

**CASE STUDY**

# Multicloud that's Flexible and Fast

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Control Plane has allowed us to go from concept to production so much faster than before. Something that would take days or weeks can be accomplished in hours.”

**MAX FEINBERG, CTO, VERDOVA****KEY DETAILS**

- ✓ 30% Developer Time Savings
- ✓ Multicloud and Multi-Region on AWS and GCP
- ✓ Cost-Efficient Scaling

**INSTITUTION**

Verdova

**LOCATION**

USA

**INDUSTRY**

Ag Data Analytics

**SNAPSHOT**

The machinery and technologies used on the farm to grow crops increasingly grow data also – whether the GPS track of a planter, the fuel consumption of a combine, or the average tons-per-acre of a spreader. For most farms, even large ones, this data is too fragmented and siloed to be useful to the grower – or anyone else for that matter.

Verdova works with growers to aggregate data, cleanse and process it into meaningful data products valuable to buyers up and down the agricultural value chain, and return 85% of the proceeds back to the grower as an alternative revenue source.

To serve their growing customer base, Verdova stores and cleanses large volumes of macro-level and micro-level agricultural data ingested from the systems and applications used by growers and presents this data through an API and frontend applications.



## PROBLEM

# The Search for a DevOps Robot

The CTO of Verdova, Max Feinberg, worked at NASA earlier in his career on Astrobee – a free-flying robotic system designed to help astronauts with routine tasks, freeing them up for more strategic duties. In the aerospace industry, product releases required months of pre-planning, with substantial buffer zones for deployment. However, even years after leaving NASA, Feinberg found himself allocating a week or two of each cycle to deployment and stressing over all the things that could go wrong.

This stress was compounded by the fact that Verdova was using services from AWS, Google Cloud Platform (GCP), and Azure. For them, the arrangement allowed them to choose best-of-breed services, but was complex. The choice to use GCP was driven by the need to analyze incredibly large geospatial datasets – a task for which Google's Big Query was the only viable option.

## THE SOLUTION

# Flexibility of Multicloud Without the Hassle

Verdova was an early adopter of Control Plane. Feinberg knew from painful experience both how much time DevOps tasks can consume as well as how different they can be between clouds. Verdova systematically tested Control Plane on a workload-by-workload basis and finally settled on an arrangement whereby their API and front-end applications are hosted in Control Plane and access RDS (where most of Verdova's data is stored), S3, SQS, and Lambda in AWS and Big Query in GCP.

Control Plane's Universal Cloud Identity makes this hybrid multicloud architecture much easier to build and maintain. Verdova assigns a Control Plane identity to their workloads that is connected to the security policies of their cloud accounts, allowing the workload to access any service from any of their cloud accounts - whether an S3 object, an RDS database, or an SQS queue.

The real issue, though, was not the stress but the time. Feinberg didn't have a dedicated DevOps team and whatever time and effort he and his engineers put toward infrastructure was time taken away from customer-facing functionality, improved data cleansing, and deeper analytics.

This led Feinberg on a hunt to find the DevOps equivalent of Astrobee – a system that would handle the routine tasks so his team could focus on the important stuff.

This eliminates the need to embed and maintain credentials within each workload. Additionally, Verdova uses Control Plane's Cloud Wormhole to give their workloads access to certain RDS databases running inside of VPCs.

Feinberg has also appreciated the suite of Day-2 ops tools which Control Plane provides – from connecting a domain, to managing certificates, to the fact that Prometheus and Grafana are already integrated and ready to use. Even for an experienced DevOps engineer, these tasks can easily eat up days of valuable time and for a developer without expertise might eat a week or more.

## Availability Close to Customers

Verdova is partnered with a carbon credit marketplace, enabling them to precisely measure the amount of carbon sequestered on participating farms. Part of the marketplace's team is located in Lviv, Ukraine, far from the corn fields of Illinois. Even before the invasion of Ukraine on February 24th 2022, delivering low latency data from Verdova to the marketplace proved to be difficult. By enabling availability zones in Control Plane that are geographically close to this remote team, Verdova has been able to minimize latency and enable this partner to successfully consume Verdova's data even with suboptimal internet.

"Having availability zones that are close to our partners in Lviv makes a big difference. It gives us just the edge we need."



**Max Feinberg, CTO, Verdova**

## Scalability Without Over-Provisioning

The utilization of Verdova's API is highly variable. Periods of low utilization may be punctuated by periods of extremely high utilization when multiple clients request large or complex datasets. Control Plane enables Verdova to scale capacity up and down smoothly without the increased load affecting the quality of their services. Additionally, since Control Plane automatically adjusts the resources available based on load, Verdova is able to offer a high service level to their customers without over-provisioning. The capacity is there when they need it but it does not consume budget when they do not.

## Surprising Support - In a Good Way

Verdova has found using Control Plane to be very straightforward even for members of the team without DevOps experience. However, some workloads are inherently complex and require special consideration. Verdova has been "shocked" by the Control Plane team's responsiveness and expertise when they need support. In one such instance, the company was deploying Apache Airflow, which required several containers and advanced configuration. The Control Plane team offered prompt answers and hands-on help to set up Airflow properly.

"Each of my engineers probably saves 30% of their time by using Control Plane. DevOps tasks that used to take us 5 days we can now do in 1 day, so it allows us to focus on our application rather than our infrastructure."



**Max Feinberg, CTO, Verdova**

## Summary

Verdova enables growers to benefit from the mountains of data their machinery and equipment generate. Control Plane facilitates this model by enabling Verdova to easily combine and configure cloud services and resources from AWS, GCP, and Azure into a highly-available, low latency infrastructure. Furthermore – like a DevOps Astrobee – Control Plane handles the routine tasks so their team can focus on strategic problems.

### About Control Plane

Control Plane is a platform enabling you to run on any cloud without the pain. With Control Plane, engineering leaders can easily combine and configure public and private clouds and mix and match cloud services from AWS, GCP, Azure, and any other cloud to build flexible yet unbreakable cloud infrastructure.



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