



euro-IX

Internet Exchange Points

2014 Report



Contents

1. Introduction	3
1.1 Foreword	3
1.2 Notes on this report	3
1.3 Internet Exchange Point (IXP)	3
2. About Euro-IX	4
2.1 List of Euro-IX Standard Members in 2014	5
2.2 List of Euro-IX Associate Members in 2014	6
2.3 List of Euro-IX Remote Members (Europe)	6
2.4 List of Euro-IX Remote Members (outside of Europe)	6
2.5 List of Euro-IX Patrons in 2014	7
3. IXPs in Europe	8
3.1 Number of operational IXPs in Europe	8
3.2 Number of connected parties in Europe	9
3.3 Traffic Statistics in Europe	11
4. IXP Switching Platform Technology	13
4.1 Switches and/or routers in use within Euro-IX Membership in Europe	13
4.2 Route Servers in use within Euro-IX Membership in Europe	14
5. Conclusion	15
Appendix 1	16
Appendix 2	21

1. Introduction

1.1 Foreword

This report has been compiled by the European Internet Exchange Association (Euro-IX) to give an overview of the IXPs situation in Europe (see Appendix 2) at the end of 2014, including:

- The number of Internet Exchange Points (IXPs) currently operating in Europe
- Related statistics and trends that are appearing in the European IXP market
- The evolution over the last couple of years

This report combines data that has been collected automatically and data that has been collected manually. Improving the data collection is vital and we continue to work with the IXPs to automate as much of the data collection as possible.

1.2 Notes on this report

- Not all IXPs make their traffic statistics publicly available and no attempts at estimates were made where true figures were not presented.
- All information has been gathered on a best effort basis and relies on the information that is provided by individual IXPs. Therefore all information contained in this report is only as accurate as the information that has been published by these IXPs. If you are planning to base your decision on the information contained in this report, we strongly advise to check the information against up-to-date data.
- Not all IXPs measure their peak traffic using the same periodic average. While the majority of IXPs choose to take samples every five minutes, some have chosen to take these samples more or less frequently.
- A best effort was made to list all known operational IXPs in Europe. However we may be unaware of the existence of some IXPs and thus they do not appear in the list (Appendix 1). We welcome any information about IXPs missing from this report.
- Some IXPs that were listed in the 2013 report have not been included in the 2014 one due to the fact that either no contact could be made with them to verify if they are still operational, they have no working website or we have received information that they are no longer operational.
- In 2014, Euro-IX was in contact with approximately 60% of the IXPs listed in the Appendix 1.

1.3 Internet Exchange Point (IXP)

Euro-IX has accepted the industry definition of an IXP as being:

“A network facility that enables the interconnection of more than two independent Autonomous Systems, primarily for the purpose of facilitating the exchange of Internet traffic. An IXP provides interconnection only for Autonomous Systems. An IXP does not require the Internet traffic passing between any pair of participating Autonomous Systems to pass through any third Autonomous System, nor does it alter or otherwise interfere with such traffic.”

2. About Euro-IX

The European Internet Exchange Association (Euro-IX) was formed in May 2001 with the intention to further develop, strengthen and improve the Internet Exchange Point (IXP) community.

A number of IXPs recognised a need to combine their resources so as to coordinate technical standards across the continent, develop common procedures, as well as share and publish statistics and other information. This publishing of information would in turn give all interested parties a better insight into the world of IXPs.

Euro-IX was originally set-up as a discussion forum for European based IXPs. However as interest started to grow from other regions it seemed a natural progression for Euro-IX to expand beyond its original boundaries. Thus in January 2005, Euro-IX decided to open its doors to IXPs from outside Europe, allowing them to join the association as "Associate Members".

In 2009, the association introduced the "Remote Member" category, intended for IXPs from outside Europe that would like to affiliate themselves with Euro-IX, but do not envisage attending Euro-IX forums on a regular basis. As of 2011, the "Remote Member" category is also open to European IXPs.

By the end of 2014, Euro-IX counted 78 Members and 12 Patrons from the IXP-related equipment-vendor and colocation sectors of the community. The 78 member IXPs are from 50 countries and the affiliations are as follows:

- Standard Members: 44 IXPs from 28 countries
- Associate Members: 9 IXPs from 5 countries (Brazil, Egypt, India, Japan and USA).
- Remote Members: 25 IXPs from 17 countries, including 9 IXPs from Europe (Bulgaria, Finland, Germany, Iceland, Italy, Luxembourg and Ukraine), 10 from the Af-IX region (Angola, Congo, Kenya, Mozambique, Nigeria, South Africa, Tanzania, Tunisia, Zambia), 3 IXPs from North America (Canada and United States), 2 IXPs from the APIX region (Australia and Nepal) and 1 IXP from the LAC-IX region (Curacao).

List of Euro-IX Standard Members in 2014

	IXP Name	Country
1	ALB-IX	Albania
2	AMS-IX	Netherlands
3	ARMIX	Armenia
4	BCIX	Germany
5	BIX	Hungary
6	BIX.BG	Bulgaria
7	BNIX	Belgium
8	CATNIX	Spain
9	CIX	Croatia
10	CIXP	Switzerland
11	DE-CIX	Germany
12	DIX	Denmark
13	ECIX	Germany
14	Equinix	Switzerland
15	FICIX	Finland
16	France-IX	France
17	GigaPix	Portugal
18	GN-IX	Netherlands
19	GR-IX	Greece
20	INEX	Ireland
21	InterLAN	Romania
22	IXLeeds	United Kingdom
23	KOSIX	Kosovo
24	LINX	United Kingdom
25	LONAP	United Kingdom
26	LyonIX	France
27	MIX-IT	Italy
28	MSK-IX	Russian Federation
29	NaMeX	Italy
30	Netnod	Sweden
31	NIX	Norway
32	NIX.CZ	Czech Republic
33	NL-ix	Netherlands
34	PLIX	Poland
35	SFINX	France
36	SIX	Slovenia
37	SOX	Serbia
38	SwissIX	Switzerland
39	Thinx	Poland
40	TOP-IX	Italy
41	TPIX	Poland
42	UAE-IX	United Arab Emirates
43	VIX	Austria
44	VSIX	Italy

List of Euro-IX Associate Members in 2014

	IXP Name	Country
1	BBIX	Japan
2	CyrusOne	United States of America
3	GPX MEIX	Egypt
4	JPIX	Japan
5	JPNAP	Japan
6	NIXI	India
7	PTT.br	Brazil
8	Telx	United States of America
9	Terremark	United States of America

List of Euro-IX Remote Members (Europe)

	IXP Name	Country
1	DE-CIX Hamburg	Germany
2	DE-CIX Munich	Germany
3	FVG-IX	Italy
4	LU-CIX	Luxembourg
5	NetIX	Bulgaria
6	RIX	Iceland
7	TIX Tuscany	Italy
8	TREX	Finland
9	UA-IX	Ukraine

List of Euro-IX Remote Members (outside of Europe)

	IXP Name	Country
1	AMS-IX Caribbean	Netherlands Antilles
2	ANGONIX	Angola
3	Any 2	United States of America
4	IXPN	Nigeria
5	JINX	South Africa
6	KINIX	Congo
7	KIXP	Kenya
8	MOZ-IX	Mozambique
9	NAPAfrica	South Africa
10	NPIX - Kathmandu	Nepal
11	OTTIX	Canada
12	TIX - Tanzania	Tanzania, United Republic of
13	TorIX	Canada
14	TunIXP	Tunisia
15	WAIX	Australia
16	ZIXP	Zambia

List of Euro-IX Patrons in 2014

	Organisation Name
1	ADVA
2	Alcatel-Lucent
3	Brocade
4	BTI Systems
5	Cisco Systems
6	Extreme Networks
7	Huawei
8	Interxion
9	Juniper Networks
10	MRV
11	TelecityGroup
12	Telehouse

3. IXPs in Europe

3.1 Number of operational IXPs in Europe

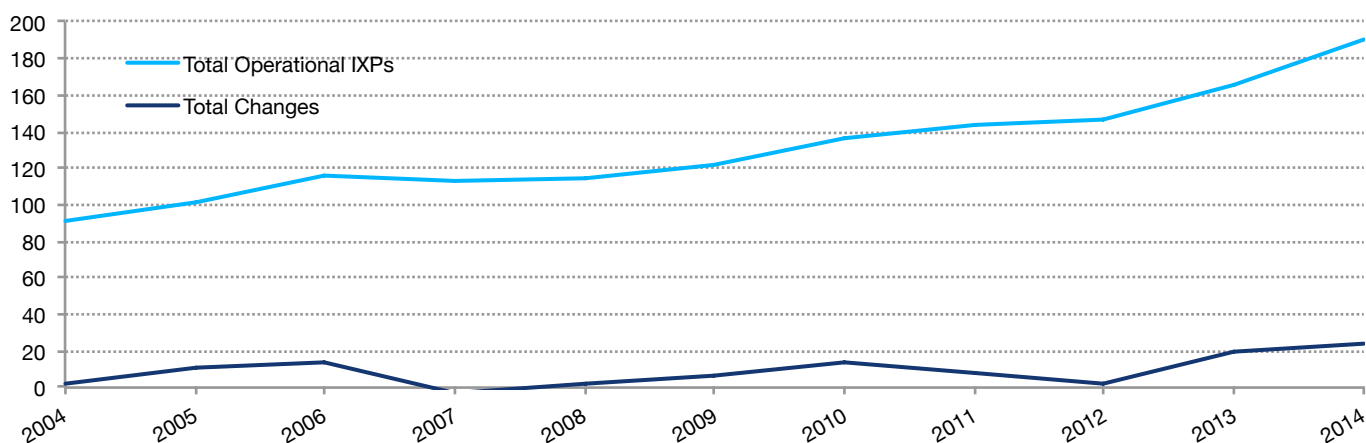
» IXP Growth in Europe over 10 years

The number of operational IXPs in Europe has increased with 108% over the past 10 years, going from 91 in 2004 to 190 in 2014

Note: The growth of 24 IXPs in 2014 includes both newly established IXPs but also IXPs that were only identified by Euro-IX in 2014 (Source: Euro-IX IXPDB, IXP websites)

YEAR	IXPS STARTED	IXPS CLOSED	GROWTH	OPERATIONAL
2004	2	0	2	91
2005	11	0	11	102
2006	14	0	14	116
2007	3	6	-3	113
2008	14	12	2	115
2009	12	5	7	122
2010	18	4	14	136
2011	8	0	8	144
2012	2	0	2	146
2013	22	2	20	166
2014	37	16§	21	187

Table 3.1.1



» Countries with the most IXPs in Europe

	Country	Number of operational IXPs in 2014
1	Russian Federation	28
2	Germany	15
3	France	15
4	Sweden	13
5	Poland	12
6	United Kingdom	10
7	Italy	7
8	Netherlands	7
9	Norway	7
10	Ukraine	7

Table 3.1.2

3.2 Number of connected parties in Europe

» IXP Participants distribution among Euro-IX members (data taken on the 24/02/15)

The largest share of Euro-IX members, namely 26%, have between 6 and 25 participants

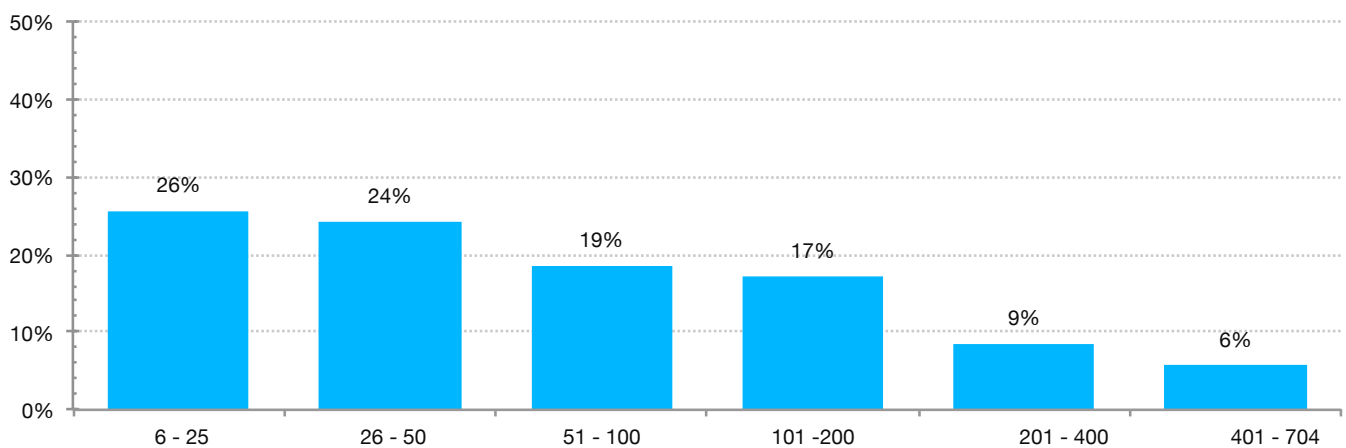
24% have between 26 and 50 participants

19% have between 51 and 100 participants

17% have between 101 and 200 participants

Only 9% of IXPs have between 201 and 400 participants

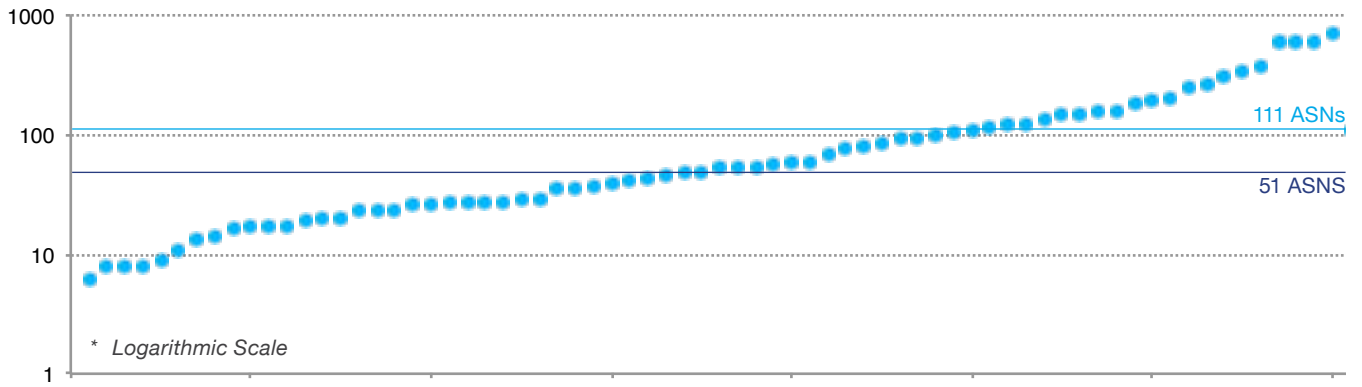
A minority of Euro-IX members (6%) have between 401 and 704 participants.



Graph 3.2.1

» Number of connected ASNs per member IXP

	Range	Average	Median
number of IXP participants	6 - 704	111	51



» Member IXPs with the most customers/members in Europe

	IXP	Number of listed ASN (data taken on 24/02/15)
1	AMS-IX	704
2	LINX	607
3	DE-CIX Frankfurt	600
4	MSK-IX	372
5	NL-ix	332
6	TPIX	313
7	France-IX	255
8	PLIX	204
9	Equinix Zurich	191
10	Swiss -IX	160

Table 3.2.3

3.3 Traffic Statistics in Europe

» Traffic growth over 7 years among Euro-IX membership

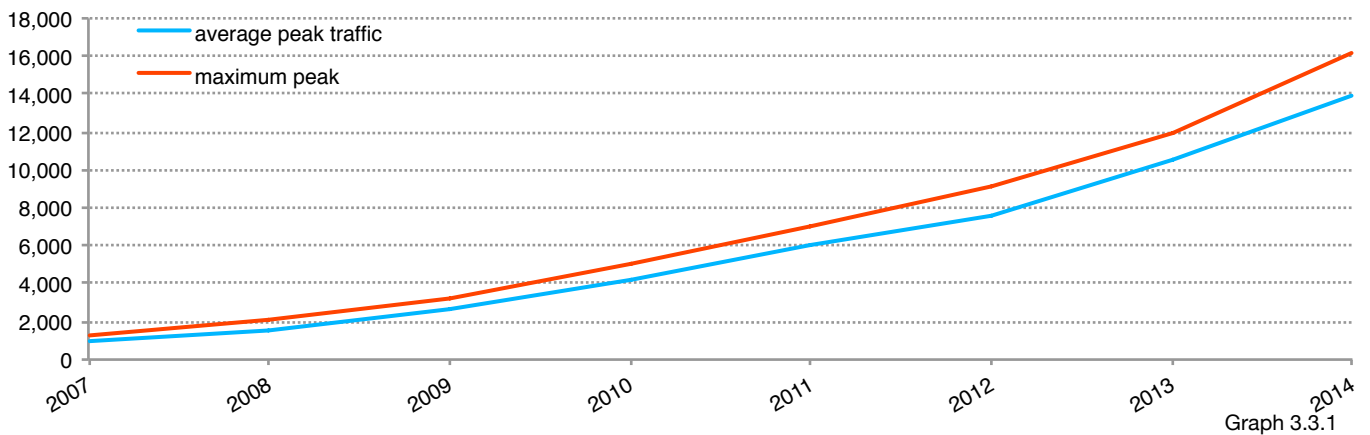
The average number of IXPs we collected data from went from 29 in 2007 to 54 in 2014. These include Euro-IX members and “sub-members”, i.e. other IXPs or pops operated by our members in Europe, such as IXManchester, Netnod Lulea etc...

The average aggregated peak traffic within Euro-IX membership has increased with 1,353% over the past 7 years, going from 955 Gbps in 2007 to 13,877 Gbps in 2014. And the maximum aggregated peak traffic has increased with 1,168% since 2007, going from 1,275 Gbps to 16,169 Gbps.

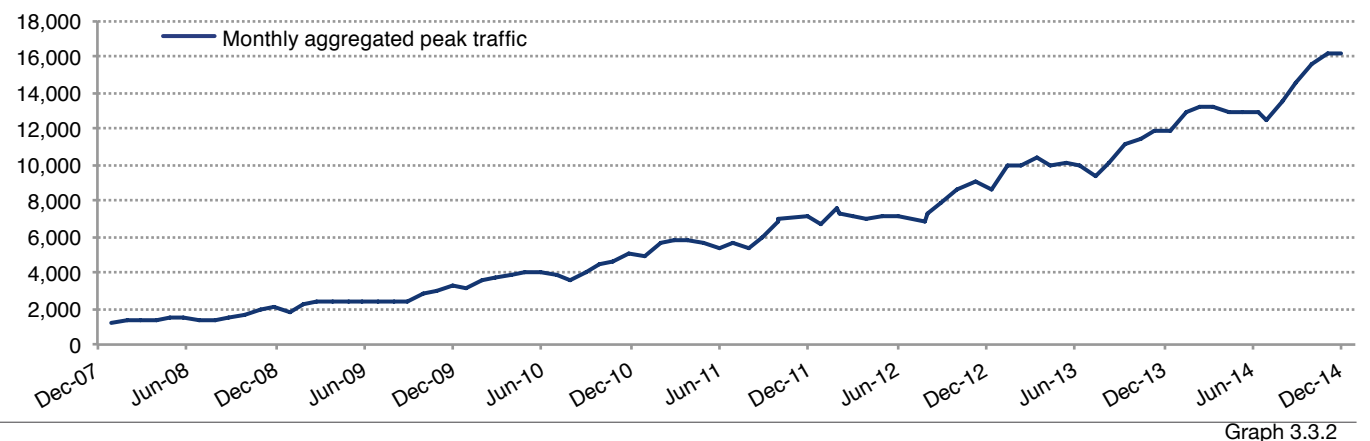
Note: the aggregated peak traffic volume is determined by collecting publicly available traffic statistics from Euro-IX Member IXPs. The Data was captured during a 12-month period, from January to December each year.

	2007	2008	2009	2010	2011	2012	2013	2014
Known operating IXPs in Europe	113	115	122	136	144	146	166	188
Number of countries in Europe with IXPs	31	31	33	35	35	38	43	48
Average number of IXPs we collected traffic data from in 2014	29	35	39	42	44	43	45	54
Average aggregated peak traffic per year within Euro-IX membership (in Gbps)	955	1,554	2,608	4,149	6,080	7,629	10,515	13,877
Maximum aggregated peak traffic per year within the Euro-IX membership (in Gbps)	1,275	2,053	3,288	5,085	7,072	9,099	11,903	16,169

Table 3.3.1



Graph 3.3.1



Graph 3.3.2

» Countries with the most traffic in Europe

	Country	Aggregated Traffic Peaks in 2014 (in Gbps)
1	Netherlands	4,179
2	Germany	4,130
3	United Kingdom	2,456
4	Russian Federation	1,238
5	Sweden	1,043
6	Poland	736
7	France	409
8	Ukraine	313
9	Czech Republic	307
10	Italy	295

Table 3.3.2

» Member IXPs with the most traffic in Europe

	IXP	Maximum Traffic Peak in 2014 (in Gbps)
1	DE-CIX Frankfurt	3,582
2	AMS-IX	3,374
3	LINX	2,346
4	MSK-IX	1,238
5	Netnod - Stockholm	1,021
6	NL-IX	803
7	PLIX	401
8	ECIX	386
9	France-IX	368
10	UA-IX	313

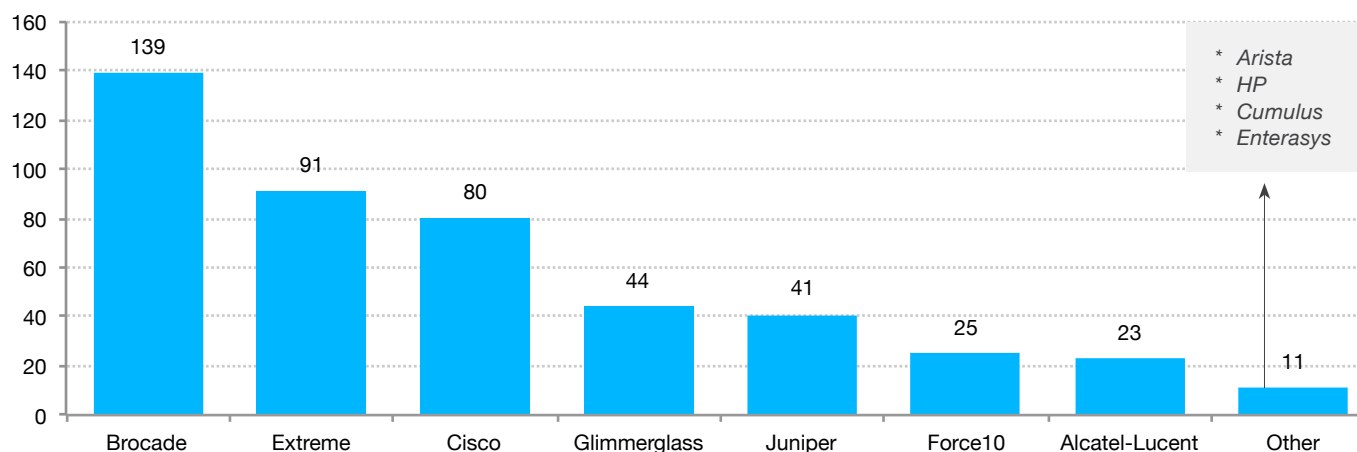
Table 3.3.3

4. IXP Switching Platform Technology

4.1 Switches and/or routers in use within Euro-IX Membership in Europe

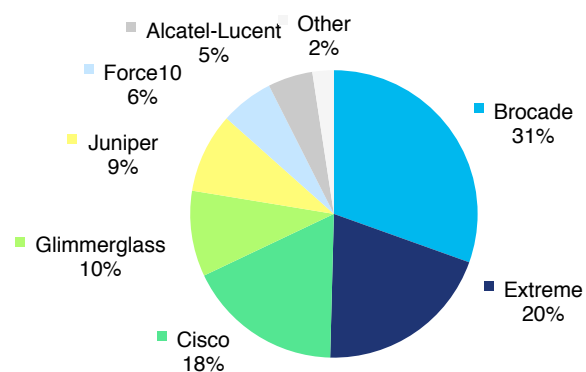
Data source: Euro-IX Database (Data taken on the 12/02/15). This data is maintained manually by the IXPs themselves. There is no direct relationship between the number of devices/vendors in use at IXPs and such factors, as the traffic at IXPs, port density, deployment type of switches and routers (e.g., core, distribution/aggregation, edge), and number of participants (ASNs).

» Number of switches and/or routers in use in 2014



Graph 4.1.1

» Market Share of switch/router vendors in 2014

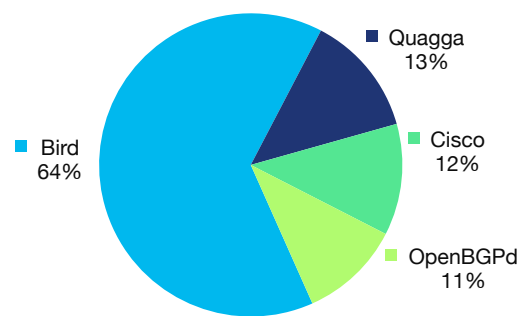
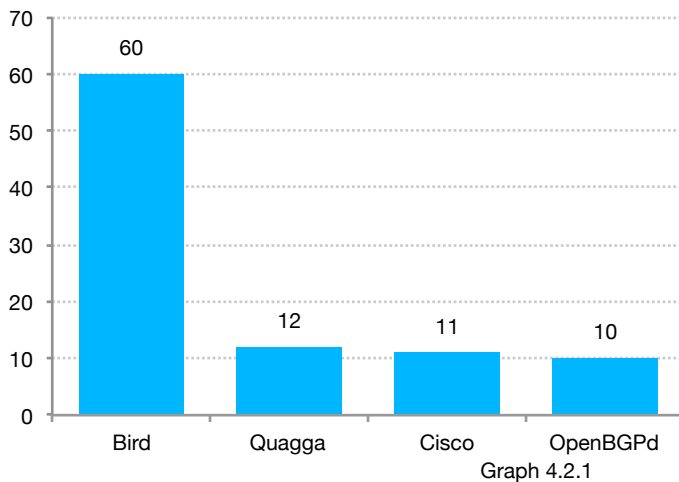


Graph 4.1.2

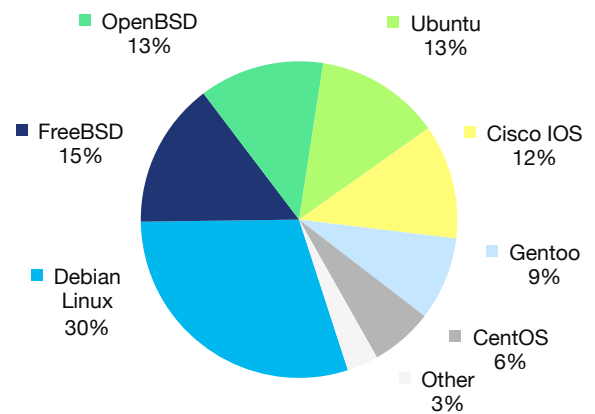
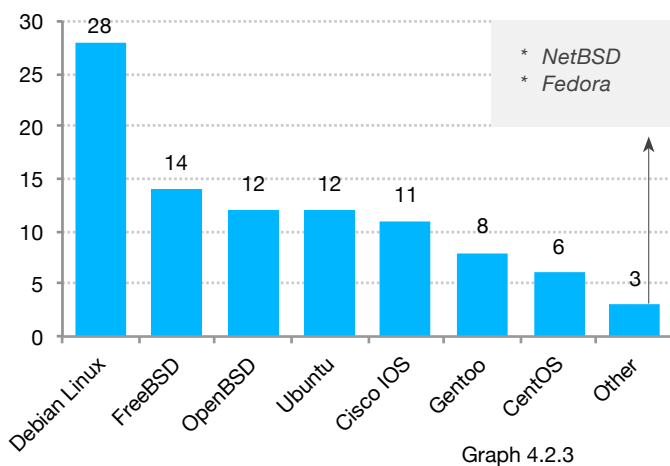
4.2 Route Servers in use within Euro-IX Membership in Europe

40 member IXPs have entered information in this database. There were 94 route servers in use at these IXPs in 2014. Please note that this data is updated manually by the IXPs themselves and may be only partially complete.

» Route Servers daemons in use in 2014



» Route Server operating systems in use in 2014



5. Conclusion

We would like to thank all our member IXPs for committing themselves to openly exchanging information with the rest of the community via the Euro-IX website and the biannual Euro-IX Fora.

We welcome all forms of feedback and suggestions concerning this report and will do our best to answer any further requests for information.

The Euro-IX Secretariat
[*secretariat@euro-ix.net*](mailto:secretariat@euro-ix.net)

Appendix 1

List of known IXPs in Europe

Note: * indicates Euro-IX Member / ** indicates Euro-IX Sub-Members (IXPs operated by our Members)

COUNTRY	# OF IXPS	CITY	FULL NAME OF IXP	ACRONYM
Albania	1			
		Tirana	Albania Internet Exchange	ALB-IX*
Armenia	1			
		Yerevan	Armenia Internet Exchange	ARMIX*
Austria	3			
		Graz	Grazer Internet Exchange	GraX
		Klagenfurt	Alpes Adria Internet Exchange	AAIX
		Vienna	Vienna Internet eXchange	VIX*
Bahrain	1			
		Manama	Bahrain Internet Exchange	BIX - Manama
Belarus	1			
		Minsk	Belarus National Internet Exchange Point	BYIX
Belgium	1			
		Brussels	Belgian National Internet Exchange	BNIX*
Bosnia and Herzegovina	1			
		Sarajevo	Bosnia Internet Exchange	BHIX
Bulgaria	3			
		Sofia	Balkan Internet Exchange	Balkan-IX
		Sofia	Bulgarian Internet Exchange	BIX.BG*
		Sofia	NetIX	NetIX*
Croatia	1			
		Zagreb	Croatian Internet eXchange	CIX*
Cyprus	1			
		Nicosia	Cyprus Internet Exchange	CyIX
Czech Republic	2			
		Prague	Neutral Internet eXchange of Czech Republic	NIX.CZ*
		Prague	Commercial Peering Centre in Prague	Peering.cz
Denmark	5			
		Ballerup	Danish Internet eXchange point - Ballerup	DIX - Ballerup**
		Copenhagen	GlobalConnect Content-IX	Content-IX
		Copenhagen	Netnod - COMIX	Netnod - COMIX**
		Lyngby	Danish Internet eXchange point - Lyngby	DIX - Lyngby*
		Skanderborg	Danish Internet eXchange point - Skanderborg	DIX - Skanderborg**
Estonia	3			
		Tallinn	Tallinn Governmental Internet Exchange	RTIX
		Tallinn	Tallinn Internet eXchange	TIX Tallinn
		Tallinn	Tallinn Internet Exchange	TLLIX

Finland	4		
		Espoo	Finnish Communication and Internet Exchange
		Helsinki	Finnish Communication and Internet Exchange
		Oulu	Finnish Communication and Internet Exchange
		Tampere	Tampere Region Exchange
France	15		
		Grenoble	Grenoble Internet Exchange Point
		Lille	Lille Internet Exchange
		Lyon	Lyon Global Internet Exchange
		Marseille	France Internet Exchange - Marseille
		Nice	Nice Internet eXchange
		Paris	Equinix Internet Exchange - Paris
		Paris	French National Internet Exchange IPv6
		Paris	France Internet Exchange
		Paris	Free Internet Exchange
		Paris	MIXT
		Paris	Paris Internet Exchange
		Paris	POUIX
		Paris	Service for French Internet eXchange
		Strasbourg	European Global Internet eXchange
		Toulouse	GIX de la grande region Toulousaine
Germany	15		
		Berlin	Berlin Commercial Internet Exchange
		Berlin	European Commercial Internet Exchange - Berlin
		Bremen	Bremen Internet Exchange
		Dortmund	Dortmund Internet Exchange
		Düsseldorf	European Commercial Internet Exchange - Dusseldorf
		Düsseldorf	OpenCarrier e.G. Member IX Dusseldorf
		Frankfurt	Deutscher Commercial Internet Exchange
		Frankfurt	European Commercial Internet Exchange - Frankfurt
		Frankfurt	Kleyer Rebstocker EXchange
		Hamburg	Deutscher Commercial Internet Exchange
		Hamburg	European Commercial Internet Exchange - Hamburg
		Munich	Deutscher Commercial Internet Exchange
		Munich	Internet Exchange Point in Munich
		Nurnberg	Nurnberger Internet eXchange
		Stuttgart	Stuttgarter internet eXchange
Greece	1		
		Athens	Greek Internet Exchange
Hungary	1		
		Budapest	Budapest Internet eXchange
Iceland	1		
		Reykjavik	Reykjavik Internet Exchange
Ireland	3		
		Cork	Cork Neutral Internet Exchange
		Dublin	Internet Neutral EXchange
		Galway	eXchange West
Israel	1		
		Tel-Aviv	Israeli Internet eXchange
Italy	7		

	Florence	Tuscany Internet eXchange	TIX Tuscany*
	Milan	Milan Neutral Access Point	MiNAP
	Milan	Milan Internet eXchange	MIX-IT*
	Padova	VSIX Nap del Nord Est	VSIX*
	Rome	Nautilus Mediterranean Exchange Point	NaMeX*
	Torino	Torino Piemonte Exchange Point	TOP-IX*
	Udine	Friuli Venezia Giulia Internet eXchange	FVG-IX*
Kazakhstan	1		
	Almaty	Kazakhstan Traffic Exchange	KAZ-IX
Kosovo	1		
	Prishtinë	Kosovo Internet Exchange Point	KOSIX*
Latvia	2		
	Riga	Latvian Internet eXchange	LIX - Latvia
	Riga	Santa Monica Internet Local Exchange	SMILE
Lebanon	1		
	Beirut	Beirut Internet Exchange	Beirut-IX
Liechtenstein	1		
	Eschen	Rheintal IX Internet Exchange	Rheintal IX
Lithuania	2		
	Vilnius	Lietuvos Interneto paslaugų tiekėjų apsikeitimo mazgu	LIPTAM
	Vilnius	Lithuania Internet Exchange	litix
Luxembourg	1		
	Luxembourg	Luxembourg Commercial Internet Exchange	LU-CIX*
Macedonia	1		
	Skopje	Macedonian Internet Exchange	MatrIX
Malta	1		
	Msida	Malta Internet Exchange	MIX
Moldova, Republic of	1		
	Chisinau	Internet eXchange Moldova	MD-IX
Netherlands	7		
	Amsterdam	Amsterdam Internet Exchange	AMS-IX*
	Emmen	Zuid Oost Drentse Internet eXchange	ZOD-IX
	Enschede	Nederlands-Duitse Internet Exchange	NDIX
	Groningen	Groningen Internet Exchange	GN-IX*
	Leeuwarden	Friese Internet Exchange	FR-IX
	Rotterdam	Rotterdam Internet Exchange	R-iX
	The Hague	Netherlands Internet Exchange	NL-ix*
Norway	7		
	Bergen	Bergen Internet Exchange	BIX**
	Oslo	Free Internet eXchange Oslo	FIXO
	Oslo	Norwegian Internet eXchange	NIX*
	Oslo	Norwegian Internet eXchange	NIX2**
	Stavanger	Stavanger Internet Exchange	SIX - Stavanger
	Tromsø	Tromsø Internet Exchange	TIX
	Trondheim	Trondheim Internet Exchange	TRDIX**
Palestinian Territory, Occupied	1		
	Ramallah	Palestine Internet Exchange	PIX Palestine
Poland	12		

	Gdansk	Gdansk Internet eXchange	GIX Gdansk
	Katowice	E-Poludnie Internet Exchange - Katowice	EPIX Katowice
	Krakow	Cracow Internet Exchange	CIX KR
	Lodz	Lodz Telecommunication Node	IX.LODZ.PL
	Lodz	Lodz Internet Exchange	LIX - Poland
	Poznan	Poznan Internet Exchange	PIX
	Warsaw	KIX - Poland	KIX - Poland
	Warsaw	Polish Internet Exchange	PLIX*
	Warsaw	Thinx Poland	Thinx Poland*
	Warsaw	Orange Polska Internet Exchange	TPIX*
	Warsaw	Warsaw Internet eXchange	WIX - Poland
	Warsaw	E-Poludnie Internet Exchange - Warszawa	EPIX Warszawa
Portugal	1		
	Lisbon	GIGAbit Portuguese Internet eXchange	GigaPix*
Romania	4		
	Bucharest	Balcans Internet Exchange	Balcan-IX
	Bucharest	InterLAN IX	InterLAN*
	Bucharest	Romanian Network for Internet eXchange	RoNIX
	Constanta	Tomis Internet Exchange	Tomix
Russian Federation	28		
	Chelyabinsk	Chelyabinsk Peering Point	CHEL-PP
	Ekaterinburg	Ekaterinburg Internet Exchange	EKT-IX**
	Ekaterinburg	Ural-IX	Ural-IX
	Kazan	Kazan Internet Exchange	KZN-IX**
	Khabarovsk	DataIX - Khabarovsk	DataIX - Khabarovsk
	Krasnodar	South Russia IX	Sea-IX
	Krasnoyarsk	Krasnoyarsk Internet Exchange	KRS-IX
	Moscow	DataIX - Moscow	DataIX - Moscow
	Moscow	MPIX	MPIX
	Moscow	Moscow Internet Exchange	MSK-IX*
	Nizhny Novgorod	IX of Nizhny Novgorod	IX-NN
	Novosibirsk	DataIX - Novosibirsk	DataIX - Novosibirsk
	Novosibirsk	Novosibirsk Internet eXchange	NSK-IX**
	Omsk	OMSK-IX	OMSK-IX
	Perm	Perm Internet Exchange	PERM-IX
	Rostov on Don	Rostov on Don Internet Exchange	RND-IX**
	Samara	Samara-IX	SMR-IX**
	Saratov	Saratov Internet Exchange	SARATOV-IX
	St Petersburg	DataIX - St Petersburg	DataIX-St Petersburg
	St. Petersburg	PIRIX Internet Exchange	PIRIX
	St.-Petersburg	St. Petersburg Internet eXchange	SPB-IX**
	Simferopol	Crimea-IX	Crimea-IX
	Stavropol	Stavropol Internet eXchange	STW-IX**
	Ufa	DataIX - Ufa	DataIX - Ufa
	Ulyanovsk	Ulyanovsk Internet Exchange	ULN-IX
	Vladivostok	Vladivostok Internet Exchange	VLV-IX**
	Voronezh	Voronezh Internet Exchange	VRZ-IX**
	Yaroslavl	Yaroslavl Internet Exchange	YAR-IX
Serbia	1		
	Belgrade	Serbian Open eXchange	SOX*
Slovakia	3		

	Bratislava	Sitel Internet eXchange	Sitelix
	Bratislava	Slovak Internet eXchange- Bratislava	SIX - Bratislava
	Kosice	Slovak Internet eXchange- Kosice	SIX - Kosice
Slovenia	1		
	Ljubljana	Slovenian Internet Exchange	SIX*
Spain	5		
	Barcelona	Catalunya Neutral Internet Exchange	CATNIX*
	Bilboa	Punto neutro Vasco de Internet	EuskoNIX
	Madrid	Espana Internet Exchange	ESPANIX
	Santiago	Galicia Neutral Internet eXchange	GalNIX
Sweden	12		
	Boras	Boras Internet Exchange	BOR-IX
	Gävle	Regional Internet Exchange Gästrikland-Hälsingland	RIX-GH
	Gothenburg	Gothenburg Internet Exchange	GIX
	Gothenburg	Internet Exchange i Sverige - Gothenburg	Netnod - Gothenburg**
	Lulea	Internet Exchange i Sverige - Lulea	Netnod - Lulea**
	Malmoe	Internet eXchange point of the Oresund Region	IXOR
	Malmoe	Internet Exchange i Sverige - Malmoe	Netnod - Malmoe**
	Stockholm	Internet Exchange i Sverige - Stockholm	Netnod - Stockholm*
	Stockholm	SOLIX	SOLIX - Stockholm
	Stockholm	Stockholm Internet Exchange	STHIX
	Sundsvall	Internet Exchange i Sverige - Sundsvall	Netnod - Sundsvall**
	Umea	NorrNod	NorrNod
	Uppsala	Uppsala regional Internet exchange	UppRIX
Switzerland	3		
	Geneva	CERN Internet eXchange Point	CIXP*
	Zurich	Equinix-Switzerland	Equinix Zurich*
	Zurich	Swiss Internet Exchange	SwissIX*
Ukraine	7		
	Donetsk	Donetsk Internet Exchange	DN-IX
	Kharkov	Kharkov Internet Exchange	KH-IX
	Khmelnyskiy	Khmelnysky traffic exchange network	KM-IX
	Kiev	Digital Telecom Internet Exchange	DTEL-IX
	Kiev	Giganet	Giganet
	Kiev	Ukrainian Internet Exchange	UA-IX*
	Odessa	Odessa Traffic Exchange Network	Od-IX
United Arab Emirates	3		
	Abu Dhabi		EMIX
	Dubai		UAE-IX*
	Dubai		SmarthubIX
United Kingdom	10		
	Cardiff	IXCardiff	IXCardiff**
	Edinburgh	IXScotland	IXScotland**
	Leeds	IXLeeds	IXLeeds*
	London	London Internet Exchange	LINX*
	London	London Network Access Point	LONAP*
	London	Packet Exchange	Packet Exchange
	London	XchangePoint	XchangePoint
	Manchester	Edge-IX	Edge-IX
	Manchester	IX Manchester	IXManchester**
	Manchester	Manchester Commercial Internet Exchange	MCIX

Appendix 2

- Europe
- Countries outside Europe

