



Grid Dynamics Solutions

Cloud and Application Modernization in AWS

www.griddynamics.com



Grid Dynamics

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Thought Starters: Cloud and Application Modernization



Create operational efficiencies migrating to the cloud



Capture substantial value from improved efficiency

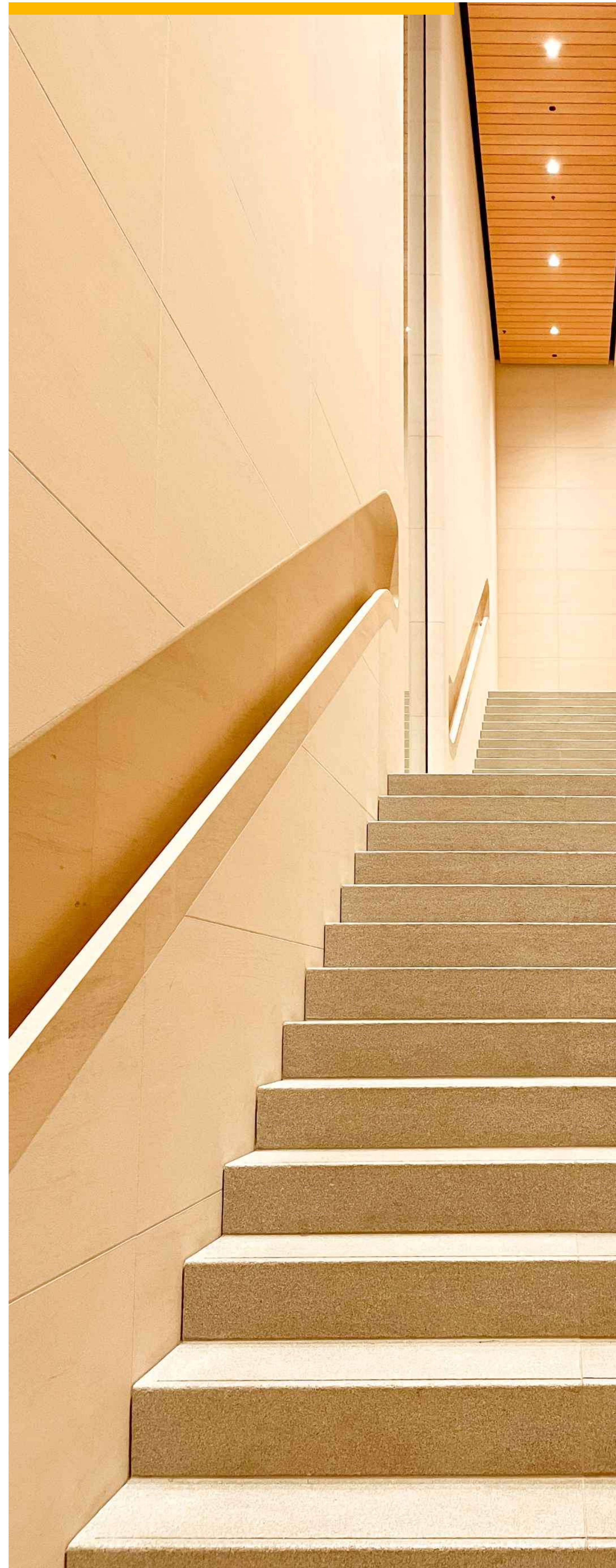
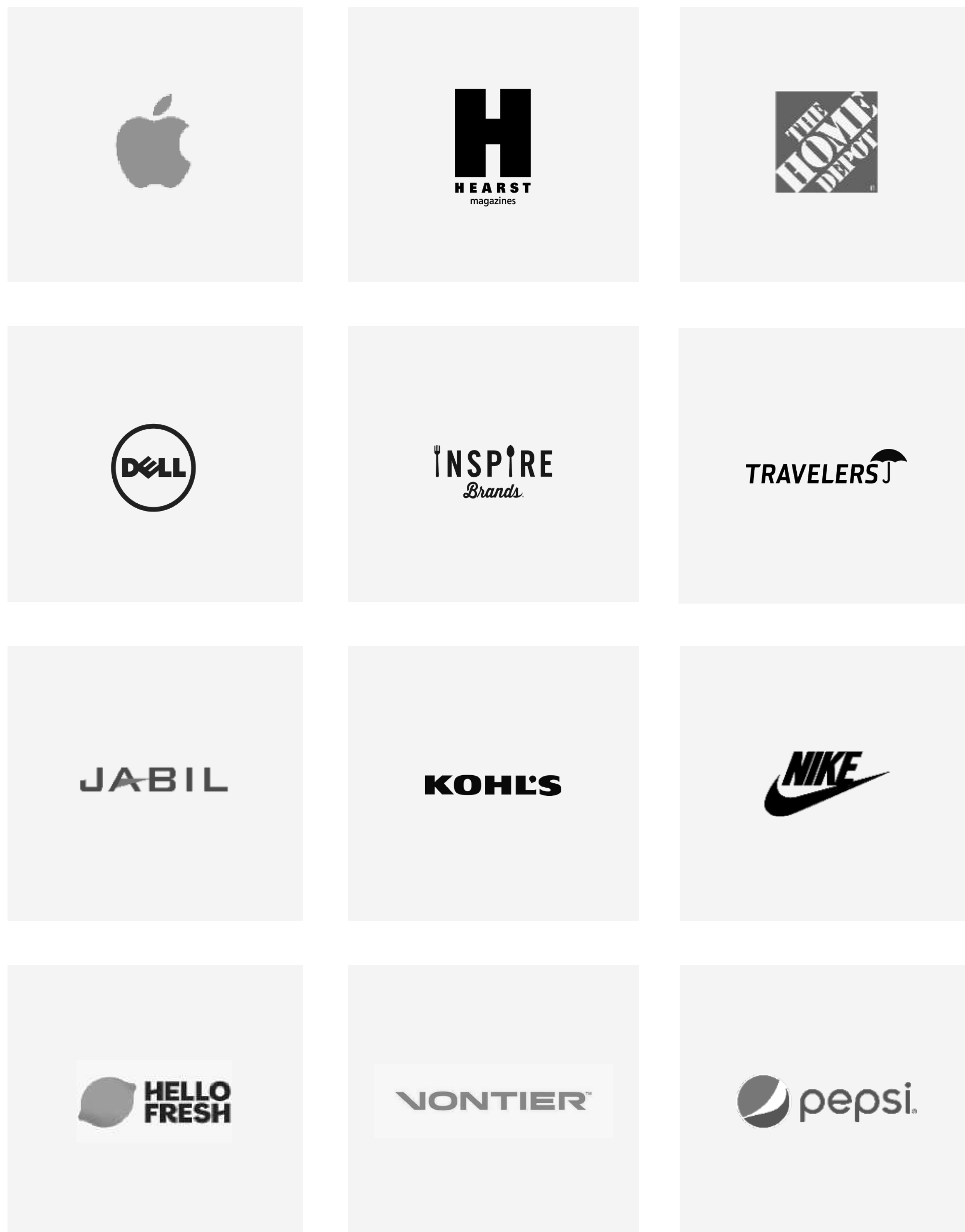


Cut operational and maintenance costs



Uncover new revenue and growth opportunities

Some of our clients in the area of cloud and application modernization



Solutions: Cloud and Application Modernization

We provide services from inception through development into production engineering, up and down the technology stack on AWS, with the ability to dramatically accelerate adoption of microservices and advanced analytics platforms. Our significant experience in this domain spans industries including technology, retail, manufacturing, and finance.

Application & Data Replatforming

Unlock the true value of cloud. Target high-value transformative applications and data. **Dive deep into the current state of monoliths and database platforms**, decompose the software and data elements and **recompose them in an AWS-native microservices platform**. Remove barriers by leveraging our design and engineering expertise to rearchitect hundreds of applications with direct business value.

DevSecOps Foundation

We **establish CI/CD tools and Agile processes** in AWS that enable companies to release changes in minutes, deploy 100s of changes in parallel, increase reliability and stability, and reduce cloud environment costs. Our standardized DevOps tools and processes help clients reduce operational costs and accelerate time to market. Our platforms are deployed as blueprints and tailored to application requirements.

Microservices Acceleration

Our **microservices platform** accelerates deployment to AWS **from months to weeks**. Our **Pivotal Cloud Foundry (PCF) to Amazon Elastic Kubernetes Service (EKS) Starter Kit** further accelerates applications moving off PCF (now called VMware Tanzu). Deployed as an Infrastructure as Code blueprint, our solution includes foundational capabilities to manage containers, APIs and credentials and is designed for zero-trust and observability.

Center of Excellence

We establish **cloud governance** that covers **architecture, development, financials (FinOps) and security**. Our AWS architecture frameworks govern key architectural decisions needed during a large transformation. In today's increasingly sophisticated and costly cloud ecosystems, we offer a unique and proven methodology for reducing cloud costs, optimizing usage efficiency, resiliency, & performance.

Quality Engineering

Our **Product Oriented Design** approach toward software engineering focuses on driving velocity with minimal defects. We leverage mature testing practices and DevSecOps capabilities (automating scans and tests) to ensure that systems perform at scale and under stress. When coupled with our chaos engineering, we proactively design for failure and improve from RCA and post-mortems.

Reliability & Chaos Engineering

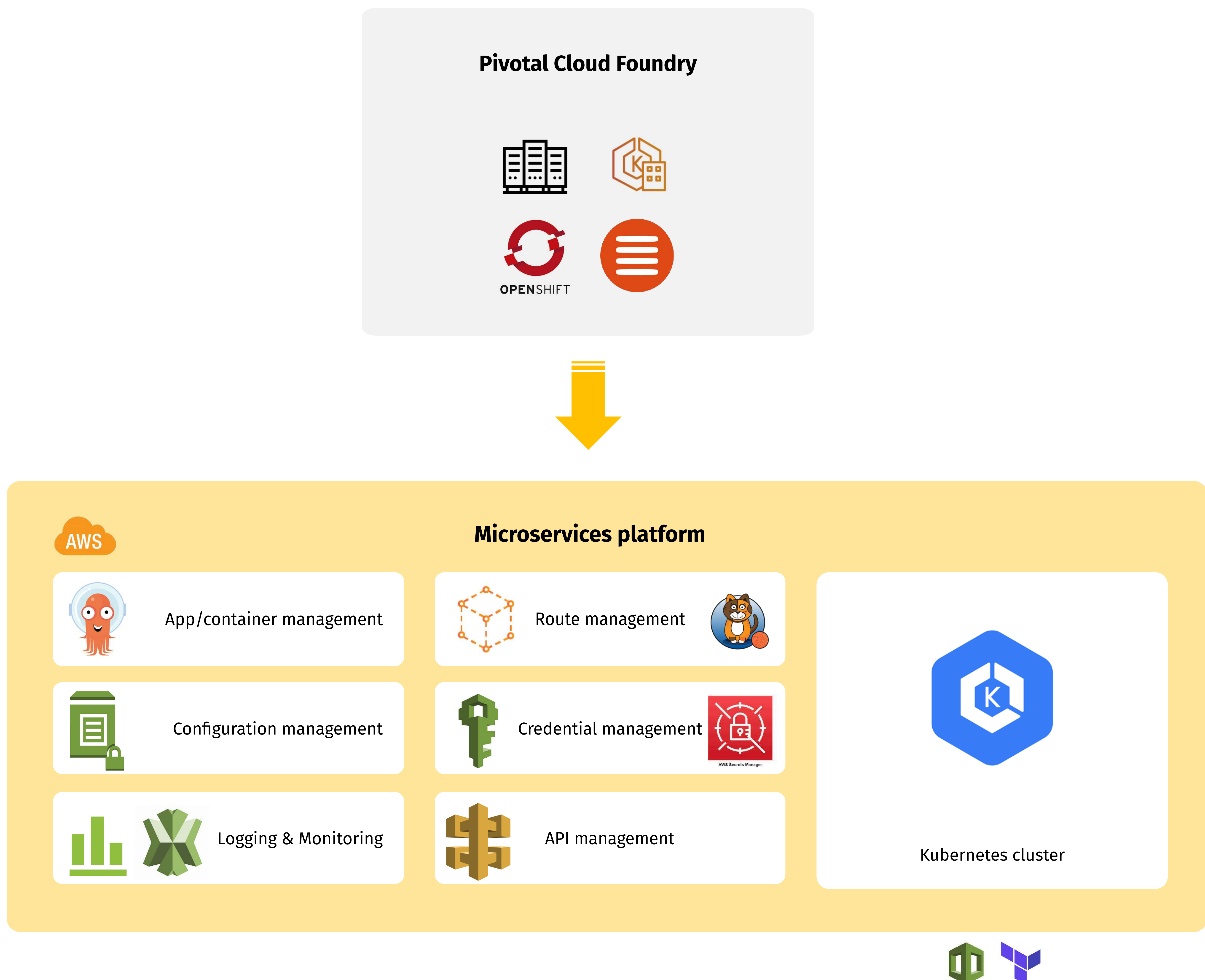
As natives of AWS cloud platforms and custom application development, our team often partners with clients in **SRE** roles leveraging advanced AWS technologies to **observe, automate, run analytics, leverage ML, and continuously improve** the full stack. We apply techniques like chaos engineering to constantly experiment and test the performance, stability and security of any given system.

Microservices Platform Starter Kit: Overview

Accelerate migration from PCF to Amazon EKS

We turned years of experience building custom microservices platforms into a starter kit leveraging AWS Elastic Kubernetes Service (EKS) Blueprints. The starter kit addresses the majority of questions that arise when companies encounter the world of cloud and microservices for the first time. AWS provides industry leading services to architect modern solutions including IoT, containers, serverless, and AI/ML. Our cloud practice brings a set of capabilities to enable application and data modernization, including our Pivotal Cloud Foundry (PCF) to EKS starter kit, as

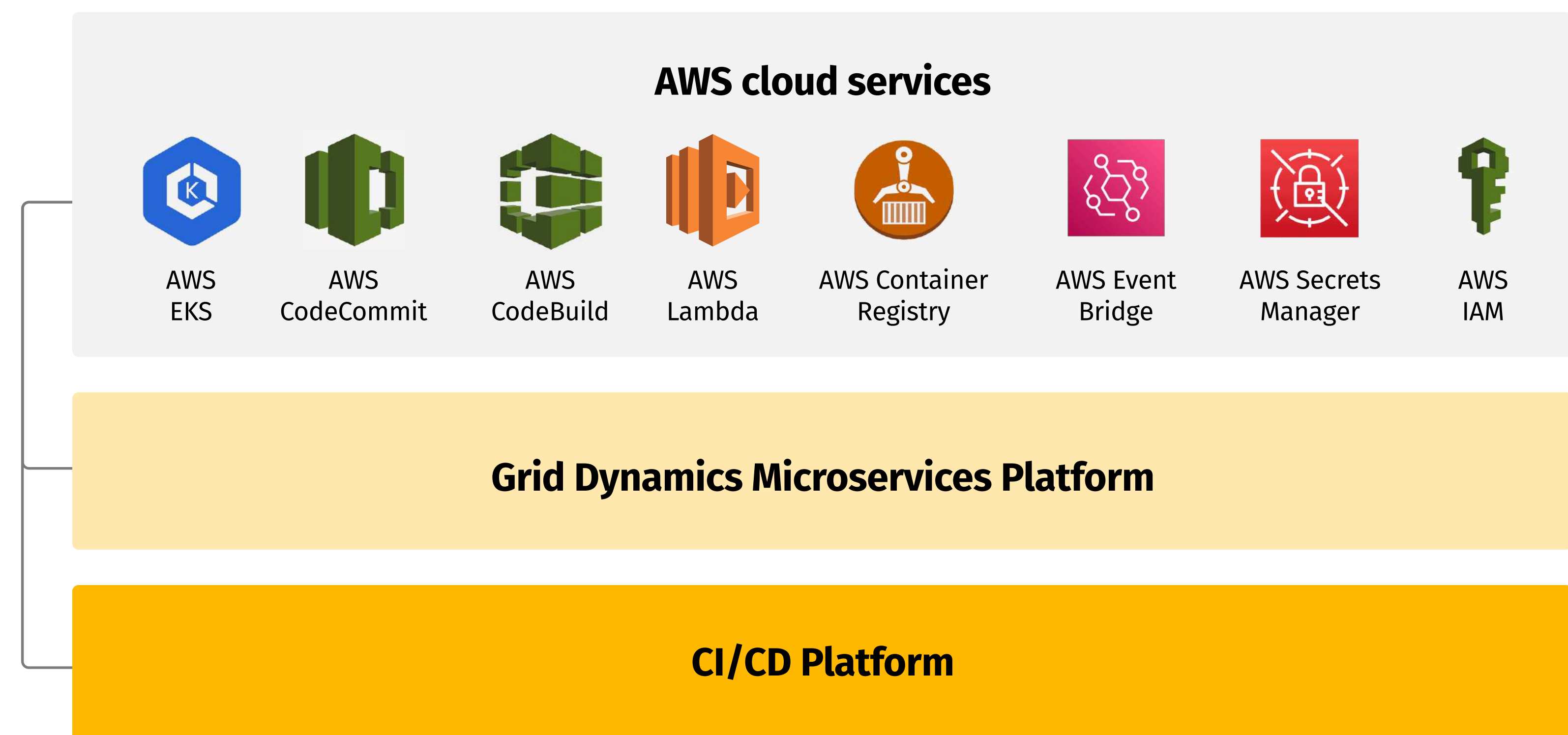
well as DevOps, quality engineering and advanced analytics. Application modernization requires toolchains and platforms to transform code with velocity while ensuring minimal defects and risk. Our reference implementation allows companies to focus on their business domain logic and enables quick onboarding of “clean slate” implementations. It is primed for easy migration of existing PCF microservices workloads and eliminates the time usually spent on the infrastructure work associated with the beginning of a cloud journey.



Microservices Platform Starter Kit: Features

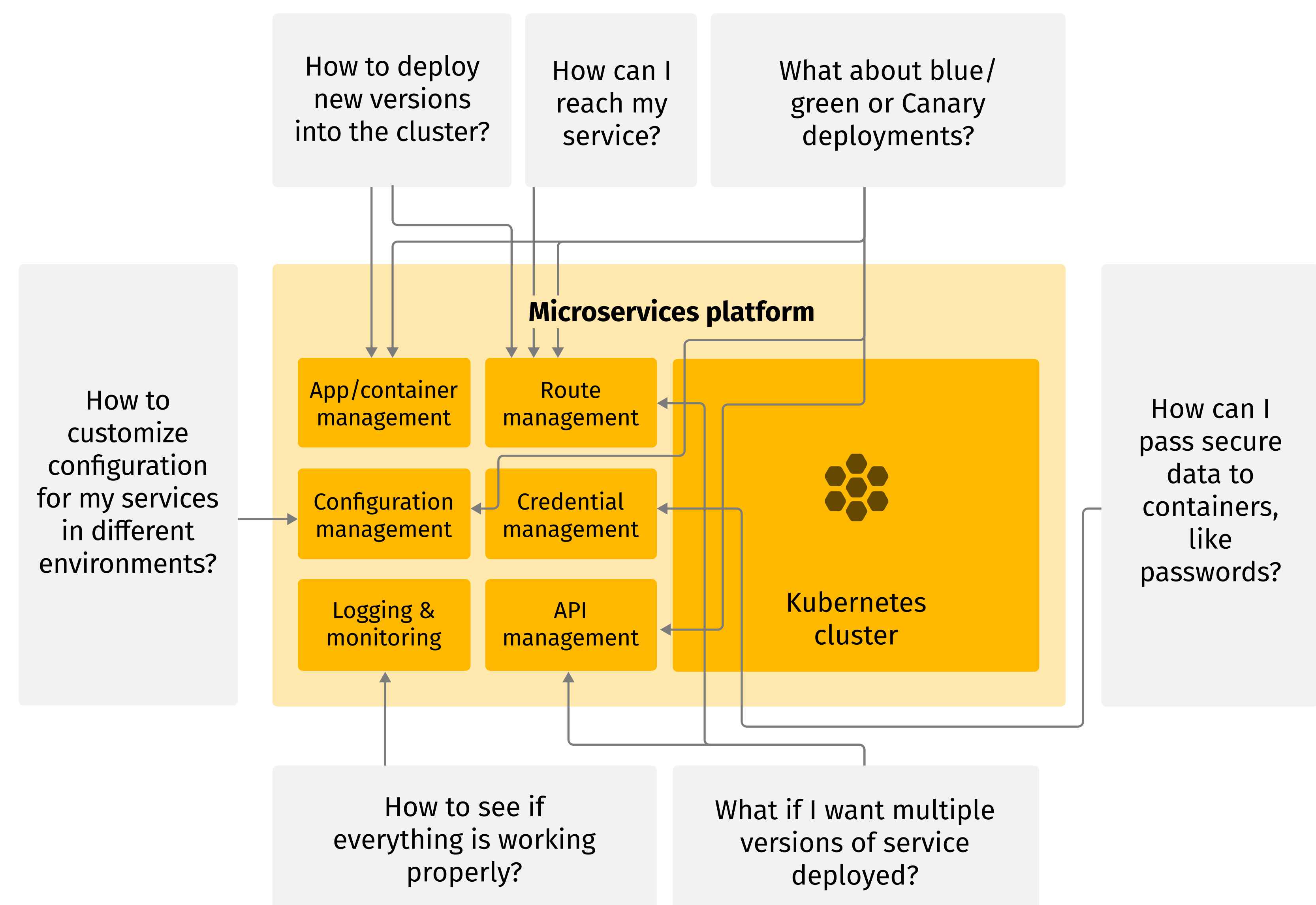
Microservices Starter Kit

Grid Dynamics' Microservices Platform Starter Kit leverages Amazon EKS Blueprints for fast, seamless cloud migrations from PCF (VMware Tanzu) to AWS Kubernetes. Coupled with our microservices and CI/CD platforms, we provide a foundation for speed, cutting infrastructure provisioning time by 60% in a fully integrated cloud-native environment.



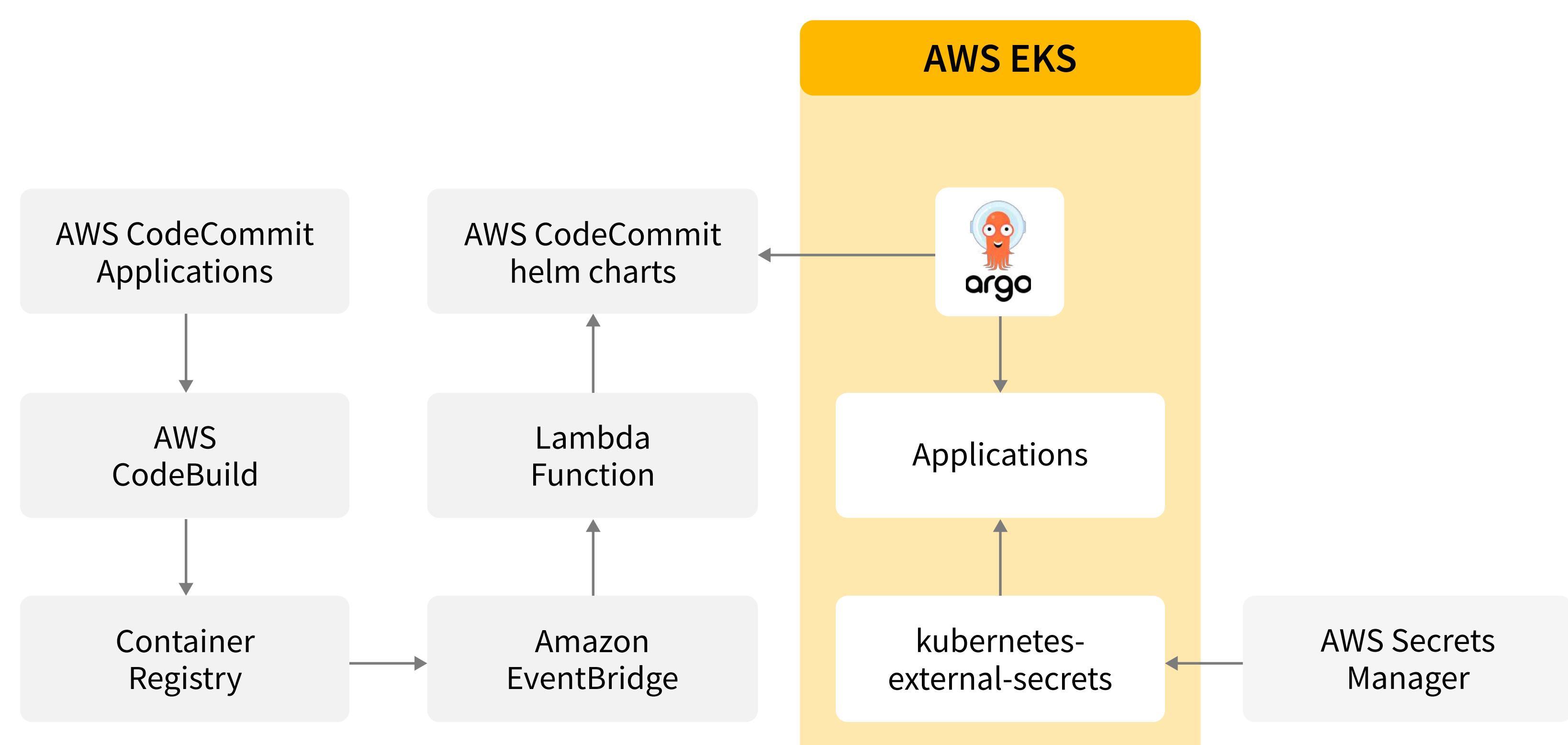
Microservices & CI/CD Platform

Our microservices and CI/CD platforms come as a pre-defined ecosystem blueprint that provides pre-packaged solutions to common questions raised when migrating to the modern technology stack. The platform provides capabilities for CI/CD processes, infrastructure automation, security and compliance management, and operational processes such as AIOps.



Powered by AWS EKS Blueprints

Based on Amazon's EKS Blueprints, which are customized to support easier migration of real workloads and provide additional support for Code Build pipelines provisioning, the PCF to EKS Starter Kit includes CI/CD provisioning that requires no code changes on the application side, enables a secure workflow for credentials and secrets for applications, and provides capabilities for future enhancements.





Private cloud for a leading auto manufacturer

The change development, analytical, and manufacturing processes at a leading automotive company required robust processing power to support complex operations distributed across many geographies. Grid Dynamics was engaged to design, implement and manage massive Kubernetes clusters hosting multiple workloads. Due to the size, it was prohibitive to run most of them in the cloud.

3
isolated geo-regions;
mix of VMs, bare metal, and cloud services

~90%
of infrastructure is on-premises

Outcomes

50
fully automated and managed Kubernetes clusters, with plans to expand up to 200

3
parallel tracks of engagement
(platform engineering, microservices platform, SRE)

- Grid Dynamics implemented end-to-end k8s cluster deployment automation, including starting off bare metal, setting up monitoring, policies, and seamless upgrade plans.
- Continued support on the SRE side allowed for rapid growth while continuing to provide reliable infrastructure.
- A separate project spawned to provide a management platform layer, including cluster inventory, orchestration, identity management, and APIs to interact with other systems.

AWS-native personal shopping assistant portal for a luxury retailer

This American chain of luxury department stores focuses on high-end curated products and excellent customer service, including unique experiences like personal shopping assistants and more. Grid Dynamics was engaged to support the client's vision of providing new ways to shop by creating a set of omnichannel experience solutions developed separately from the main system. The long-term strategy is to migrate all (or the majority of) workloads to the cloud, with AWS as the platform of choice.

legacy ATG system

limited functionality to meet changing customer experience demands

slow & difficult

to support and extend the system with new functionality

Outcomes

AWS-native solution

Amazon API gateway, SNS, Kinesis, S3, DynamoDB, and AWS Lambda for CI/CD provisioning

\$60 million

increase in customer spend

- Grid Dynamics developed a custom application that facilitated new ways for sales associates and personal stylists to collaborate.
- The solution is based on an AWS-native technology stack and heavily employs AWS API gateway, SNS, Kinesis, S3, DynamoDB, and other AWS-specific technologies.
- The business logic is represented by a set of Lambda functions, which are built and deployed to AWS via CI/CD pipelines implemented company-wide.
- The solution was able to provide unique differentiating experiences for customers that helped improve conversions, customer loyalty, and ultimately provide impactful business value for the company.





Engage with Grid Dynamics

1

Our team of cloud and enterprise technology experts work with you to **define roadmaps** for cloud migration, application modernization, or other enterprise capabilities.

2

We work with you to define an optimal **engagement model** that can include both your and Grid Dynamics teams. We leverage our **starter kits** built using open source and cloud-native components to accelerate the implementation.

3

We deploy **cross-functional teams** with proper domain/technology leadership to execute projects from the roadmaps and deliver solutions end-to-end. Our teams usually work with clients' stakeholders and product owners in a **co-innovation** model.

4

We focus on **iterative execution** of the roadmaps to deliver business value in short phases, but also continuously **refine the strategy** and come up with improvement proposals.

5

The co-innovation approach helps you to **establish a strong technology culture** in your organization, efficiently manage the roadmaps, and scale your cloud and DevOps capabilities.

About Grid Dynamics

Grid Dynamics is a global digital engineering company that co-innovates with the most respected brands in the world to solve complex problems, optimize business operations, and better serve customers. Driven by business impact and agility, we create innovative, end-to-end solutions in digital commerce, AI, data, and cloud to help clients grow.

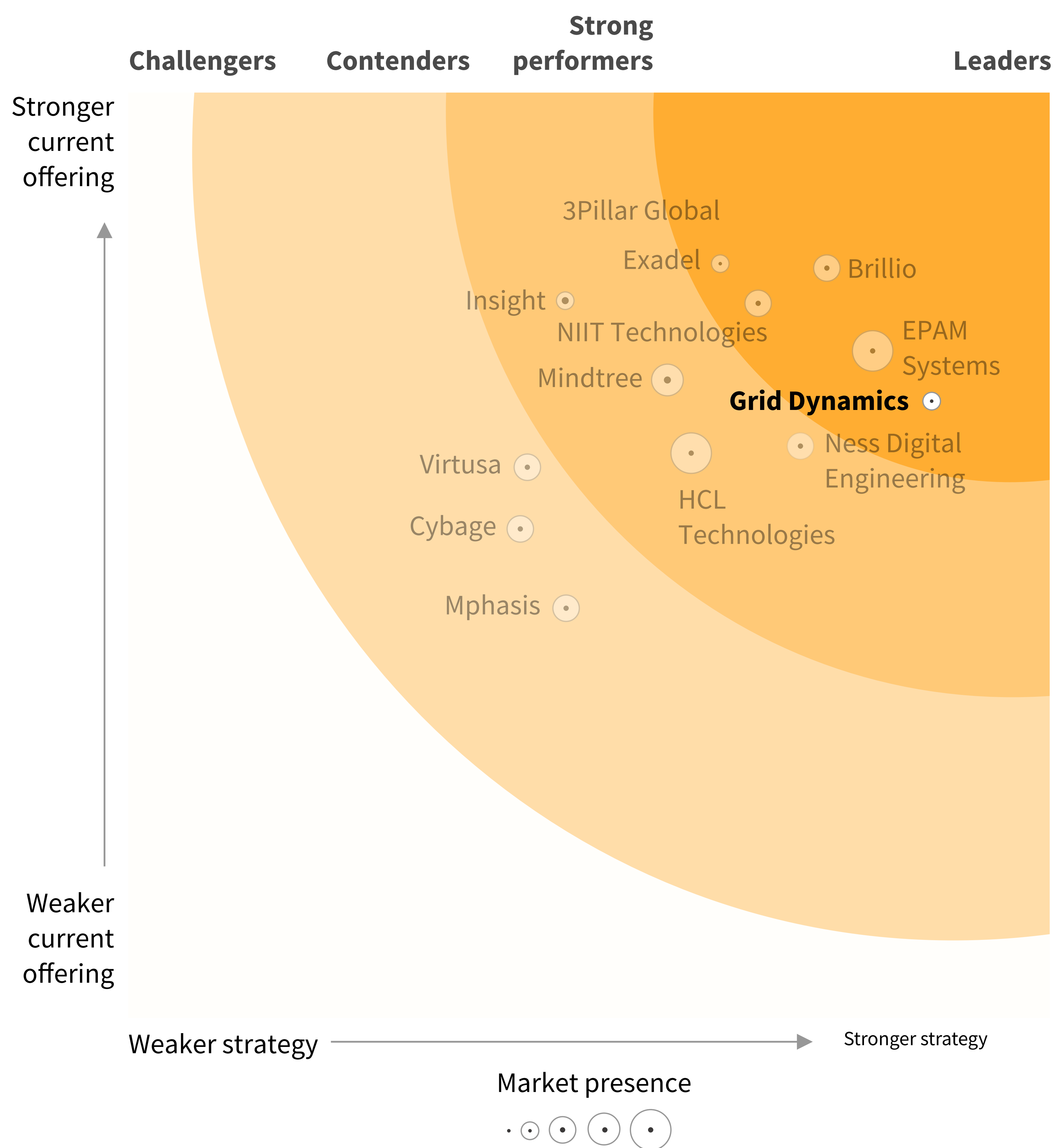
Headquartered in Silicon Valley, with delivery centers located throughout the globe, Grid Dynamics is known for architecting revolutionary digital technology platforms for 7 of the 25 largest retailers in the US and 3 of the 10 largest consumer goods companies in the world, as well as leading brands in the digital commerce,

manufacturing, finance, healthcare, and high tech sectors.

Our secret sauce? We hire the top 10% of global engineering talent and employ our extensive expertise in emerging technology, lean software development practices, a high-performance product and agile delivery culture, and strategic partnerships with leading technology service providers like Google, Amazon, and Microsoft.

In 2019, Forrester named Grid Dynamics a leader among midsize agile development service providers. In 2020, Grid Dynamics went public and is trading on the NASDAQ under the GDYN ticker.

The Forrester wave™ Midsize Agile Development Service Providers Q2 2019





About Grid Dynamics








Key facts

- 13 countries across North America, Europe, and Asia
- 3,800 employees in Q3 2022
- Forrester Leader Midsize Agile Software Development Service Provider Q2 2019

Areas of expertise

- **Experience engineering**
Web | Mobile | AR/VR
- **Data Science and AI**
Search | Personalization | Supply chain | IoT
- **Platform engineering**
Microservices | MACH | Composable
- **Data engineering**
Big data | Streaming | MLOps
- **Cloud and DevOps**
CICD | AIOps | SRE | QE

Clients

	Google	
align		
RAYMOND JAMES		AMERICAN EAGLE
LVMH		



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