



DNA Testing Pioneer Natera Harnesses the Power of Google Cloud Platform to Transform Patient Outcomes.



In 2004 with genome sequencing in its infancy, DNA testing pioneer Natera, Inc. (NASDAQ: NTRA) was born to harness the power of genetic data to improve patient outcomes via software and cloud technologies. Fast forward to today and their proprietary cell-free DNA testing has enabled the company to apply revolutionary technology that changes the management of disease worldwide.

With access to public gene sets, as well as unmatched compute power and elasticity, cloud technology has enabled and empowered Natera's rise. As their data scientists and computer engineers dreamed of expanding their infrastructure on Google Cloud Platform (GCP), Natera engaged consulting partner Foghorn Consulting. With their deep multicloud and life sciences, experience Foghorn and Natera went to work to bring the vision to fruition.



**NATERA SCIENTISTS
& ENGINEERS DREAMED
OF EXPANDING THEIR
DEEP NEURAL
NETWORK**



Foghorn consulting is a Google Cloud Platform Partner. Their seasoned cloud and devops engineers design, build and deploy digital transformations that accelerate innovation in the cloud.

SITUATION

With existing on-prem and AWS environments Natera needed a seamless and secure way to connect to GCP and deepen their data science capabilities. By tapping into the same compute power of Google Search, Natera hoped to further speed up their data-crunching abilities. Natera wanted to design a GCP environment that gave their network engineers ownership of the IP space and multi-cloud internetworking topology while giving developers and data scientists the ability to provision on-demand compute and capture cost-savings in those environments.

With flag planted, Foghorn's overarching goals were to implement a design that makes it secure and easy for Natera to access cloud resources within GCP. Using DevOps best practices, network planning and application development teams were aligned to realize the prize of increased performance and expanding data science capabilities.

CHALLENGE

Natera and Foghorn's teams had collaborated on numerous projects which gave them the confidence to undertake a brand new cloud build on GCP with an ambitious design/ build/ deploy timeline. Utilizing Foghorn's Slack-enabled FogOps™, the teams collaborated to build a comprehensive GCP infrastructure via Terraform in under one month. All conversations and designs were pulled into greater focus by Natera's life-saving mission, the sanctity of patient data, and HIPAA compliance mandates.

Foghorn had built numerous IaaS ecosystems on GCP and brought a deep well of prebuilt code to the task. A force-multiplier in the course of this work was Google's publicly-available Terraform repositories. Foghorn used Foundation Fabric and Project Factory as a starting point for customized solutions. A git repository held Terraform code which was organized into a series of deployments beginning with org-level activities and then moving to project specific resources.

Natera's key stakeholders and Foghorn's agile FogOps Team wrote and deployed a symphony of code on GCP that established rules, policy constraints, audit logging, standard resource labels, and firewall definitions. A Virtual Private Cloud was deployed that development and production can utilize as needed. High-availability VPN tunnels were established to connect to public and private clouds.



RESULTS

In the span of just one month, Foghorn built Natera a powerful GCP environment to specification. Terraform modules were leveraged for reuse and consistency across production and development environments. A role-based access control (RBAC) deployment now provides for standard GCP groups. These groups are modeled on the GCP Enterprise best practice standards.

"While this project was challenging, working with Natera is very fulfilling. Having a blank canvas on GCP is a dream come true, and we know that what we built will serve Natera and their customers well into the future," shares Foghorn GCP Solution Architect Caleb Hyde.

With Google Cloud Platform's robust and scalable data science tools, Natera has gone from strength to strength. Alignment of storage, network, and security across public and private cloud has helped to future-proof their infrastructure. With GCP and their data science platforms, Natera can scale their solution and deliver more meaningful and relevant data to more patients, scientists, and physicians.

"Foghorn was able to rapidly deliver a secure and scalable cloud infrastructure within GCP in a relatively short period of time"

GEORGE FAINSILBER
Senior Manager Information
Technology Infrastructure
NATERA

For a deeper look at Foghorn's capabilities please visit:
<https://foghornconsulting.com>

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"Foghorn was able to rapidly deliver a secure and scalable cloud infrastructure within GCP in a relatively short period of time," shares George Fainsilber, Senior Manager Information Technology Infrastructure at Natera. "This framework enables future growth within the platform while adhering to our strict security requirements. Our developers were able to begin working almost immediately upon delivery."

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