



euro-IX

# IXPs Traffic Statistics

2016 summary



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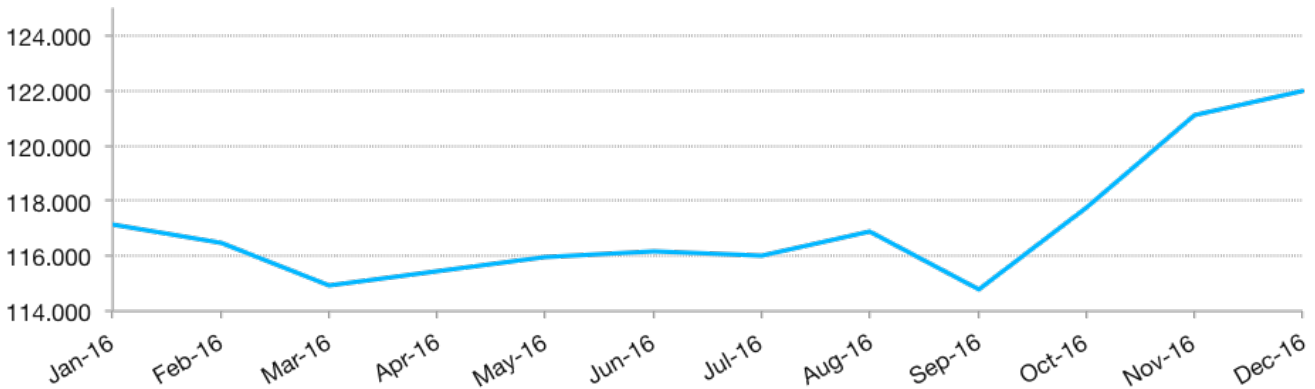
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# Global Traffic Statistics in 2016

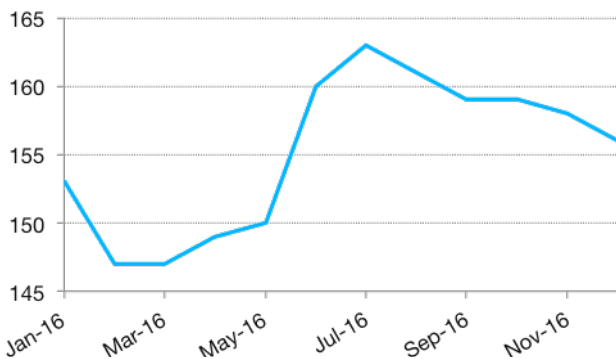
> Total aggregated traffic growth worldwide (in Gbps)



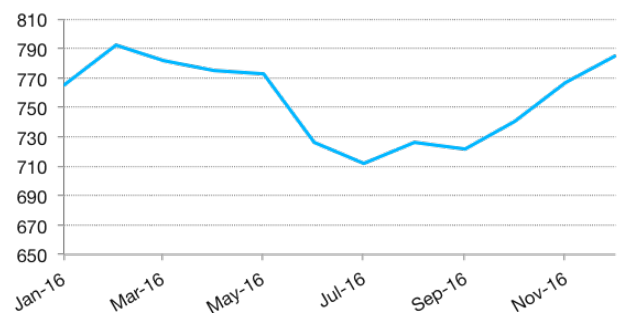
There were a few fluctuations in the global traffic in 2016 (dropping in March and September), but on the whole, it remained fairly consistent until October, when traffic began to grow to the right. Starting with 117,128 Gbps in January and growing to 122,483 Gbps in December, the total aggregated traffic peak increased with 4.2% over the past 12 months.

Note: these numbers are based on data collected each month over public peering LAN (automatically and manually). The number of IXPs collected from varied from one month to the other depending on the data available. This number increased from 153 in January to a high of 163 in July, before decreased to 155 in December (see chart below). On average, Euro-IX collected data from 155 IXPs throughout the year.

> Number of IXPs collected from worldwide

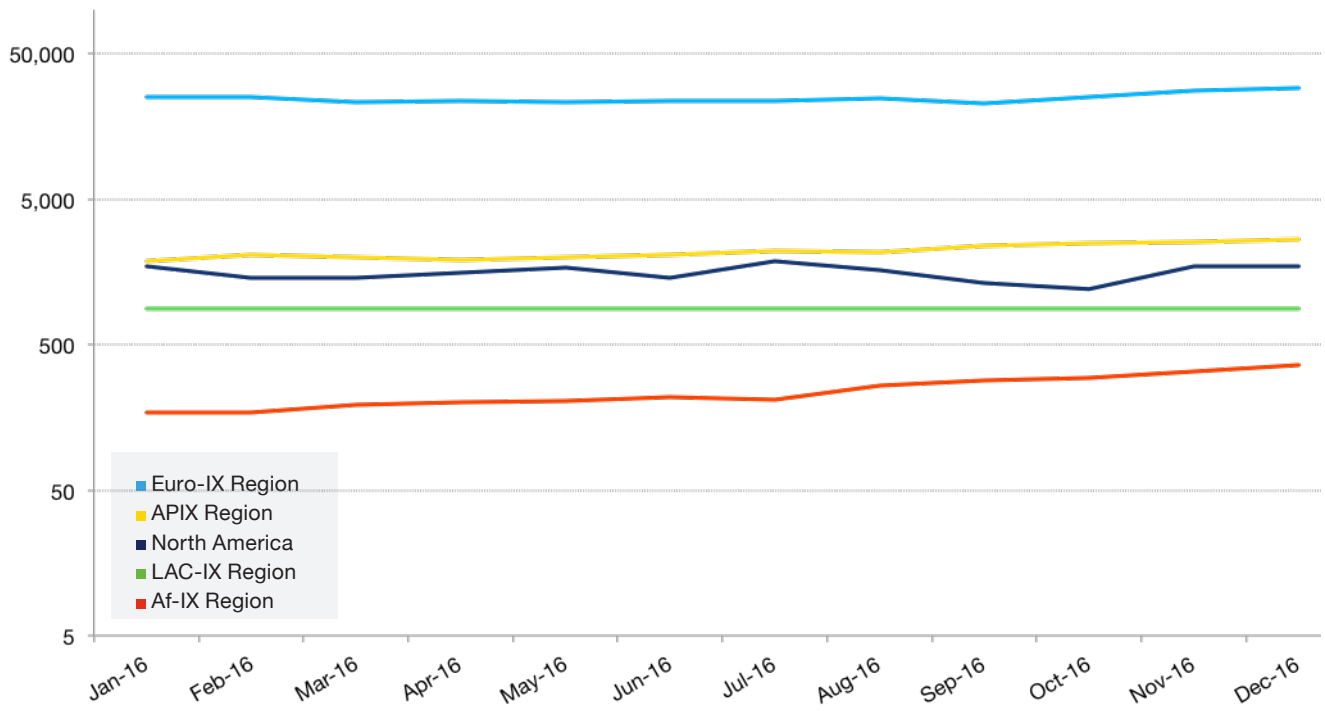


> Average peak traffic per IXP (in Gbps)



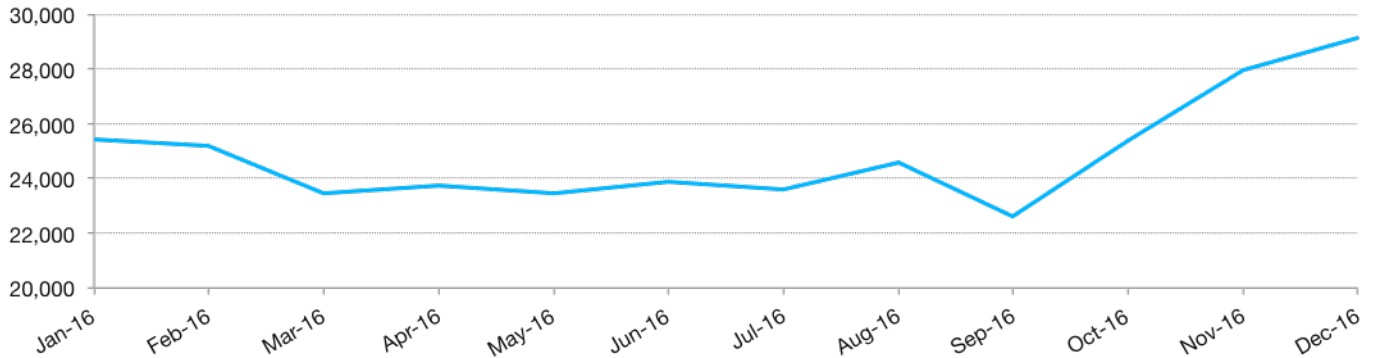
At the start of 2016 traffic seemed to increase, after which we began to see a drop until July, before increasing again towards the end of the year. Overall, there was a slight increase of 2.5% in traffic, going from 766 Gbps in January to 785 Gbps in December. The traffic peaks ranged from 28 Kbps to 4,863 Gbps in January and from 15 Mbps to 5,636 Gbps in December. The averages shown above are therefore not representative for most of the Exchanges and the IXP community remains very diverse.

> Overview of the aggregated traffic statistics per region (in Gbps, logarithmic scale)



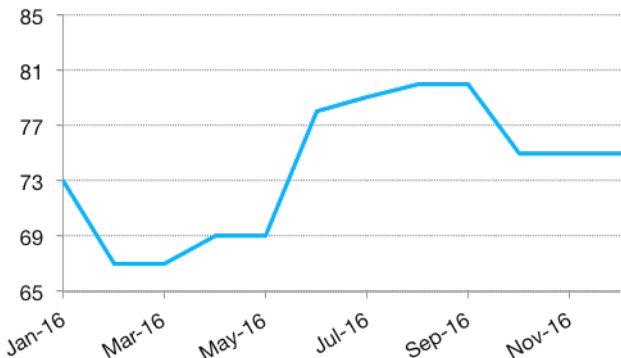
# Euro-IX Region

> Total aggregated traffic growth in the Euro-IX region (in Gbps)

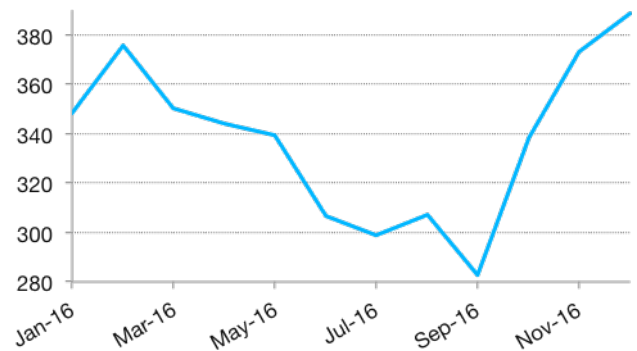


The total aggregated peak traffic in the Euro-IX region has increased with 15.8% over the past 12 months, going from 25,185 Gbps in January to 29,152 Gbps in December. The traffic remained quite steady throughout the year, with a slight drop in September, before increasing again towards the end of the year. These numbers are based on data collected from 74 IXPs on average throughout the year, over public peering LAN.

> Number of IXPs monitored in the Euro-IX region



> Average peak traffic per IXP (in Gbps)

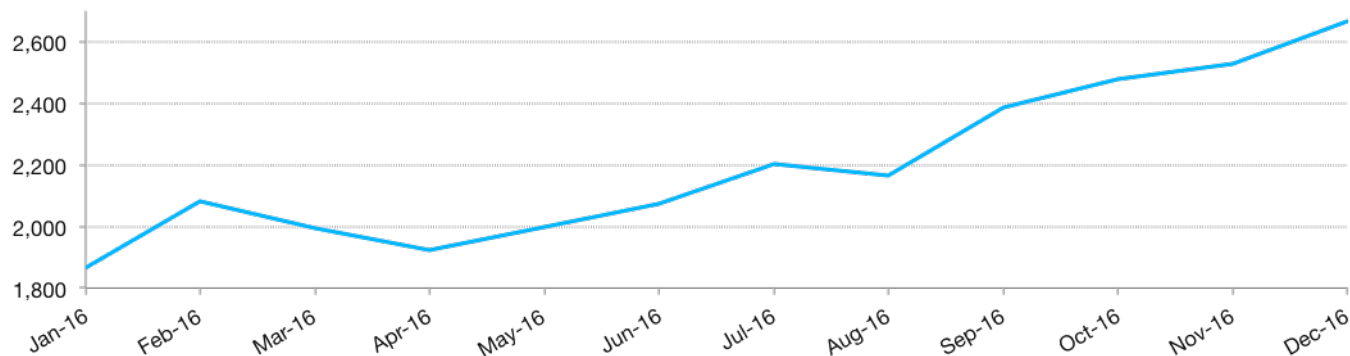


The number of IXPs data was collected from in the Euro-IX region ranged from 67 at the lower end in February, to 80 in August. The average peak traffic per IXP increased with 11.5%, going from 348 Gbps to 388 Gbps. The traffic peaks in this region ranged from 93 Kbps to 4,863 Gbps in January and from 15 Mbps to 5,636 Gbps in December.

The 4 largest IXPs in term of traffic in this region but also worldwide remain DE-CIX in Frankfurt, AMS-IX in Amsterdam, LINX in London and MSK-IX in Moscow, which are the only ones where the traffic peaks above 1 Tbps each month.

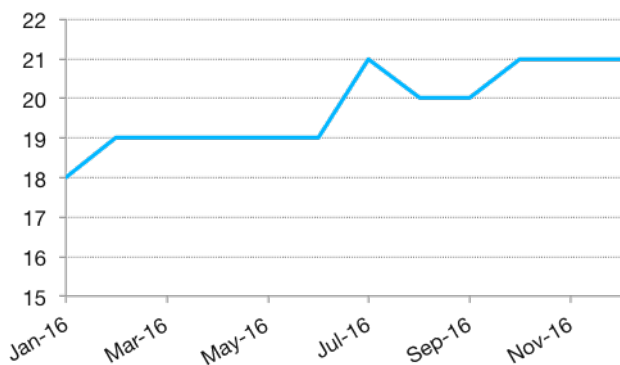
# APIX Region

> Total aggregated traffic growth in the APIX region (in Gbps)

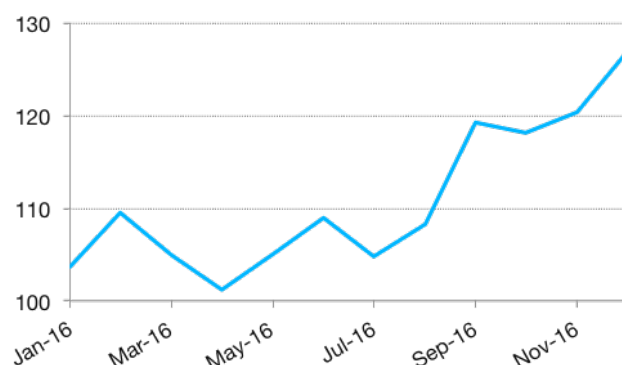


The total aggregated peak traffic in the APIX region has increased with 42.7% over the past 12 months, going from 1,866 Gbps in January to 2,664 Gbps in December. These numbers are based on data collected from 21 IXPs, over public peering LAN. Although the APIX region had some slight decreases, the general curve was to the right in 2016.

> Number of IXPs monitored in the APIX region



> Average peak traffic per IXP (in Gbps)

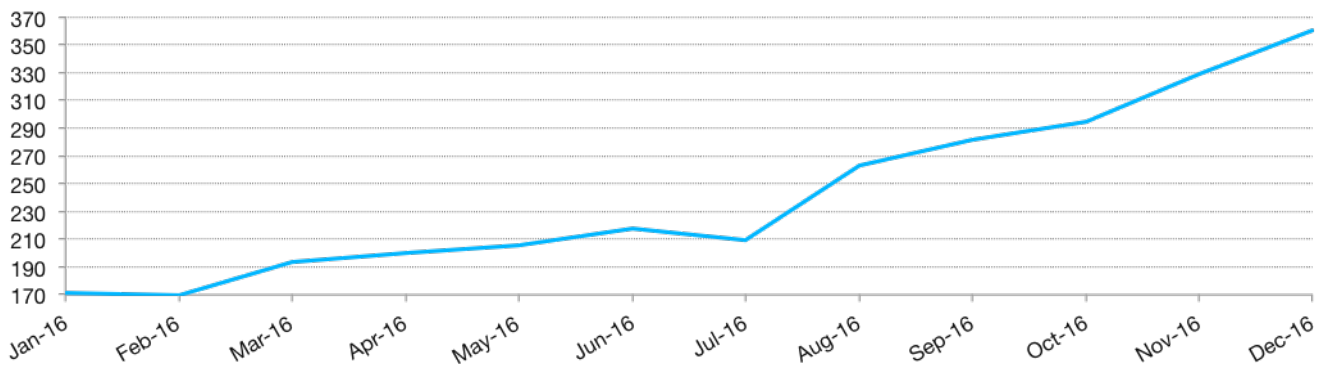


The number of IXPs we collected data from in this region remained stable in 2016 (18 to 21 IXPs) and did not vary much from 2015 (17 to 21 IXPs). The average peak traffic per IXP increased by 22% in the APIX region in 2016, going from 104 Gbps to 127 Gbps.

The peaks ranged from 77 Mbps to 530 Gbps in January and from 64 Mbps to 571 Gbps in December. The leading IXPs in the Asia-Pacific region for traffic are HKIX in Hong-Kong, JPNAP in Tokyo, JPIX in Tokyo and KINX in Seoul. For these 4 IXPs, the traffic peaks above 100 Gbps each month.

# Af-IX Region

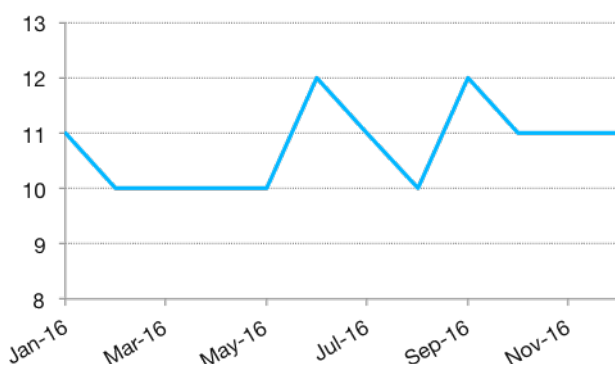
- > Total aggregated traffic growth in the Af-IX region (in Gbps)



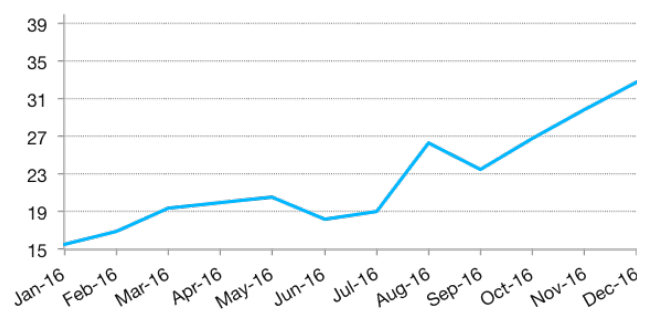
The total aggregated peak traffic in the Af-IX region has increased with 110.5% over the past 12 months, going from 171 Gbps in January to 360 Gbps in December. These numbers are based on data collected from 11 IXPs on average, over public peering LAN.

The traffic in the Af-IX region grew steadily from January to December, with a few fluctuations in July and October.

- > Number of IXPs monitored in the Af-IX region



- > Average peak traffic per IXP (in Gbps)

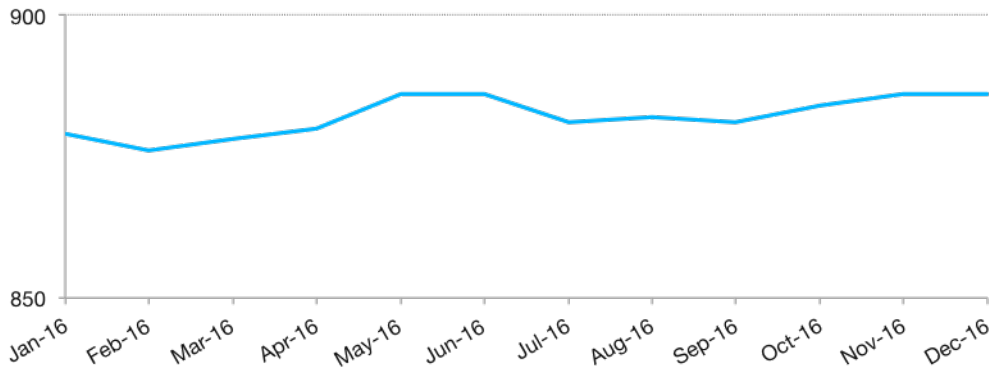


The average peak traffic per IXP increased by 106% in the Af-IX region over 12 months, going from 16 Gbps to 33 Gbps (in comparison with a 13% decrease in 2015). The traffic peaks ranged from 17 Kbps to 80 Gbps in January and from 3 Mbps to 183 Gbps in December.

The largest IXP in terms of traffic this year is NapAfrica, with TunIX (Tunis) now the second largest. Although the traffic in this region is lower in comparison to the other regions, the Af-IX region has the most significant traffic growth. NapAfrica (Johannesburg, Durban and Cape Town), experienced continued traffic growth in 2016 (increase of 187.5% and is now peaking above 180 Gbps; compared to a 105% increase in 2015), and JINX (Johannesburg), with traffic peaking around 14,5 Gbps each month.

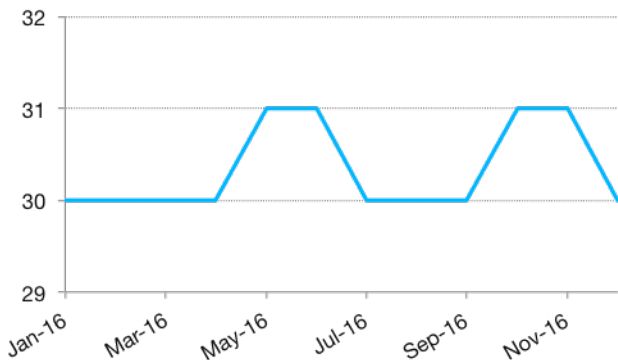
# LAC-IX Region

> Total aggregated traffic growth in the LAC-IX region (in Gbps)

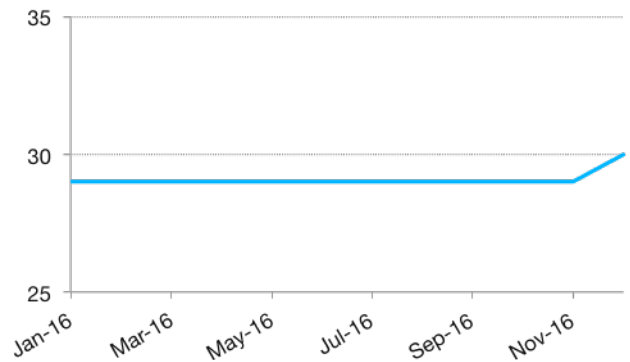


The total aggregated peak traffic in the LAC-IX region has increased with 0.8% over the past 12 months, going from 879 Gbps in January to 886 Gbps in December. The numbers are based on data collected from 30 - 31 IXPs, over public peering LAN.

> Number of IXPs monitored in the LAC-IX region



> Average peak traffic per IXP (in Gbps)



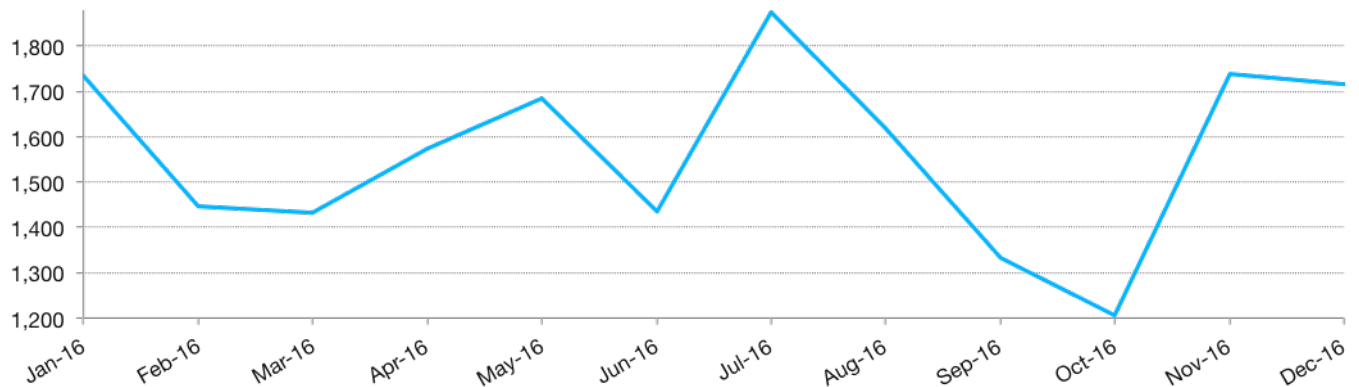
The average peak traffic per IXP increased with 3.4% in the LAC-IX region in 2016. It went from 29 Gbps to 30 Gbps. The peaks ranged from 18 Mbps to 1,280 Gbps in January and from 26 Mbps to 1,067 Gbps in December.

The largest IXP of this region remains IX.br (formerly PTT.br) in Brazil (operates in 25 locations). IX.br in Sao Paulo has the largest traffic, peaking above 1000 Gbps each month (averaging at 1125,5 Gbps in 2016).



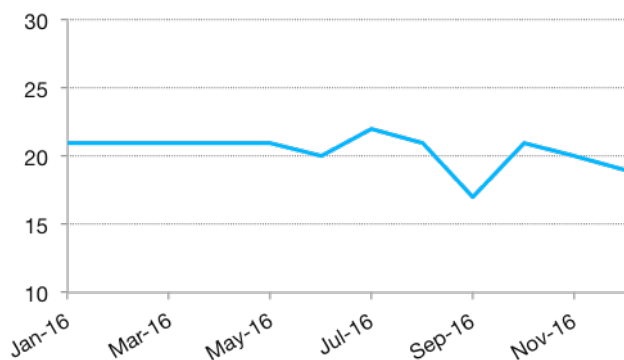
# North America

> Total aggregated traffic growth in North America (in Gbps)

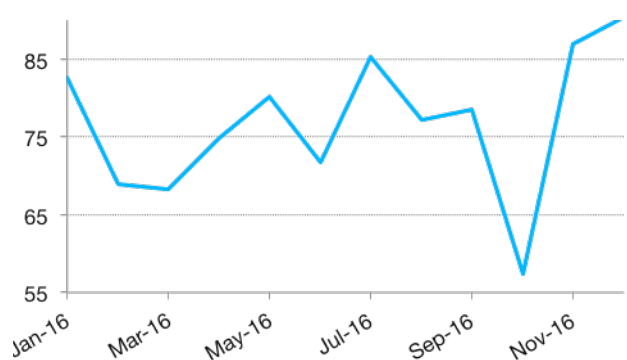


The total aggregated peak traffic in North America has decreased with 1.03% over the past 12 months, going from 1,735 Gbps in January to 1,717 Gbps in December. The traffic in this region fluctuated throughout the year with a significant drop in October to 1,205 Gbps. The numbers are based on data collected from 20 IXPs on average, over public peering LAN.

> Number of IXPs monitored North America



> Average peak traffic per IXP (in Gbps)



The number of IXPs we collect data from went from 21 in January, decreasing to 19 in December. The traffic peaks ranged from 10 Kbps to 519 Gbps in January and from 53 Kbps to 631 Gbps in December. The largest IXPs in this region remains SIX in Seattle, NYIIX in New York (both still showing traffic peaking above 300 Gbps each month), and Torix in Toronto with an average peak exceeding 200 Gbps. The average peak traffic per IXP increased with 8.4% in 2016 going from 83 Gbps in January to 90 Gbps in December.