



euro-IX

# Internet Exchange Points

2016 Report



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# 1. Introduction

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## 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 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

## 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 2015 report have not been included in the 2016 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.

## 1.2 Internet Exchange Point (IXP)

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

*“A network facility that enables the interconnection and exchange of Internet traffic between more than two independent Autonomous Systems. 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.”*

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## 2. About Euro-IX

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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 2016, Euro-IX counted 84 Members and 17 Patrons from the IXP-related equipment-vendor and colocation sectors of the community. The 77 member IXPs are from 50 countries and the affiliations are as follows:

- Standard Members: 42 IXPs from 29 countries
- Associate Members: 9 IXPs from 5 countries (Australia, Brazil, India, Japan and USA).
- Remote Members: 33 IXPs from 21 countries, including 15 IXPs from Europe (Bulgaria, Finland, Germany, Iceland, Italy, Luxembourg, Russia, Serbia and Ukraine), 9 from the Af-IX region (Angola, Congo, Kenya, Mozambique, Nigeria, South Africa, Tanzania, Tunisia, Zambia), 4 IXPs from North America (Canada and United States), 4 IXPs from the APIX region (Australia, Armenia, China, Nepal and Serbia) and 1 IXP from the LAC-IX region (Curacao).

## List of Euro-IX Standard Members in 2016

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

## 2.2 List of Euro-IX Associate Members in 2016

	IXP Name	Country
1	BBIX	Japan
2	CyrusOne	United States of America
3	JPIX	Japan
4	JPNAP	Japan
5	MegalX	Australia
6	NIC.br (IX.br)	Brazil
7	NIXI	India
8	Telx	United States of America
9	Terremark	United States of America

## 2.3 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	GN-IX	Netherlands
5	LU-CIX	Luxembourg
6	NetIX	Bulgaria
7	RIX	Iceland
8	STHIX	Sweden
9	SOX	Serbia
10	TIX Tuscany	Italy
11	TOUIX	France
12	TREX	Finland
13	UA-IX	Ukraine

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

	IXP Name	Country
1	AMS-IX Caribbean	Netherlands Antilles
2	ANGONIX	Angola
3	ARMIX	Armenia
4	CH-IX	China
5	Community IX	United States of America
6	Dataline-IX	Russia
7	Global-IX	Russia
8	IXPN	Nigeria
9	JINX	South Africa
10	KINIX	Congo
11	KIXP	Kenya
12	MOZ-IX	Mozambique
13	NAPAfrica	South Africa
14	NPIX - Kathmandu	Nepal
15	OTTIX	Canada

16	TIX - Tanzania	Tanzania, United Republic of
17	TorIX	Canada
18	TunIXP	Tunisia
19	WAIX	Australia
20	ZIXP	Zambia

## 2.5 List of Euro-IX Patrons in 2016

	Organisation Name	Country
1	ADVA	The Netherlands
2	Arista Networks	Ireland
3	Brocade	The Netherlands
4	BTI Systems	Canada
5	Ciena	United Kingdom
6	Coriant	Germany
7	ECI	Germany
8	Extreme Networks	The Netherlands
9	FlexOptix	Germany
10	Huawei	The Netherlands
11	Interxion	The Netherlands
12	Juniper Networks	United States
13	MRV	The Netherlands
14	Nokia	United Kingdom
15	NTT AT	Japan
16	TelecityGroup	United Kingdom
17	Telehouse	United Kingdom

## 3. IXPs in Europe

### 3.1 Number of operational IXPs in Europe

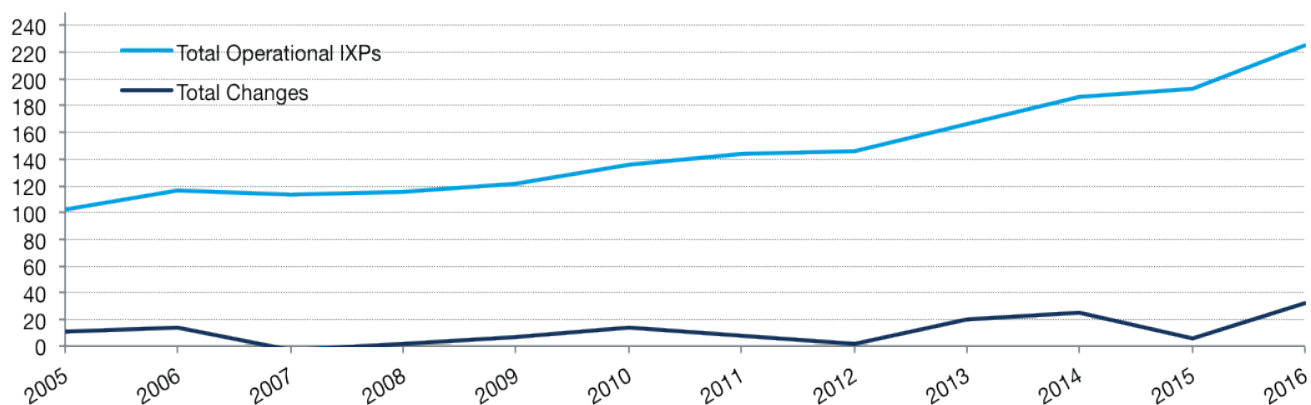
#### » IXP Growth in Europe over 12 years

The number of operational IXPs in Europe has increased with 120% over the past 12 years, going from 102 in 2005 to 225 in 2016.

**Note:** The growth of 32 IXPs in 2016 includes both newly established IXPs but also IXPs that were only identified by Euro-IX in 2016 (Source: IXP Database)

YEAR	IXPS STARTED	IXPS CLOSED OR INACTIVE	GROWTH	OPERATIONAL
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
2015	17	11	6	193
2016	44	12	32	225

Table 3.1.1





» Countries with the most IXPs in Europe

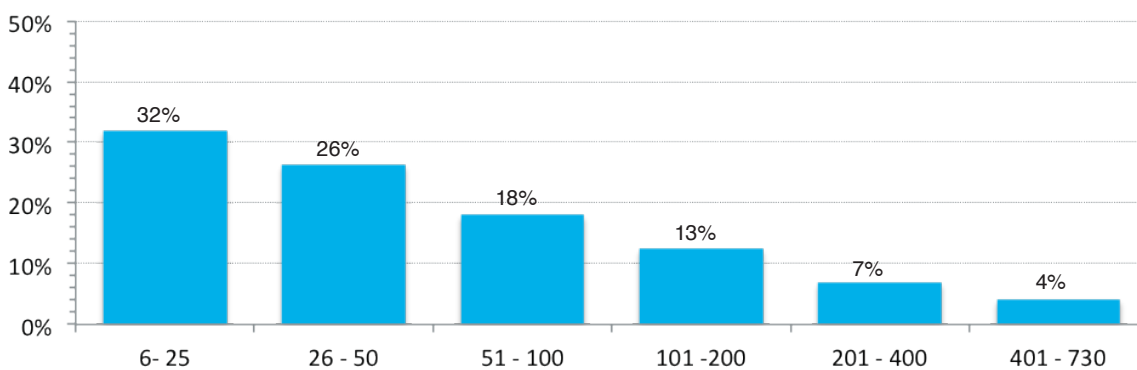
	Country	Number of operational IXPs in 2016
1	Russian Federation	30
2	Germany	17
3	France	15
4	Sweden	14
5	Poland	12
6	United Kingdom	11
7	Italy	8
8	Netherlands	8
9	Norway	7
10	Ukraine	7

Table 3.1.2

**3.2 Number of connected parties in Europe**

» IXP Participants distribution among Euro-IX members

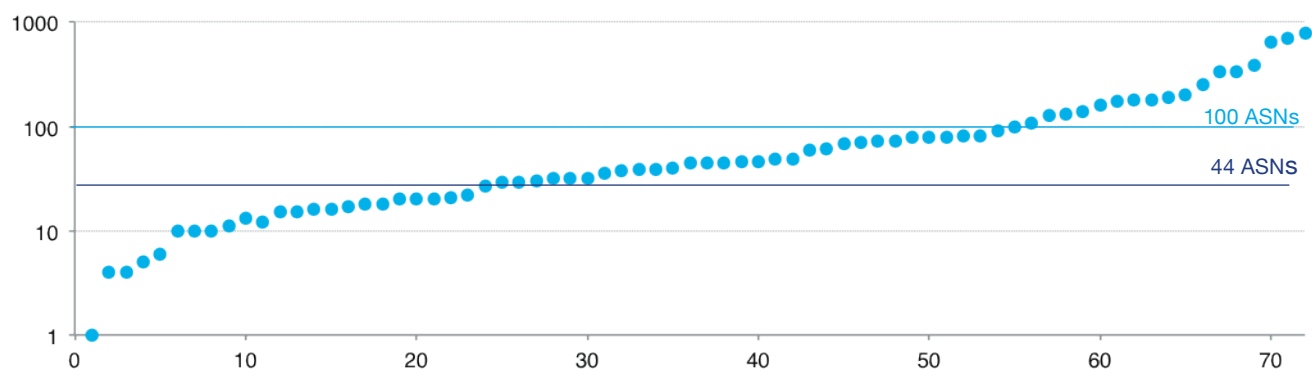
- The largest share of Euro-IX members, namely 32% have between 6 and 25 participants
- 26% of Euro-IX members have between 6 - 50 participants
- 18% have between 51 - 100 participants
- 13% have between 101 - 200 participants
- 7% have between 201 - 400 participants
- A 4% minority of members have between 401 - 730 participants



Graph 3.2.1

» Average number of connected ASNs per member IXP

	Range	Average	Median
number of IXP participants	6 - 730	100	44



Graph 3.2.2

» Member IXPs with the most ASNs in Europe

	IXP	Number of listed ASN
1	AMS-IX	796
2	DE-CIX Frankfurt	691
3	LINX	646
4	MSK-IX	389
5	NL-ix	331
6	Equinix Paris	331
7	France-IX Paris	255
8	TPIX	203
9	Equinix Zurich	190
10	SwissIX	181

Table 3.2.3

### 3.3 Traffic Statistics in Europe

#### » Traffic growth over 9 years among Euro-IX membership

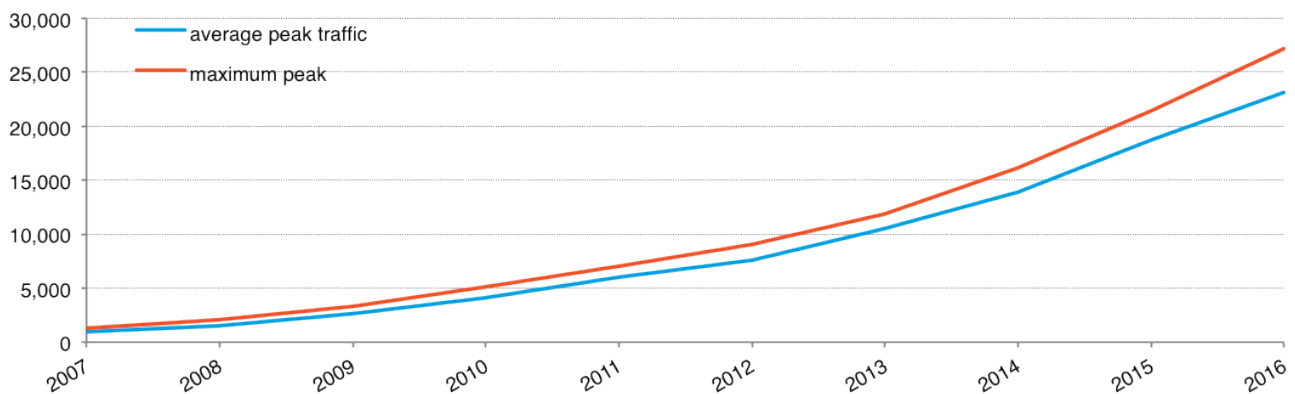
The average number of IXPs we collected data from went from 29 in 2007 to 58 in 2016. These include Euro-IX members and “sub-members”, i.e. other IXPs or pops operated by our members in Europe, such as IXManchester, Netnod Lulea etc.

The average aggregated peak traffic within the Euro-IX membership has increased with 7,348% over the past 9 years, going from 955 Gbps in 2007 to 18,765 Gbps in 2016. The maximum aggregated peak traffic has increased with 8,601% since 2007, going from 1,275 Gbps to 21,469 Gbps.

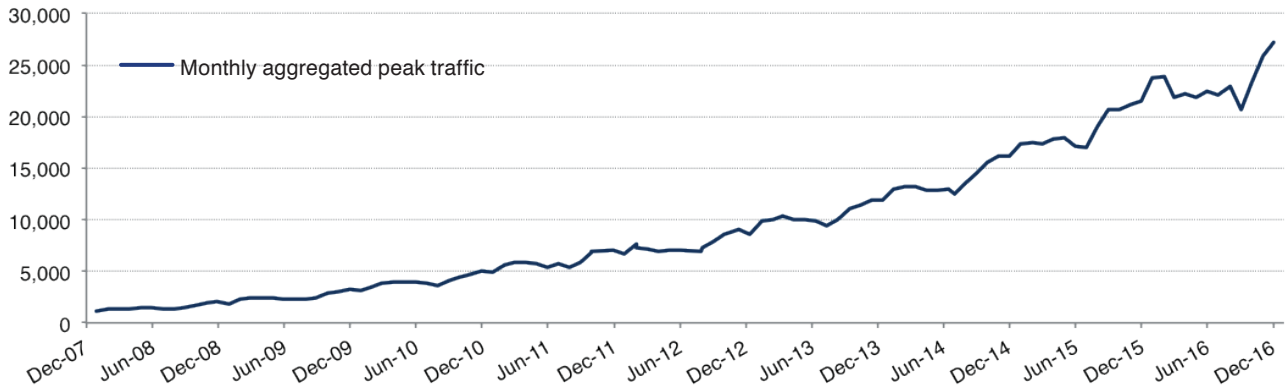
**Note:** the aggregated peak traffic volume is determined by collecting publicly available traffic statistics from Euro-IX Member IXPs. The Data was captured during a 12-month period, from January to December each year.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Known operating IXPs in Europe	113	115	122	136	144	146	166	188	193	225
Number of countries in Europe with IXPs	31	31	33	35	35	38	43	48	48	49
Average number of IXPs we collected traffic data from in 2016	29	35	39	42	44	43	45	54	55	58
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	18,765	23,192
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	21,469	27,198

Table 3.3.1



Graph 3.3.1



Graph 3.3.2

» Countries with the most traffic in Europe

	Country	Aggregated Traffic Peaks in 2016 (in Gbps)
1	Germany	5,638
2	Netherlands	5,187
3	United Kingdom	3,340
4	Russian Federation	2,382
5	Sweden	1,199
6	Poland	694
7	France	496
8	Ukraine	722
9	Czech Republic	482
10	Italy	398

Table 3.3.2

» Member IXPs with the most traffic in Europe (at IXPs in Europe)

	IXP	Average Traffic Peak in 2016 (in Gbps)
1	DE-CIX Frankfurt	4,847
2	AMS-IX	4,410
3	LINX	2,762
4	MSK-IX	1,771
5	DatalX	1,759
5	NL-ix	1,057
6	Netnod - Stockholm	1000
7	ECIX (all pops)	847
8	France-IX	584
9	PLIX	474

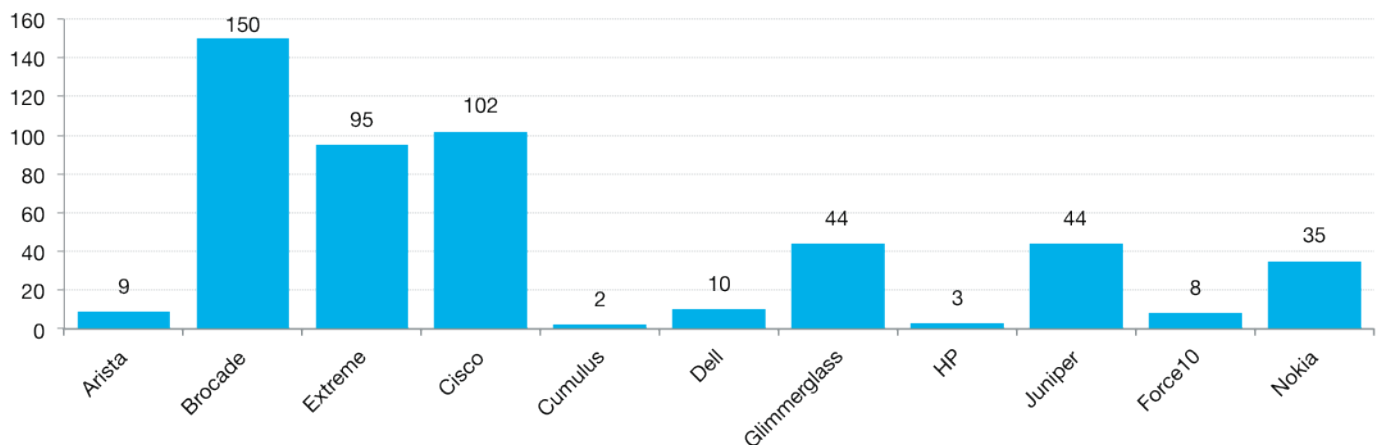
Table 3.3.3

# 4. IXP Switching Platform Technology

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

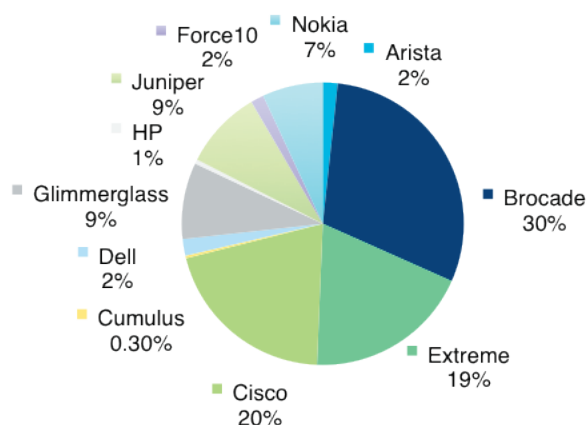
### » Number of switches and/or routers in use in 2016

\*Data source: Euro-IX Database. This data is sent by members to Euro-IX for updates.



Graph 4.1.1

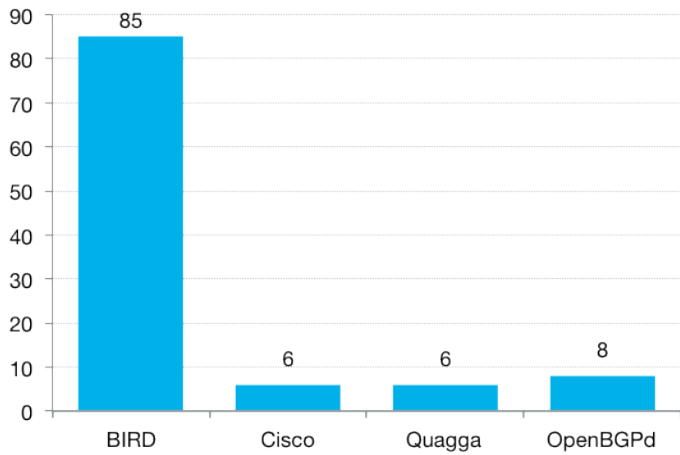
### » Market Share of switch/router vendors in 2016



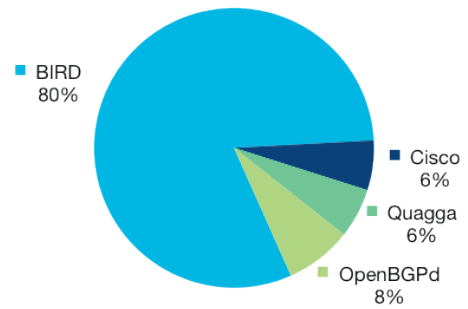
Graph 4.1.2

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

### » Route Servers daemons in use in 2016

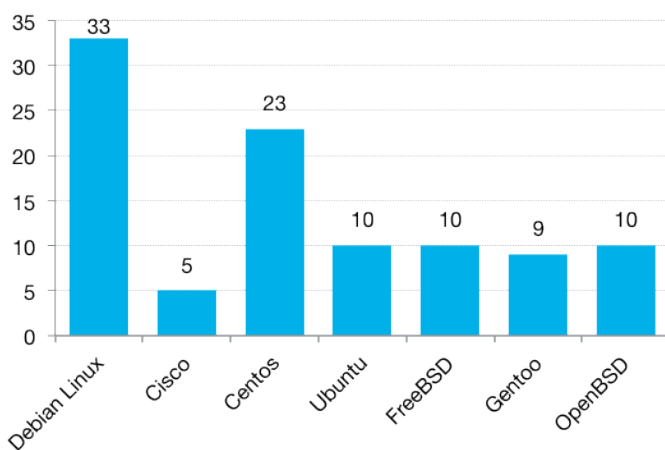


Graph 4.2.1

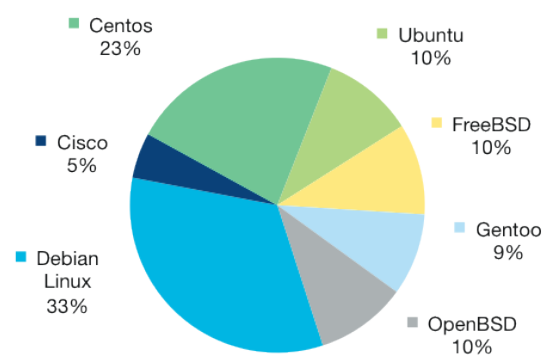


Graph 4.2.2

### » Route Server operating systems in use in 2016



Graph 4.2.3



Graph 4.2.4

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## 5. Further information

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### 5.1 Resources

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

We additionally thank all European IXPs, and especially those that provide publically available information.

### 5.2 Contact

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	6		
		Espoo	Finnish Communication and Internet Exchange
		Espoo	Global Internet Exchange - Helsinki
		Helsinki	Finnish Communication and Internet Exchange
		Oulu	Finnish Communication and Internet Exchange
		Helsinki	Global Internet Exchange - Helsinki
		Tampere	Tampere Region Exchange
Finland			FICIX - Espoo**
			Global-IX - Espoo**
			FICIX - Helsinki*
			FICIX - Oulu**
			Global-IX - Helsinki**
			TREX*
France	16		
		Grenoble	Grenoble Internet Exchange Point
		Lille	Lille Internet Exchange
		Lyon	Lyon Global Internet Exchange
		Marseille	France Internet Exchange - Marseille
		Marseille	Deutscher Commercial Internet Exchange
		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
France			GrenobliX**
			Lillix
			LyonIX*
			France-IX Marseille**
			DE-CIX Marseille
			NicIX**
			Equinix Paris**
			FNIX6
			France-IX*
			FreeIX
			MIXT
			PARIX
			POUIX
			SFINX*
			EuroGIX
			TOUIX*
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
Germany			BCIX*
			ECIX Berlin*
			BREM-IX
			DO-IX
			ECIX Dusseldorf**
			OCIX Düsseldorf
			DE-CIX Frankfurt*
			ECIX Frankfurt**
			KleyReX
			DE-CIX Hamburg**
			ECIX Hamburg**
			DE-CIX Munich**
			INXS
			N-IX
			S-IX
Greece	2		
		Athens	Athens Internet Exchange
		Athens	Greek Internet Exchange
Greece			AIX
			GR-IX*
Hungary	1		
		Budapest	Budapest Internet eXchange
Hungary			BIX*
Iceland	1		
		Reykjavik	Reykjavik Internet Exchange
Iceland			RIX*
Ireland	3		
		Cork	Cork Neutral Internet Exchange
		Dublin	Internet Neutral EXchange
		Galway	eXchange West
Ireland			CNIX
			INEX*
			ExWest

Israel	1			
		Tel-Aviv	Israeli Internet eXchange	IIX - Tel Aviv
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	8			
		Amsterdam	Amsterdam Internet Exchange	AMS-IX*
		Amsterdam	Global Internet Exchange - Amsterdam	Global-IX Amsterdam**
		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		30	
	Chelyabinsk	Chelyabinsk Peering Point	CHEL-PP
	Ekaterinburg	Ekaterinburg Internet Exchange	EKT-IX**
	Ekaterinburg	Ural-IX	Ural-IX
	Kazan	Kazan Internet Exchange	KZN-IX**
	Khabarovsk	DatalX - Khabarovsk	DatalX - Khabarovsk**
	Krasnodar	South Russia IX	Sea-IX
	Krasnoyarsk	Krasnoyarsk Internet Exchange	KRS-IX
	Moscow	Dataline Internet Exchange	DatalineIX*
	Moscow	DatalX - Moscow	DatalX - Moscow**
	Moscow	MPIX	MPIX
	Moscow	Moscow Internet Exchange	MSK-IX*
	Nizhny Novgorod	IX of Nizhny Novgorod	IX-NN
	Novosibirsk	DatalX - Novosibirsk	DatalX - 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	DatalX - St Petersburg	DatalX-St Petersburg*
	St.-Petersburg	Global Internet Exchange	Global-IX*
	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	DatalX - Ufa	DatalX - 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	4		
		Bratislava	Sitel Internet eXchange
			Sitelix
		Bratislava	Slovak Internet eXchange- Bratislava
			SIX - Bratislava
		Bratislava	Neutral Internet eXchange of Slovakia
			NIX.SK*
		Kosice	Slovak Internet eXchange- Kosice
			SIX - Kosice
Slovenia	1		
		Ljubljana	Slovenian Internet Exchange
			SIX*
Spain	4		
		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	14		
		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	Global Internet Exchange - Stockholm
			Global-IX - Stockholme**
		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*
Turkey	1		
		Istanbul	Deutscher Commercial Internet Exchange
			DE-CIX Istanbul
Ukraine	7		
		Donetsk	Donetsk Internet Exchange
			DN-IX
		Kharkov	Kharkov Internet Exchange
			KH-IX
		Khmelnyskiy	Khmelnyskiy 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	11		
		Cardiff	IXCardiff
			IXCardiff**
		Coventry	UNIFI - IX Internet Exchange
			UNIFI-IX
		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

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## Appendix 2

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- Europe
- Countries outside Europe

