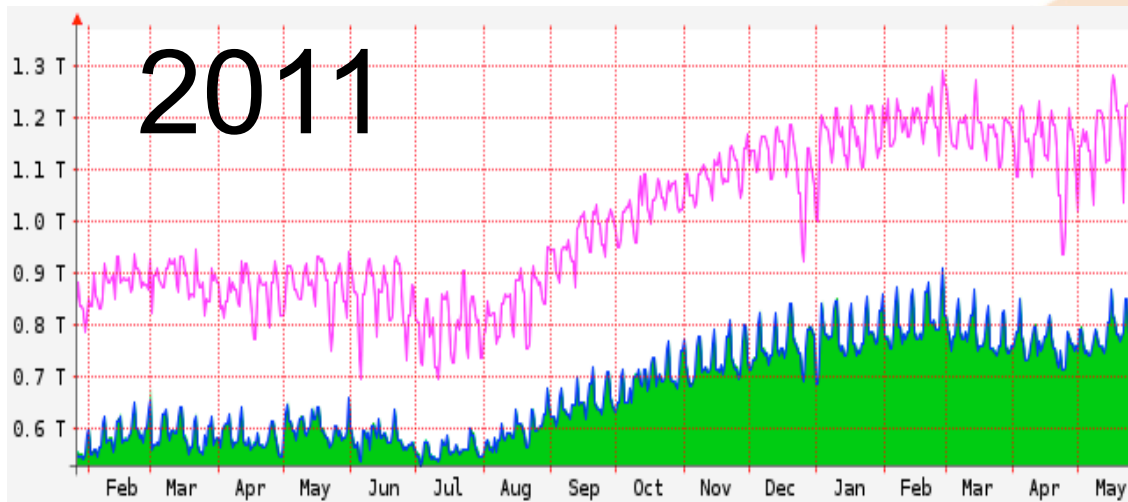
Version 0.5

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1. Growth challenges
2. Evolutionary services
3. Revolutionary services
4. Key components
5. Conclusions

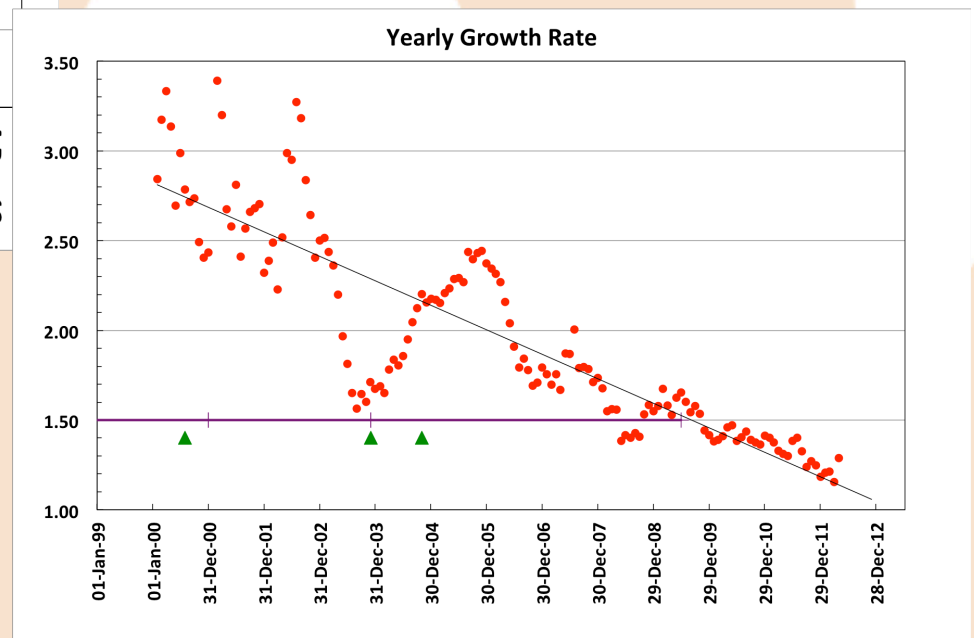
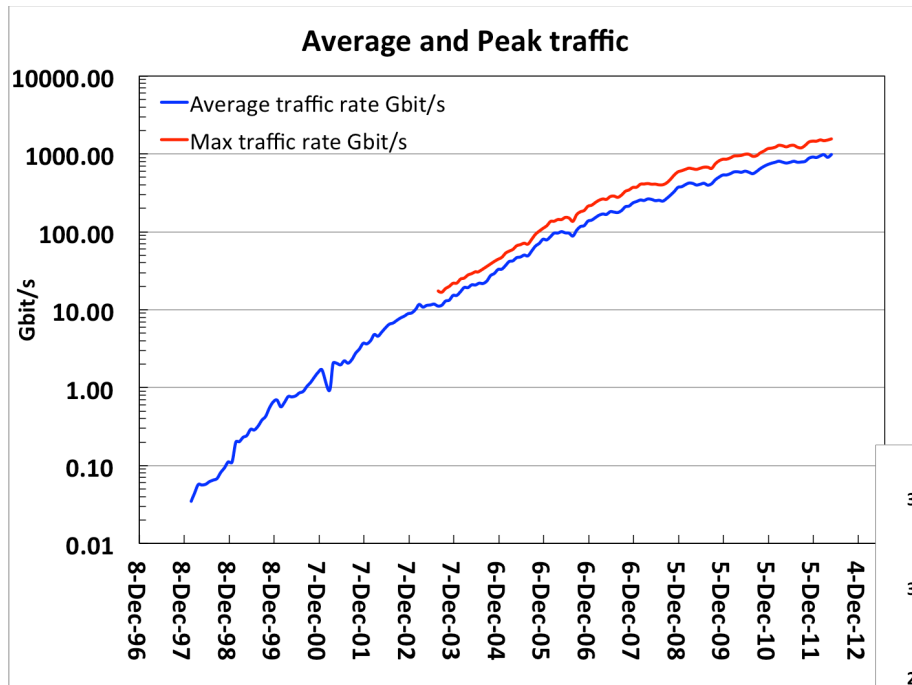
1. Growth challenges

1.1. Slowing growth



<https://www.ams-ix.net/statistics/>

1.1. Slowing growth



1.2. Market stability

Traffic in May 2011

- DE-CIX: 1.450 Gbit/s
- AMS-IX: 1.220 Gbit/s
- LINX: 846 Gbit/s
- MSK-IX: 485 Gbit/s
- UA-IX: 286 Gbit/s

Traffic in May 2012

- DE-CIX: 1.787 Gbit/s
- AMS-IX: 1.573 Gbit/s
- LINX: 1.182 Gbit/s
- MSK-IX: 648 Gbit/s
- UA-IX: 261 Gbit/s + DTEL-IX: 123 Gbit/s

https://www.euro-ix.net/tools/ixp_matrix

1.2. Market stability

Connected ASes in May 2011

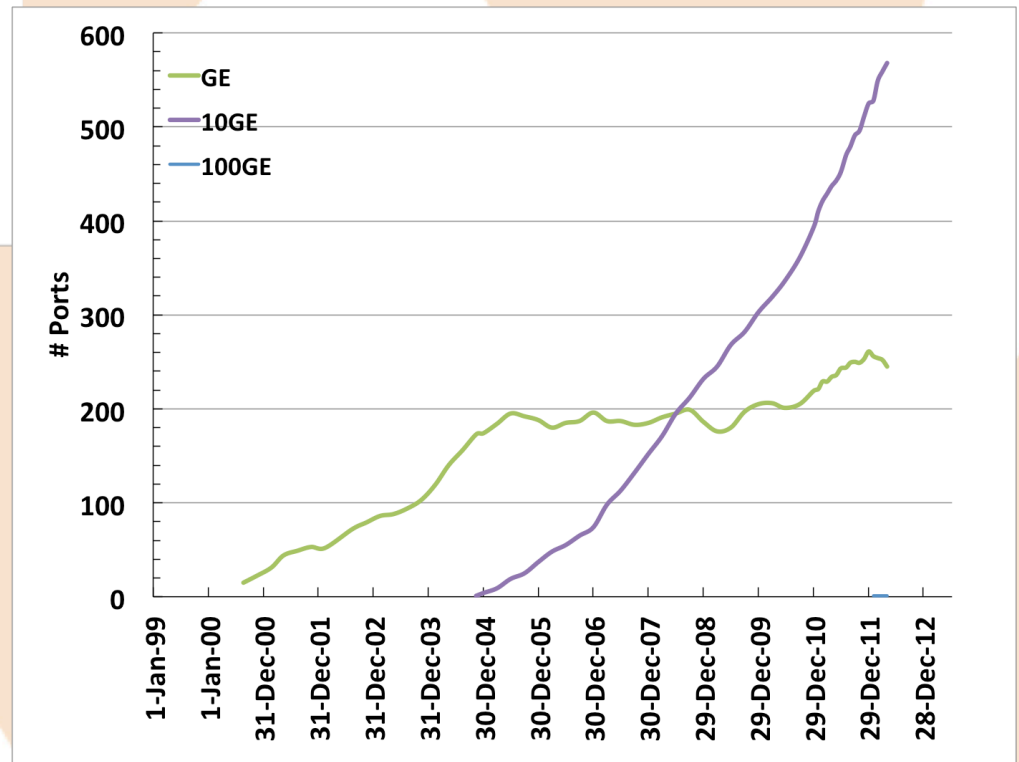
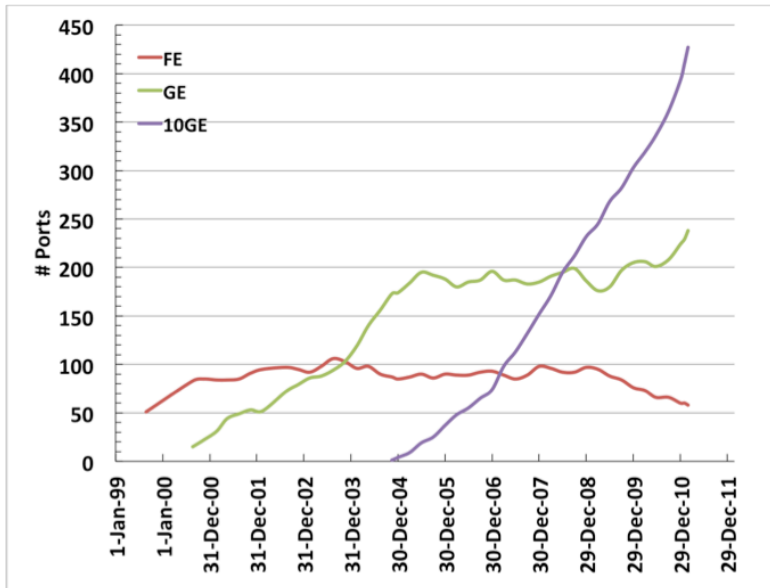
- AMS-IX: 429
- DE-CIX: 389
- LINX: 385
- MSK-IX: 344
- NL-ix: 281

Connected ASes in May 2012

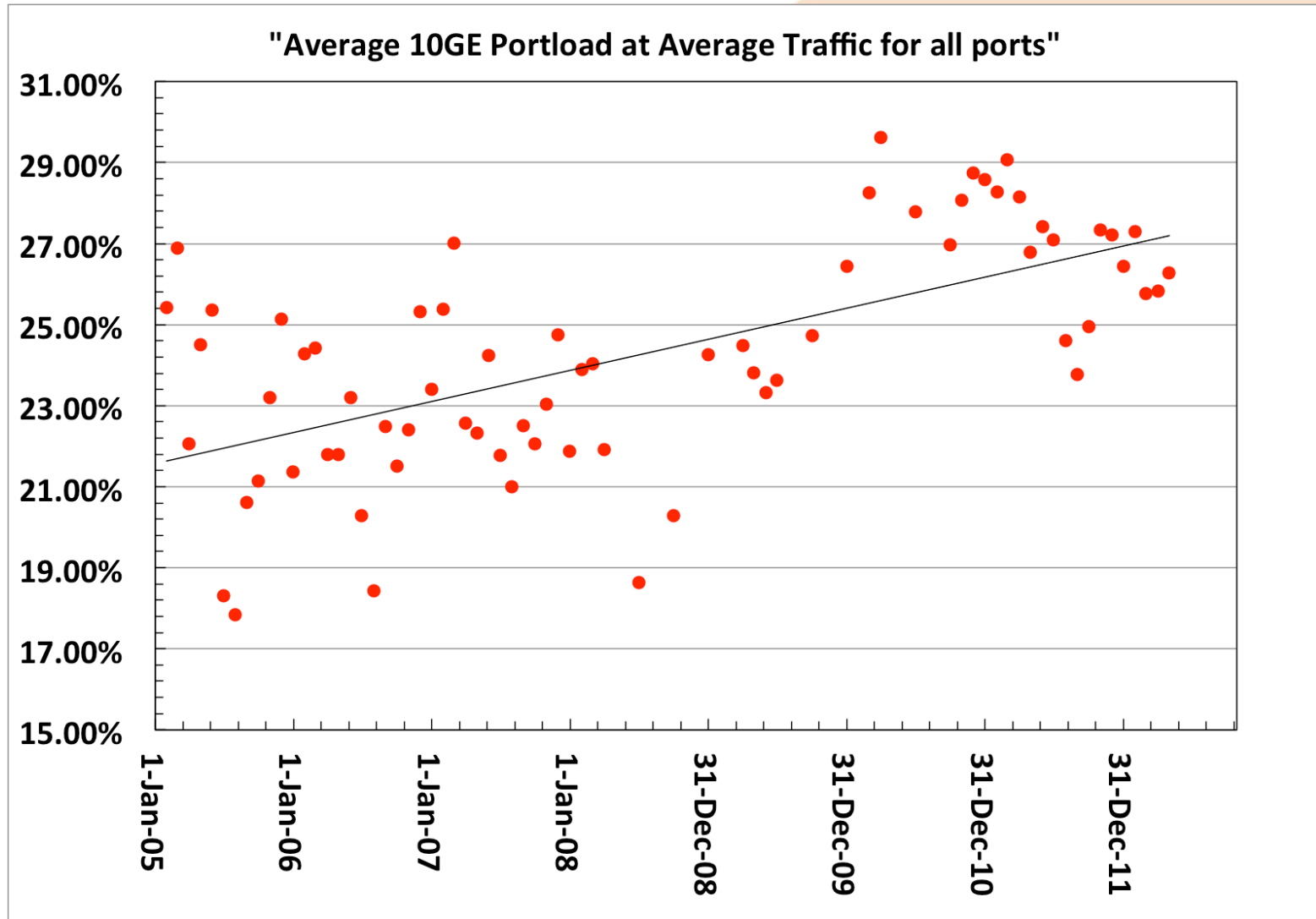
- AMS-IX: 488
- DE-CIX: 441
- LINX: 423
- MSK-IX: 362
- NL-ix: 274

https://www.euro-ix.net/tools/ixp_matrix

1.3. Ports growth



1.3. Traffic per port



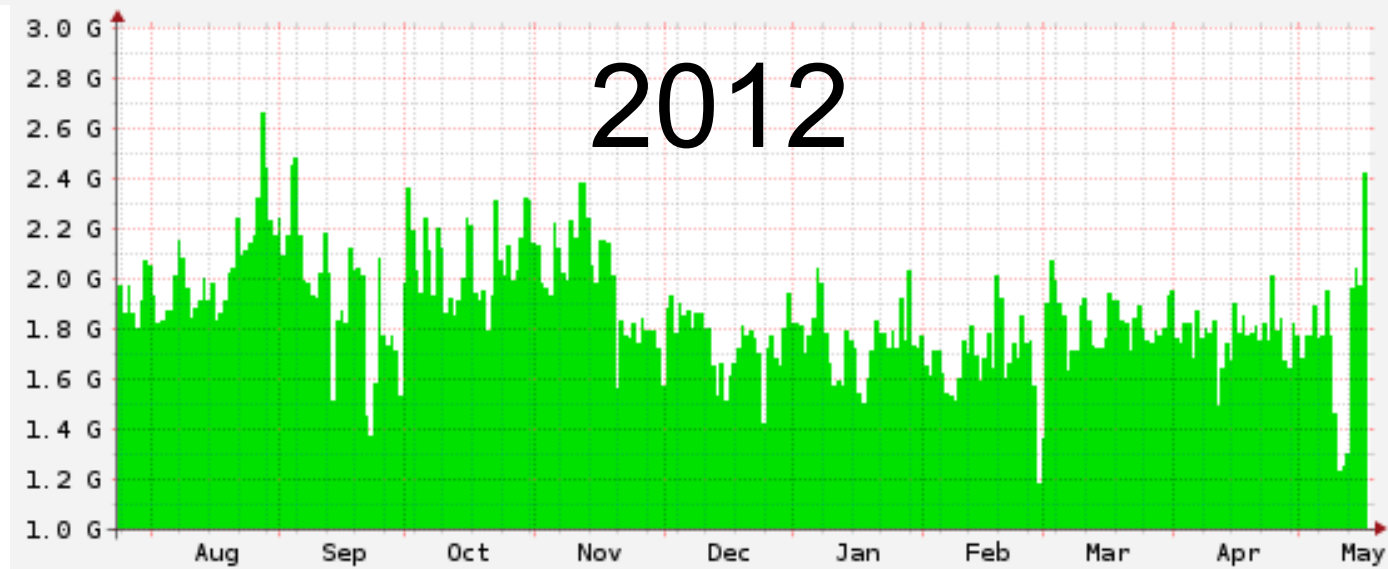
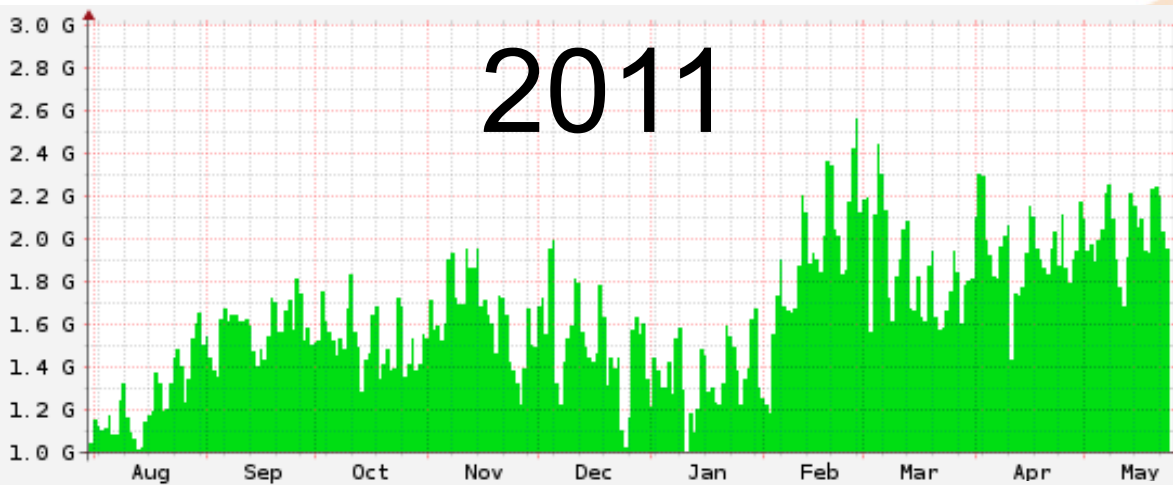
1. Growth challenges

1. Slowing growth
2. Market stability
3. Ports growth

What do we see now?
Growth or Stagnation

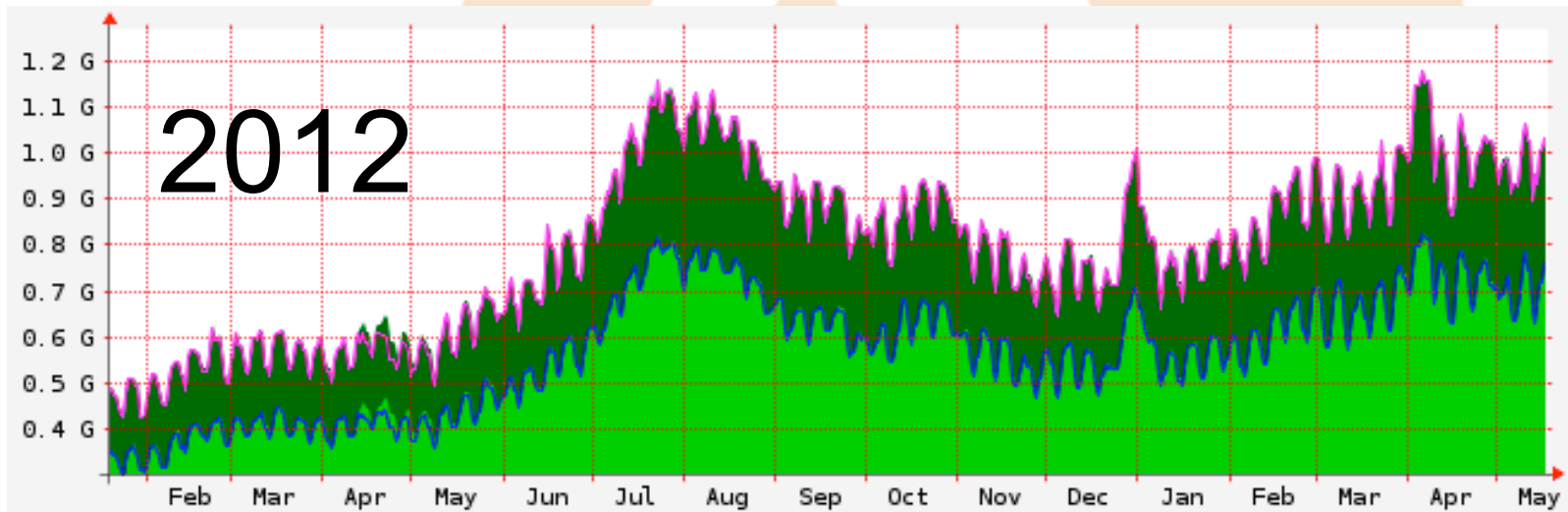
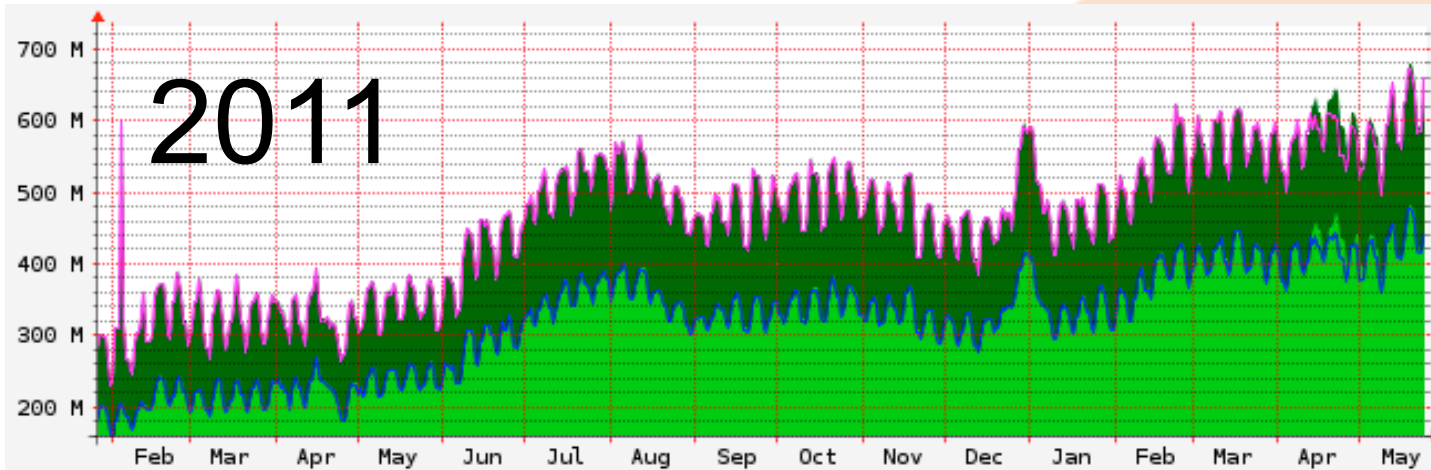
2. Evolutionary services

2.1. IPv6



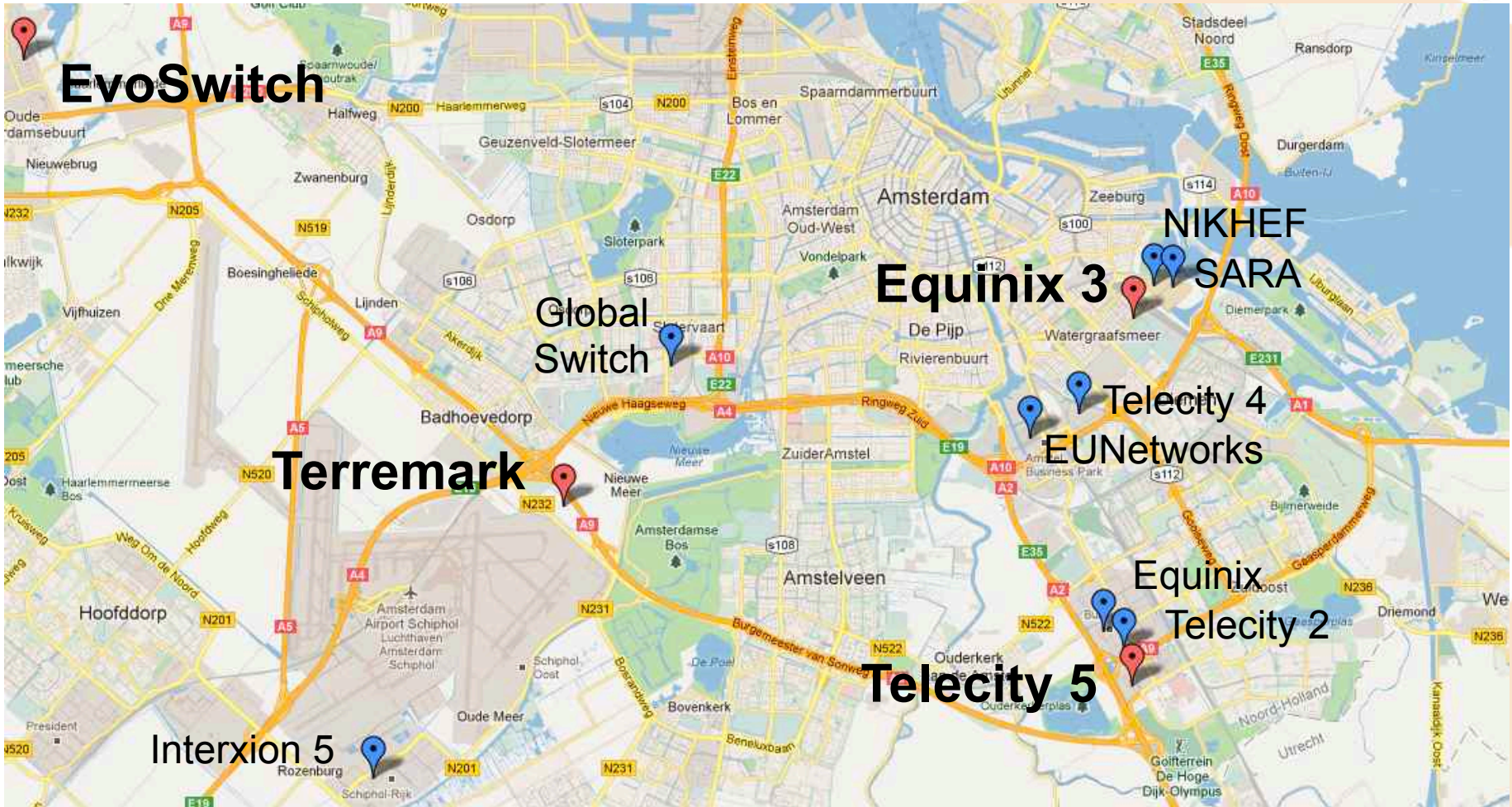
<https://www.ams-ix.net/sflow-stats/ipv6/>

2.2. GRX / IPX



<https://stats.ams-ix.net/grx.html>

2.3. New sites



4 new sites (addition to 8 existing)

2.4. 100Gbit

- New type of interface: 100Gbit/s
- 2 customer ports – May 2012



Pros:

- 1x100Gbit less than 10x10Gbit
- Less fiber

Cons:

- Price
- Size

2. Evolutionary services

1. IPv6
2. GRX/IPX
3. New sites
4. 100Gbit

3. Revolutionary services

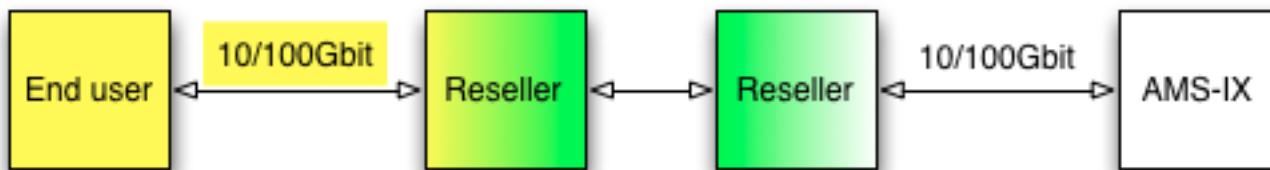
3.1. SLA

- Main market: mobile operators
- Price: higher than existing port
 - 1Gbit: 500 euro + **100 euro**
 - 10Gbit: 1500 euro + **250 euro**
- Parameters
 - Availability: 99.99%
 - Packet Loss: 0.05%
 - One Way Delay: 0.5ms
 - One Way Delay variation: 0.1ms

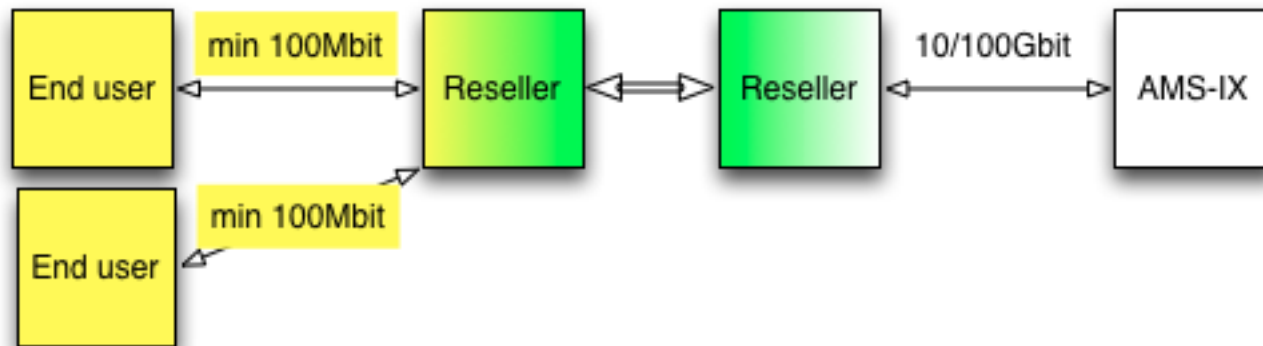
3.2. Reseller program

- Reseller chooses own price list
- Two types of connections

1. **Physical:** 1 port to AMS-IX – 1 port to end user

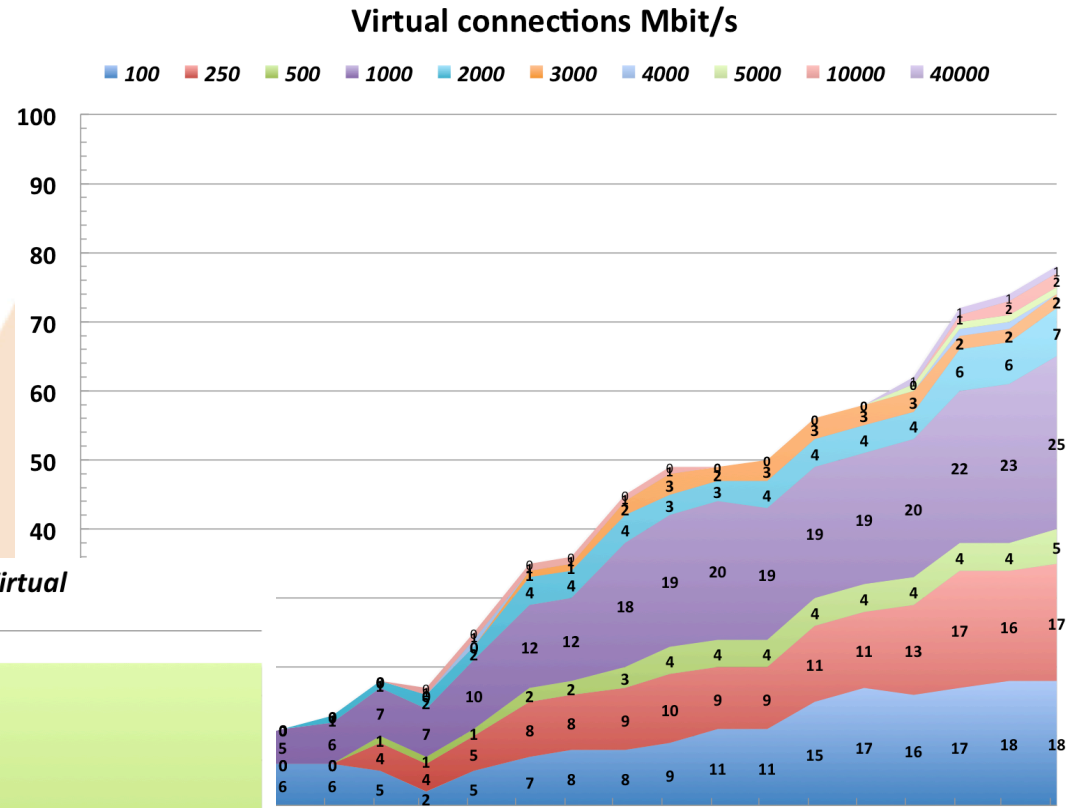
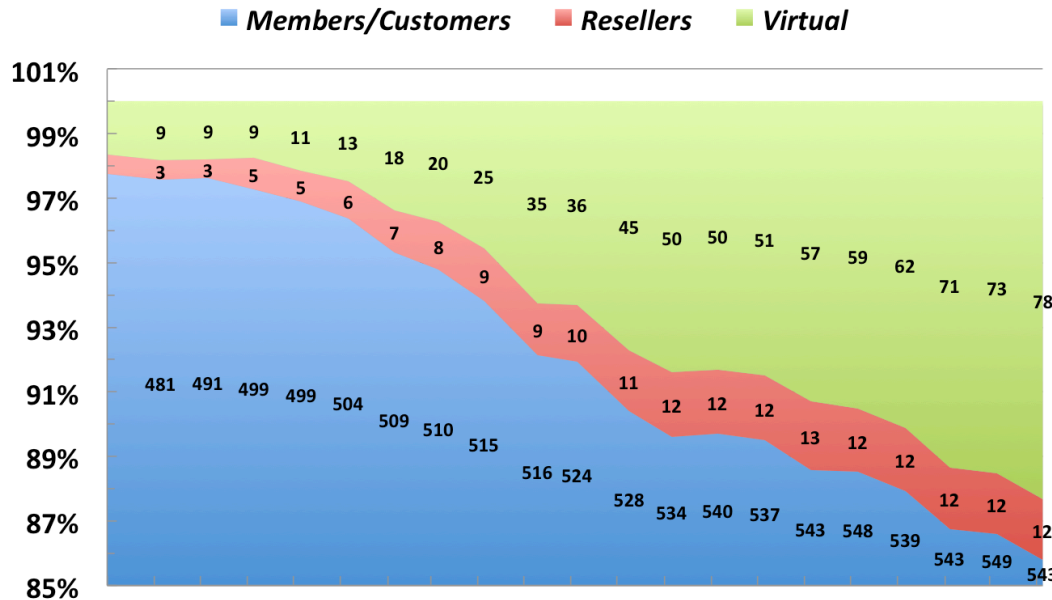


2. **Virtual:** 1 port to AMS-IX – many ports to end users



3.2. Reseller program

- Steady growth
- in Russia: 2
- in Ukraine: 0



2010-2012

3.3. AMS-IX Hong Kong

- Separate exchange in Hong Kong (HK)
- Responsibility:
 - AMS-IX: equipment and support
 - Hutchison: new customers and interconnect to Amsterdam
- Main service: **local interconnect in HK**
- Extra service: connectivity to AMS-IX in HK

<http://www.ams-ix.hk/>

3. Revolutionary services

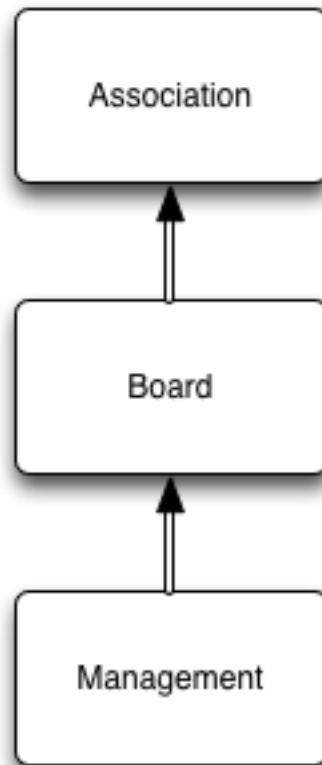
1. SLA
2. Reseller program
3. AMS-IX Hong Kong

4. Key components

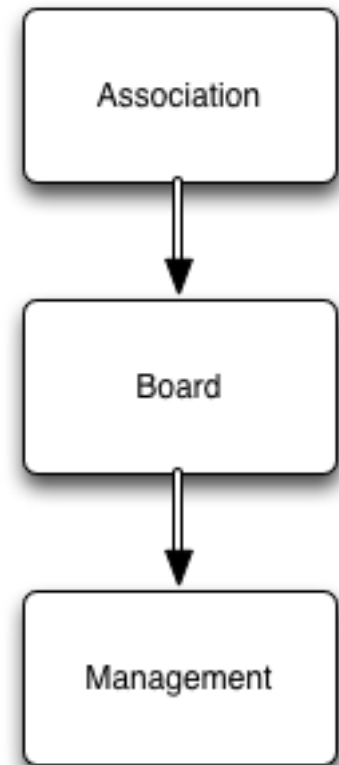
4.1. Community

1. Collaboration
2. Equality
3. Consensus

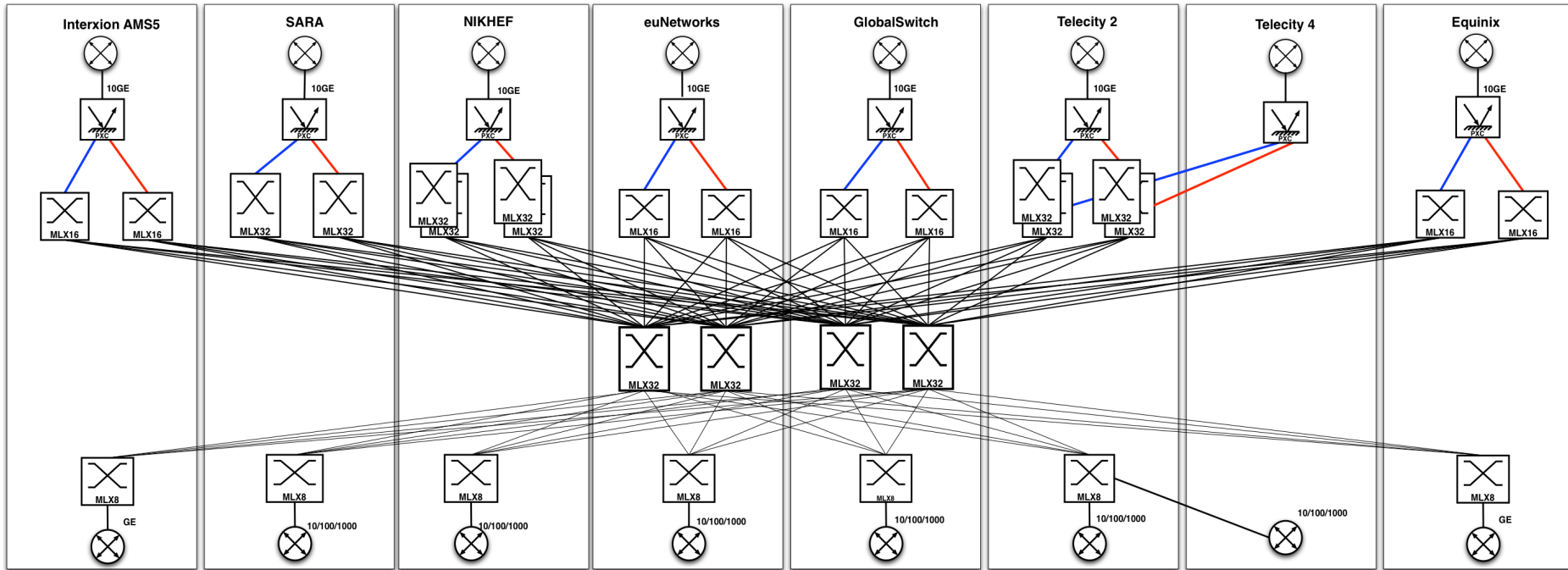
HK



SLA



4.2. Network



- Quick failover: SLA
- Redundancy: SLA
- Scalability: 4 new sites, AMS-IX HK

4.2. Network

Photonic cross connection

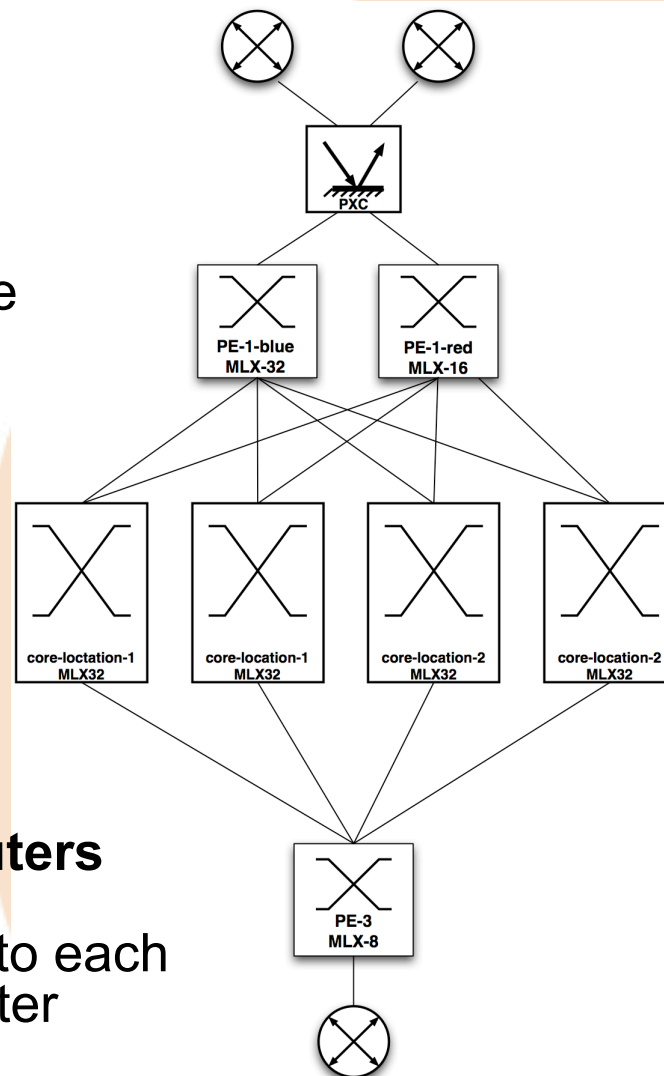
Move a 10/100G connection to the backup router in case of emergency/PW

CORE routers

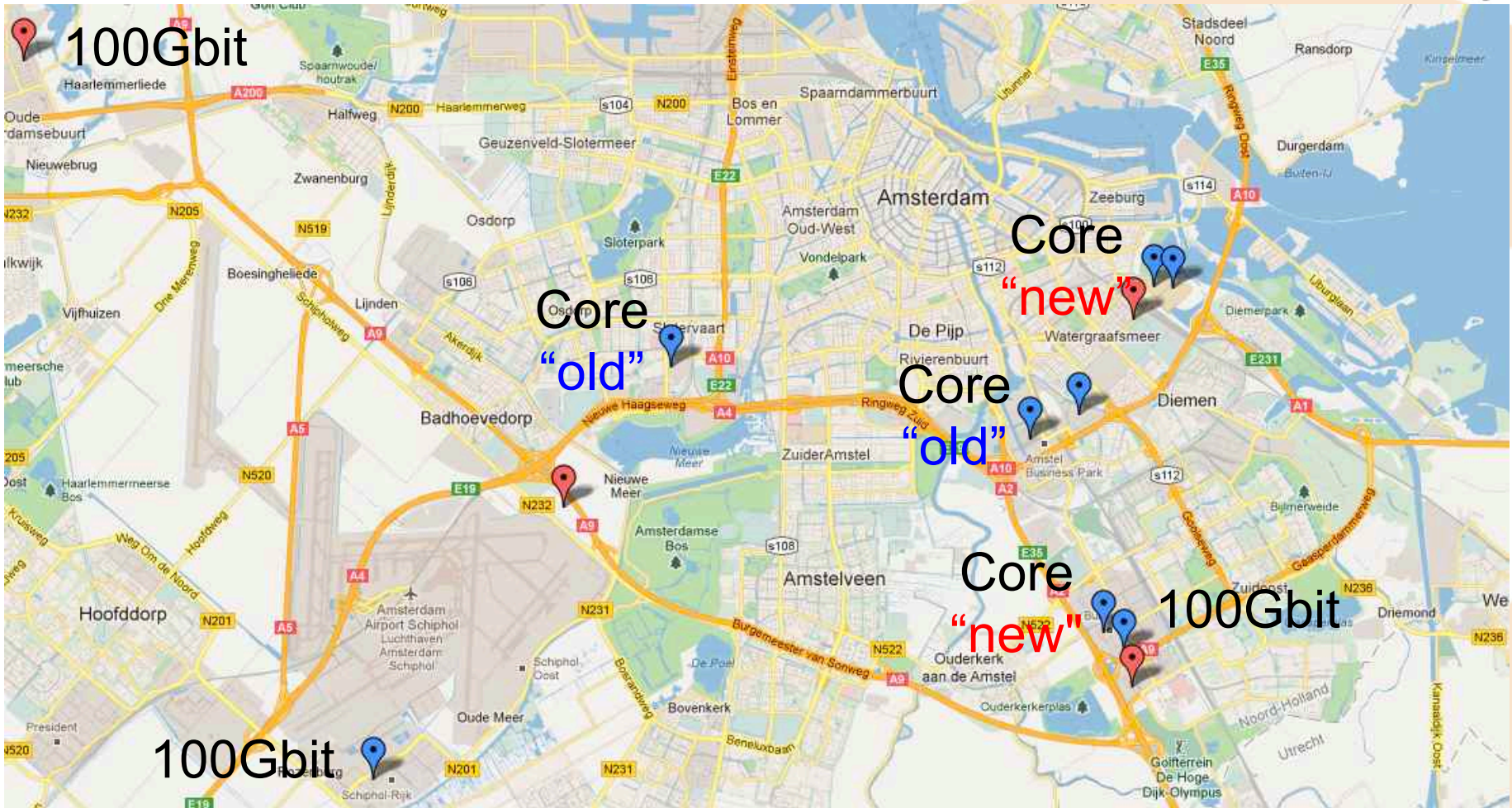
Two duplicates routers on each core site

EDGE routers

Connectivity to each core router



4.4. 100Gbit and core



New and old core sites

4.3. Team

1. MPLS implementation
2. 100Gbit testing
3. Interconnect between AMS-IX and HK



4. Key components

1. Community
2. Network
3. Team

5. Conclusions

5. Conclusions

- Keep growing (100Gbit, new colo)
- Always looking for new opportunities (SLA, HK)
- Cooperation with partners (resellers, HK, colo)



<http://www.ams-ix.net/contact/>

Questions?

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