

UNDERSTANDING REMOTE PEERING:

Guide to Peering at the London Internet
Exchange



INTRODUCTION

Growth in global cloud, content and digital communications is driving the need for efficient exchange of traffic at the world's internet hubs.

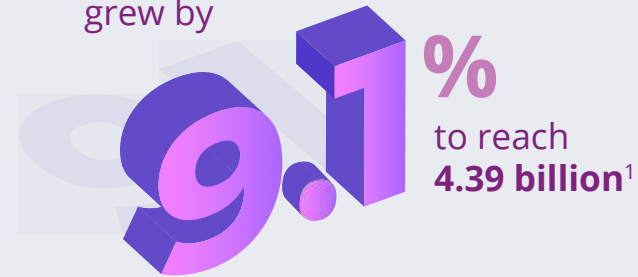
In 2019, the [number of global internet](#) users grew by 9.1 percent to reach 4.39 billion people online. Video streaming is set to [nearly double by 2022](#), accounting for 82 percent of internet traffic, while internet gaming traffic will grow by a staggering ninefold within the same period.

The increased consumption of online media and applications is challenging organisations to deliver exceptional digital experiences. This means bringing them as close as possible to their end users.

Over-the-top (OTT) providers, media companies and digital service providers need to establish local presence to exchange traffic with local internet service providers (ISPs). Many are opting for a more cost-effective way by peering at an internet exchange (IX), but connecting to these exchange points can be complicated and hard to manage.

This guide will explain how remote peering can help these organisations simplify their connection to the IXs and deliver connectivity to seamlessly access multiple internet exchange points (IXPs) across the globe efficiently.

Global internet users grew by



By 2022, there will be nearly

2x video streaming²



Internet gaming traffic will grow

9x from 2017 to 2022²

¹ Digital 2019: Global Internet Use Accelerates: <https://wearesocial.com/blog/2019/01/digital-2019-global-internet-use-accelerates>

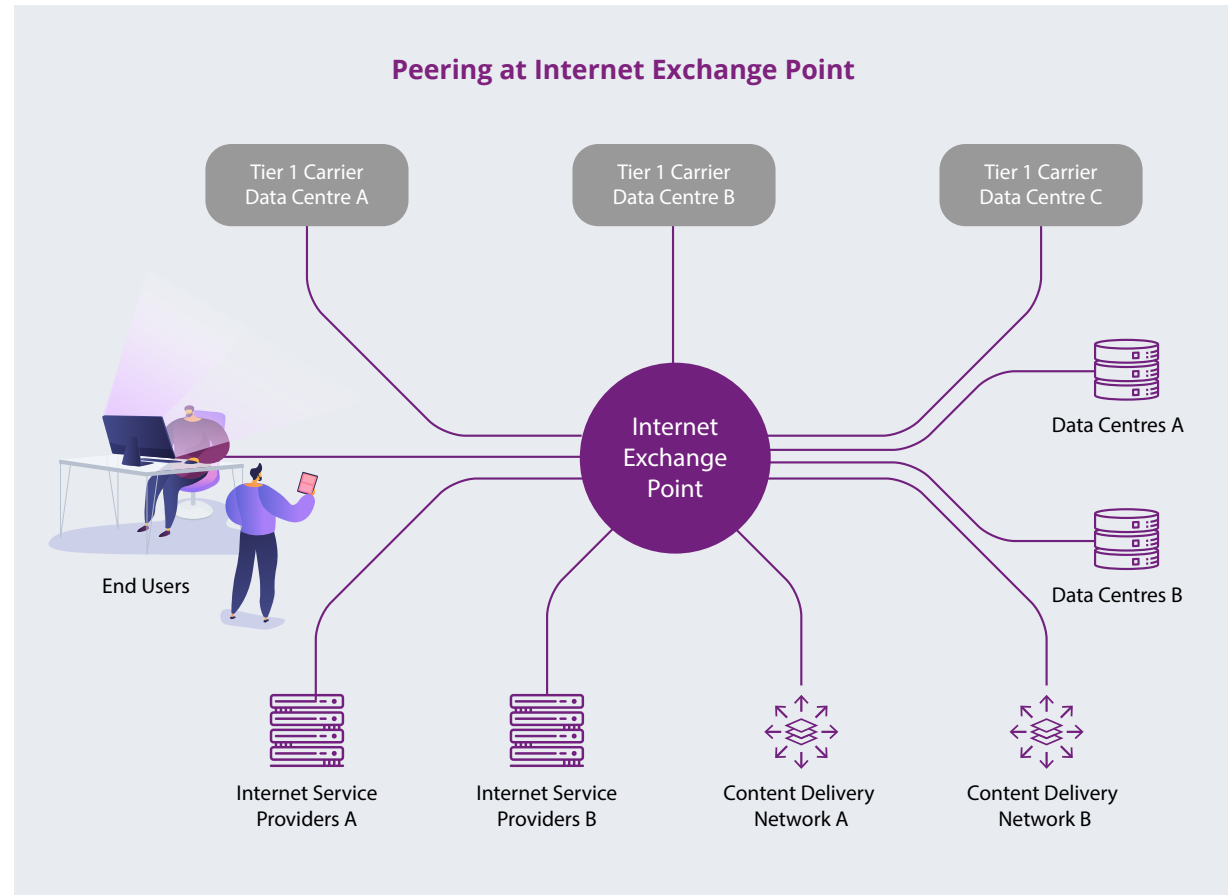
² Cisco Visual Networking Index: Forecast and Trends, 2017-2022 White Paper: <https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-741490.html#targetText=The%20amount%20of%20VoD%20traffic,from%201%20percent%20in%202017.>

What is Remote Peering?

Peering is the arrangement of traffic exchange between networks. A large ISP could allow traffic from other ISPs in exchange for traffic on their backbone network, and also exchange traffic with smaller ISPs to reach regional end points. This is basically how the internet works.

An IX provides a neutral peering point between service providers and networks, facilitating the exchange of internet traffic within an enabled physical location known as an IXP. To peer at an IX, members will need to have a point of presence (PoP) at the exchange point.

Alternatively, remote peering offers direct access to the IXP without the need for a PoP. This reduces the need for additional installation costs in deploying hardware or colocating in the same facility. It is a more cost-efficient and flexible way to access multiple IXs.

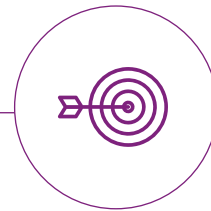


DRIVERS FOR PEERING AT IXPs



Reduced Costs

Peering offers a hub-and-spoke model that delivers greater cost efficiency when compared to buying IP transit and arranging peering agreements with local ISPs. By peering at an IXP, organisations gain access to hundreds of potential partners and can exchange internet traffic on a settlement-free basis.



Improved Resilience

Connecting to a single ISP means having a single point of failure. A range of peering partners are immediately available at an IXP, supporting the acceleration of traffic growth while improving resilience with multiple redundant routes.



Optimised Online Experience

IXPs help to reduce the number of hops between service providers, which helps to lower network latency. This significantly improves end users' online experience when using bandwidth-sensitive applications such as video on-demand and online gaming.

INTRODUCING LONDON INTERNET EXCHANGE (LINX)

- LINX London, UK
- LINX NoVA, US



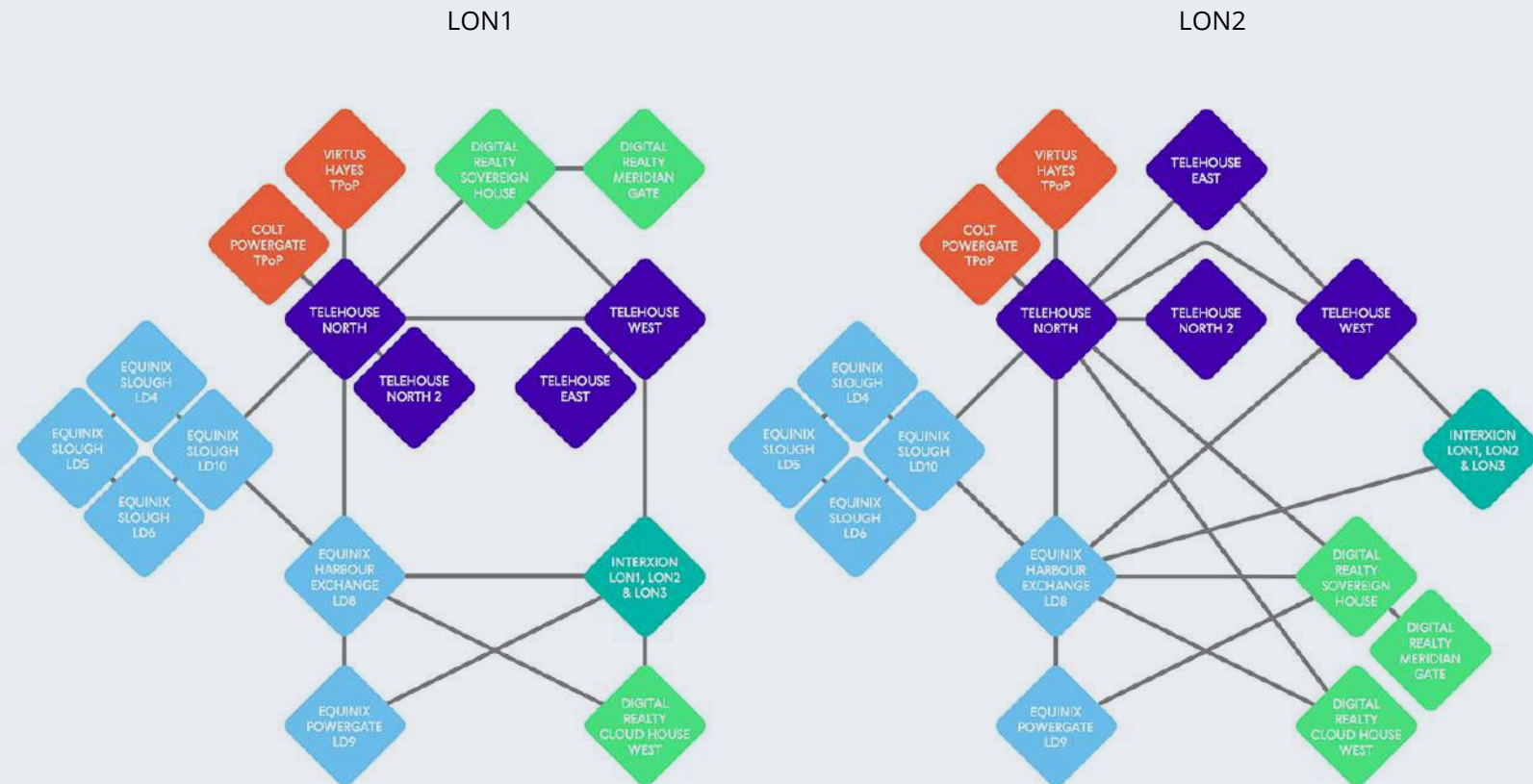


**LINX London, UK
AS5459**

The LINX London Network consists of two separate high-performance Ethernet switching platforms (LON1 & LON2) accessible from 16 data centre locations.

Switches from different equipment vendors are deployed in two diverse networks to provide an extra level of fault-tolerance, the logic being that both systems shouldn't develop the same fault at the same time.

With over 950 member ASNs connecting from 80 different countries worldwide, LINX members have access to direct routes from a large number of diverse international peering partners. Using LINX allows a reliable exchange of traffic with increased routing control and improved performance.



[View LINX's Connected Networks](#)

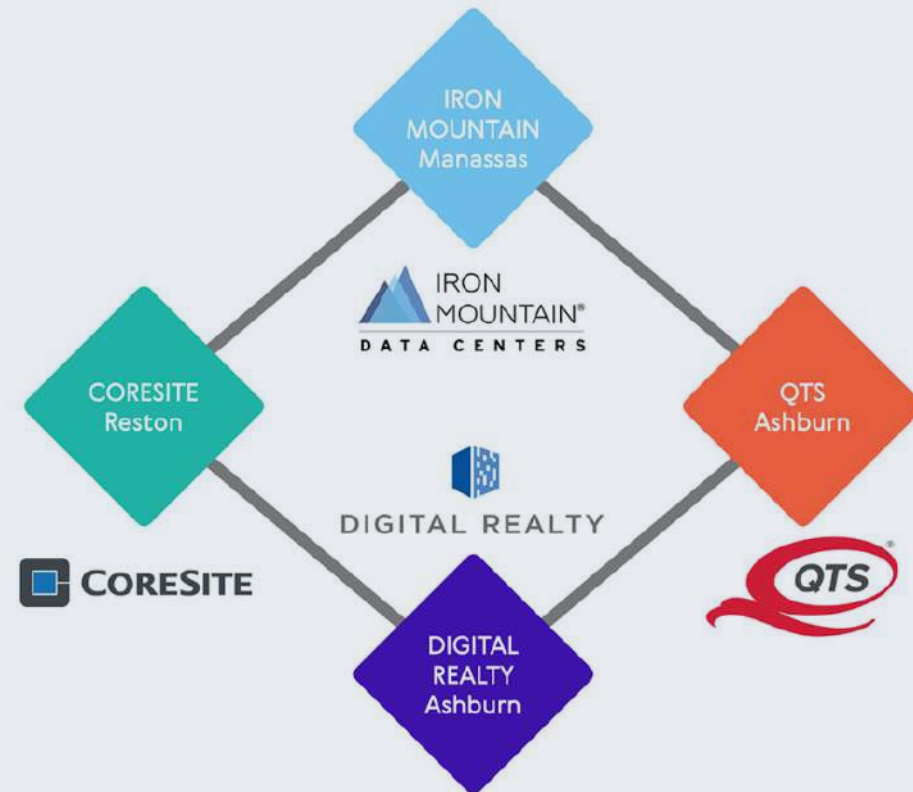


**LINX NoVA, US
AS8714**

LINX NoVA is a fast-growing interconnection platform, present in multiple data center locations within the Northern Virginia region – a key location for networks to be present. It is a well-established internet exchange point (IXP) with many diverse networks connected.

Established in 2014, LINX NoVA has a strong community of unique and diverse networks including leading content delivery networks (CDNs) and regional and national ISPs such as Satellite Service Providers.

LINX NoVA is present in multiple location for increased resilience including Ashburn, the communications gateway to Europe. It is close to the Virginia Beach Landing Station where key subsea cables terminate including MAREA (US to Europe) and BRUSA (South America to US)



[View LINX's Connected Networks](#)

TRADITIONAL IXP ACCESS vs. REMOTE PEERING



TRADITIONAL IXP ACCESS vs. REMOTE PEERING

Traditional IXP Access

IXs were created to interconnect autonomous systems (AS) and keep traffic local for improved IP quality. Networks peer at an IXP to directly connect with each other without having to transit and peer via third party ISPs. It reduces the need for upstream transit to reduce cost while increasing the number of peering options.

How to Connect

To get started, organisations have to join the IX as a member and install hardware at its enabled site in addition to buying connections to the IXP. This means managing multiple suppliers which include the IX, colocation and network service provider.

The IXP facilitates peering, but peer agreements aren't automatic. They will have to meet the basic technical requirements for peering with other members:

- Publicly routed AS number (ASN)
- A block of public IP addresses
- Edge router running Border Gateway Protocol (BGP)

When a peering agreement is made, members will have to configure its edge router to establish a bi-lateral BGP peering session at the IXP to connect to the peering partner.

The Move to Remote Peering

Remote peering enables organisations to seamlessly connect to an IXP without being physically present at the exchange point. This can be done via a service provider with pre-existing connections to the peering platform.

The use of remote peering paves the way for more organisations to peer at IXs globally. It is a faster and more cost-efficient method to access multiple IXPs, reducing the number of suppliers and overall network costs. Connectivity can be managed easily without the need to buy a physical port or deploy equipment at every exchange point.



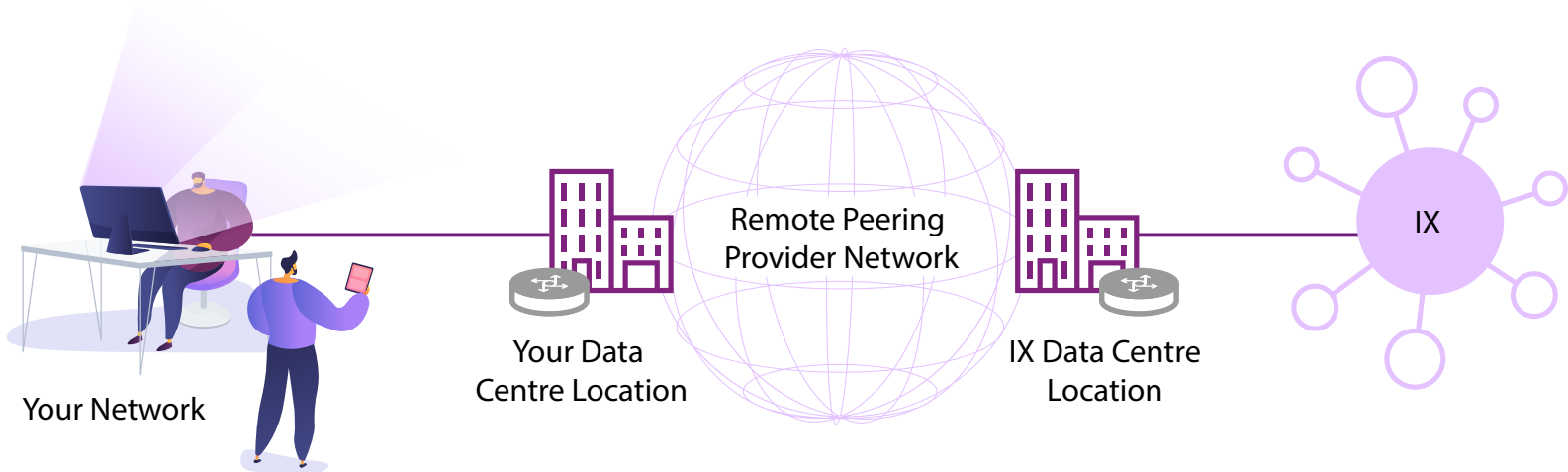
A remote peering provider, or an IX's reseller partner, usually offers scalable bandwidth capacity, flexible service terms and access to a variety of IXs. Organisations will still need their own ASN for peering with other members, while retaining control over their peering and routing policy.

Automated and Programmable Remote Peering

Many remote peering providers have applied software-defined networking (SDN) technology to build network fabrics with access to IXs globally. Organisations can deploy connections to multiple IXPs using a Network as a Service (NaaS) model. This brings the flexibility, agility and scalability of cloud-based services to remote peering.

Service providers with pre-existing connections with the IXPs can make these service locations visible on a NaaS platform. It allows for self-service provisioning of connectivity services to the IX of their choice, further automating the process of remote peering. End-to-end connectivity can be easily managed via a single platform with complete visibility over the network performance.

The centrepiece of SDN is the use of application programming interface (API) in service delivery. Management of network resources can be orchestrated at the application layer and integrated between existing platforms (eastbound). This streamlines the delivery process and can significantly improve the speed of provisioning.



Accelerating Remote Peering with IX-API

IX-API provides an interface for provisioning key services at multiple IXs. IX-API was developed by AMS-IX, DE-CIX and LINX to support fully end-to-end automated processes and enable networks to configure, change and cancel services at multiple IXs. Epsilon was the first connectivity provider to adopt the IX-API.

EPSILON SUCCESS STORY

Optimising User Experience Globally with On-demand Remote Peering

The Challenge



aamra wanted to deliver a high-quality user experience to its customers when they access European content and services. It required connections to the [London Internet Exchange \(LINX\)](#) to peer with its large pool of diverse international peering partners.

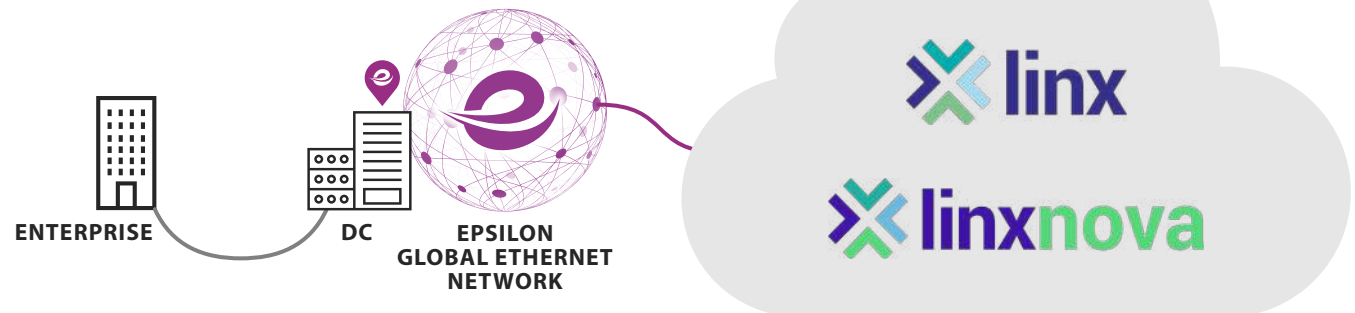
However, there are complex challenges around establishing the network infrastructure to peer at the IXPs. It also lacked the relevant skill sets and technical knowledge in peering. aamra needed a partner that could give them the scalability to access the IXs at new locations, without the need to manage infrastructure costs or adding complexity to its operations.

Epsilon's Solution

- Epsilon's Remote Peering solution provides direct and secure access to the [world's largest IXs](#).
- aamra gained a single platform for connecting on-demand to multiple IXs anywhere around the world.
- With Infiny, aamra can interconnect with [over 260 global data centres](#) and access IXPs in unique and high-growth markets.
- The solution provides a seamless way to scale connectivity to IXs in Europe and across the globe, maximising aamra's efficiency and performance to deliver a consistent user experience.

The Results

- Optimised delivery of content and cloud-based services globally.
- More control over the destination and delivering its content within fewer hops, which improved overall latency and jitter.
- Freed up time and resources to focus on value-adding services for its customers.
- A full suite of networking solutions that are ready to grow and evolve with its business.





SIMPLIFY PEERING AT GLOBAL INTERNET EXCHANGES

Remote peering enables more organisations to benefit from peering at IXPs globally. As demand for cloud, content and digital communications continues to accelerate, remote peering becomes the most efficient way to bring applications and services closer to end users and deliver an optimised online experience. When remote peering is procured and managed using an SDN platform, organisations are in the driver's seat and have a global peering ecosystem at their fingertips.

Contact us to discuss your cloud transformation

Europe: +44 207 096 9600 | Asia: +65 6813 4020

epsilontel.com • info@epsilontel.com