eBook
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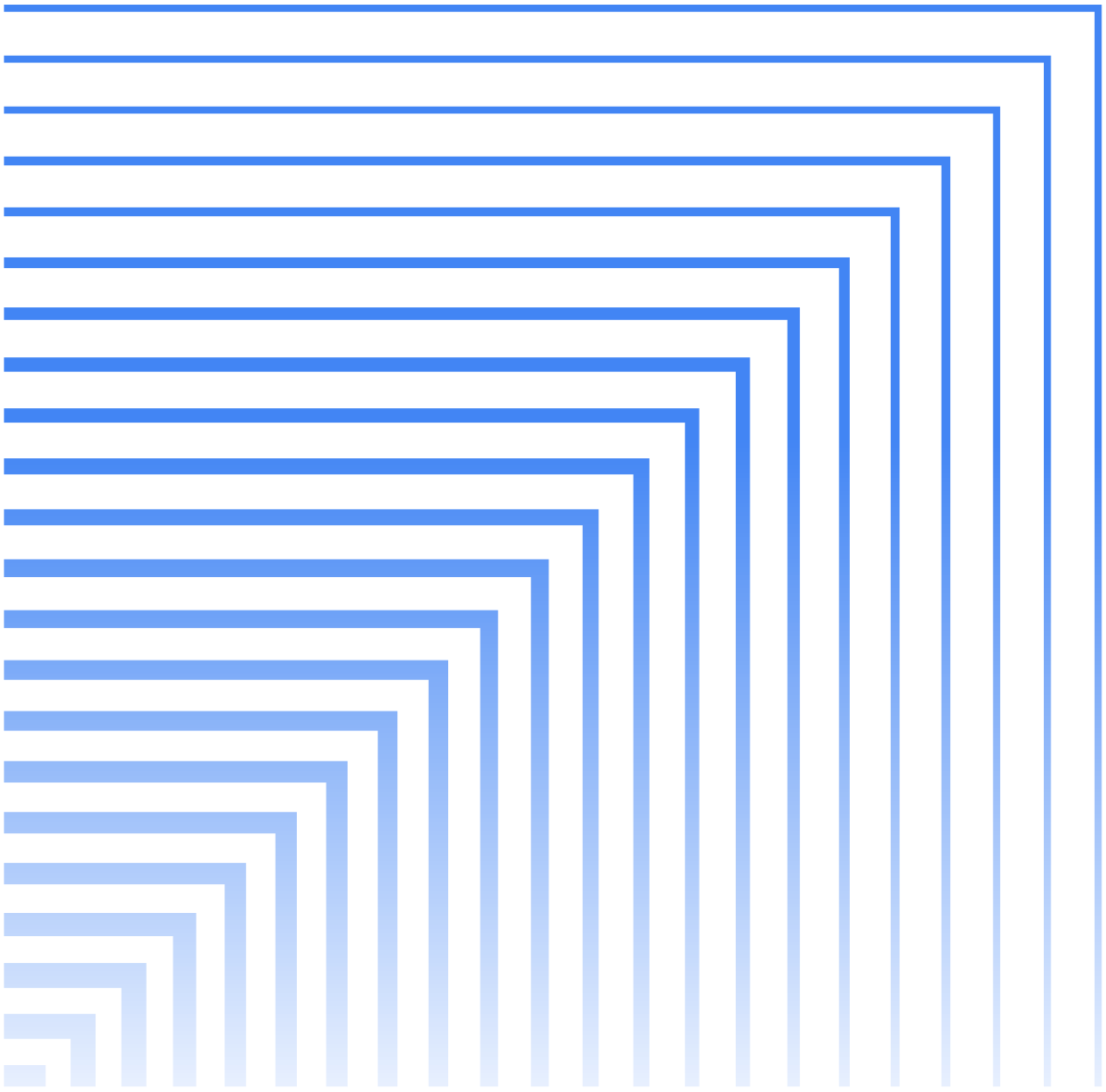
Build and scale faster with Google Cloud for Web3

Web3 represents the third iteration of the internet and promises to unleash a new era of innovation, creativity, and entrepreneurship.



Google Cloud

Web3, meet Google Cloud

It represents the third iteration of the internet and promises to unleash a new era of innovation, creativity, and entrepreneurship. Web3 is underpinned by blockchain, the decentralised ledger that has spawned cryptocurrencies and DeFi (decentralised finance). Both are reimagining financial services and yet Web3's reach goes further, much further. It is making its mark on industries as diverse as manufacturing, telecommunications, and retail, too.

The application of blockchain is attractive for organisations across the economy for good reason. Decentralised identities, for example, can put consumers back in control of their personal information. Meanwhile, blockchain technologies can improve private regulatory compliance, helping the regulators along the way to address fraud, money laundering and much more besides.

For manufacturers, think smart vehicle identification, machine-to-machine payments, and parts traceability as just three viable applications of Web3. For telcos, think loyalty management, stolen device tracking, and secure bidding. And for retail, think green energy tracking, IoT-enabled supply chain, and digital pallets receipt.

If blockchain is the enabler, it is your inspiration and creativity that is generating the services of tomorrow. And that's no easy task especially when Web3 makes exceptional demands on compute power and storage capacity, and necessitates faster throughput and additional security.

That's where Google Cloud can help. Not only do we provide the power and performance – the scale and security – we also offer a comprehensive support system.

This includes access to a vibrant community of like-minded innovators and entrepreneurs, growth opportunities, and **exclusive foundation grants**.

You can find out more about the Google for Startups Cloud Program Web3 Tier here.

At Google Cloud we know what it takes to build a business from the bottom up. That's why we want to back ground-breaking startups like yours. From raising funds to planning and designing new products and services, to developing and executing sales and marketing plans, we know you have plenty of day-to-day challenges. So, let us take care of infrastructure – and you can focus on innovation.

"On Web3, we are definitely looking at blockchain, such an interesting and powerful technology with broad applications."

– ***Sundar Pichai**, CEO, Google and Alphabet*

Google Cloud

Scale

Web3 businesses trade on scale. For a young company, growth is the one constant and it requires infrastructure that can absorb larger and larger volumes of data and provide fast access to it no matter where the team is working, or where customers reside.

Google Cloud has the infrastructure and services to meet scale:

Google's own backbone provides low-latency access to nodes and apps, and to quickly expand regions with a Virtual Private Cloud.

Google Cloud Spanner leverages fully managed relational databases allowing teams to quickly access large volumes of data on-demand, with 99.999% availability.

Google Compute Engine is designed to scale compute-intensive workloads when you need to track and analyse large volumes of transaction.

Google Kubernetes Engine scales existing clusters on any cloud using Anthos Service Mesh.

Google Cloud

Speed

Startup time operates at a different speed. Decision making accelerates, competitive pressure necessitates rapid response, and market opportunities demand near-instant reactions. New application development – to support the latest iteration of product or service – has to happen at pace, and must be supported by fast network and reliable performance once launched.

Google Cloud understands the need for speed:

Google Cloud's Premium Network Tier provides low latency and higher transaction throughput to deal with traffic spikes.

Blockchain Node Engine enables the provision of dedicated nodes and minimises node operations.

Google Kubernetes Engine allows businesses to automatically deploy, scale, and manager containers, simplifying deployment in the process.

Firebase, Google Kubernetes Engine, and Google Compute let you deploy and manage code changes.

Google Cloud

Intelligence

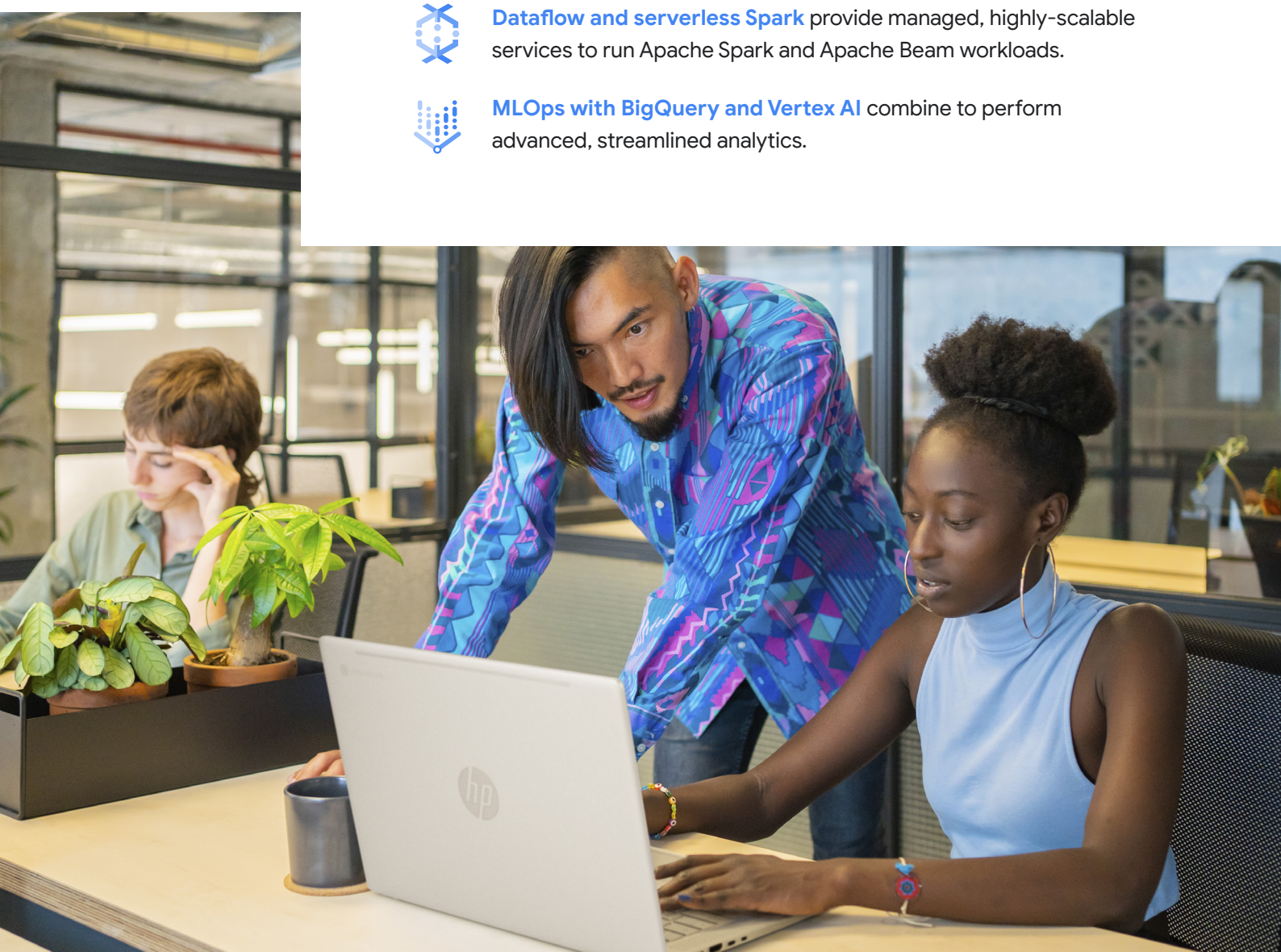
Real-time intelligence and streamed analytics are the lifeblood of Web3 entrepreneurship. They are the currency of competitive differentiation, the route to actionable insights. To handle compute-hungry data and deliver it at speed requires a particular kind of infrastructure and specialist tools.

Google Cloud has the infrastructure and tools to deliver timely intelligence:

BigQuery allows for blockchain data streaming in real time and on-demand analysis via Pub/Sub. Scales to thousands of cores in seconds.

Dataflow and serverless Spark provide managed, highly-scalable services to run Apache Spark and Apache Beam workloads.

MLOps with BigQuery and Vertex AI combine to perform advanced, streamlined analytics.



Google Cloud

Security

Blockchain companies are most likely to have a distributed workforce, a virtual team drawn from a global talent base. This typically means that valuable intellectual property might – without necessary care – traverse untrusted networks. That data stays trusted and encrypted at all times is a must for the Web3 startup.

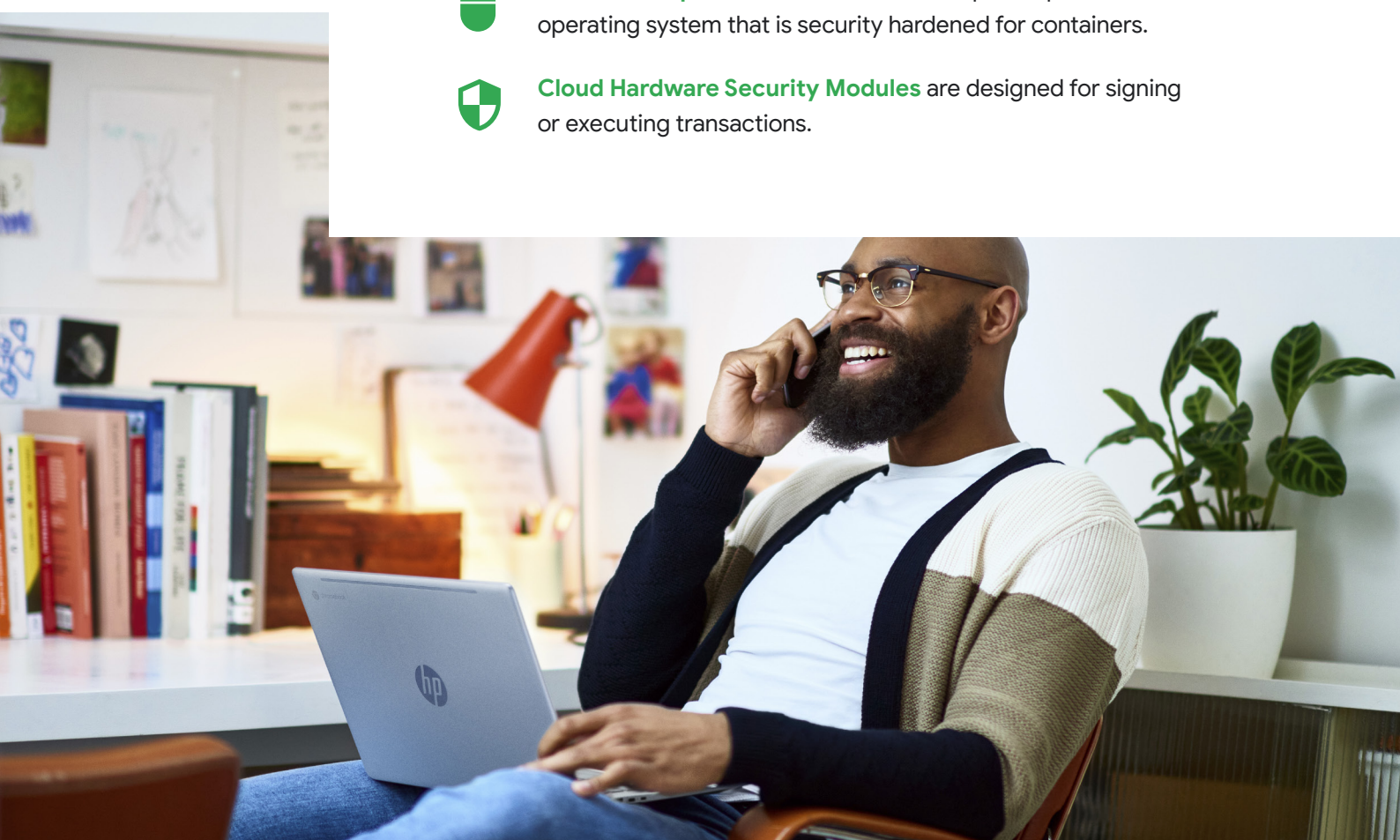
Google Cloud has the tools and framework to meet security needs:

Confidential Compute provides encrypted data in-use while it is being processed – even from privileged access (root-in-project), including the cloud provider itself.

Key Management uses KMS (Key Management Service) and CMEK (Customer-Managed Encryption Keys) to manage all keys on Google Cloud. Our partners offer more advanced key and secrets management offerings.

Container-Optimised OS is a small-footprint, open source operating system that is security hardened for containers.

Cloud Hardware Security Modules are designed for signing or executing transactions.



Google Cloud

Google for Startups Cloud Program Web3 Tier

Beyond the tangible benefits for Google Cloud explored previously, the Google for Startups Cloud Program offers two added benefits:

1. A community to connect and collaborate

Join a growing community of Web3 developers and Google experts to share ideas, network, and explore opportunities.

2. Resources to help you manage and grow

Efficiently run and scale your Web3 project or startup with must-have business tools and operational support, all in one place.

Moreover, when you sign up to one of our two tiers you'll be eligible for support specifically designed for Web3 projects and startups:

Start Tier

For Web3 projects and startups without funding (pre-seed)

Program benefits

- Up to $2,000 USD in Google Cloud credits, valid for two years[1]
- Apply Google Cloud credits to a Customer Care plan for unlimited access to technical support
- 12 months free Google Workspace Business Plus for new sign-ups[2]
- See more benefits here

Additional benefits

Access to Google Cloud events at global Web3 conferences like Paris Blockchain Week, Consensus, and TOKEN2049 Singapore.

Eligibility

- Web3 projects and startups not yet funded by an institutional investor or foundation
- Founded within the last 5 years
- Not yet received Google Cloud credits (beyond the free trial)

To find out more and to apply click here

[1] Credits can be applied towards Google Cloud Platform Services and Select Google Cloud offerings, subject to the Google for Startups Cloud Program - Startup Terms. [2] Company domain must not have been subscribed to a paid Google Workspace plan from within 31 days of applying to the Google for Startups Cloud Program, to the day the benefit is requested.

Google Cloud

Scale Tier

For Web3 projects and startups with verified funding up to and including series A

Program benefits

- Up to $200,000 USD over 2 years for Google Cloud and Firebase usage covered in:
  Year 1: 100% up to $100,000 USD in Google Cloud credits
  Year 2: 20% up to an additional $100,000 USD in Google Cloud credits
- $12,000 USD in Google Cloud Enhanced Support credits for one year
- 12 months of free Google Workspace Business Plus for new sign-ups[2]
- See more benefits here

Additional benefits

Invite-only access to gated Discord channel with Google Cloud Web3 product, engineering, partners, and other startups in the program.

VIP access to Google Cloud events at global Web3 conferences like Paris Blockchain Week, Consensus, and TOKEN2049 Singapore.

Input on the Google Cloud Web3 product roadmap and early access to new products.

Free access to advanced hands-on learning labs focused on Web3 and the latest Google Cloud technology.

Access to exclusive foundation grants from Aptos, Celo, Flow, HBAR Foundation, Near, and Solana Foundation totalling up to $1M USD each (or token equivalent).[3]

Access to a total of up to $3M USD in investments from the Polygon Ventures Ecosystem Fund, priority review from the Ventures Team, and access to all Polygon Venture benefits.[3]

Access to priority review for the Base Ecosystem Fund, introductions to the Coinbase Ventures and Listing teams, testnet Base Goerli ETH for building, and more.[3]

One month of Nansen Query at no charge and 20% off Nansen products and engagement fees for an additional 12 months.[3]

Up to $10,000 USD in Alchemy credits with VIP support, priority access to Alchemy University, and more.[3]

Gasless contract deployment with thirdweb, dedicated development support and dollar-matching up to $2,500 to promote Explore marketplace custom contracts.[3]

Eligibility

Web3 projects and startups that have funding (including equity, tokens, NFT token fundraising, or a grant from a blockchain foundation) up to and including series A (if series A, raised within the last 12 months).

Founded within the last 10 years.

Not yet received more than $4,000 in Google Cloud credits.

To find out more and to apply click here

[1] Credits can be applied towards Google Cloud Platform Services and Select Google Cloud offerings, subject to the Google for Startups Cloud Program - Startup Terms. [2] Company domain must not have been subscribed to a paid Google Workspace plan from within 31 days of applying to the Google for Startups Cloud Program, to the day the benefit is requested. [3] Offer subject to change without notification.

Google Cloud

Randstad transforms talent identification with Cypherium blockchain on Google Cloud

A world leader in human resources services, Randstad employs 40,000 people and prides itself as an enabler of human aspiration through technology. Now it has combined the power of decentralised ledger and the scale and flexibility of Google Cloud to match talent to corporate need more efficiently, freeing its teams to do more value-added work.

When a global bank needs a project team to respond to regulatory upheaval, a healthcare service requires emergency staff after a disease outbreak, or a multinational needs independent consultants to draft a strategy designed for weathering global trade conflict, the talent identification and verification process is typically bureaucratic and long-winded. This is at odds with the urgency of the need.

The combination of Google Cloud – with help from Google Workspace – and Cypherium blockchain frees Randstad from many of these manual verification tasks. “Google Compute Engine and the Cypherium blockchain have proven the ideal combination for us,” says Frank van der Bijl, Global Collaboration Manager at Randstad. “Both can be accessed with a few clicks; there’s no need to worry about building everything ourselves, installing other apps, or maintenance.”

With Cypherium blockchain, Randstad expects to introduce instant verification from recognised official sources.

It will be able to do this through a system of digital signatures, which allows data to be handled transparently and authentically, while maintaining privacy for Randstad’s clients and employees.

To handle billions of HR datapoints, Randstad relies on a range of Google Cloud features including BigQuery, Firebase, and Contact Centre AI solutions such as Dialogflow. In addition, it deploys AutoML to create prediction-based models. Google Cloud’s secure-by-design infrastructure is equally important for an organisation handling so much personal information.

The dramatic reduction in manual verification tasks means Randstad specialists can focus on what they are really good at: using creativity, intuition, and empathy to find the best match between candidate and job.

> **“On Google Cloud, you don’t need to know how to maintain your service on the cloud. With a few clicks, you can just run it.”**
>
> *– **Frank van der Bijl**, Global Collaboration Manager at Randstad*

Google Cloud

Google Cloud helps Merkle Science use blockchain to tackle financial compliance and enforcement

Merkle Science launched in November 2018 with a single-minded business proposition. The Singapore-headquartered startup intended to use the largest publicly-available economic datasets in the world to help financial services firms meet their compliance obligations, and aid law enforcement agencies in identifying suspect transactions. Google Cloud provided the scale, speed, and efficiency to make the proposition possible.

Merkle Science knew that financial services firms struggle to keep across their regulatory obligations especially when it comes to emerging cryptocurrency transactions. In many cases relevant anti-money laundering policies are not in place. Regulators and law enforcement, meanwhile, need to track risks including payments on the darknet, funds stolen as a result of cryptocurrency hacks, and potential Ponzi Schemes.

Addressing the challenge, Merkle Science focused on a blockchain solution. "We data mine the blockchain—the largest publicly available economics dataset in the world—and scrape large parts of the internet for information relevant to cryptocurrency policing," explains Nirmal AK, Chief Technology Officer of Merkle Science. "So cryptocurrency exchanges can use our platform to send us customer transactions for risk screening. We then conduct extensive analysis to identify risks associated with transactions, users, or platforms."

To handle such large datasets, Merkle Science turned to Google Cloud. The firms worked together to expand the BigQuery public datasets created for Bitcoin blockchain and other blockchain-based currencies.

In addition, Merkle deployed Cloud Composer for managed workflow orchestration and authoring, scheduling and monitoring of pipelines; Pub/Sub and Dataflow to feed information from mining, crawling, and third parties into a data ingestion pipeline; App Engine to conduct application deployments; Cloud storage to store files; and Cloud Bigtable to provide the throughput needed for the organisation's NoSQL database.

The result, allows the Merkle Science engineering team to focus on customer services, uptake, and rapid application development rather than administration and maintenance tasks. Google Cloud also ensures that Merkle Science can provide its customers with timely analysis and intelligence with near real-time streaming of events. "The managed services available from Google Cloud meant we can focus on the business rather than on maintaining underlying infrastructure," says Nirmal.

> **"The managed services available from Google Cloud meant we can focus on the business rather than on maintaining underlying infrastructure."**
>
> – ***Nirmal AK,*** *Chief Technology Officer of Merkle Science*

Google Cloud

Focus on innovation over infrastructure, with our Web3 startup program from Google Cloud.

To learn more, and to apply for Web3 benefits, visit
cloud.google.com/startup/web3