

## CASE STUDY

# How Quantropi Quantum-Secured a Remote Workforce VPN Solution

### VERTICAL

- Cloud Security
- Virtual Private Networks (VPN)
- Secure Remote Workforces

### CHALLENGE

- How to quantum securely transmit true random numbers over today's Internet

### SOLUTION

- QiSpace™ SaaS Platform
- SEQUR™ Quantum Entropy as a Service (QEaaS)

### BENEFITS

- Achieve full security potential of AES for data at rest and in motion
- SDK for speed to market
- Significant cost savings compared to hardware alternatives

### Overview

The cryptographic threat from bad actors in today's digital society is real. Add to that the looming threat from quantum computers, and the need for strong cybersecurity solutions has never been more urgent. With a pandemic raging and work-from-home trending, Quantropi joined DLS Technology Corporation and Wedge Networks as part of an IRAP (Industrial Research Assistance Program) cybersecurity pilot project to develop an integrated, end-to-end solution to protect data in motion and at rest – a quantum-secure remote workforce solution. The consortium leveraged Quantropi's QiSpace™ platform, and its SEQUR™ Quantum Entropy as a Service (QEaaS) product to instantly achieve the full quantum security potential of the group's encryption algorithms.

### Challenge

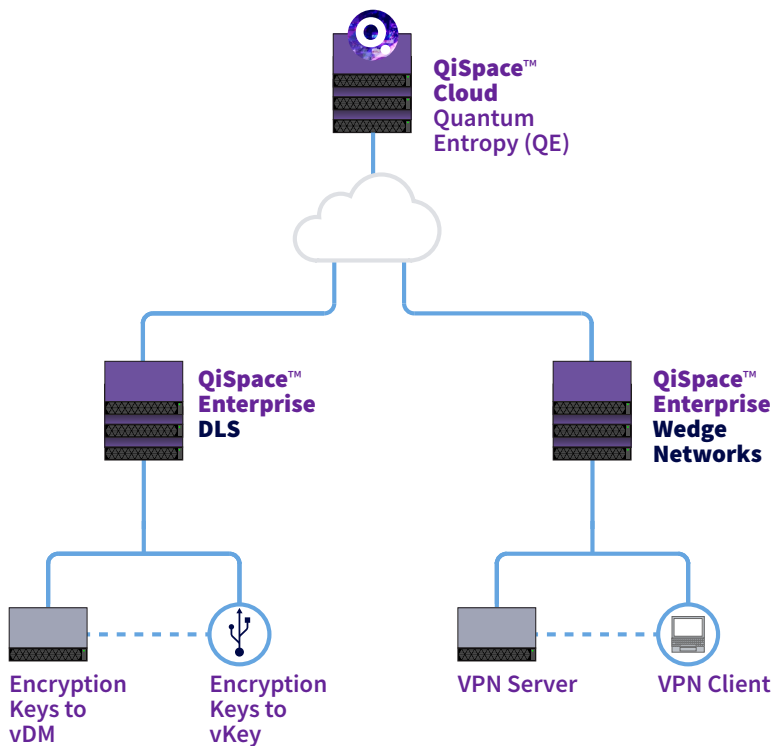
DLS offers a product called vKey, a bootable endpoint solution that enables a secure work environment. Meanwhile, Wedge Networks' ARP product helps detect network threats in real time. Both products leverage AES-256 encryption, which requires true random keys to leverage its full security potential. For the consortium to achieve its mandate of developing a solution immune to the quantum threat, it needed a source of true random — and a secure way to transmit it. →

### Why are random numbers important?

An encryption key is a random number used to determine how the algorithm will encrypt data. But if the same key is used to encrypt identical data, the encrypted form will also be identical. This lowers security and creates vulnerabilities to exploitation, such as replay attacks. To achieve the full security potential of encryption algorithms such as AES, true random keys must be used. Quantropi is the only company on the planet providing true random numbers transmitted quantum securely over today's Internet.

## Proof of Concept

The consortium leveraged Quantropi's QiSpace™ platform — specifically its SEQUR™ product — to upgrade and harden AES encryption. By integrating QiSpace™ with DLS's vKey Device Manager, Quantropi's SEQUR™ quantum-securely distributed strong random numbers to DLS over the public Internet. DLS utilized SEQUR™ entropy to make the true random keys required for quantum-secure disk encryption on vKey. Together with Wedge Networks, Quantropi developed the architecture to integrate QiSpace™ with Wedge Network's VPN offering, thereby enabling on-demand quantum-secure session key establishment through SEQUR™. In both instances, no additional endpoint hardware investments are required.



## Conclusion

By leveraging Quantropi's QiSpace™ platform and SEQUR™, DLS, Wedge Networks and Quantropi were able to meet their challenging mandate to develop a remote workforce VPN solution that is secure from quantum computer attacks. Now, remote workers accessing confidential platforms or applications from home or other remote locations, can have the peace of mind of knowing their data and privacy is secure from any classical or quantum attacks, today and forever. That's because Quantropi is the only company in the world capable of quantum-secure entropy and key distribution via today's Internet, over any distance, at network speeds.

**“Quantropi’s QiSpace™ and SEQUR™ Quantum Entropy platforms supply true random numbers used for data-at-rest encryption of vKey; DLS’ flagship remote workforce product. Highly recommended.**

— Patrick Nadeau  
Director of Sales and Marketing  
DLS Technology Corporation

## What's next?

Would your enterprise benefit from quantum entropy to harden its cybersecurity defences today and protect against the quantum threats of tomorrow? Become a QiSpace™ Beta Partner today.

**And Bring it on.**