



Case Study

Syntropy



Improving latency and throughput on the **public internet**

One of the biggest frustrations for companies participating in the global digital economy is a reliance on the traditional public internet. The core of the global internet is a weak link for traffic because vector pathing is managed by BGP and is beyond the control of the enterprise.

For the Syntropy Relay Network - a fully programmable global digital fabric that runs on top of the public internet and creates a network of the best connected ISPs to ensure optimum performance - significant reductions in latency and packet loss, and significant improvements in SDN throughput were delivered through a partnership with Console Connect.

In some cases, Console Connect was able to improve latency by a median of over 18ms, and make some relay nodes up to 20% more efficient compared to other providers.

“ Console Connect was able to improve latency by a median of over 18ms. ”

Syntropy and the Syntropy Relay Network



Syntropy is a network solutions business building a decentralised data availability layer using blockchain. DARPs - distributed nodes - continuously share latency information, creating a global intelligence layer for Internet pathways, relaying network traffic when they are able to provide a superior route versus the default public Internet path decided by BGP.

For digital businesses, Syntropy reduces risk inherent to global network transit by putting the control back into the hands of the network operator, removing the limitations of internet protocols such as BGP and optimising throughput in complex environments with multiple data centres and cloud providers.

What is BGP?

Border Gateway Protocol (BGP) is a standardised exterior gateway protocol to exchange routing and reachability information on the Internet. It makes routing decisions based on paths, network policies, or other rule-sets.

What is SDN?

Software-Defined Networking uses software-based controllers or APIs to communicate with the underlying hardware.

What is DARP?

Distributed Autonomous Routing Protocol enables a group of decentralised devices connected to a network to determine the optimal path for data to travel by passing the data through an intermediary node.

What is Latency?

Network latency is the delay in time it takes for a data packet to go from one place to another.

***Latency improvement = Public path latency - SDN path latency**

Mission critical uptime

Syntropy works with businesses such as Entain, for which uptime is critical. Entain owns some of the most recognisable brands in gaming, including Ladbrokes, bwin, PartyPoker, Sportingbet, and BetMGM, with operations in 31 regulated territories, and a workforce of more than 25,000 in over 20 offices worldwide.

Entain is running a complex distributed network in real time with 40+ geographically dispersed private data centres, connected by Tier 1 internet service providers. A typical data centre hosts hundreds of applications and can process millions of transactions daily. Entain generates 71,000+ trading events every single minute which is comparable to any leading stock exchange.

As a leader in the online gaming and sports betting industry, any outage or congestion can affect performance, reducing the end customer experience as well as resulting in failed transactions and lost revenue.

For companies like Entain, even short outages or briefly degraded performance are unacceptable, especially during events such as the FIFA World Cup.



Benefits delivered by Syntropy

Console Connect delivered a bundle of nodes and network connectivity to Syntropy, which consists of 314 servers, and Syntropy installed its DARP application on the nodes.

The network connectivity can be divided into two types:

- DARP connectivity - through which the overlay detects the fastest and most efficient network paths
- SDN connectivity - connectivity passing through Syntropy DARP nodes between Syntropy customer terminals

The DARP network overlay acts as a route optimisation system to find the best Internet path: the Syntropy customer sends a request to all nodes to detect which node is the best Internet path option to use at the time of the request. SDN connectivity is the actual network usage via the detected path.

The Console Connect and Syntropy solution was utilised by Entain for sports betting and gaming during the FIFA World Cup Qatar 2022 in November and December 2022.

The Console Connect provided nodes were algorithmically selected to be deployed on the worst performing routes in general, and Syntropy saw a median latency improvement per relay of 18.6ms, versus an improvement of 10.4ms in a non-Console Connect node. Console Connect nodes were also able to reduce packet loss an entire percentage point, from a pre-existing 1.66% down to 0.067%, versus an improvement of only 0.22 percentage points, from 0.23% to 0.013% for non-Console Connect nodes.

	Console Connect	Non-Console Connect
Median latency improvement per relay	18.6ms	10.4ms
Packet loss improvement	1%	0.22%

Better performance with Console Connect

The study shows that between 46% and 72% of Syntropy's daily SDN throughput was piped through Console Connect nodes, and out of all unique assigned paths, 24.58% were assigned through Console Connect.

In Hong Kong and Taipei, the relays provided by Console Connect are 17% to 20% more efficient compared to other providers. Furthermore, out of all paths through London, 25.24% of them were improved by Console Connect's node, while other providers improve only 8.31% of paths on average.

As a result, with a diverse flow location-wise and a significant share of total SDN throughput, Console Connect nodes greatly contribute to improving the performance of Syntropy's SDN network.

"Console Connect is considered as a Tier 1 ISP worldwide and it has a great mix of services that Syntropy can benefit from. Console Connect understands in which direction the industry moves and the possibility of our platform, and how it can help solve some of the existing challenges the Internet currently has," said a Syntropy spokesperson.

“ Console Connect nodes greatly contribute to improving the performance of Syntropy's SDN network. ”

Syntropy said that networking teams are often limited by current internet protocols such as BGP, because they lose control of data traffic once it leaves their private network.

In a typical enterprise environment, with multiple data centres and several cloud vendors, this loss of control means exposure to more risk. But the work Syntropy is doing in partnership with Console Connect provides secure and user-centric connectivity through a unifying layer optimised for performance.

Leveraging Console Connect's global network, Syntropy can route around critical failures, removing bottlenecks and limitations of the existing BGP system and unlocking greater scalability potential for future technologies and applications.

How do I **sign up**?

- Take control
- Cut complexity
- Make interconnection effortless

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