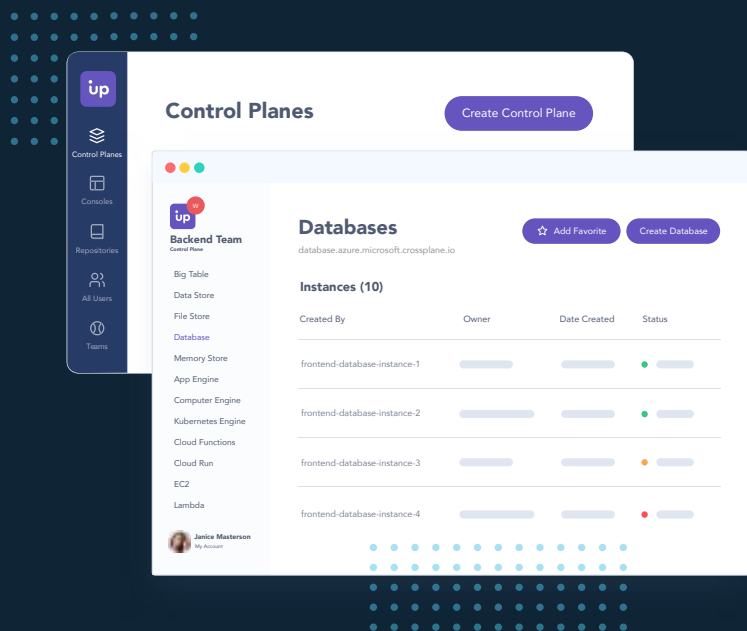# upbound

Whitepaper

Upbound: A platform for platform teams

Origins of Upbound

Upbound was founded in 2017 by a team of engineers who have been building hyper-scale platforms for the likes of AWS, Google and Azure for decades.

Origins of Crossplane and why?

Upbound is the company behind open source Crossplane - an open-source framework for building control planes. Crossplane was the first open-source project to recognize Kubernetes for its control plane, and not as a container orchestrator, and has been leading the effort to democratize control plane technology in the cloud-native community.

Every company is a cloud company today. Even if they're not selling software, digital experiences running in the cloud are business-critical components for businesses of all shapes and sizes.

In order to meet the needs of customers, and deliver software faster. Organizations have created platform teams, groups of highly skilled SREs, to deploy

Internal Cloud Platforms designed to give operators a central point of control and developers a paved road experience to getting applications to production.

In the old world, when engineers want to deliver solutions faster, they would have to determine and negotiate what tools they need, go through approvals and ultimately get bogged down by internal red tape.

Enter Upbound, a complete platform to manage infrastructure, eliminate configuration drift, and empower developers with self-service using our Universal Cloud Platform.

What is a control plane?

A control plane is like an air traffic control tower which schedules flights and ensures smooth operations on the ground. In the cloud, a control plane orchestrates infrastructure and application resources. Control planes power cloud platforms, presenting an easy-to-use API to people who use the platform while giving the teams who build the platform a single pane of glass to manage resources.

The current problem

Customers need to deploy applications and features to production faster than ever before. Doing so requires teams to be proficient in how to build and manage applications which run across various zones, regions, and cloud vendor environments. To do this, developers and operators (such as your SREs) need to work together, but today the two personas are in conflict with one another much of the time. Developers who need to make infrastructure configuration changes wait days and weeks for operators to approve their requests, while operators spend time reacting to requests and engineering one-off solutions to unblock teams thus slowing the pace of deployment and innovation.

The solution

Platform teams have a solution - build an internal cloud platform architected around a control plane that 1) manages all infrastructure across zones, regions, and vendors for operators while 2) presenting developers with a quick and easy self-service experience.

The vision for Upbound is to build a platform for platform engineering and ultimately an entirely new paradigm for cloud computing. We're in the business of running our customer's platforms by hosting and managing the control planes used to power their platforms. In addition to control planes, Upbound offers user interfaces and management services around them so customers can manage the entire platform lifecycle using our product.

What is unique about Upbound

Upbound is unique in that: it is the platform teams use to build their own platform vs. buying something off the shelf like Anthos, Tanzu, OpenShift, Heroku or others who are opinionated about how organizations use their platforms or what infrastructure they use.

Secondly, with existing vendors, what works well within one platform may not work so well in another thus making a multi-cloud or multi-tenancy difficult.

Lastly, existing vendors often lock customers in, thus making it difficult to switch to other vendors or between cloud and on-prem when required.

> Upbound allows customers to define their own cloud platform, the infrastructure it uses, the APIs it exposes, and the policies it enforces.

The platform is designed to scale with your needs: as new requirements arise, thus, new requirements can be added to the organization's API as and when the need arises.

The end result is a total self-serve platform for developers which is production-ready and meets all the security and compliance requirements.

The benefit for operators (e.g.: SREs or DevOps engineers) is that they get a single view of their infrastructure and what's going on within it, whether it's on-prem, on AWS, GCP or Azure.

Key benefits of Upbound

Future-proofed platforms

Never re-platform again. No matter what tools and vendors you add to your infrastructure, Upbound can manage them.

Faster time to deployment

Applications and new features are shipped faster so businesses can innovate quicker.

Innovate faster

Software engineers can focus on building rather than infrastructure provisioning, configuration, and management.

Lower Capex

Cloud computing bills are reduced.

Lower Opex

Reduced labour costs since SRE doesn't need to scale as much.

Reduced risk

Big fixes and governance controlled all in one place.

Smarter tech stack

Annual vendor negotiation results in more favourable terms for the customer.

Happier workforce

Happier software engineers whose jobs have become more enjoyable result in higher retention and successful hiring.

Why upbound

Upbound is a turnkey solution for building and managing your entire platform using control planes, while Crossplane is simply a project you can use to build your own control plane. There's a long way between getting a control plane running in production and running a platform with it, and Upbound gives you a turnkey solution.

Upbound provides a production-ready enterprise control plane, that allows organizations to define their own cloud platform with the control plane, you can define your own API.

The control plane connects to all your infrastructure whether on-prem, on GCP, Azure or AWS thus making those infrastructure components available to your control plane to interact with.

Upbound provides customers with 3 things:

Paved road experiences for developers looking to use cloud infrastructure and deploy applications to production.

A tailor-fit solution specifically addressing the customer's needs.

Forward-thinking design such that any component can be modified as business needs evolve so that customers will never re-platform again!

Features of the Upbound platform

Upbound's product offerings are available via a subscription model that currently has two tiers.

The first is a free tier catering to individuals getting started with control planes and who need tooling to debug and share their Crossplane providers and configurations. It includes the ability to publish public listings in Upbound Registry, and limited access to Upbound Cloud.

Upbound's enterprise tier unlocks additional value across the product portfolio. Platform teams can manage unlimited control planes in Upbound Cloud, create unlimited private listings in Upbound Registry, and get access to 24/7 support, prioritized bug fixes, implementation services, onboarding and training.

Fully managed control planes

Control planes running in Upbound are designed to be high performance, scalable, multi-tenant and secure for the most demanding scenarios.

Best-in-class platform building blocks

Upbound Marketplace is a one-stop shop for all the components you need in your platform powered by an Upbound control plane. Supported and certified listings are available so you can run your platform in production with confidence.

Self-service console

The Upbound Console is dynamically rendered from your Upbound control plane and the Crossplane packages installed in it.

Real-time platform dashboard

View all your platform resources being managed by your control plane in real-time so you can see who's doing what.

Backups and restore

Upbound automatically backs up and restores your control planes for your platforms so your customers have continuous platform availability.

Support for multi-tenancy

Designed for complex multi-tenant Kubernetes deployments, where isolation of cloud credentials, control plane resources, and users is critical.

Platform Engineering as defined by Upbound

AWS, Azure, and GCP were successful because they architected their platforms around control planes.

A control-plane-based architecture gives you a declarative approach to defining and managing resources, continuous reconciliation of resources to eliminate configuration drift, and a pattern for achieving self-service.

This insight inspired Upbound to invent Crossplane, an open-source framework for building control planes, which is rapidly democratizing control plane technology for the masses.

With Upbound, organizations can build their own internal cloud platforms which becomes the single point of control for their business.

How Upbound enables platform engineering

By leveraging control planes, Upbound offers a new methodology for building a custom platform and scaling infrastructure.

Upbound enables customers to orchestrate production-ready control planes as a building block for their internal cloud platform in a multi-tenant capacity right out of the gate.

Upbound control planes are fully managed, enabling customers to focus on composing their internal cloud platforms without fighting with legacy provisioning, configuration management, or deployment systems.

Platforms running with Upbound control planes are automatically backed up and restored so customers can have continuous and reliable access to their platform.

Want to learn more about Upbound?

Contact Us

About Upbound

Upbound is the industry's first platform for building internal cloud platforms. Designed around control planes, Upbound offers a new methodology for building an internal cloud platform, purpose-built for your organization. Customers can quickly build, deploy, manage, secure, and use their platforms all from a single point of control.