



CASE STUDY

TGEN

How TGen is using phoenixNAP's Bare Metal Cloud to Ensure Data Security and Compliance

AT•A•GLANCE

> CLIENT

TGen

> LOCATION

Phoenix, Arizona

> BUSINESS FOCUS

Research institute focusing on human diseases and biomedical discoveries.

> ISSUE

Meeting GDPR compliance requirements for EU-hosted sensitive workloads and establishing a powerful yet safe infrastructure for fast and secure data storage and manipulation.

> SOLUTION

phoenixNAP's Bare Metal Cloud deployed in Amsterdam, NL

> RESULT

Advanced protection for sensitive data through hardware-based security, proprietary DDoS protection, and world-class data center security infrastructure.

INTRO

The **Translational Genomics Research Institute (TGen)**, an affiliate of City of Hope, is an Arizona-based non-profit organization conducting genetic research for the purpose of developing earlier diagnostics and smarter treatments for various common and complex diseases. Analyzing genetic components of neurological disorders, infectious diseases, and rare childhood illnesses, the organization is dedicated to *“conducting groundbreaking research with life-changing results”*.

Founded in 2002, the institute strives to bring more rationality and precision into global healthcare through personalizing treatments based on the underlying genetic components of a specific disease.

Performing such extensive research and conducting clinical trials creates a vast amount of data the organization stores, processes, and analyzes on demand. To derive value out of these data and ensure efficiency of research, TGen requires IT infrastructure that meets its performance, security, and scalability needs.

“By identifying biological patterns of common and complex diseases, we can help in developing potential diagnostic, vaccine construct or therapeutic drug targets. To achieve this, we need to analyze huge volumes of data, which requires advanced compute resources to provide insights and value. Intel and phoenixNAP technologies are vital to ensuring efficient and secure data processing. We’ve had a great collaboration with both companies over the years and we are excited to continue exploring the potential of their technologies.”

*Nik Schork, Ph.D.,
Deputy Director of Quantitative Science, TGen*

CHALLENGE

Through their work and collaborations in the biomedical research and healthcare spaces, TGen frequently handles sensitive and confidential data. Expansion of these collaborations to Europe brought new compliance requirements regarding data privacy. Adhering to GDPR became a major challenge for the organization as it was using data from multiple global sources for research.

To address this issue, TGen was in search of a data center with a global footprint and GDPR compliance readiness. The organization utilized phoenixNAP services in the Arizona data center, leveraging the HIPPA-ready and PCI-DSS compliant infrastructure for the US presence. For their EU-based research projects they needed a flexible solution with scalable resources and advanced security features to ensure rapid deployments, while maintaining data confidentiality within EU privacy regulation compliance.



SOLUTION

TGen chose phoenixNAP's **Colocation** and **Hardware-as-a-Service** solutions to host their data and perform advanced IT operations. TGen also leverages **Bare Metal Cloud** to rapidly provision physical servers on a global scale and meet their safety and compliance requirements. Deployed in minutes, Bare Metal Cloud servers provide cutting-edge hardware and security infrastructure necessary for confidential processing of vast amounts of data.

TGen is specifically looking to use the **latest 3rd Generation of Intel® Xeon® Scalable Processors (codenamed Ice Lake)** that will be available with Bare Metal Cloud as of May, 2021. Enabling access to **Intel® Software Guard Extensions (SGX)** and **Intel® Trusted Execution Environment (TEE)** technology, the new generation CPUs will provide additional protection for TGen's sensitive data. The servers will be available in phoenixNAP's Amsterdam data center, enabling TGen to ensure GDPR compliance.

Leveraging the potential of 3rd Generation of Intel® Xeon® Scalable Processors and security features of Intel SGX technology, Bare Metal Cloud will provide an environment that combines maximum security with advanced performance potential. Intel SGX enables hardware-based encryption, isolating sensitive data in a secure enclave inside the physical memory to enable in-use encryption as a precondition for confidential computing. The new CPUs also bring significant performance improvements, with increased core count and clock speeds, more database transactions per minute, and exceptional multi-socket processing.

On top of that, the organization is using **phoenixNAP's Encryption Management Platform (EMP)** to safely store and manage all its cryptographic keys. Powered by **Fortanix Self-Defending Key Management Service (SDKMS)**, the solution enables TGen to simplify encryption key management and orchestration. As the world's first unified key management platform built on HSM-grade security, Fortanix provides a simple unified interface for managing encryption keys, tokens, and secrets. TGen benefits from seamless integration of EMP with Bare Metal Cloud for improved security.

“phoenixNAP's Bare Metal Cloud provides the flexibility we require. Quick to deploy in multiple locations, it gave us a European presence with the level of security needed to ensure GDPR compliance. The advanced features available with the latest generation Intel processors and Fortanix-powered Encryption Management Platform further our ability to deploy and manage security tools we need, all while maintaining exceptional levels of performance.”

*Glen Otero, Ph.D.,
VP Scientific Computing, TGen*

BENEFITS

The strategic geographical availability of Bare Metal Cloud servers coupled with advanced security features and tools helped TGen meet its GDPR compliance requirements. The additional, free 20 Gbps DDoS protection from phoenixNAP further increased the platform's high-level, multi-layered protection.

Easily scalable and highly customizable, with flexible billing models and API-driven provisioning, Bare Metal Cloud has become a suitable long-term solution, adapting to TGen's project growth and dynamics.

Using Bare Metal Cloud has allowed TGen to establish regional presence through a comprehensive platform for fast, secure, and compliant computing.

"Knowing their data sits on a secure and reliable infrastructure allows our faculty to focus on their research. Knowing that we can easily scale our IT resources to meet their demands provides fewer sleepless nights."

*James Lowey,
CIO, TGen*

ABOUT phoenixNAP

phoenixNAP is a global IT services provider offering progressive Infrastructure-as-a-Service solutions from locations worldwide. Our bare metal server, cloud, hardware leasing and colocation options are built to meet the evolving technology demands businesses require without sacrificing performance. Scalable OpEx solutions to support with the systems and staff to assist; phoenixNAP global IT services.



Contact phoenixNAP at: sales@phoenixnap.com
or **855.330.1508** | www.phoenixnap.com