

# IPv6 Adoption Growth in UK Internet Exchanges

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# Pro IPv6 Disclaimer

Hurricane Electric has worked to advance IPv6 deployments globally.

- HE received its first IPv6 allocation in 2001.
- In 2007 HE was one of the first ISPs to convert to a native IPv6 backbone.
- HE peers with more ASNs over IPv6 than any other network.

# IPv6 Adoption over Internet Exchanges

We will look at how Internet exchanges have progressed in adoption of IPv6 since last year.

- A quick overview of the health of Internet Exchanges.
- Examine how IPv6 peering over Internet exchanges in has progressed since last year.
- A look at what we need to do to move forward.

# IPv6 Adoption over Internet Exchanges

Internet exchanges continue to grow and thrive.

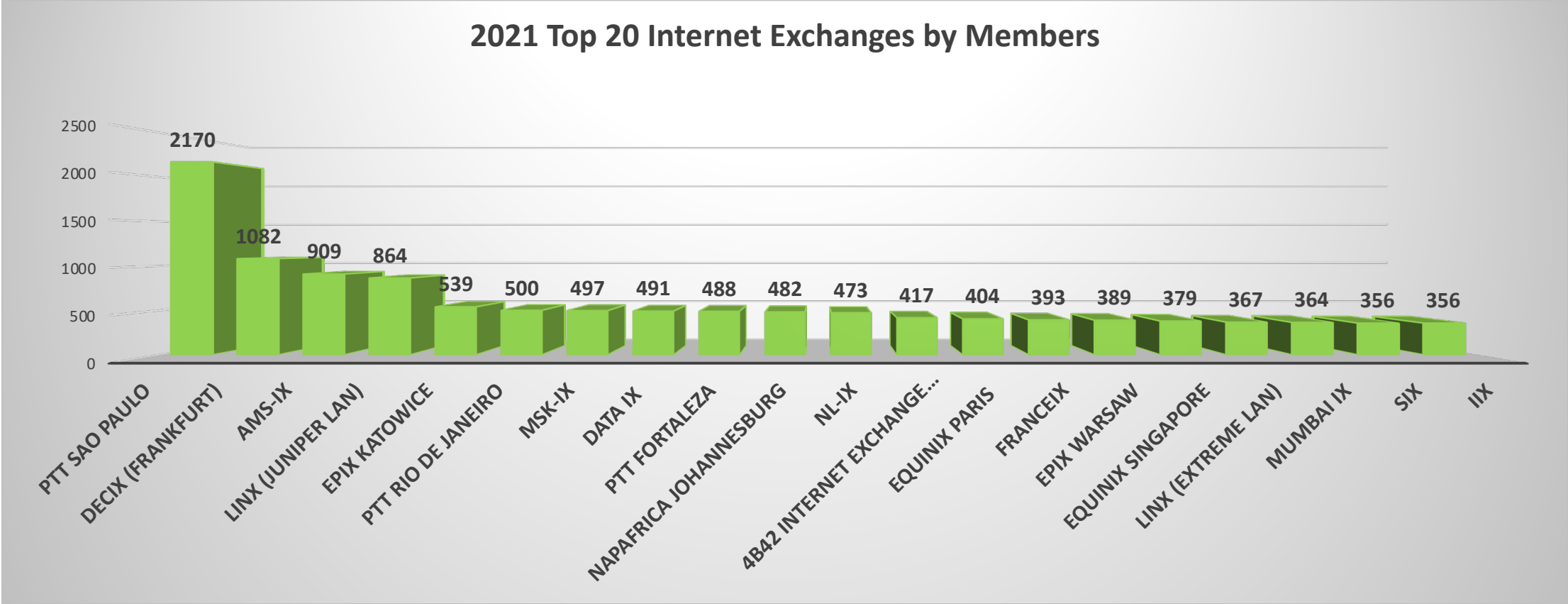
## In 2020, 7 new exchanges:

- Quad Cities Internet Davenport, IA USA
- Belarus National Internet Exchange  
Point Minsk Belarus
- Aqaba IX Aqaba, Jordan
- ManxIX Douglas, UK
- Palestine Ramallah Palestine IX  
Ramallah, Palestine
- Romania Commercial Internet Exchange  
Bucharest, Romania
- MekongIX Phnom Penh, Cambodia

## In 2021, 6 new exchanges:

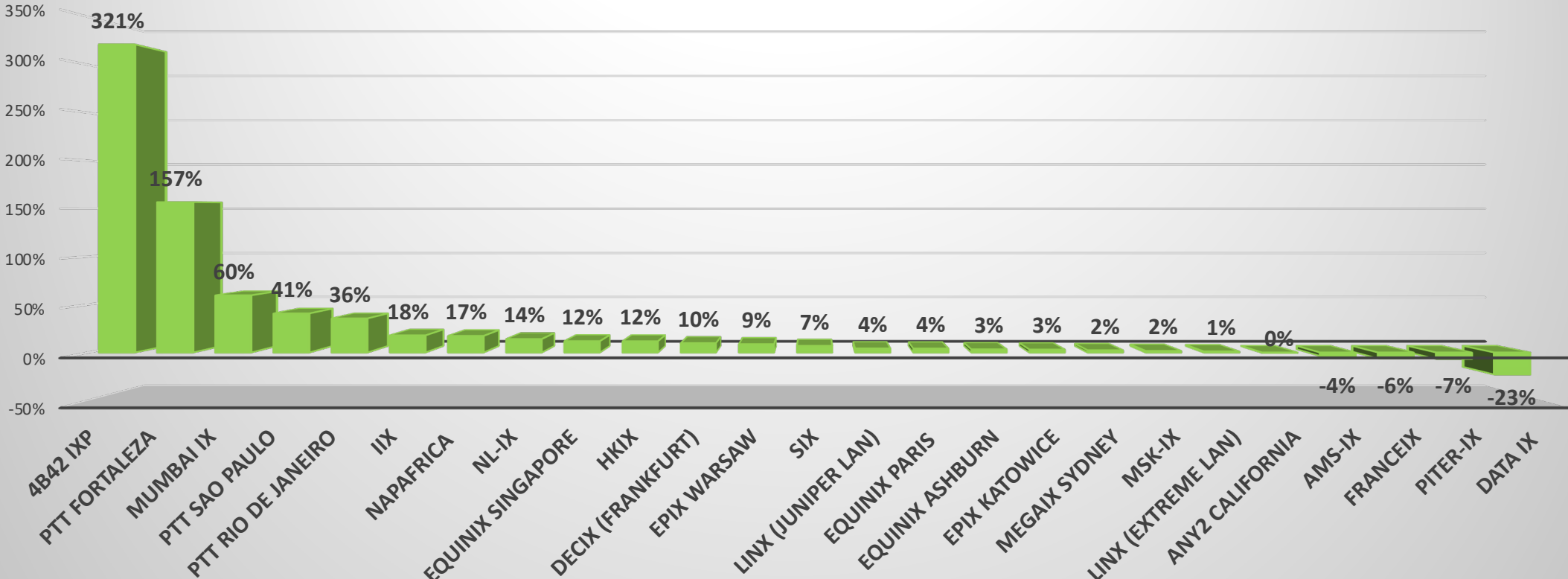
- BFIX Bobo-Dioulasso, Burkina Faso
- STIUXX, Taipei, Taiwan.
- ABQIX, Albuquerque, NM USA
- DACS-IX North, New York City, USA
- [FMIX \(Fargo-Moorhead Internet Exchange\)](#), Fargo, USA
- [Saarcix](#) , Saarland, DE

# Top Internet Exchanges by Members



# Top 20 Exchanges Member Growth

Top 20 Exchanges Member Growth from 2020 to 2021



# IPv6 Adoption at European Internet Exchanges

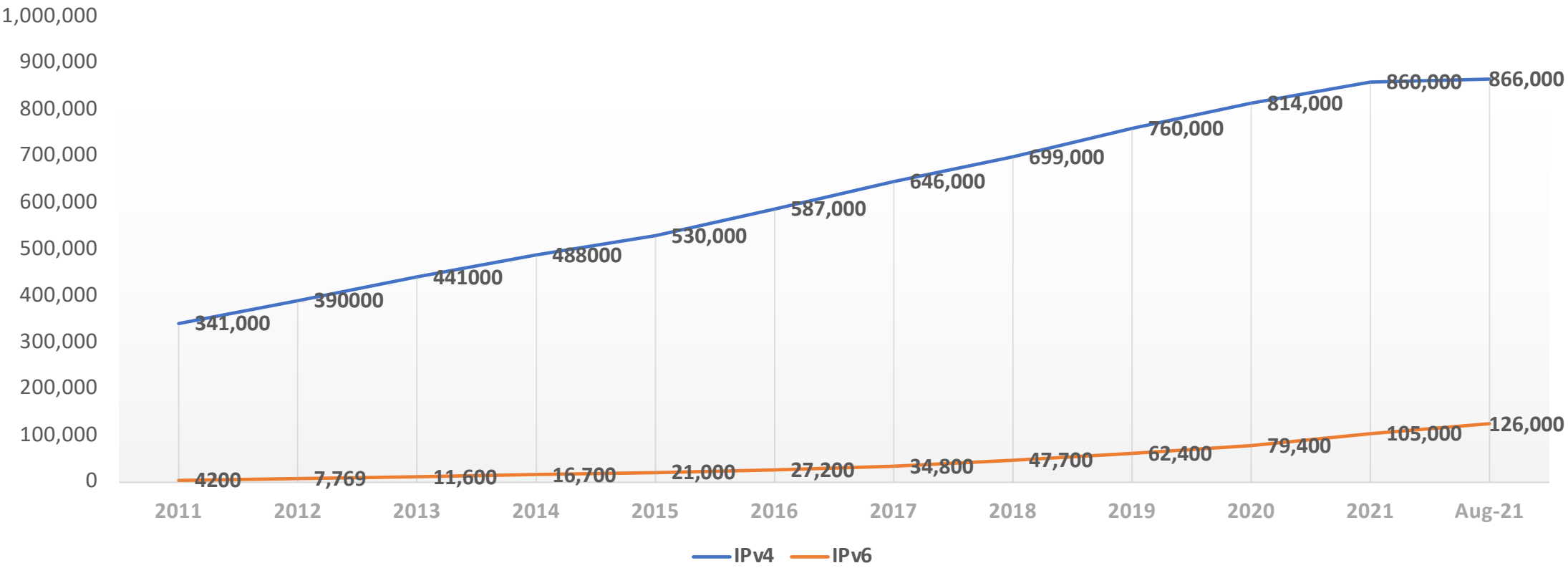
We can see that overall, membership at Internet exchanges is up.

The other thing that has an impact on IPv6 adoption is the number of prefixes being announced.

Let's look at that.

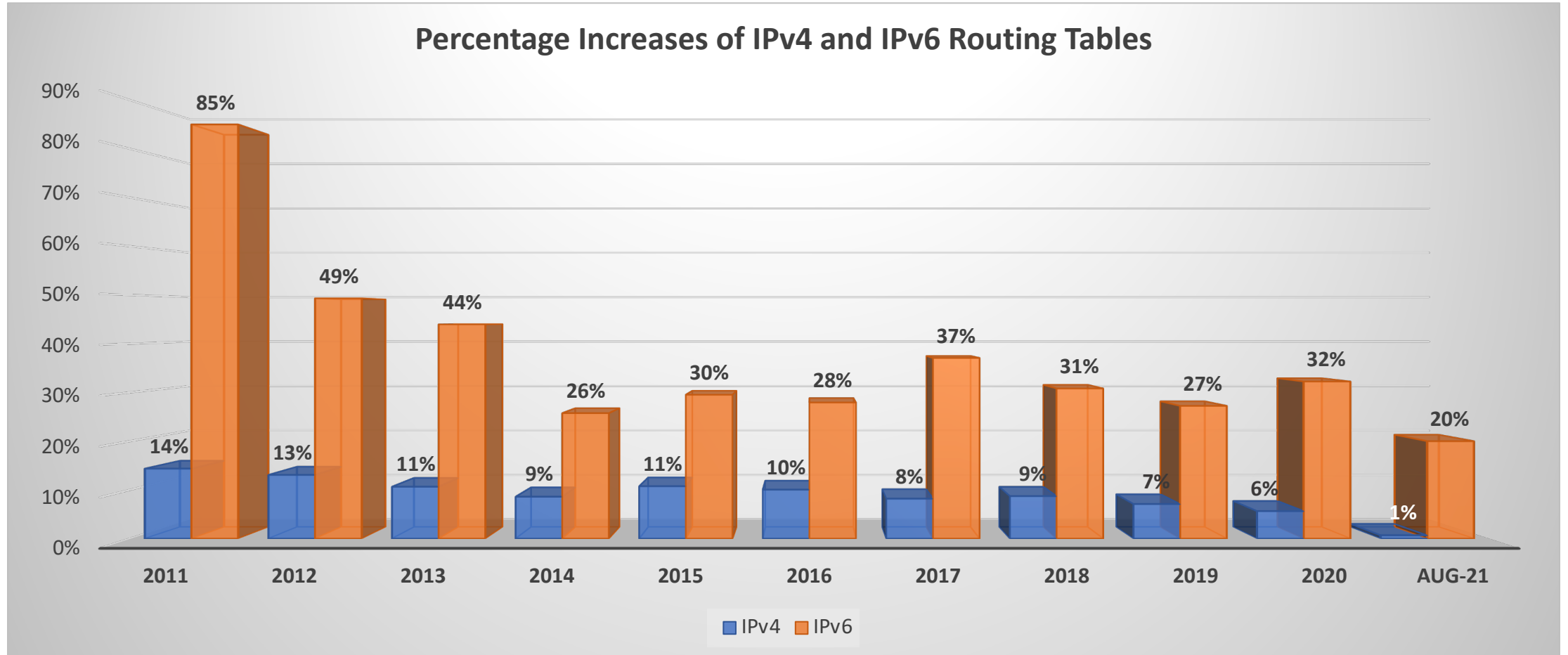
# IPv6 Adoption over UK Region IXEs

IPv4 and IPv6 Routing Table Growth





# IPv6 Adoption over UK Region IXEs

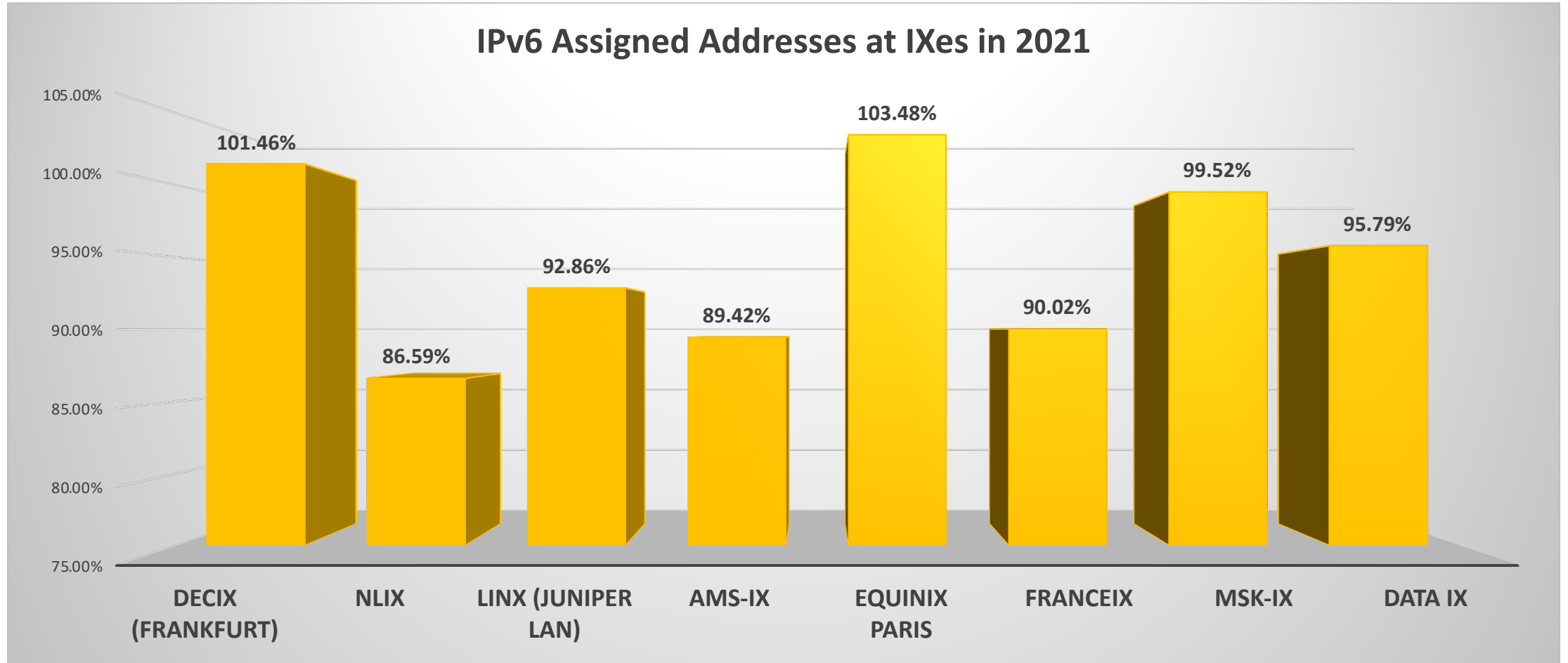


# IPv6 Adoption at European Internet Exchanges

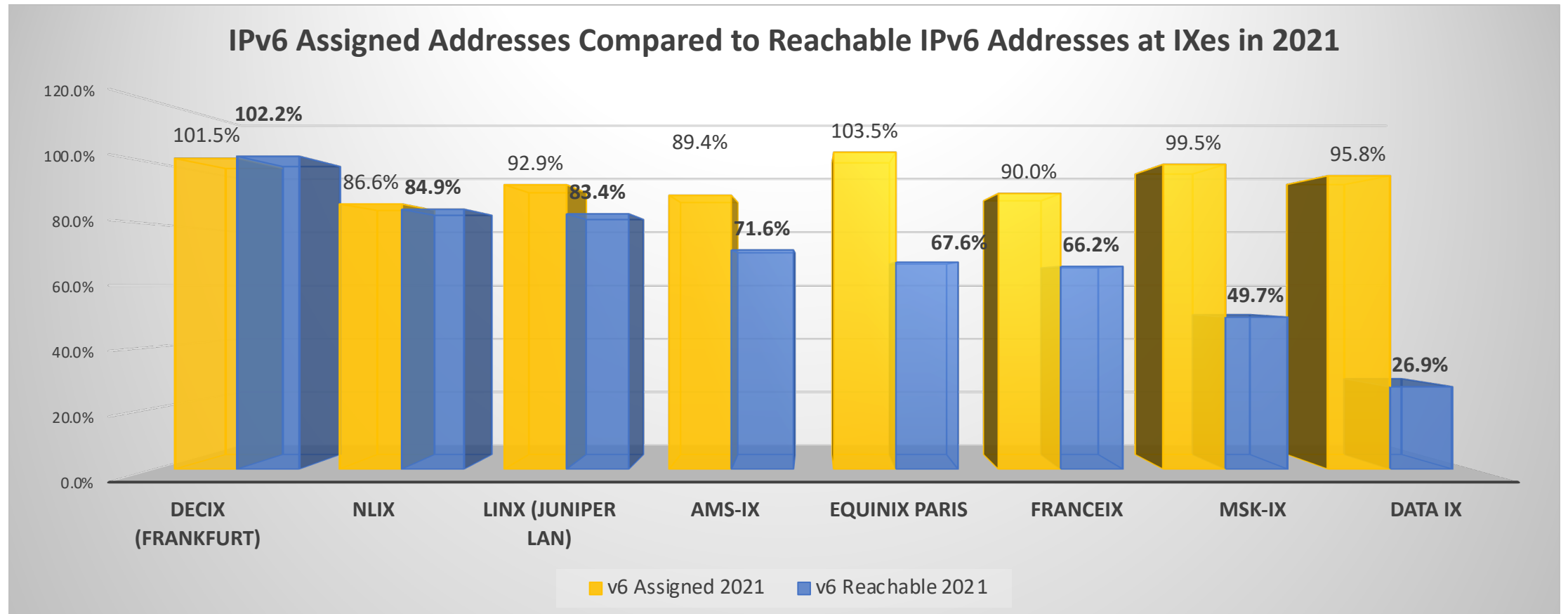
What happens at Internet exchanges influences the Internet as a whole. Here are a few additional bits of IPv6 and IX data:

- 33 percent of all networks advertise IPv6 prefixes, up from 31 percent at the end of 2020.
- There are 818 Internet exchanges worldwide, including the 6 new exchanges that formed since January.
- Europe hosts 12 of the top 20 Internet exchanges by participants in the world.
- Peers are more likely to have an IPv6 peering session on a European exchange.

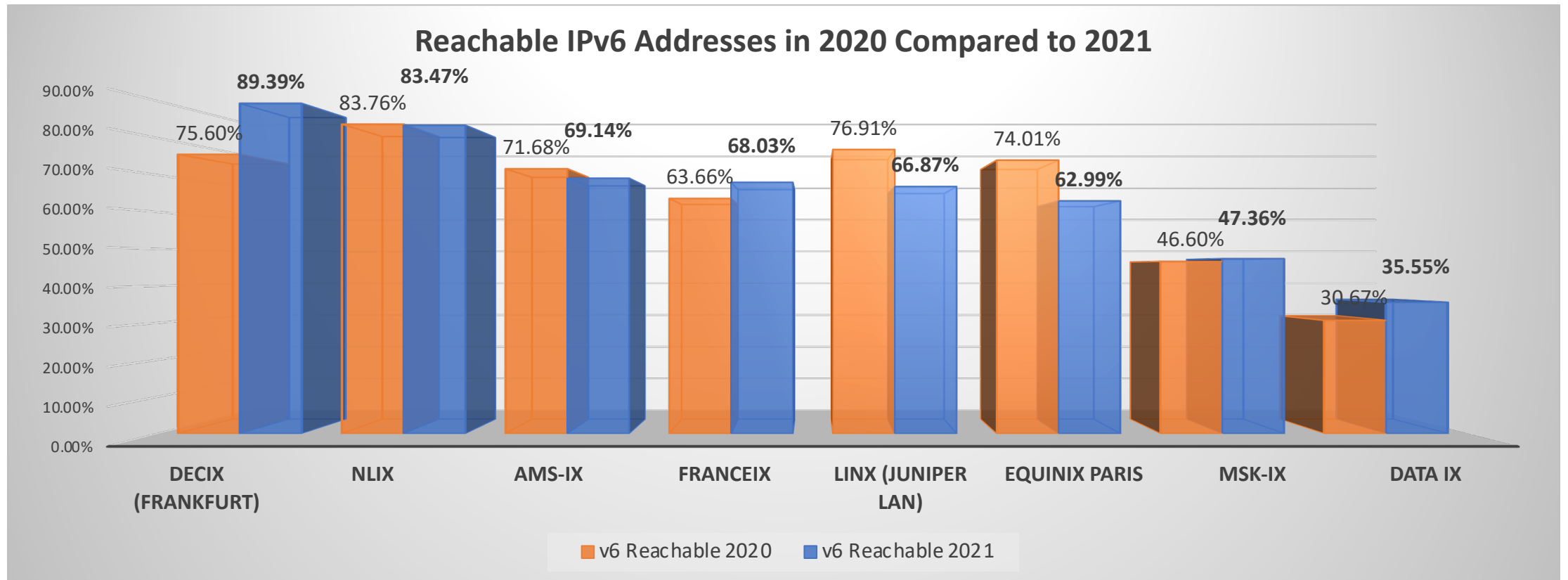
# Assigned IPv6 per IPv4 at Top European IXs



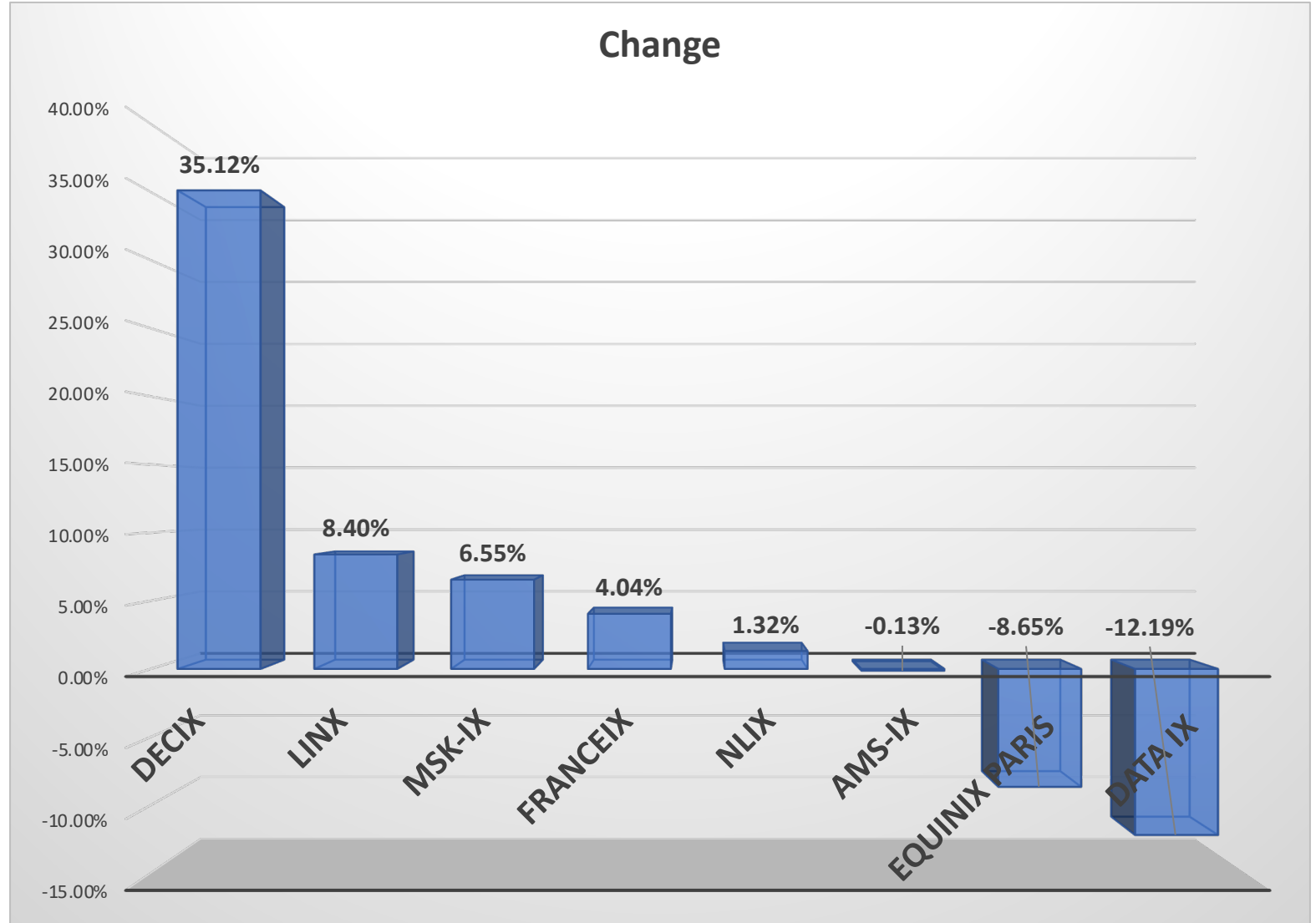
# Reachable IPv6 at the Top European IXs



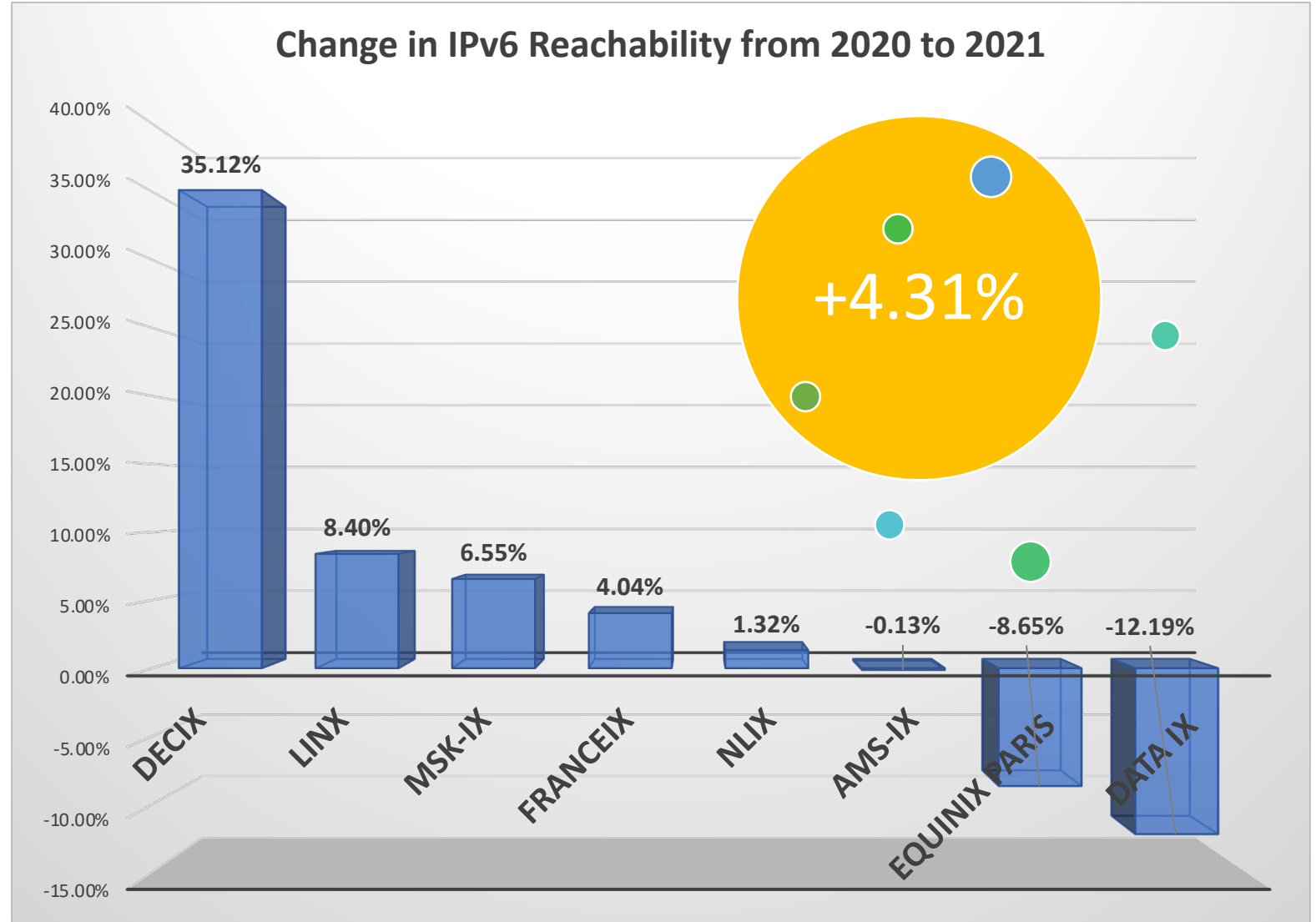
# Reachable IPv6 at the Top European IXs



# Reachable IPv6 at the Top European IXs



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# IPv6 Adoption at European Internet Exchanges

The takeaways from what was happening at the European exchanges:

- While more new exchanges continue to form, membership is down at some of the larger exchanges.
- More IPv6-only networks are joining the exchanges.
- IPv6 adoption is increasing overall.



# What about IPv6 Adoption at UK Internet Exchanges

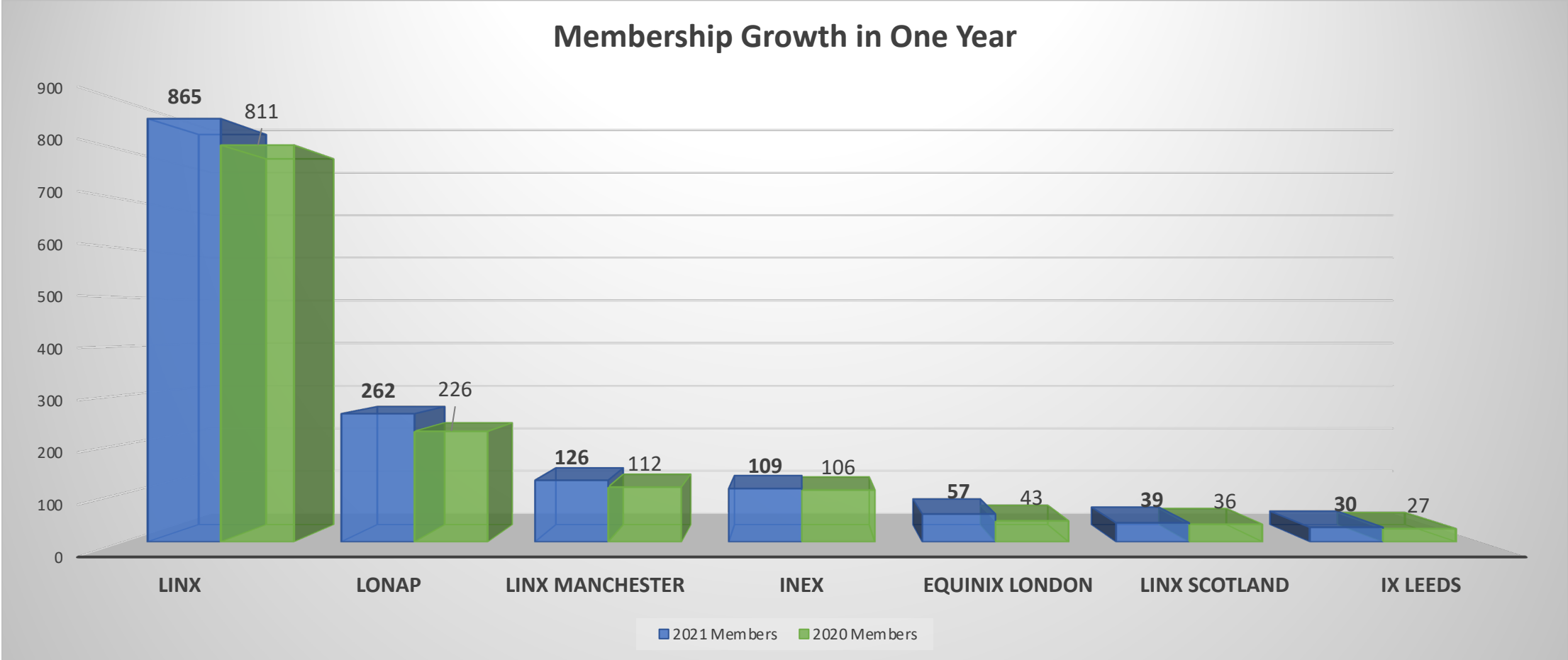
Europe had a good year, but now what you really came for:

What happened in Internet exchanges in the UK (and Ireland) since last year?

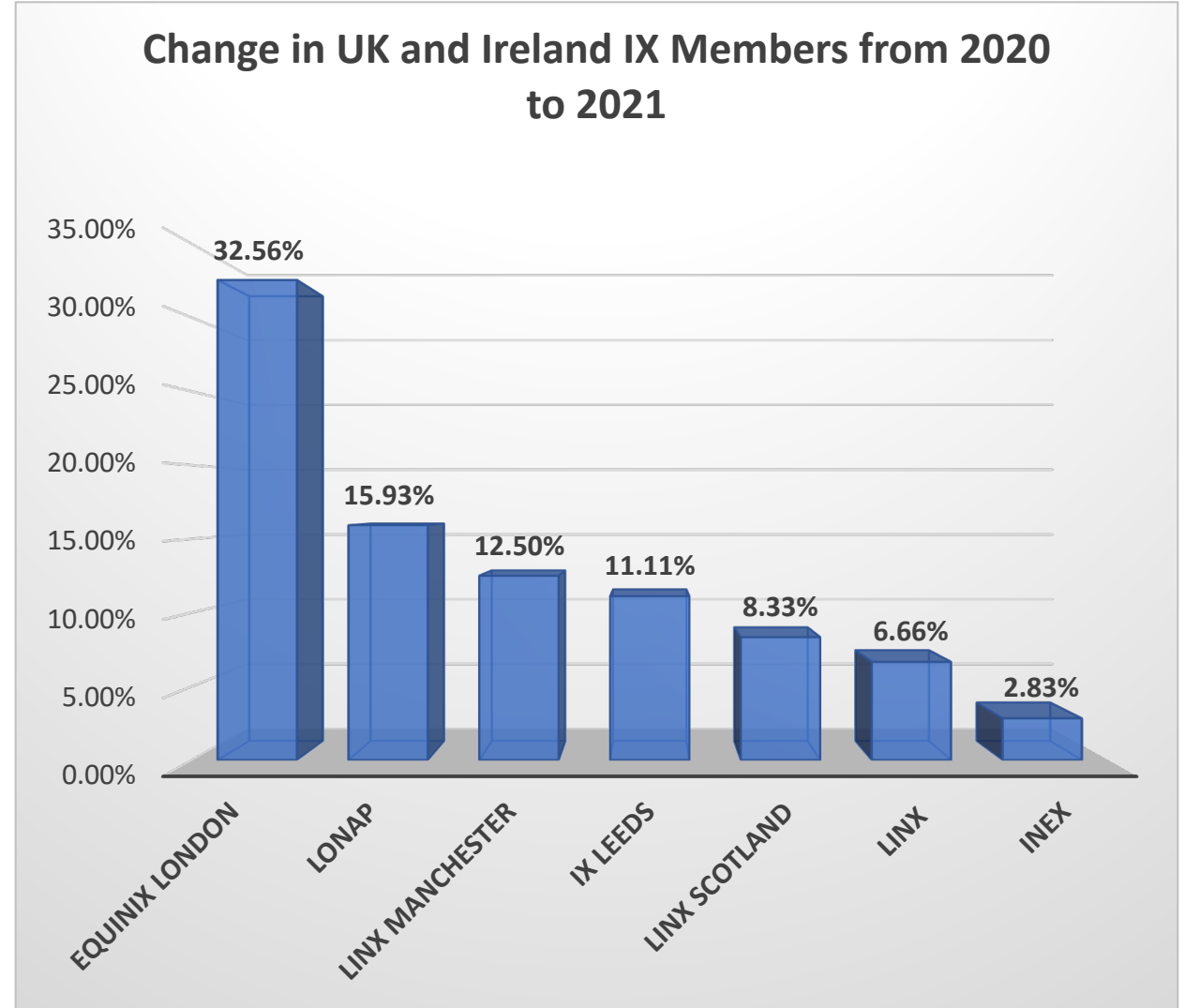
# IPv6 Adoption at UK and Ireland IXes



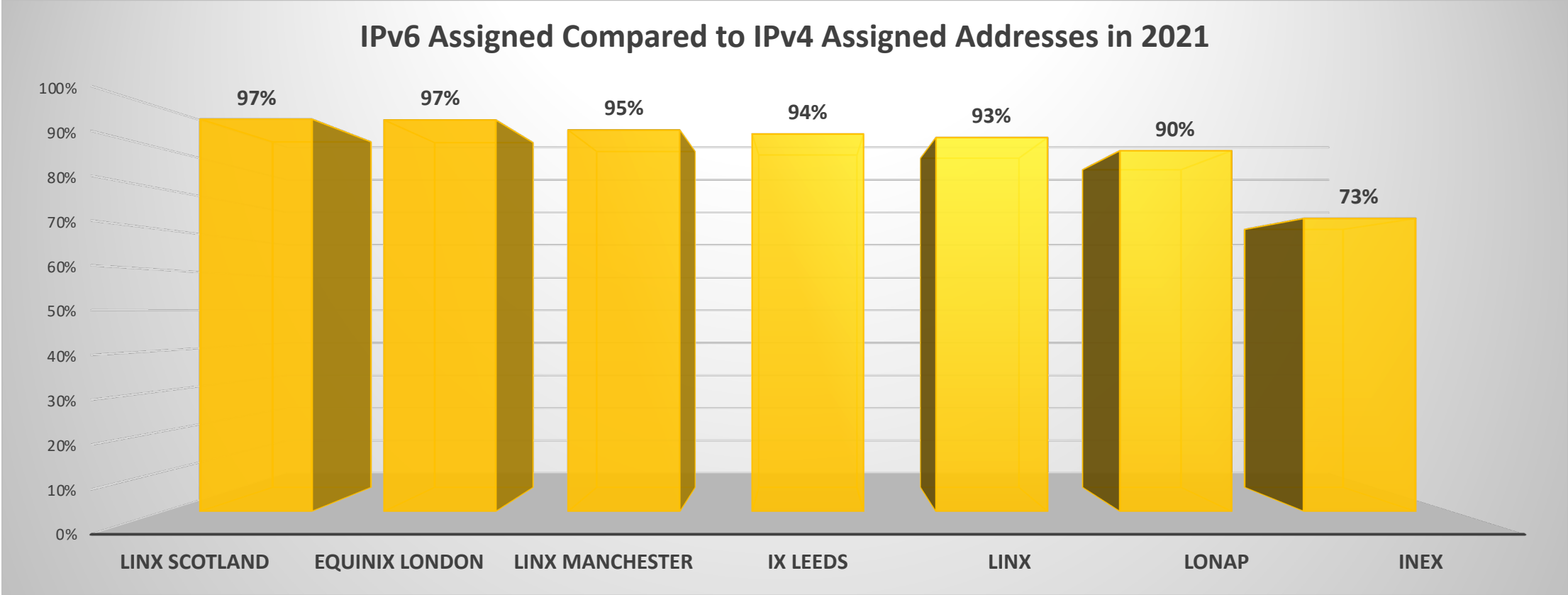
# IPv6 Adoption at UK and Ireland IXEs



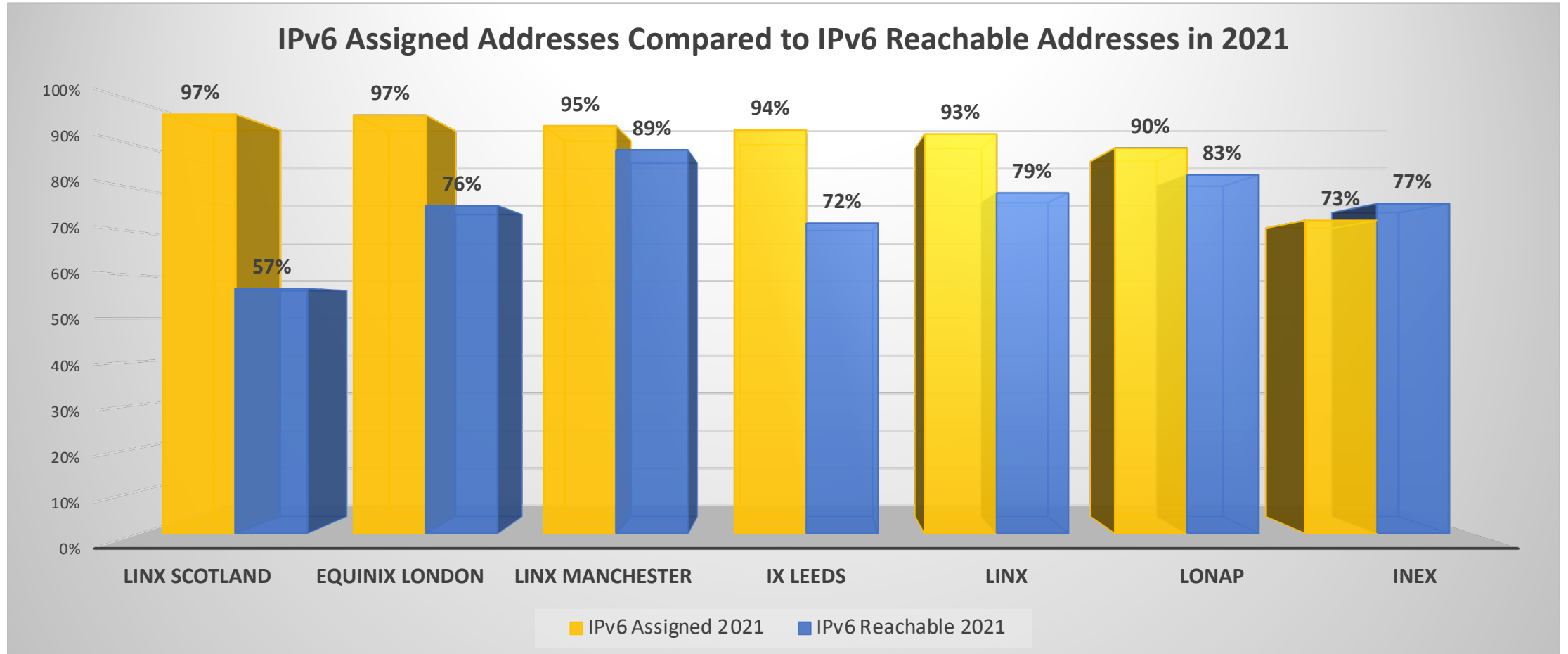
# IPv6 Adoption at UK and Ireland IXes



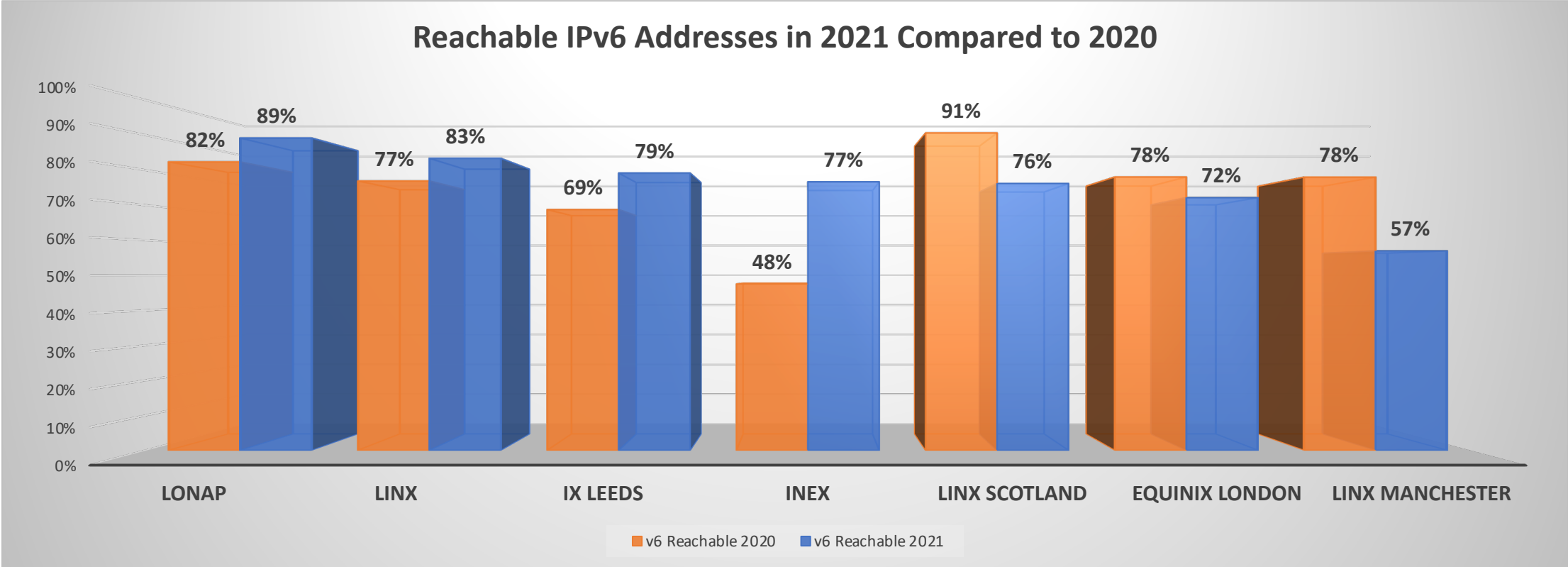
# Assigned IPv6 per IPv4 at UK and Ireland IXs



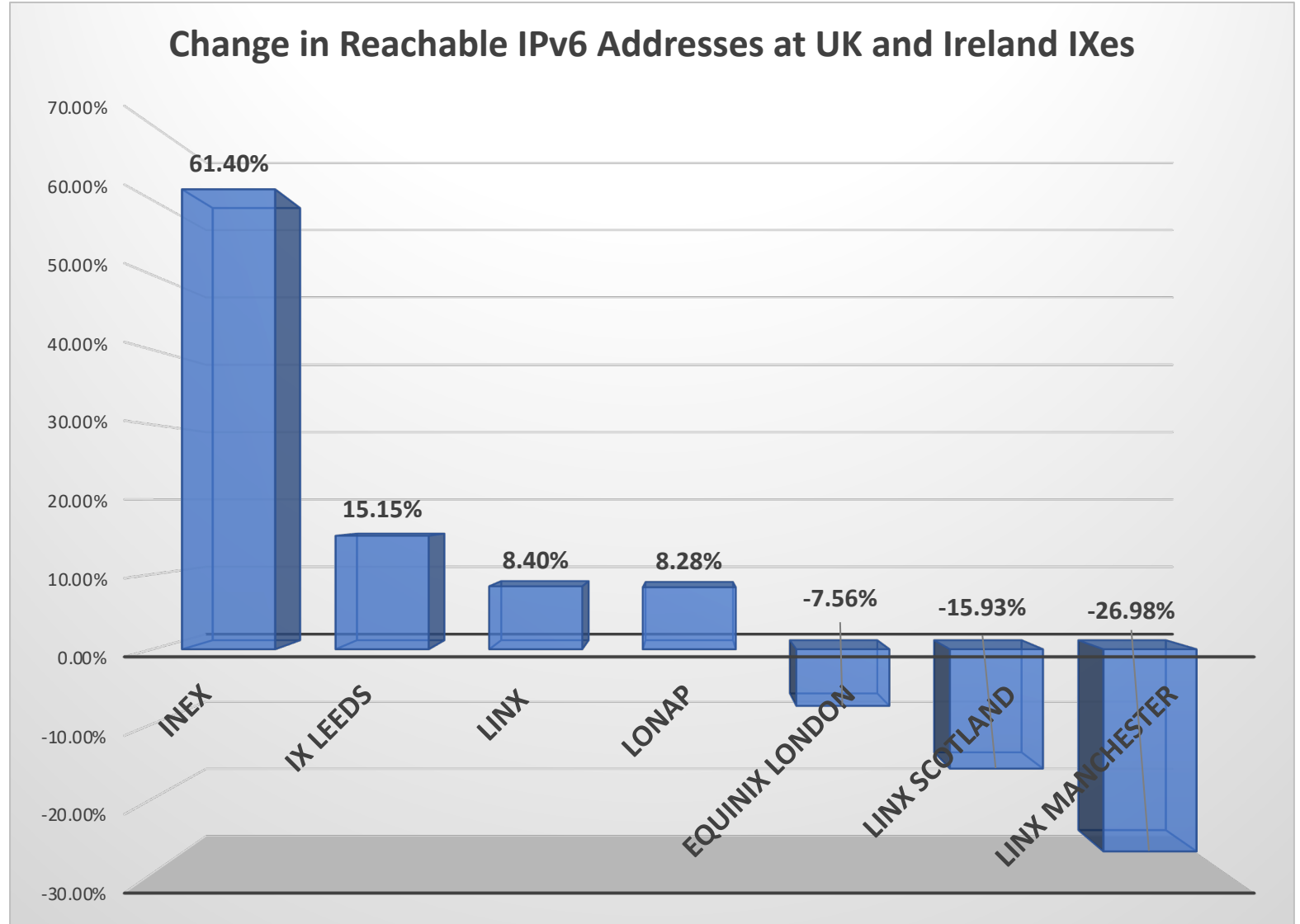
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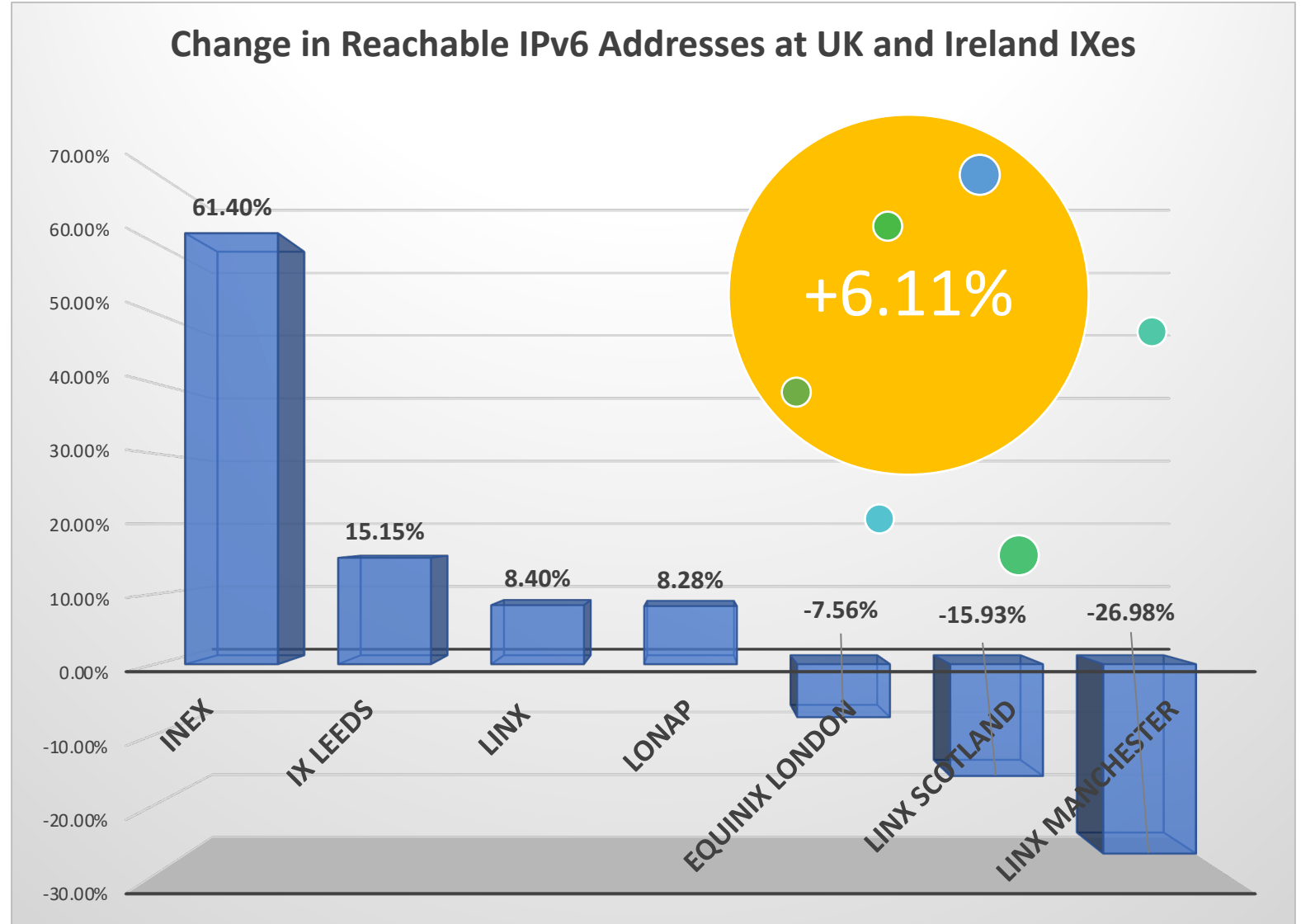


# Reachable IPv6 at the UK and Ireland IXes





# Reachable IPv6 at the UK and Ireland IXs



# Moving Forward in 2021 in IPv6 peering

More peering on Internet exchanges drives more IPv6 deployment.

The growth of IPv6 networks works in favor of those who want to stay on IPv4.

- When more traffic moves to IPv6, it reduces demand for IPv4 resources.
- When networks don't deploy IPv6, they put pressure on the IPv4 supply.
- Pressure increases prices and the cost of operating networks.

# Moving Forward in 2021 in IPv6 peering

You can do something about increasing IPv6 traffic.

- Whenever you peer, ask to turn up IPv6 sessions with the IPv4 sessions.
- Advertise your IPv6 prefixes and ask other networks to advertise theirs.
- Check back with your IPv4-only neighbors from time to time to see if they have added IPv6 peering.

# Summary

- For the first time, we are seeing more IPv6 addresses on some Internet exchanges than IPv4.
- More peers on Internet Exchanges are IPv6 only.
- No matter what your protocol politics, increasing peering over IPv6 will help you meet your objectives.

Thank you  
for your kind  
attention.

Questions?

# Resources

- Internet exchanges data  
<https://bgp.he.net/report/exchanges>
- Internet exchange reachability data gathered from Hurricane Electric's network.
- IPv6 Adoption  
<https://www.akamai.com/us/en/resources/our-thinking/state-of-the-internet-report/state-of-the-internet-ipv6-adoption-visualization.jsp>