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Lightbend looks to take the sting out of cloud-native development with Kalix

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Introduction

Kalix is a PaaS for building and deploying cloud-native microservices and APIs at speed and, Lightbend claims, at the lowest possible cost. It provides an out-of-the box cloud-native stack and aims to take the sting out of the inherent complexity of cloud-native deployment by eliminating the need for the user to undertake time-consuming environment management. Kalix does not require DevOps resources, Kubernetes "ninjas" or expert database administrators as operators.

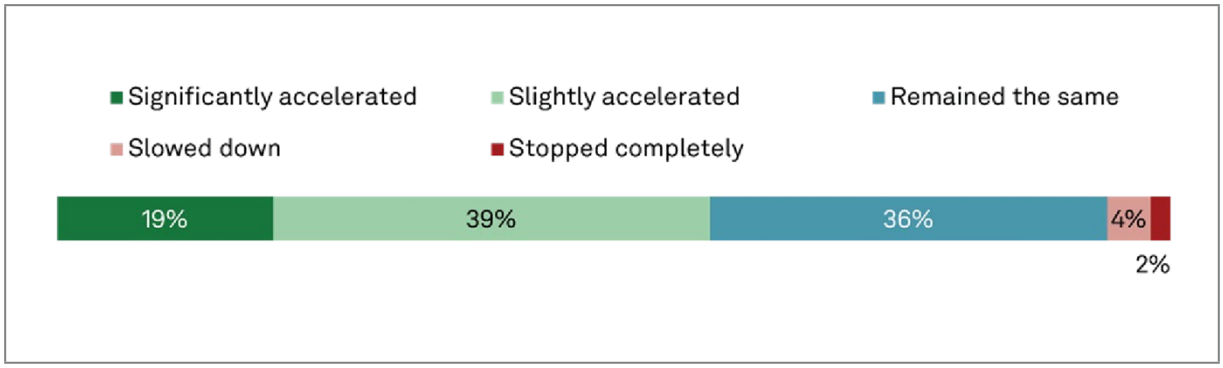
The Take

Application modernization means different things to different people, but a universal goal is to bring systems to a state where IT resources are more responsive to business needs. With ever-shifting market foundations — a steady stream of new hyperscaler services, updated hardware consumption models, and a mix of open-source and commercial software novelties — undertaking this work can be intimidating. While, on a large scale, the transition is still in its early days, for many organizations the hazard of not updating IT development and operations is beginning to outweigh the cost of doing so. This is where Lightbend's Kalix is focused, offering organizations a way to undertake the work without some of the heavy lifting and cost. It is directly targeting the personas and roles that are responsible for delivering new applications.

Context

Data from 451 Research's Voice of the Enterprise: Cloud, Hosting & Managed Services, Application Modernization 2022 survey reveals that once organizations get started on application modernization, momentum comes into play.

The pace of application modernization is accelerating



Source: 451 Research's Voice of the Enterprise: Cloud, Hosting & Managed Services, Application Modernization 2022.
Q. Over the past 12 months, how has the pace of your organization's modernization efforts changed, if at all?
Base: Organizations that are currently planning or developing a plan for application modernization (n=510).

Lightbend's goal is to reduce the challenges involved in moving to the cloud, which include time to market, developer and DevOps skills availability, architectural complexity and cost. In the cloud, the hyperscalers take care of managing the hardware and networking, virtualization, operating system and Kubernetes. However, the customer for the most part must take care of security, transport, database, frameworks and business logic. Kalix takes on the management of these aspects — with the exception of business logic — eliminating the need for developers to be concerned with any wiring and integration work with Kubernetes, databases (no database needed), security (built-in), services meshes, caches, pub/sub or API gateways.

Business model

Lightbend was founded as Typesafe in 2011 and was best known for the combination of open-source projects that are used to create reactive microservices, including the Scala programming language and Akka event-driven middleware. As such, Lightbend was almost entirely focused on open source and the Reactive programming model in its first few years. Today, Lightbend subscriptions operate under a business source license, and the 100-person company claims some 150 enterprise subscribers.

The target buyer for Kalix is the enterprise architects, developers, engineering managers and CTOs. It uses a pay-as-you-go model where customers pay for actual execution time. Its business is 90% direct now, with the indirect model driven by global systems integrator referrals. Lightbend's goal is to shift to 40% channel business.

Customers include Capital One Financial Corp. (real-time financial processes), Hewlett Packard Enterprise Co. (real-time analytics), eero by Amazon.com Inc. (IoT), Verizon Communications Inc. (modern e-commerce), and Tubi (application modernization). It has raised about $80 million in several rounds and claims about $20 million revenue — 65% in North America, 25% EMEA and 10% Asia-Pacific. In its most recent round, it raised $19 million led by Dell Technologies Capital. Previous investors Bain Capital Ventures, Blue Cloud Ventures, Greylock Partners, IBM Corp., Intel Corp., Juniper Networks Inc. and Shasta Ventures also participated.

Product

Kalix is built on Akka, Lightbend's JVM-based framework, which uses Reactive's loosely coupled application-design principles (the company's provenance) for building and running cloud-native

applications on Kubernetes. However, the company does not foreground this aspect, only that it enables performant, large-scale systems and is now supporting part of the company's story; it is no longer the story itself.

Kalix is deployed on serverless with managed service and private cloud options. Kalix uses GKE and EKS and runs on the distributed Yugabyte databases on Google Cloud (Yugabyte and Lightbend are both Dell Technologies Capital investments) and on AWS. It is available in both marketplaces. There are enterprise (multi-tenanted with dedicated parts of the cluster) and dedicated (fully isolated cluster) versions, both of which are managed services. Customers are billed by Lightbend, but can spend from their AWS or GCP accounts, which counts as a percentage of their committed hyperscaler spending and Lightbend collects a margin. Azure support will follow. It has not implemented Knative, which it believes is too limited in scale and performance for its needs.

Competition

In addition to the hyperscalers themselves — which all have modern cloud-native application development services taking advantage of their respective serverless environments, including stateful offerings — competitors include Microsoft Corp. Azure Durable Functions, Cloudflare Inc. Durable Workers, Macrometa and Digital Ocean Nimbella, while the likes of Serverless, Pulumi, Stackery and Stackpath are more complementary in that they are focused on the back-end services.

SWOT Analysis

Strengths	Weaknesses
Lightbend believes that the cost savings it unlocks across software purchases, engineering/consulting expertise, DevOps, DBA and SRE funding and reduced cloud spending (smaller infrastructure footprint required than traditional middleware) provide the budget that could support investment in Kalix.	It is significant that cost reduction is becoming a more prominent driver here, especially as enterprises begin to cite their spiraling cloud costs as a material impact on financial results — at the same time as pointing to the accelerated innovation, developer productivity, availability and security they get from using cloud. Lightbend will need the use cases and proof points to validate its claims here.
Opportunities	**Threats**
Application modernization efforts have accelerated over the past year. Most respondents (59%) at organizations with application modernization plans in progress report that the activity has intensified over the past 12 months, with almost 20% saying it has "significantly accelerated." In contrast, only 6% say the pace of work has slowed or stopped.	Whether to address skills shortages or keep up with more nimble competition, undertaking the development work required for application modernization is no longer a matter of if but when. The vast majority of modernizers are reaching out to third parties for assistance. However, there is no shortage of vendors offering such support — global systems integrators, public cloud providers, and software and system vendors are all in the mix — and customers will rely on multiple parties to make the transition.

Source: 451 Research.