EMPOWERING SERVICE PROVIDERS TO MEET NEW BUSINESS DEMANDS

Guide to monetising cloud networking opportunities with on-demand connectivity

CONTENT

ENTERPRISES ARE MOVING THEIR BUSINESS TOWARDS THE CLOUD

In the past, connectivity was simple. Large enterprises hosted the majority of data and applications on-site or at a nearby data centre, and satellite offices connected back to HQ using basic technologies. Since everything important was hosted nearby, traffic from satellite offices could be routed through HQ for security purposes. This slowed down user access to the corporate network, but that was a minor concern.

However, things have changed. Practically every organisation has adopted some form of cloud services and storage to some degree, while many have embraced hybrid cloud strategies. On top of that, most organisations employ at least a handful of Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS), and Infrastructure-as-a-Service (IaaS) solutions offered by cloud service providers (CSP). Now, a huge percentage of network traffic must be routed out to third party network service providers for these cloud services.

WHAT IS THE PUBLIC CLOUD TO YOUR ENTERPRISE CUSTOMERS?

Cloud computing has become ubiquitous and widely accessible to businesses via public internet connections. And the payoff for enterprise? Faster-paced business, more flexible working, increased productivity, and lower operational costs overall.

Those who already use cloud services, and are familiar with the benefits, will fully understand how this has revolutionised modern business. An increasing appetite for cloud applications has driven the rapid maturity of the market, which is hardly surprising when you review what cloud services mean for the modern enterprise. It allows them to be what they need to be in modern times – agile, flexible, cost efficient and infinitely scalable.
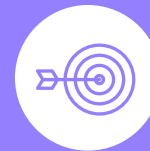
Flexible pricing options based on different SLA offerings

Infinite scalability

Only pay for the services and resources you use

Faster deployment, without large investment

Cloud environment maintained by CSPs

THE OPPORTUNITY FOR MANAGED SERVICE PROVIDERS

With increased cloud investments, managed service providers (MSP) are facing a new set of challenges. They now have to manage cloud complexity and find new ways to serve enterprise cloud demands more effectively.

Enterprises also often lack the expertise and resources to keep up with the latest cloud technology trends. They will rely on their technology partner to provide the service and expertise for their organisation.

MSPs can capture this opportunity in cloud adoption by expanding their service offering with cloud networking. To achieve rapid scalability, partnership is the faster way to reach new markets and deliver a more comprehensive solution to the enterprise customers.

CHALLENGES OF CONNECTING TO THE CLOUD

Service outages, poor performance and security risks are some of the most common cloud pitfalls today.

NO NETWORK = NO WORK

As cloud computing matures, the demands for instant access to everything, everywhere, on any device, continues to ramp up. Businesses can no longer ignore network infrastructure that underpins the delivery of their critical apps, cloud services and IT strategies.

" Traditional networking models are really not designed to support and fuel the growth of cloud. The cloud is all about scale, agility, ease of access and on-demand. Today, we need to build network and connectivity services designed to support the growth of cloud services. "

BUT WHOSE FAULT IS IT?

CSPs and Software-as-a-Service (SaaS) companies are often blamed for service outages but, in reality, have limited control over a reduced quality in their services owing to poor connectivity. But enterprise rely heavily on the public cloud and its applications, especially as hybrid IT strategies become commonplace. As a result, businesses must combat connectivity problems by investing in network connectivity strategically.

Removing the weak link at the network layer

The network is largely ignored when migrating to a cloud environment, with businesses instead focusing on cost and scalability. But they soon realise connections are not robust and secure enough to support next-generation workloads and apps.

As a result, enterprises are confronted with latency and response time issues. This is not solely their fault; network operators are also failing to consider this when selling connectivity to enterprises, making the public internet the final remaining weak link in the layers of service delivery.

CONNECTING TO THE PUBLIC CLOUD

There are several different ways to connect to the public cloud, public internet just being one of them. In this section we will discuss your options and key considerations for your cloud strategy.

THE PUBLIC INTERNET THE EASIEST, BUT NOT ALWAYS THE BEST

Connections over the public internet are easy to set up. However, those in network architecture know that the public internet is a crucial, and often overlooked, weak link in the delivery of cloud services.

It is easy to connect to the cloud... isn't it?

A myth amongst enterprises is that it is easy to connect to and deploy cloud environments. But for many organisations, once they start building out cloud environments, they realise they need to connect back to on-premises infrastructure and for these two worlds to regularly exchange data - as with a typical hybrid environment.

NEW CHALLENGES FOR MSP

Increased public cloud adoption has also led to IT challenges in uncharted territories. IT departments are expected to do more as internal demands for cloud use accelerates, far past familiarity. MSPs are being forced to address the emerging technical skills gap, alter processes and break down silos to deal with the challenges of cloud connectivity.

For enterprises working with sensitive or mission-critical data and those that want high visibility or control over their infrastructure, the public internet creates a number of major vulnerabilities.

Public internet routes are dynamic and shared, which can lead to congestion. This means when the most direct link is not available, data packets are routed through the next best option, which you have no control over. Generally, having a backup is positive, but when routes are disrupted and the network is congested, the public internet is not reliable. This often results in packet loss and increased latency.

Cyber attacks are on the rise and the public internet is where they occur. Enterprises are particularly vulnerable to cyber attacks such as Distributed Denial-of-Service (DDoS) if they rely on the public internet. These sorts of malicious attacks are reported globally, regularly, and are on the rise. They can create serious issues for businesses in today's digital world, leading to congestion and packet loss for all traffic traversing infected routers and links – resulting in significant losses.

Multiple handoffs of packets between internet service providers (ISP) creates instability in the connection and an increased threat risk. Each time the data passes through a router, it is processed and sent along to the next device. Multi-hop packet transfer, which are common, means that several routers are involved in delivering the data to its final destination thus more points of failure and attack.

KEY VULNERABILITIES IN PUBLIC INTERNET

Repeated passing and processing of data takes time, and because more and more hops are taking place, the delivery speeds slow down.

Bad actors, Botnets and DDoS attacks are on the rise, and can create serious issues for businesses.

This negatively impacts your enterprise customers' services and their user experience.

Multi-hops also mean more points of failure and a wider surface area for attack, resulting in potentially catastrophic loss of data or downtime.

Any downtime can lead to massive losses commercially, estimated at $5,600 per minute by Gartner, as well as untold damage to the business reputation.

> **TECHNOLOGY TREND TO WATCH –** Some network service providers are looking at resource Public key infrastructure (RPKI) to secure the public internet, which introduces an additional layer of authentication via a trust anchor, but this is yet to be widely adopted by enterprise and it remains to be seen how it mitigates poor performance issues with the public internet.

VIRTUAL PRIVATE NETWORK (VPN)

A more robust path across the public internet

A VPN can be used to quickly create a private network over a more open network, and cost little more than the hosting compute power and total bandwidth transferred. However, VPN connections to CSPs are still delivered at Layer 3 via a service provider across the public internet, meaning many of the same problems remain. This includes performance issues from inefficient routing, network attacks and congested connections.

FRAGMENTED DATA PACKETS

Due to the way servers transfer data via a VPN, packets are often large and have to be broken down before being forwarded on. This fragmentation and reassembly may cause CPU and bandwidth overhead, which slows down the overall performance.

> We are changing what is possible in networking, enabling the cloud to deliver the connectivity services of the future. Businesses are now expecting their cloud connectivity to be on-demand, globally scalable, data-driven and guaranteed quality.

KEY REASONS VPN IS NOT SO GREAT

Public internet connectivity, meaning performance issues remain

Prone to MTU fragmentation of packets and reassembly, impacting overall performance

Limited long-term sustainability

Public internet connectivity, meaning performance issues remain

Reliant on ISP to route traffic correctly

DEDICATED, DIRECT CLOUD CONNECTIONS

The fastest, safest route to connect your enterprise customers to the cloud.

Instead of relying on the public internet or VPN tunnels, enterprises should consider using internet-bypass solutions. CSPs such as Amazon Web Services (AWS), Microsoft Azure, Alibaba Cloud and Google Cloud Platform have created partner programs and teamed up with network service providers and connectivity innovators to enhance cloud connectivity and automation capabilities. some well-known examples include: AWS Direct Connect, Microsoft Azure ExpressRoute, Alibaba Express Connect and Google Cloud Interconnect.

This enables businesses to connect directly to the public cloud of their choice, rendering the performance, quality of service and security problems of the public internet obsolete. Cloud services and cloud networking regions for each provider, can be connected to directly via 'on-ramps' at data centres where the CSP is present across the world.

CLOUD ON-RAMPS AND INTERNET-BYPASS
GLOBAL CONNECTIVITY SOLUTIONS

If you are present in a data centre with public cloud on-ramp, you can connect to popular cloud services with a simple data centre interconnection (also known as cross-connect). This connects your equipment to the CSP via layer 2 ethernet with speeds from 50mbps up to 10gbps.

If you are not present at a data centre with cloud on-ramps, then global connectivity providers such as Epsilon can provide you with the backhaul connectivity you require to directly connect your enterprise customers' premises or alternative facilities to the public cloud(s).

However, for those without on-ramp cloud services, Epsilon can remove the complexity of connecting directly to a CSP, which requires self-configuration and will become quickly unmanageable at scale – especially without inhouse skills.

NETWORK-AS-A-SERVICE (NAAS) IS CHANGING THE GAME

With new NaaS platforms, such as Infiny by Epsilon, the combination of advanced tools and cloud ecosystems now alleviate the need for up-front investment in networking infrastructure and begin to close the skill gaps that you or your enterprise customers. The differentiator with NaaS is in automating these direct cloud connections, reducing time spent on provisioning and the need for additional manpower and resources.

Without such evolved cloud networking platforms, MSPs would be burdened with finding a carrier, managing their own network and configuring interconnection services for their enterprise customers. This becomes very complex, as connecting to multiple clouds or between clouds brings together a whole host of new challenges, requirements and knowledge.

Real world case for internet-bypass

As the major Cloudflare outage in June 2019 highlighted, the internet is fragile. This was an internet disaster because of a route leak that impacted services across google, Whatsapp, verizon, China Telecom, nintendo life and even AWS. Many hundreds and thousands of businesses still rely on the public internet to carry mission-critical data and run digital services, often without understanding the real risk this poses to their business. With established direct links to the CSPs, you can better secure your enterprise customers' data between their facilities and the public cloud, with a drastically reduced chance of downtime or interference.

REDUCE YOUR DATA TRANSFER COSTS

Direct cloud connections can also be more cost-efficient. With dedicated connections to the CSPS, your enterprise customers could avoid significant data transfer fees, depending on the amount of data they transport in (egress) and out (ingress) of the cloud environment and the number of clouds they manage.

Take the pricing example from the AWS Data Transfer Out On-demand Pricing and compare to AWS Direct Connect charges. Breaking down the costs of on-demand direct connectivity services from providers like Epsilon, plus direct connect charges applied by the CSP, you will be able to compare this against the data transfer fees with each CSP.

REASONS TO CHOOSE DIRECT CLOUD CONNECTIVITY

Dedicated interconnection that bypasses the public internet and its hazards

Connections are more stable, predictable and have lower latency

Direct route removes multi-hops and associated security concerns

No need to invest in your own global infrastructure or understand how to configure BGP

" Gartner estimates that a single minute of downtime costs an average of **$5,600** "

CLOUD
CONNECT
BY EPSILON

A flexible and secure internet-bypass solution for optimising your business applications and cloud services.

SCALABLE, PRIVATE AND SECURE DIRECT CONNECTIVITY TO AN ECOSYSTEM OF WORLD-LEADING CSP
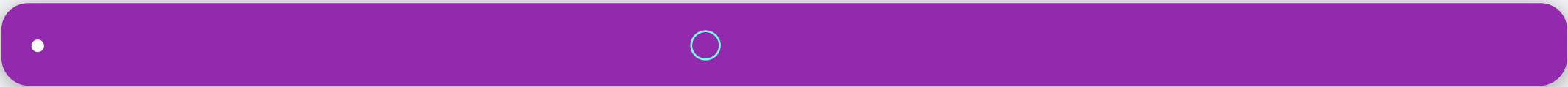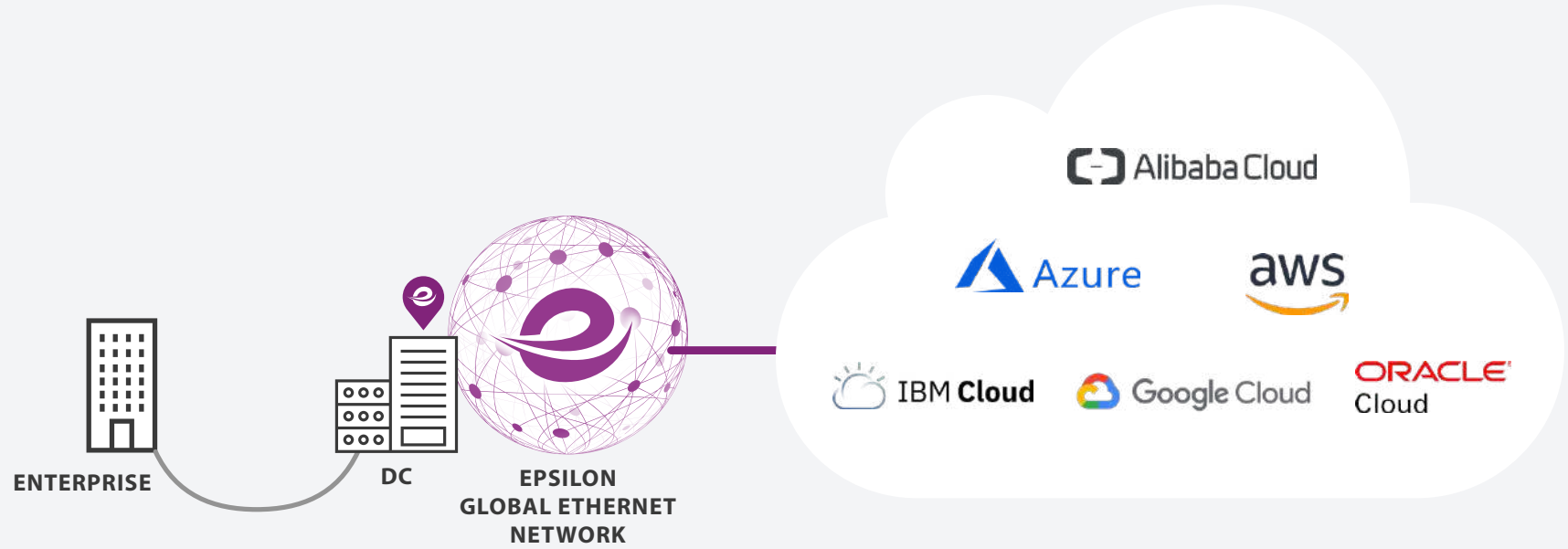
Epsilon's Cloud Connect provides dedicated and private connectivity to the world's largest CSPs via an on-demand, self-service platform.

Cloud Connect via Infiny — An Award-Winning Platform

Cloud Connect works through Epsilon's award-winning NaaS platform, Infiny. Infiny is an orchestrated virtualised networking platform that connects businesses to the public clouds in a convenient and cost-effective way, without compromising security or reliability. Cloud connections can be provisioned in minutes with complete visibility via Infiny.

It leverages Epsilon's MEF-certified Ethernet service, which delivers granular bandwidth ranging from 2Mbps up to 100Gbps. With Infiny, Cloud Connect allows you to turn up a network service anywhere on Epsilon's network fabric and connect to multiple CSPs around the world.

ENTERPRISE

DC

EPSILON
GLOBAL ETHERNET
NETWORK

Alibaba Cloud

Azure

aws

IBM Cloud

Google Cloud

ORACLE
Cloud

KEY FEATURES

Network Visibility - Real-time analytics on the performance of your networking connection, latency, jitter and packet loss.

Secure Data – Protect your mission-critical data over epsilon's MEF-certified carrier-grade global private network.

Dedicated Experts - A dedicated team of experts keep your critical operations running 24/7. Understanding the ICT and CSPs requirements.

Extensive Reach – Over 250 Points of Presence (PoP) worldwide means you can rely on Epsilon to connect you whenever you are, to wherever you need to reach.

Scalable Model – Scale your network infrastructure up and down with an on-demand connectivity model, removing the complexity when connecting to CSPs across multiple geographies.

Dense Cloud Ecosystem – Connect to the world's largest cloud platforms including Alibaba Cloud, AWS, Google Cloud, Microsoft Azure and Oracle Cloud without the need for multiple contracts.

CLOUD ON-RAMPS LOCATIONS

Alibaba Cloud
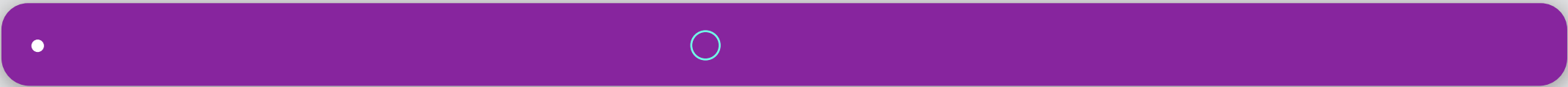
Amazon Web Services

Microsoft Azure

Google Cloud Platform

IBM Cloud

Oracle Cloud

INFINY: NETWORK-AS-A-SERVICE

Infiny is a self-service Network as a Service (NaaS) platform that enables customers to instantly buy and deploy dedicated connectivity for digital and cloud services around the world.

Through Infiny, customers can connect directly to Epsilon's ecosystem of 250+ data centres with on-ramps to public clouds, internet exchanges (IX) and other network partners via scalable, private, and secure dedicated connections. The platform makes it fast and easy to connect services and applications, and order, provision, and manage global connectivity with network automation.

Critically, Infiny solves the primary headache of modern networking. It provides flexible, on-demand connectivity to critical services while cutting out the need to invest in or manage the physical infrastructure. Even better, Infiny ensures organisations will never be held back by the lack of connectivity — it enables instant requisition and implementation with agility, scalability and visibility.
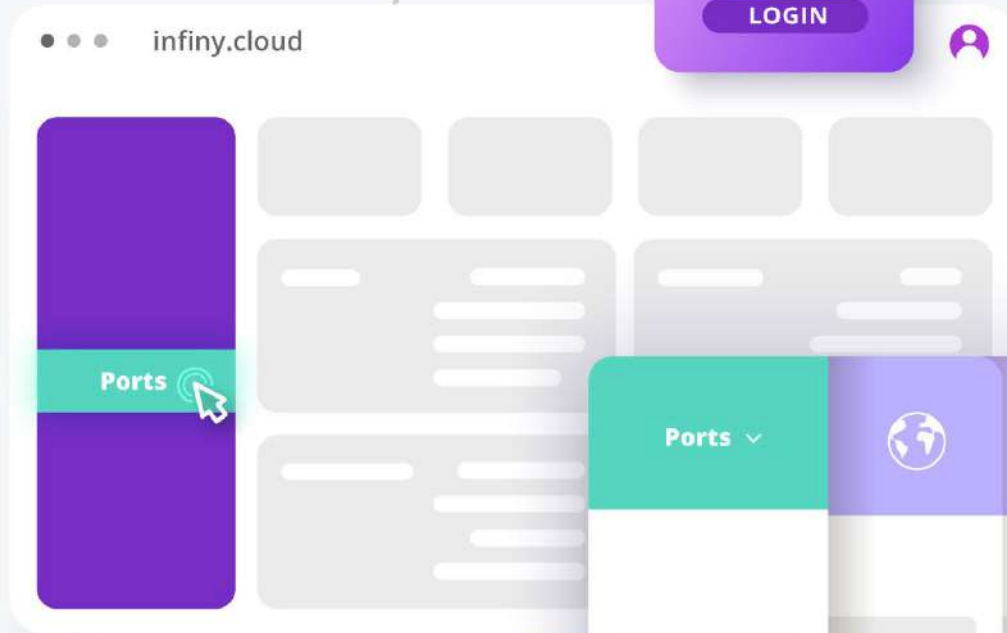
GETTING STARTED WITH INFINY

1.
Login to your
Infiny account.

Username
Password
LOGIN

infiny.cloud

Ports

Ports ∨

Buy New Ports | Region | City | DC

Bandwidth

Contract Duration

X-Connect Orderability
*Epsilon can automate
the cross connect ordering
should you choose to do so.
If not select organise your
own cabling.*

2.
On the left-hand menu, click
on '**Ports > Buy New Ports**'
and customize as you like.

PURCHASING
A PORT

CONNECTING
YOUR PORT

VIEWING YOUR
NETWORK ANALYTICS

3.

Upon selection of your preferences, the pricing will load. Click '**Buy**' to confirm your order.

> **Buy New Ports**

Total
$ 240

BUY

New Port Confirmation

Public
Private

✓ I agree to the Terms of Use

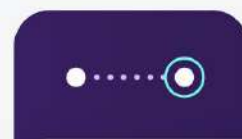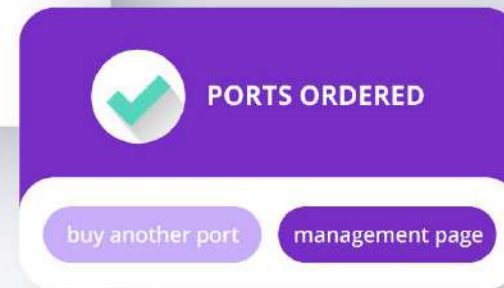✓ Request order form before provisionig

4.

Confirm details and select the options to make your ports Public or Private. *Public ports will be displayed on the Community Ports page and will allow business partners to connect with your network.*

Check the box '**Request order form before provisioning**' if you would like us to send you a document for approval. *This step is not mandatory. If checked, the service will not be provisioned until the documents are signed and returned.*

PORTS ORDERED

buy another port   management page
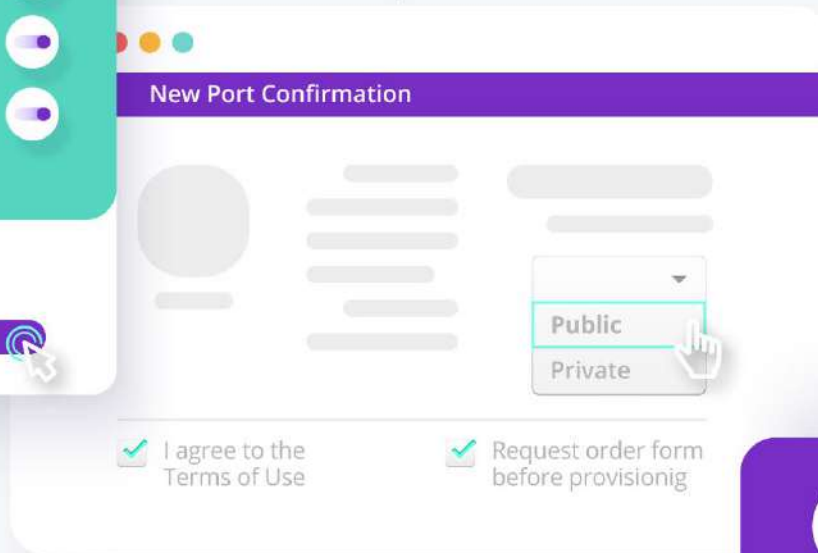
5.

Once ports order is submitted, you can choose to '**buy another port**'.

PURCHASING A PORT   **CONNECTING** YOUR PORT   VIEWING YOUR **NETWORK ANALYTICS**

infiny.cloud

Services

2.

Three options are displayed: **Cloud Service Providers, Internet Exchanges** and **Port to Port**. Select the type of connection and the provider you wish to connect to.
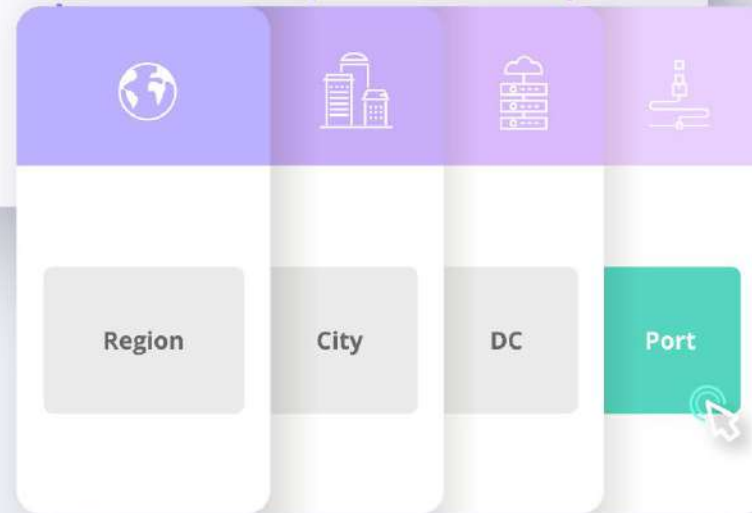
Services ⌄

Add Services   Region   City

1.

To establish a connection, click **'Services > Add Services'** on the left-hand menu of your dashboard after purchasing your ports.

Select Port

AIMS   CORESITE   DIGITAL REALTY
EQUINIX   GLOBAL SWITCH   TELEHOUSE

Select Internet Exchange

amsix   DE CIX   linx
BBIX   NYIIX   sgix

Select Cloud Service Provider

Alibaba Cloud   aws   Azure
Google Cloud   IBM Cloud   ORACLE Cloud

PURCHASING A PORT   CONNECTING YOUR PORT   VIEWING YOUR NETWORK ANALYTICS

infiny.cloud

Services

4.

Depending on your bussiness needs, customise the **Bandwidth**, **Contract Duration** and **type of Network Protection** required.

Network Protection

Contract Duration

Speed

3.

Next, select the **Region**, **City**, **Data Centre** and **Port** you wish to connect from.

Region	City	DC	Port

PURCHASING A PORT

CONNECTING YOUR PORT

VIEWING YOUR NETWORK ANALYTICS
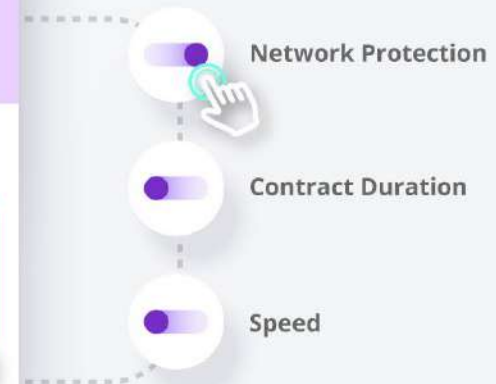
5.

A pop up will appear. Enter your service details and click '**Continue to confirmation**'. For connecting to a CSP, enter your cloud account ID.

> **Between**

🇬🇧
City

aws
Service Provider

> **And**

🇺🇸
City

EQUINIX
Data Centre

Port

Total

$ 240

BUY

New Service Details

Service name...

C-VLAN

Continue to confirmation

6.

Confirm the details are correct and click '**Buy**' to confirm your order.

✓ **SETUP COMPLETE**

provision another service

view service

7.

Once setup is completed, you can choose to '**provision another service**' or '**view service**'.
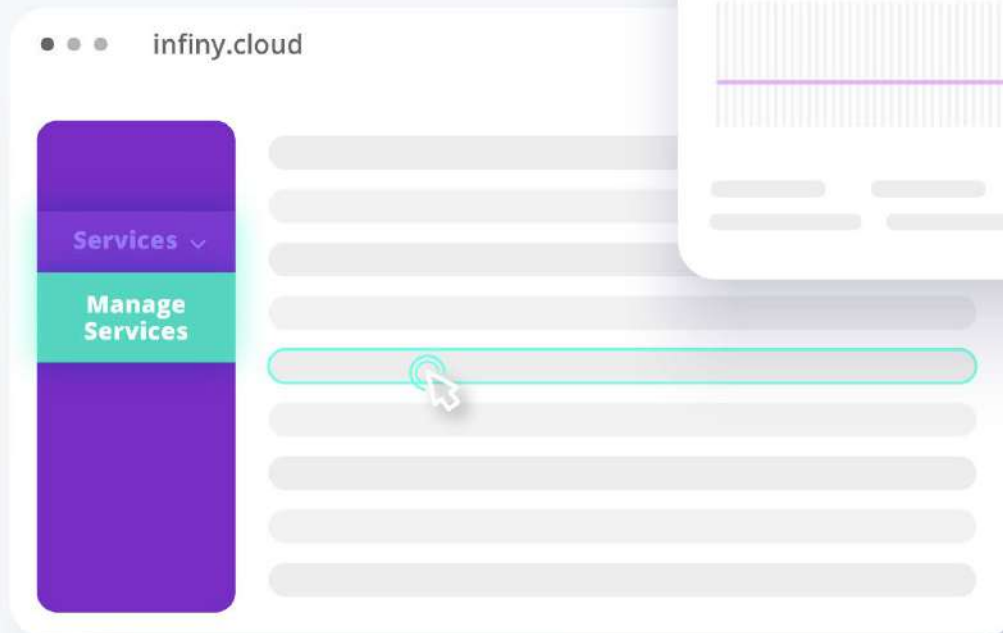
PURCHASING
A PORT

CONNECTING
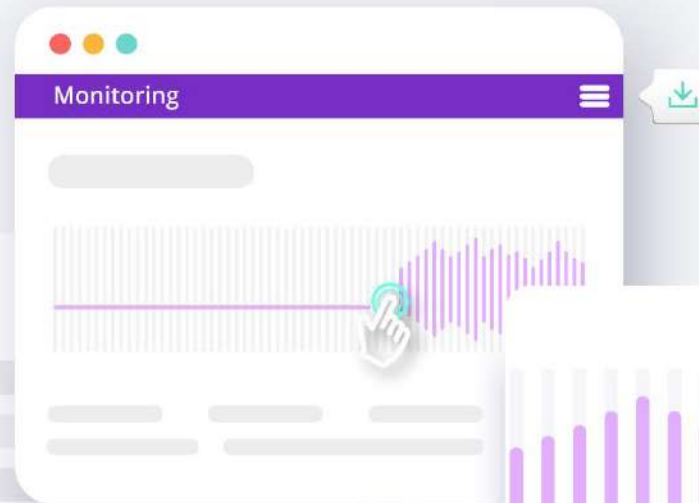YOUR PORT

VIEWING YOUR
NETWORK ANALYTICS

1.

You will now be brought to the **Network Analytics** page where you can view bandwidth utilisation and advanced analytics including jitter, latency and packet loss.
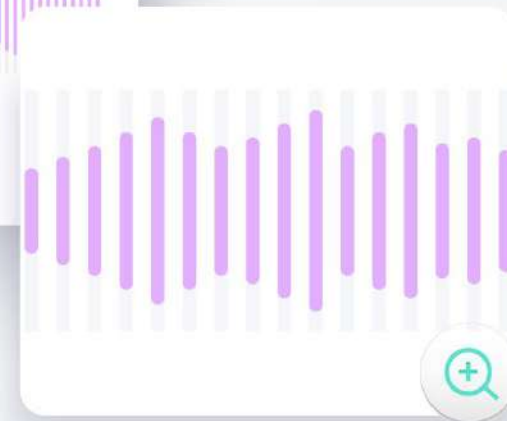
Monitoring

infiny.cloud

Services ∨

Manage Services

2.

You can view the graph within a certain period. Dragging the mouse across the graph allows you to **zoom** in on a section.

3.

Click on the three line on the top right to **download** the graph as an image or pdf document.

4.

To view other other services, click '**Managed Services**' on the left-hand menu of your dashboard and select the service you would like to manage.

› **PURCHASING** A PORT   › **CONNECTING** YOUR PORT   › VIEWING YOUR **NETWORK ANALYTICS**

INFINY ADOPTION MODELS

WHITE LABEL

Making Infiny your own branded NaaS solution.

You can adopt Infiny as a white label platform, reselling network services under your own brand as a differentiation strategy. By offering customers unmatched flexibility in purchasing and administering networking services, you can attract new customers while increasing business with existing customers.

API INTEGRATION

Reselling services with Infiny to add value and attract new business.

You can leverage the benefits of Infiny through seamless API integration with existing platforms and infrastructure. This will enable customers to price and interconnect with Epsilon's global network fabric of 250+ data centre locations with access to CSPs, internet exchanges and networks.

SELF-SERVICE

Adopting Infiny directly to support business and digital transformation objectives.

Forward-thinking MSPs see the value in flexible connectivity that support business and digital transformation objectives. Adopting Infiny gives your organisation on-demand access to Epsilon's industry-leading networking solutions, including fast, stable, and secure direct connections to the critical cloud and digital services your customers rely on.

THE BEST ROUTE TO THE CLOUD

The key to reliable connectivity and great quality of service is by aligning your IT infrastructure with day-to-day workload demands which today, will no doubt involve the cloud. Whether you opt for a public, private, multi-cloud or hybrid environment, direct connection to the cloud is clear for enterprises looking to resolve public internet woes, to gain a competitive edge and prepare for a next-generation world.

Contact us to discuss your cloud transformation
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