

Telefónica Tech and IBM collaborate on quantum-safe technology



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Telefónica Tech, the digital business unit of the Spanish telecommunications group Telefónica, and IBM, a pioneer in quantum-safe cryptography, today announced a collaboration agreement to develop and deliver security solutions that address security challenges posed by future cryptographically relevant quantum computers (future quantum computers powerful enough to break the current cryptography).

The advent of quantum computing will allow for more advanced calculations, but it also brings with it a critical challenge: ensuring data security in a future where traditional encryption algorithms could become vulnerable. Additionally, while a cryptographically relevant quantum computer is not yet available, data may already be vulnerable to harvesting by cybercriminals for future decryption.

IBM has developed quantum safe-focused enterprise software and research-driven assets for a holistic solution to anticipated quantum risks. IBM Guardium Quantum Safe, part of the broader IBM Guardium Data Security Center, helps organizations gain visibility and manage cryptography to address vulnerabilities, guide prioritization and remediation, and improve security posture. It also includes IBM Guardium Key Lifecycle Manager, which provides centralized, secured, and scalable encryption key management.

Complementing these are IBM Quantum Safe Explorer and IBM Quantum Safe Remediator, technology assets for discovering cryptographic vulnerabilities in code, testing quantum safe algorithm performance, and establishing quantum safe proxies.

Pursuant to this agreement, the two companies will work together to combine IBM's quantum-safe technology with Telefónica Tech's experience in providing managed and professional cybersecurity

services with the aim to create solutions that provide security to companies and public administrations against the new and future security risks of a post-quantum world.

The solutions being discussed will be specifically designed to help protect organizations' critical data from the risk of being decrypted by quantum computers by implementing new quantum-safe cryptography standards defined by the U.S. National Institute of Standards and Technology (NIST). IBM has co-developed two of the three algorithms that have been published as post-quantum cryptography standards, contributing to data protection in the quantum era.

Raquel Ruiz Lozano, Global Head of Strategic Partnerships for Telefónica Tech, states:

Quantum computing offers incredible opportunities, but it could also pose a significant challenge in terms of cybersecurity. This collaboration agreement with IBM allows us to continue to help address the potential risks of the post-quantum world, thanks to its IBM's quantum safe technology, and to offer our clients solutions to help protect their critical data and face this transformation with security and confidence.

Adolfo Hernández Pulido, Technology Managing Director for Telefónica at IBM, highlights:

It is critical for organisations to begin evaluating their cryptography and planning a transition to quantum-safe standards. At IBM, we are proud not only to have had a hand in the development of new post-quantum cryptography algorithms, but also to be leading the way with new quantum-safe technologies and services. We are thrilled to sign this collaboration agreement with Telefónica Tech focused on quantum-safe technology.

The prospective integration of IBM's quantum-safe technologies into Telefónica Tech's portfolio of services is being engineered to enhance the proactive risk assessments capable of being carried out by Telefónica Tech's operations professionals with the aim of helping organisations identify and address cryptography vulnerabilities in their infrastructures.

Concordant with this agreement, Telefónica Tech would also assist

organisations in their transition to new cryptographic standards, protocols or algorithms to ensure resilience and agility against cybersecurity risks posed by quantum computing, and the transition to new quantum-safe encryption technologies.

The agreement also contemplates the creation of a joint use case office, focused on key areas such as communications encryption, adaptation to new secure algorithms and the protection of critical environments.

In this context, IBM's infrastructure has already been deployed at Telefónica's headquarters, located in Distrito Telefónica (Madrid, Spain), to promote business development. This infrastructure is composed of elements specifically designed to promote a secure and resilient environment against the threats of the post-quantum world.

These include an IBM LinuxONE system, which is secured with end-to-end encryption including new quantum-safe cryptography; IBM Storage technology; and other advanced tools for protecting master and operational keys .

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