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apree health: Enhancing productivity, security, and efficiency with Google Cloud

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GOOGLE CLOUD RESULTS

- Zero downtime amidst a migration of millions of app users
- Reduced data center VM footprint by over 50%
- Streamlined and enhanced security operations and services for an extra resilient security posture
- Adopting a cloud-native data warehouse and modernizing data pipelines improves decision making and accelerates innovation

apree health used Google Cloud to enhance scalability, security, and

efficiency, thereby improving healthcare service delivery.

Modernizing patient care with a cloud migration

Navigating the complexities of the healthcare industry is not for the faint of heart, and the lack of coordinated care, fragmented communication between providers, and excessive administration weighs heavily on both patients and practitioners. It's here that apree health steps in to simplify, connect, and optimize the healthcare journey for all involved. By combining advanced primary care and easy-to-use technology solutions, apree health is building a patient-centered platform benefiting individuals, organizations, and insurers.

> “We're facing a perfect storm: aging hardware, a complex web of self-managed systems, and a critical need to modernize our data pipelines while ensuring the security of sensitive healthcare information.”
>
> **Kranthi Ravi**
> SVP, apree health

However, a decade of rapid growth to millions of users had created an on-premises IT environment composed of patchwork services and vendor offerings that were threatening their security posture.

Recognizing the need for a more robust and scalable solution, and with their server hardware nearing end-of-life in 2024, apree sought a cloud partner. Facing a potential $5 million hardware replacement cost, they chose Google Cloud, drawn to their shared commitment to customer success.

With the healthcare platform set on their migration, apree began working with SADA and Google engineers to map out their current environment and explore the most effective pathway from their data center to Google Cloud. The years of ad hoc IT expansion, adding over 600 VMs and hundreds of services with little automation, meant that disparate tools from Redis and MongoDB to self-managed Kubernetes clusters were all tenuously connected through customized data pipelines. The accumulation of technical debt was taxing their security resources, with duplicate identities across different platforms, and manually configuring their infrastructure was a time-consuming and labor-intensive task.

Taking advantage of the opportunity to re-invent their technical architecture, apree health decided to go 'all-in' on Google services, including Google Workspace, Google Cloud Security, and Google Cloud tools like BigQuery to modernize their data warehouse. With more than a million healthcare patients and providers reliant on their platform, the migration would provide these users with the state-of-the-art digital services to make care more accessible.

Shifting to scalable infrastructure while centralizing datastreams and security

> “Going all in with Google Cloud allowed us to take the focus away from the tooling and let security people do security work. Integrating it all means it’s all in the same place

Because apree health deals with Personal Health Information (PHI) regulated under HIPAA, IT stakeholders were determined to create a resilient and secure bedrock for their cloud environment, and dove into the Enterprise Foundation Blueprint. With this framework as a roadmap, apree health mimics Google Cloud's own 'defense-in-depth security model' combining architecture, policy, and detective controls. To ensure their engineers are ready to use the new environment on day one, apree health enrolled

> and you get that time back."
>
> **Jeff Bryner**
> CISO, apree health

them in Google Cloud training and certifications to gain practical experience and skills in cloud computing and best practices.

Due to resource and time constraints, the team initially lifted and shifted their self-managed containerized workloads from their data center to Google Compute Engine before moving them to Google Kubernetes Engine (GKE).

By leveraging a managed Kubernetes service similar to GKE, apree delegates the operational overhead of infrastructure management to Google Cloud. By alleviating apree's engineering team from the responsibilities of cluster provisioning, maintenance, configuration, and ongoing cluster optimization, IT talent can refocus on core application development and business-critical projects.

Amidst their decade of growth, apree implemented several artisanally-designed data pathways to compliantly ingest, analyze, and store patient data leading to a complex web of interconnected modules requiring constant maintenance that drains developer resources. Migrating to Google Cloud presented an opportunity to standardize these data pathways to more efficiently process, manage, and query their data.

Consolidating Python scripts across different services, engineers refactored them into Docker containers before deploying them onto GKE, to create a single modular pipeline of data. This modernized, agile workflow reduces complexity and accelerates statistical analysis from the initial intake of customer information, or any notes made by providers, Cloud Datastream captures real-time data changes and saves them in Cloud Storage. Incoming data files are categorized using Cloud Pub/Sub topics, which route the data to designated code blocks for processing based on data type. Processed data is then made securely accessible to both patients through a digital member app and care teams through dedicated application databases. Finally, the data is loaded into BigQuery, facilitating comprehensive analysis and informed decision-making.

By centralizing their security solutions under Google Cloud's Security Command Center and BeyondCorp, apree sunset the VPN

and Data Loss Prevention services they were using while consolidating multiple IAM vendors in favor of Google Cloud's IAM. Using a fully-integrated security ecosystem with Google Security Operations simplifies both user experience and management to ensure secure and streamlined access protected data. Adhering to the Blueprint, apree uses Cloud HSM and Customer Managed Encryption Keys to manage cryptographic keys in Google Cloud, and VPC Service Controls to act as an additional security perimeter around sensitive resources. By transitioning from a fragmented security landscape to a unified, cloud-native model, apree health has significantly strengthened its security posture, reduced risk, and established a foundation for trusted and compliant healthcare services.

During their migration to Google Cloud, through a strategic use of managed services and modernization, apree health consolidated their on-premises data center from 600 VMs and 135 separate services to 287 VMs in a 100% terraformed environment for greater control over their IT infrastructure. The results are speaking for themselves, avoiding a multi-million dollar hardware refresh while migrating millions of users to a new environment with zero downtime.

Moving and modernizing to Google Cloud is allowing apree health to respond to the evolving demands of the healthcare industry with agility and confidence. With a re-engineered data pipeline and enhanced security measures, they are well-equipped to continue innovating and delivering exceptional patient care in the digital age. The success of this migration underscores the value of partnering with experienced cloud providers like SADA and Google Cloud who help identify and mitigate challenges prior, during, and post-transformation.

apree health's data center migration journey serves as a compelling blueprint for other healthcare organizations seeking to harness the power of the cloud to drive efficiency, innovation, and patient-centric outcomes.

apree health is enhancing the healthcare experience by combining technology and patient advocacy through an easy-to-use platform connecting doctors and care recipients.

Industry: Healthcare

Location: United States

Products: Google Workspace, Google Cloud Security, BigQuery, Google Compute Engine, Google Kubernetes Engine, Cloud

Datastream, Cloud Storage, Cloud Pub/Sub, Security Command Center, Identity and Access Management, Google Security Operations, Cloud HSM, Customer Managed Encryption Keys, VPC Service Controls, BeyondCorp, Enterprise Foundation Blueprint

About Google Cloud partner- SADA

SADA is a 7x Google Cloud Partner of the Year award winner with 10 Google Cloud specializations and is a Niche Player in the 2023 Gartner® Magic Quadrant™ for Public Cloud IT Transformation Services.

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