PegaWorld

JUNE 1-3, 2025 | LAS VEGAS

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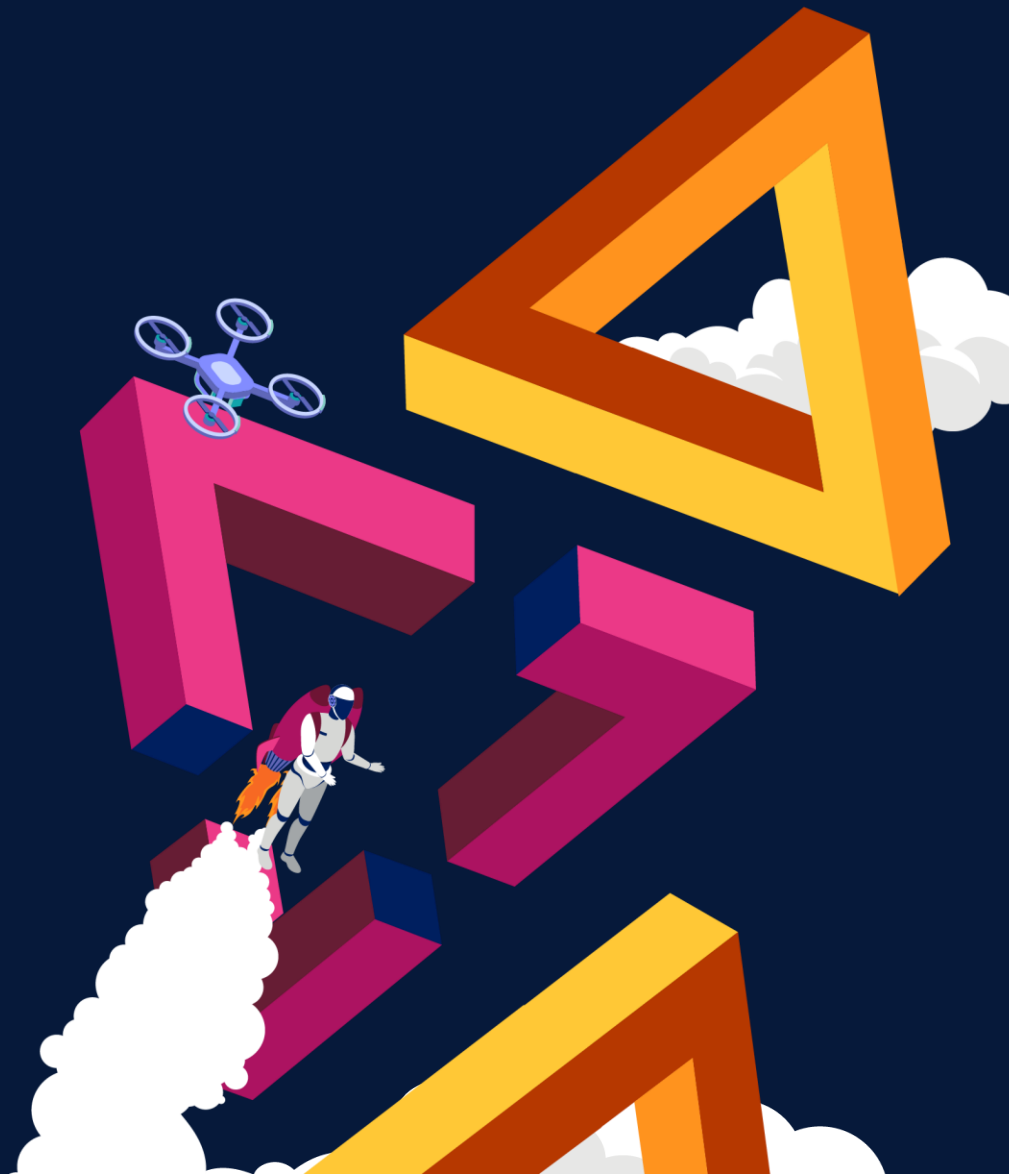
Unleashing the Power of Pega Cloud

A Deep Dive into our Scalable Architecture built on Kubernetes



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The Pega Cloud Resume

What we offer on Pega Cloud

36 global regions

16+ compliance certifications

30,000+ compute instances

At least 1 update every 20 minutes, 24x365

Layered Security and Isolation with best-in-class encryption

Multi-Zone High Availability and Data redundancy

10+ years of experience in running mission critical apps on cloud

Multi-Cloud, Runs on AWS and GCP

Dave Casavant
Senior Director,
Cloud Architecture, Performance & Quality
PW
25
Kamil Dudek
Fellow Cloud Architect
GenAI & Backing Services

Pega's as-a-Service Timeline

2011

Cloud 1

- Targeted to improve ROI over client-managed software.
- Focused on security, reliability, and integrations.

2015

Cloud 2

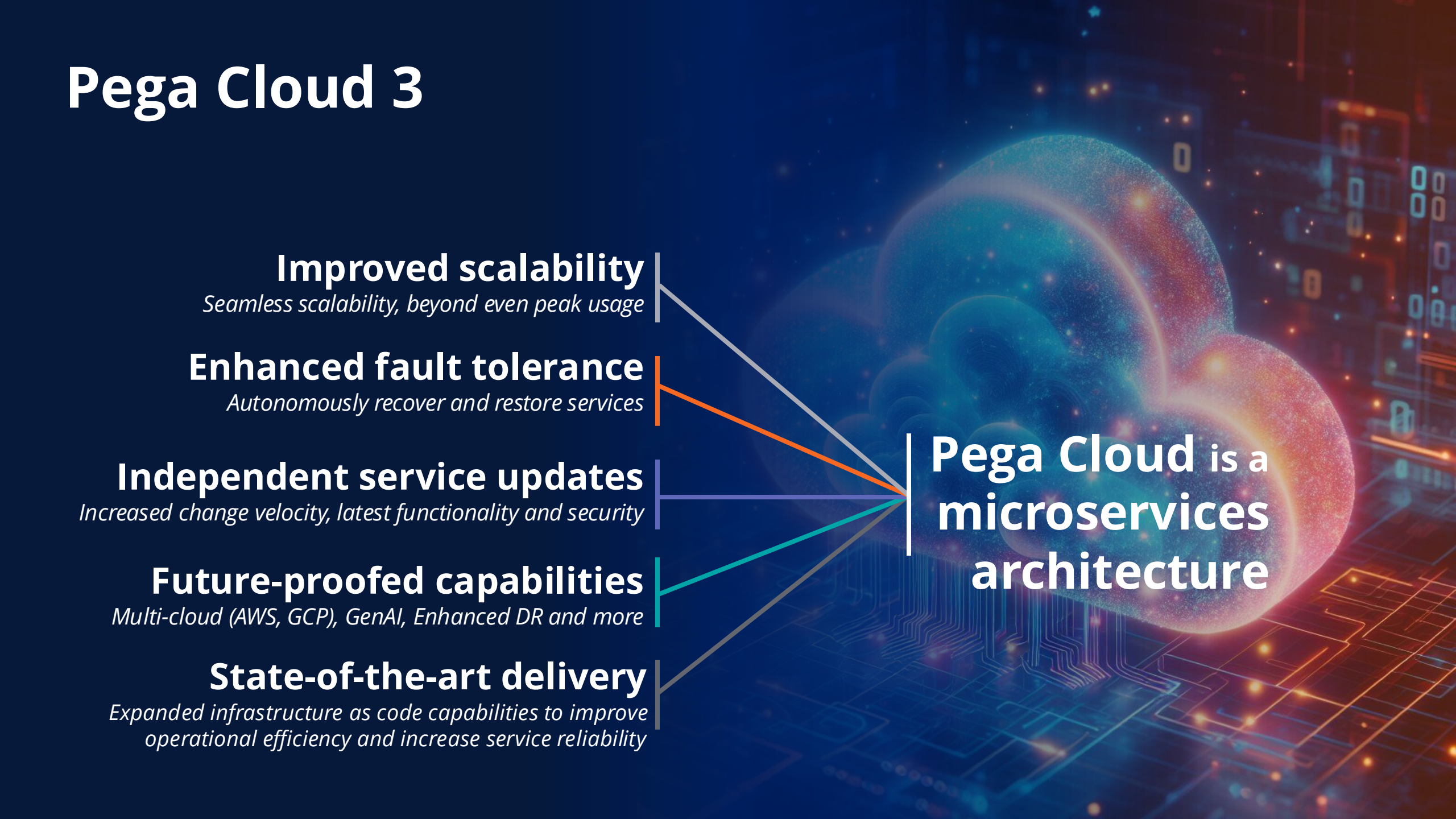
- Containerized Infinity deployments.
- Focused on operational consistency across the fleet.

2023

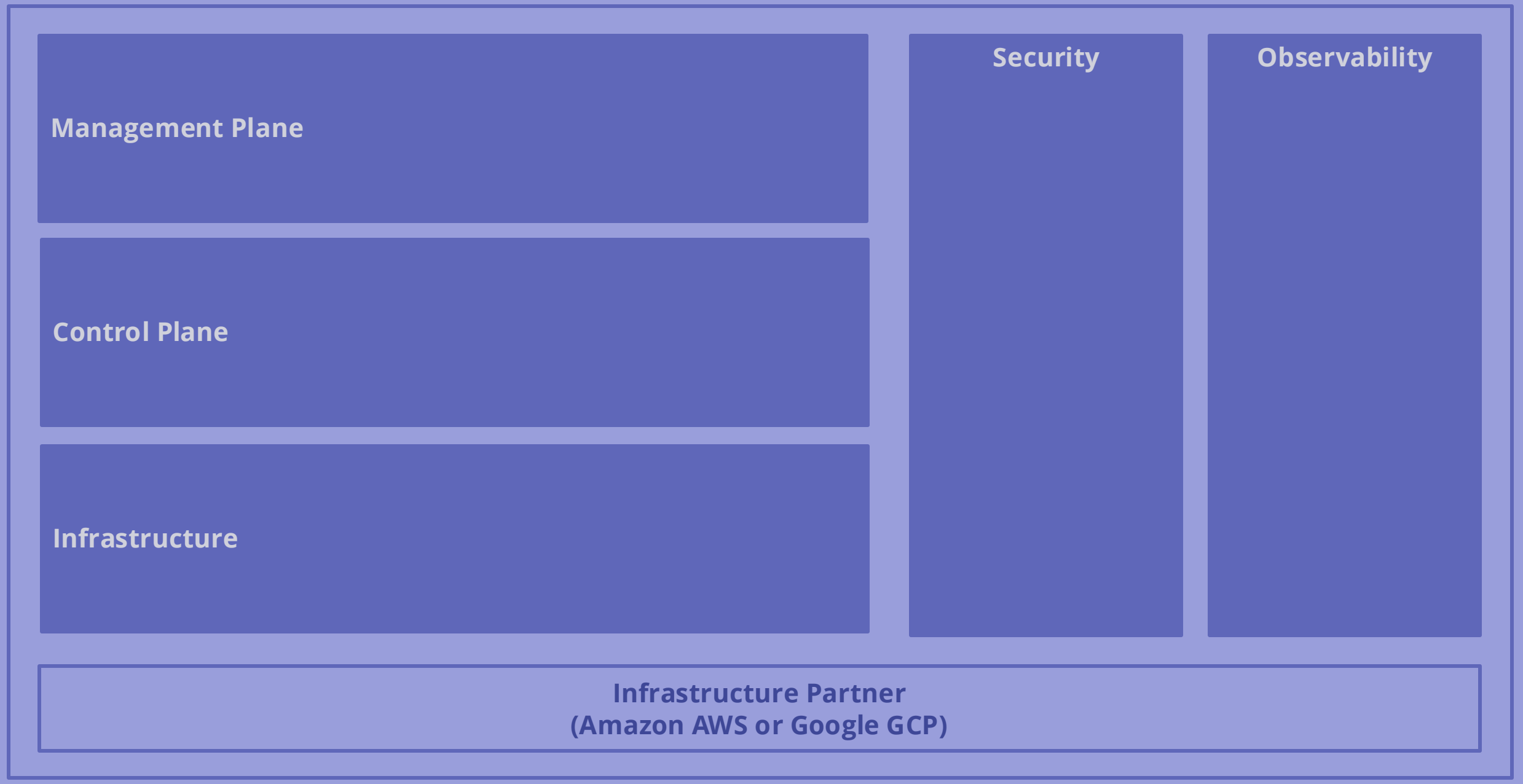
Cloud 3

- Embraces industry-standard container orchestration and microservices for a more resilient service offering.
- Focused on improved scalability through technologies like autoscaling.

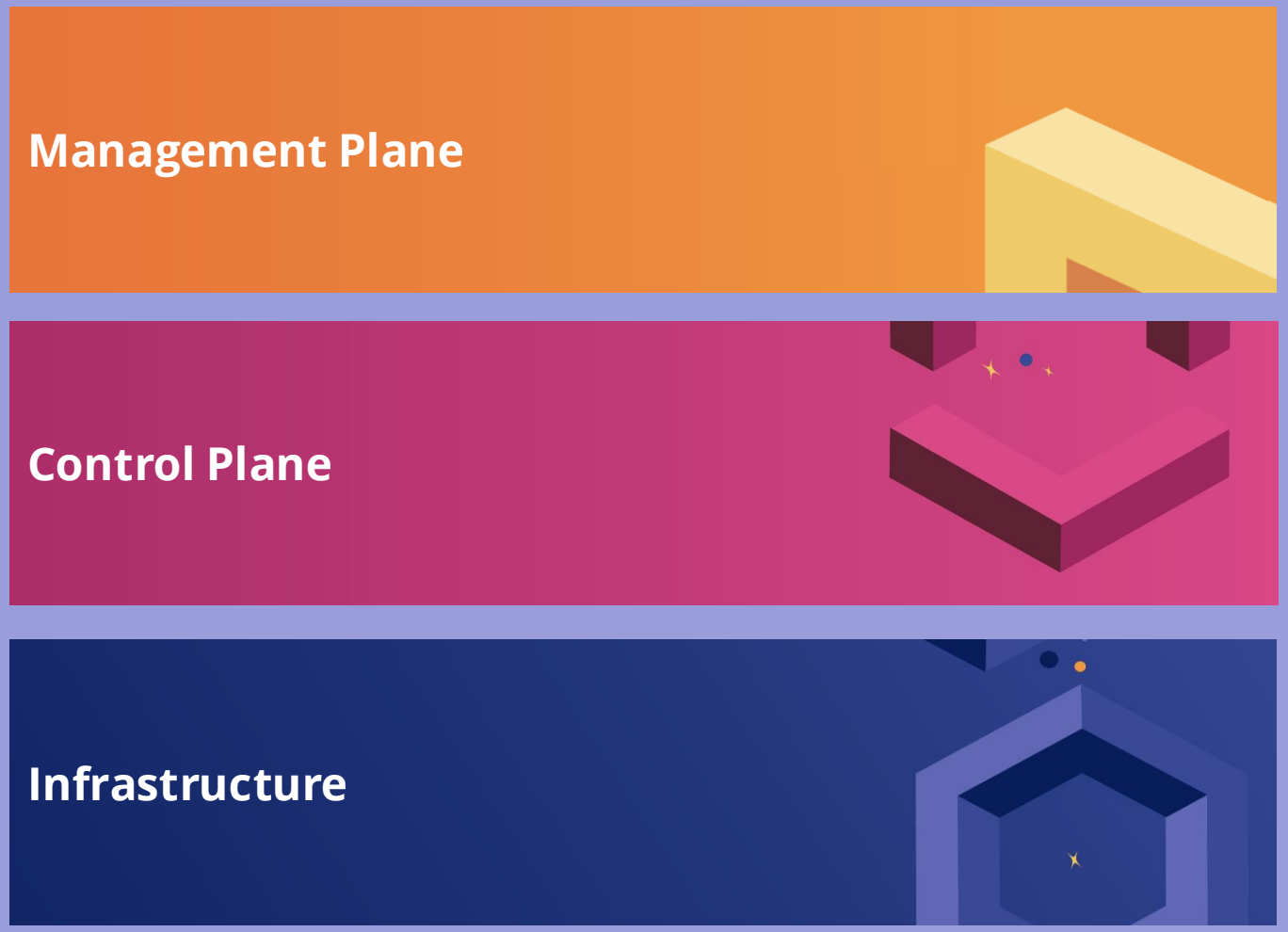
Pega Cloud 3


Improved scalability
Seamless scalability, beyond even peak usage
Enhanced fault tolerance
Autonomously recover and restore services
Independent service updates
Increased change velocity, latest functionality and security
Future-proofed capabilities
Multi-cloud (AWS, GCP), GenAI, Enhanced DR and more
State-of-the-art delivery
Expanded infrastructure as code capabilities to improve operational efficiency and increase service reliability
Pega Cloud is a microservices architecture

Pega Cloud Architecture



Pega Cloud Architecture

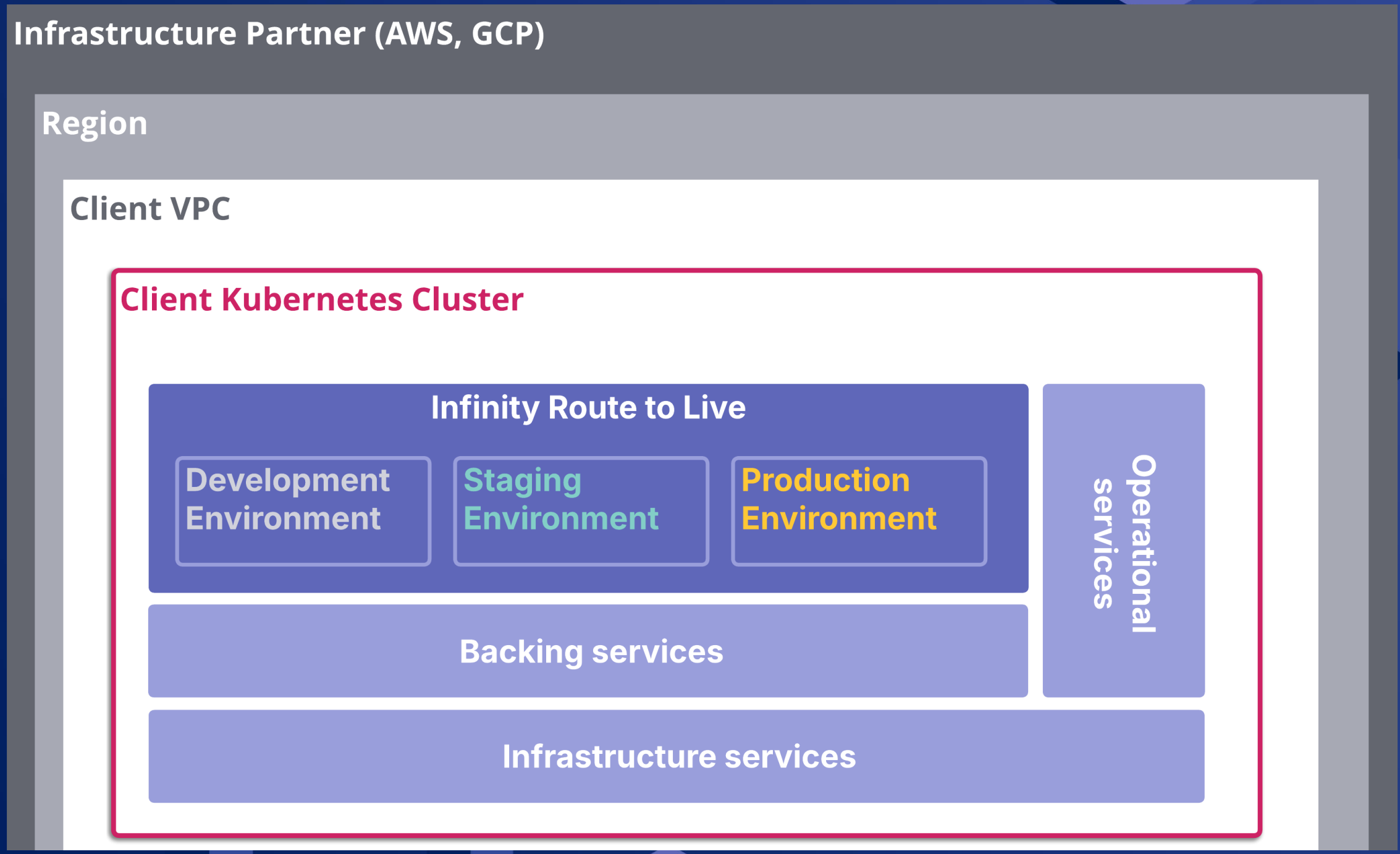


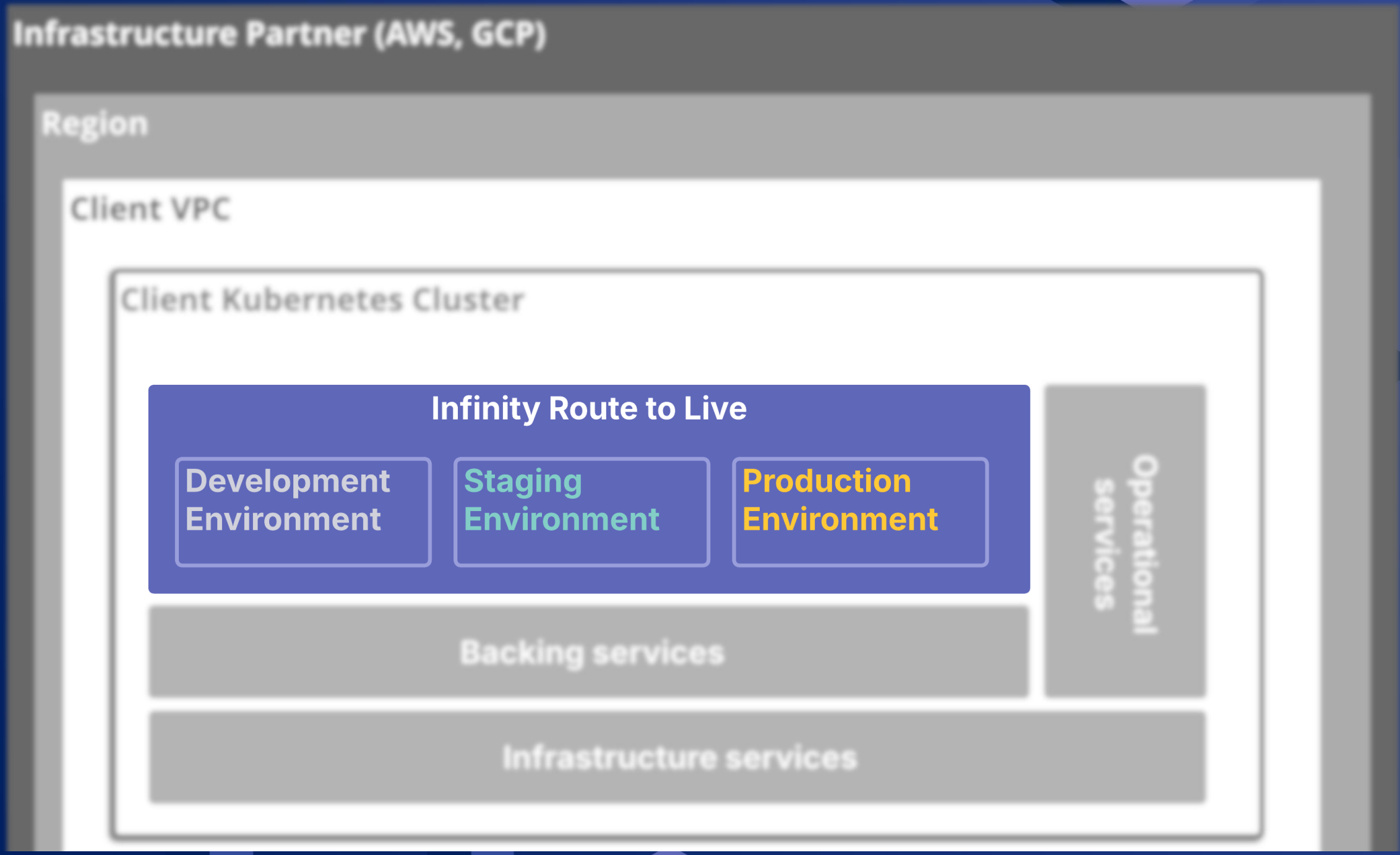
Security

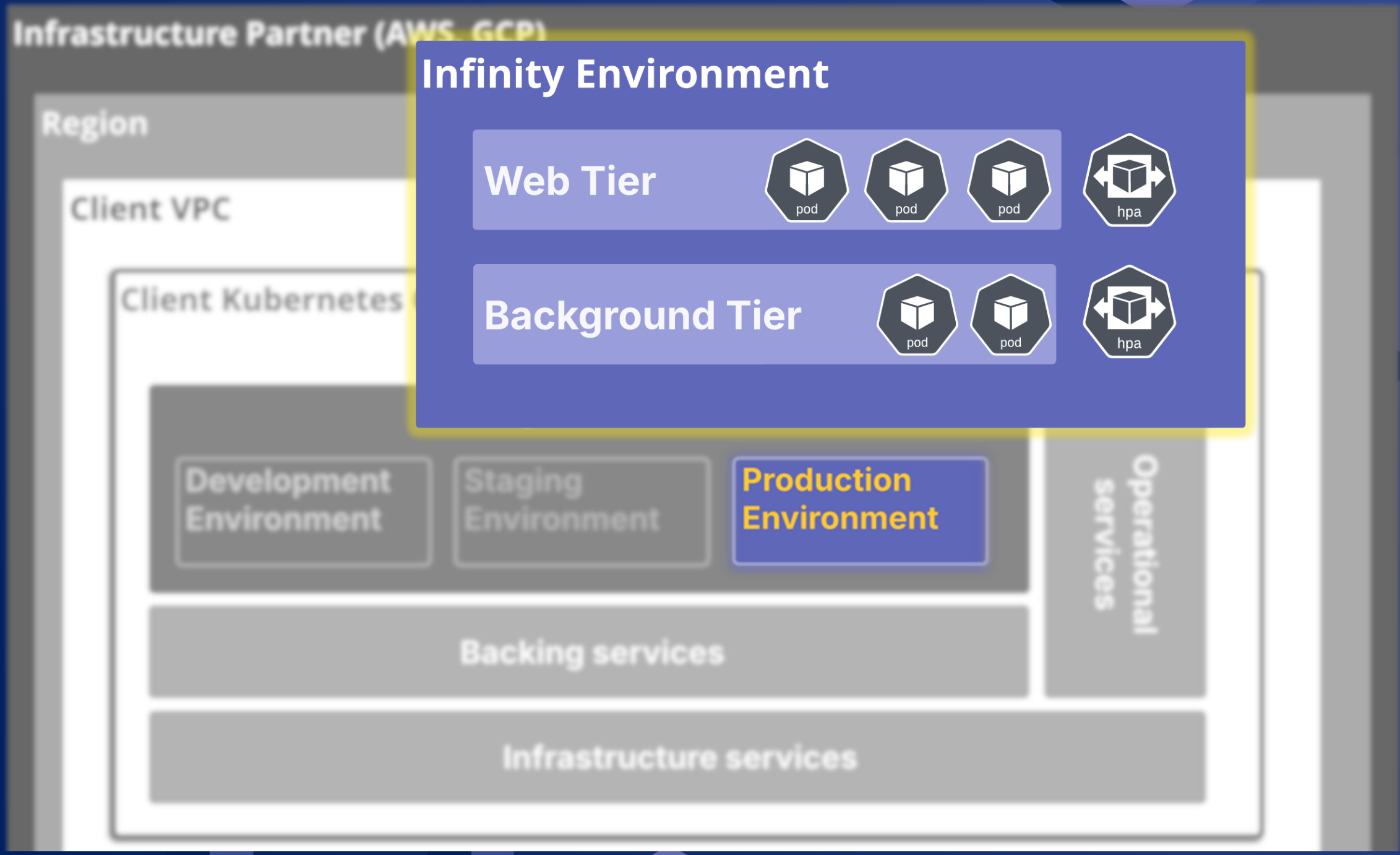
Observability

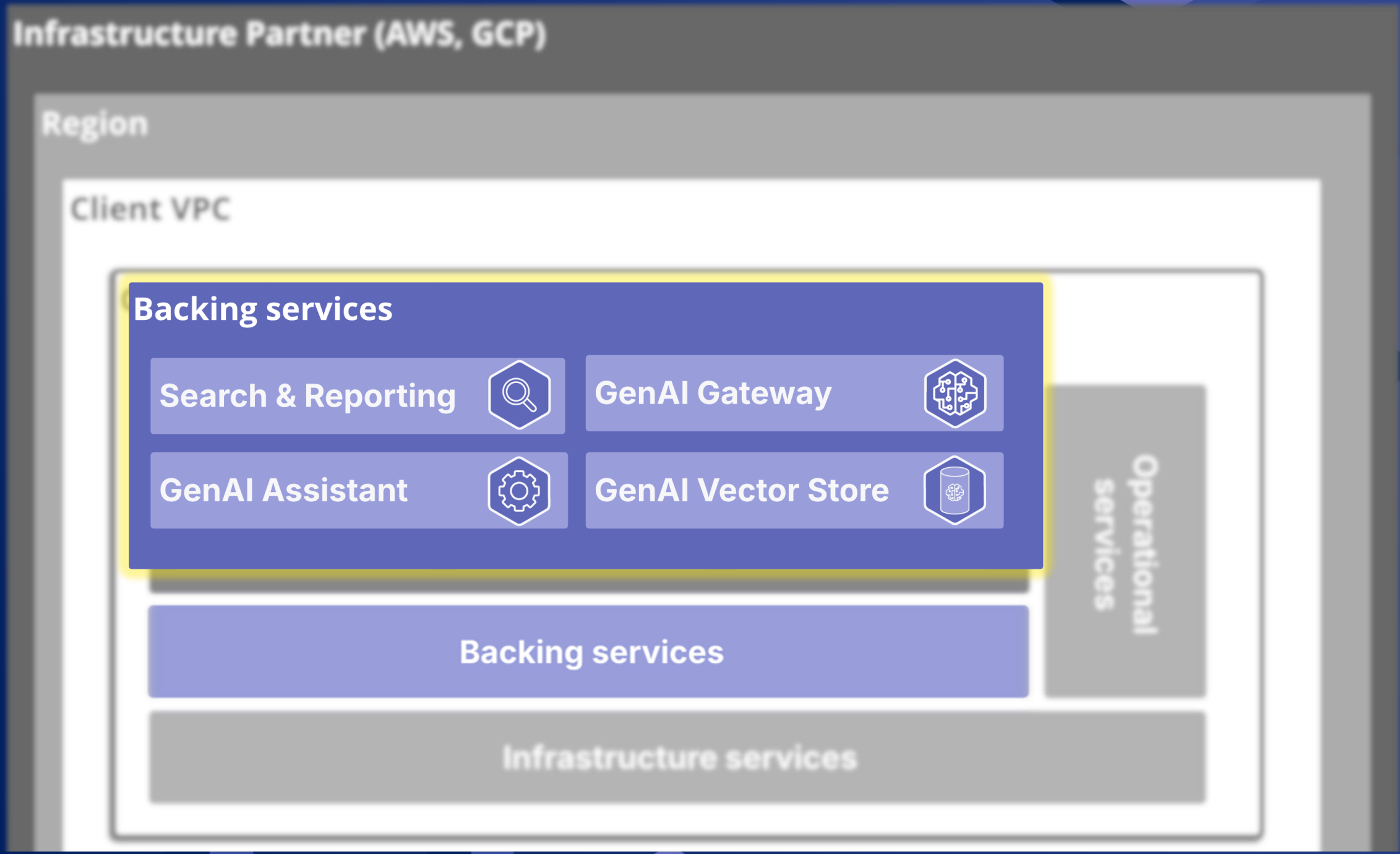
Infrastructure Partner
(Amazon AWS or Google GCP)

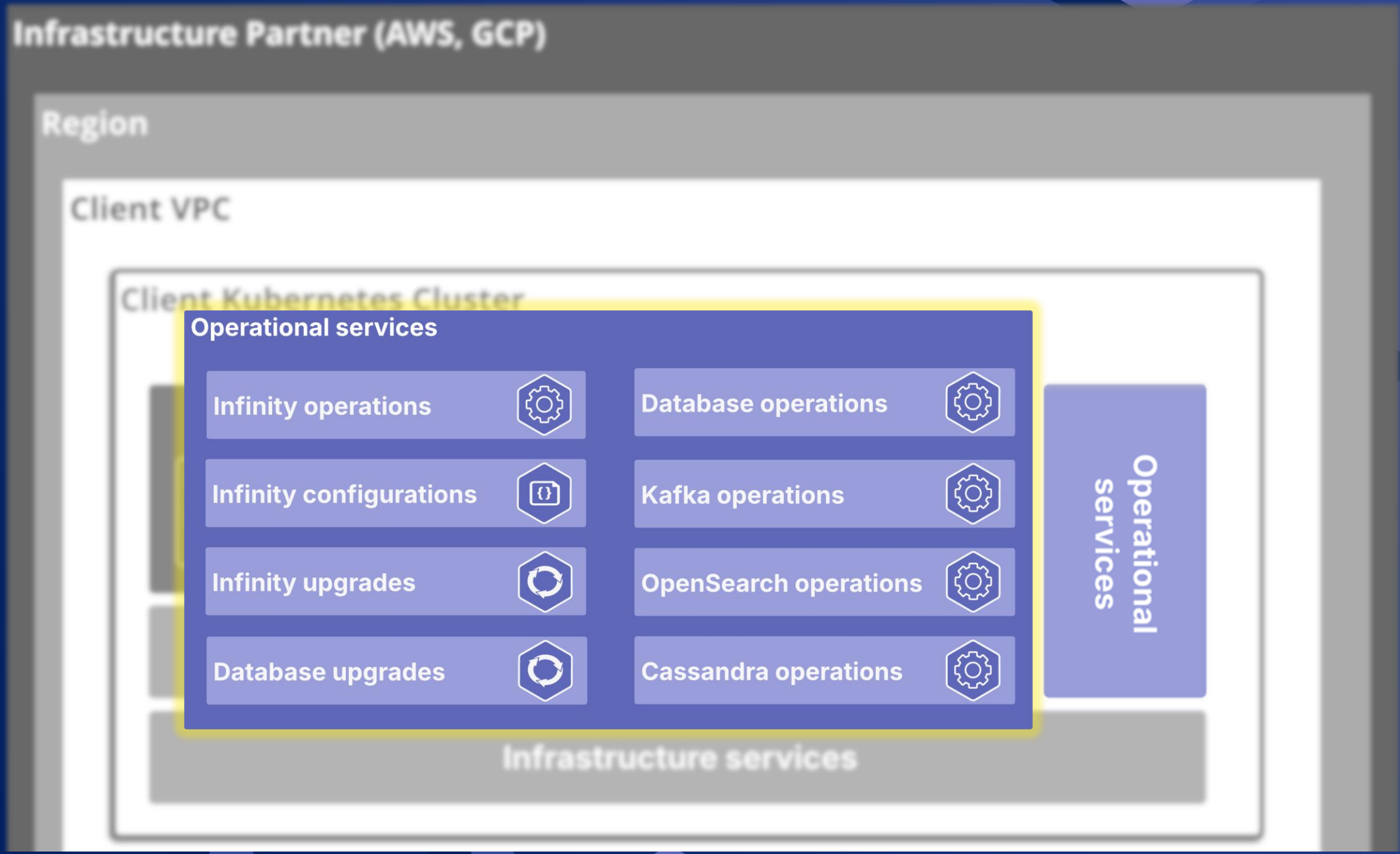
Infrastructure Partner (AWS, GCP)
Region
Client VPC
Client Kubernetes Cluster
Infinity Route to Live
Development Environment
Staging Environment
Production Environment
Operational services
Backing services
Infrastructure services
Database
Development
Staging
Production
File Storage
Development
Staging
Production
Backing Technology
Kafka
Open Search
Cassandra
GenAI Partner (AWS, GCP, Azure)
Region
Shared VPC
OpenAI
Anthropic
Gemini

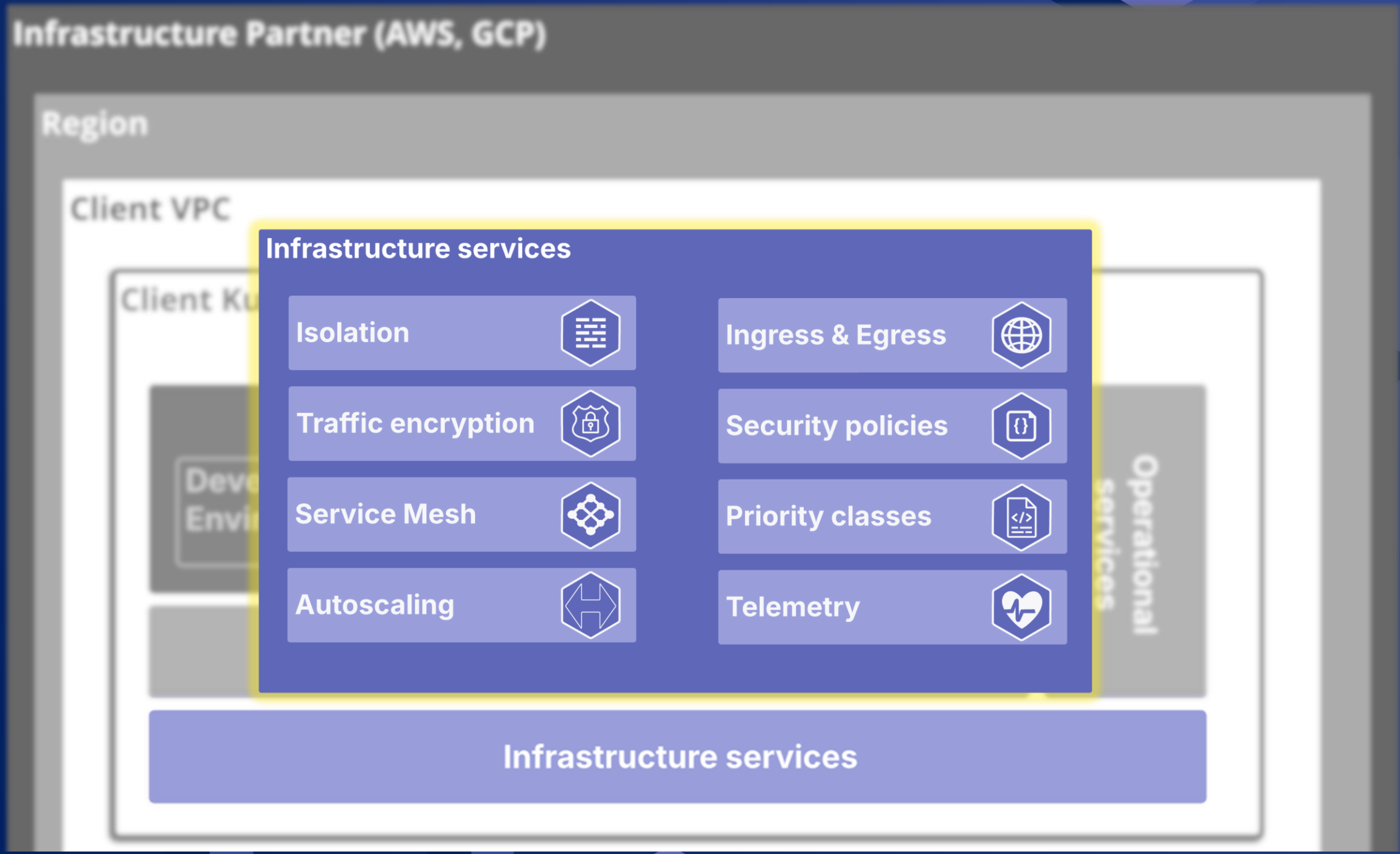

Infrastructure Partner (AWS, GCP)
Region
Client VPC
Client Kubernetes Cluster
Infinity Route to Live
Development Environment
Staging Environment
Production Environment
Operational services
Backing services
Infrastructure services


Infrastructure Partner (AWS, GCP)
Region
Client VPC
Client Kubernetes Cluster
Infinity Route to Live
Development Environment
Staging Environment
Production Environment
Operational services
Backing services
Infrastructure services


Infrastructure Partner (AWS, GCP)
Region
Client VPC
Client Kubernetes
Development Environment
Staging Environment
Production Environment
Operational services
Backing services
Infrastructure services
Infinity Environment
Web Tier
pod
pod
pod
hpa
Background Tier
pod
pod
hpa


Infrastructure Partner (AWS, GCP)
Region
Client VPC
Backing services
Search & Reporting
GenAI Gateway
GenAI Assistant
GenAI Vector Store
Operational services
Backing services
Infrastructure services


Infrastructure Partner (AWS, GCP)
Region
Client VPC
Client Kubernetes Cluster
Operational services
Infinity operations
Database operations
Infinity configurations
Kafka operations
Infinity upgrades
OpenSearch operations
Database upgrades
Cassandra operations
Operational services
Infrastructure services


Infrastructure Partner (AWS, GCP)
Region
Client VPC
Client Ku
Dev
Envi
Infrastructure services
Isolation
Ingress & Egress
Traffic encryption
Security policies
Service Mesh
Priority classes
Autoscaling
Telemetry
Operational services
Infrastructure services

Infinity Route to Live

Development Environment

Staging Environment

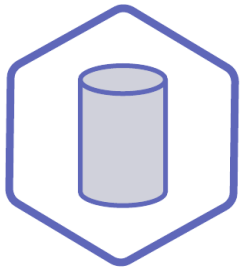
Production Environment

Operational services

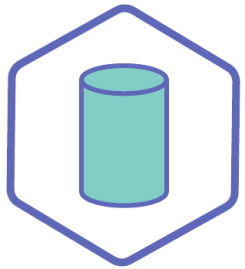
Backing services

Infrastructure services

Database

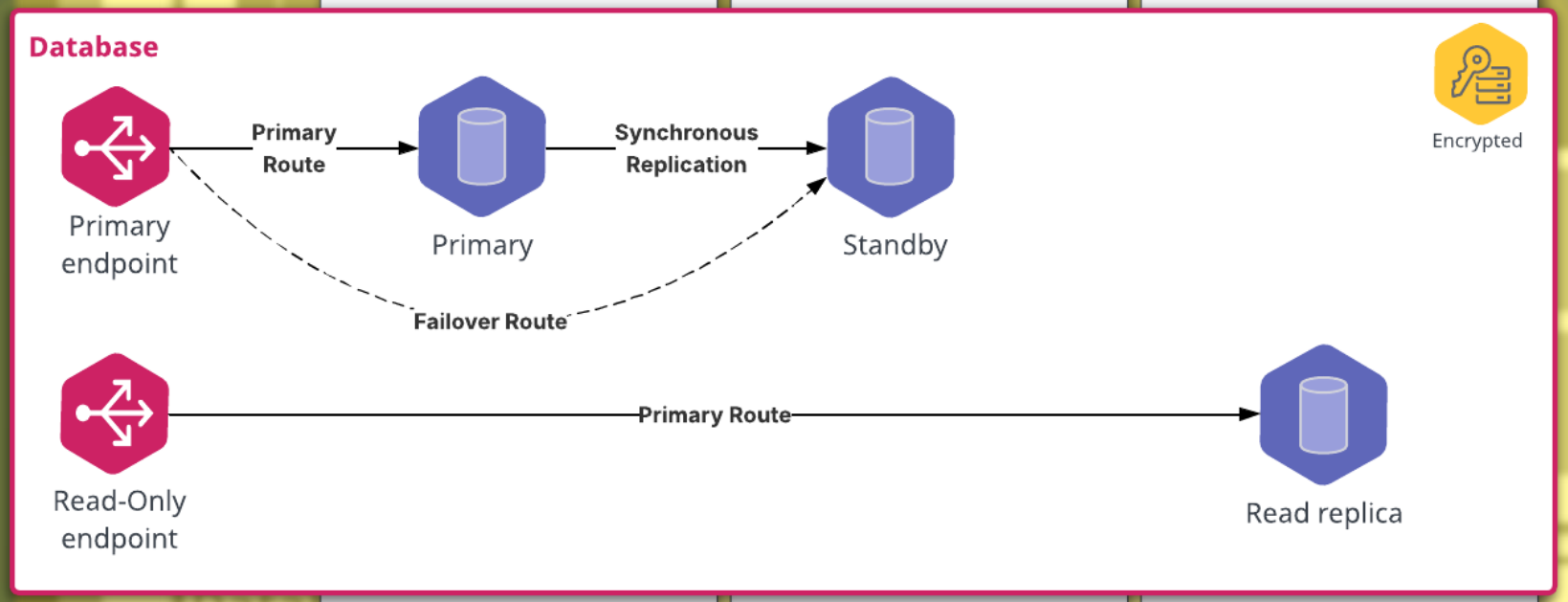


Development



Staging

Production



Infinity Route to Live

Availability Zone 1

Availability Zone 2

Availability Zone 3

Operational services

Development

Staging

Production

Development

Staging

Production

File Storage

Development

Staging

Production

Backing Technology

Kafka

Open Search

Cassandra

Kafka

Open Search

Cassandra

GenAI Partner (AWS, GCP, Azure)

Region

Shared VPC

OpenAI

Anthropic

Gemini

Infrastructure Partner (AWS, GCP)
Region
Client VPC
Client Kubernetes Cluster
Infinity Route to Live
Development Environment
Staging Environment
Production Environment
Operational services
Backing services
Infrastructure services
Database
Development
Staging
Production
File Storage
Development
Staging
Production
Backing Technology
Kafka
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GenAI Partner (AWS, GCP, Azure)
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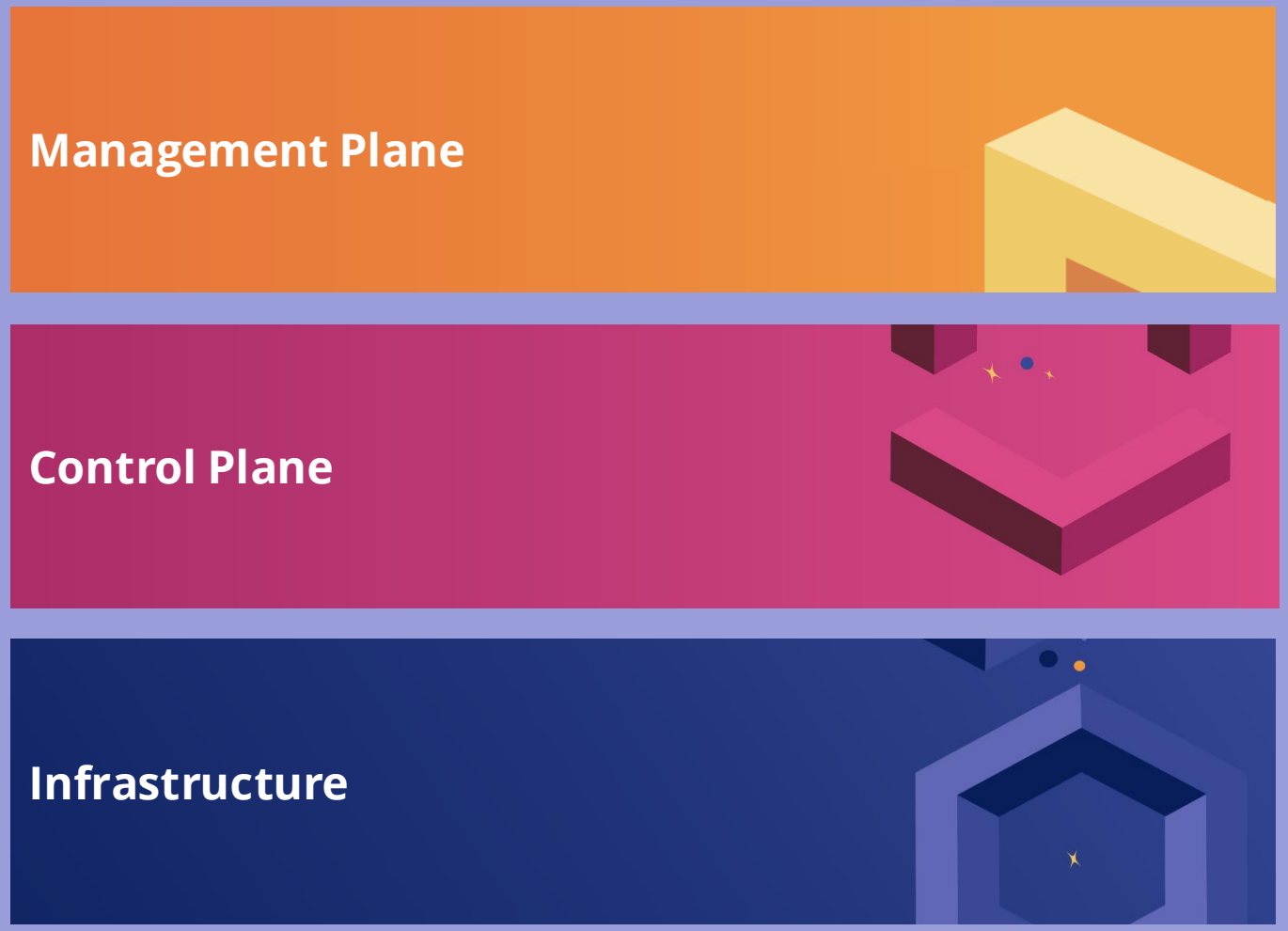
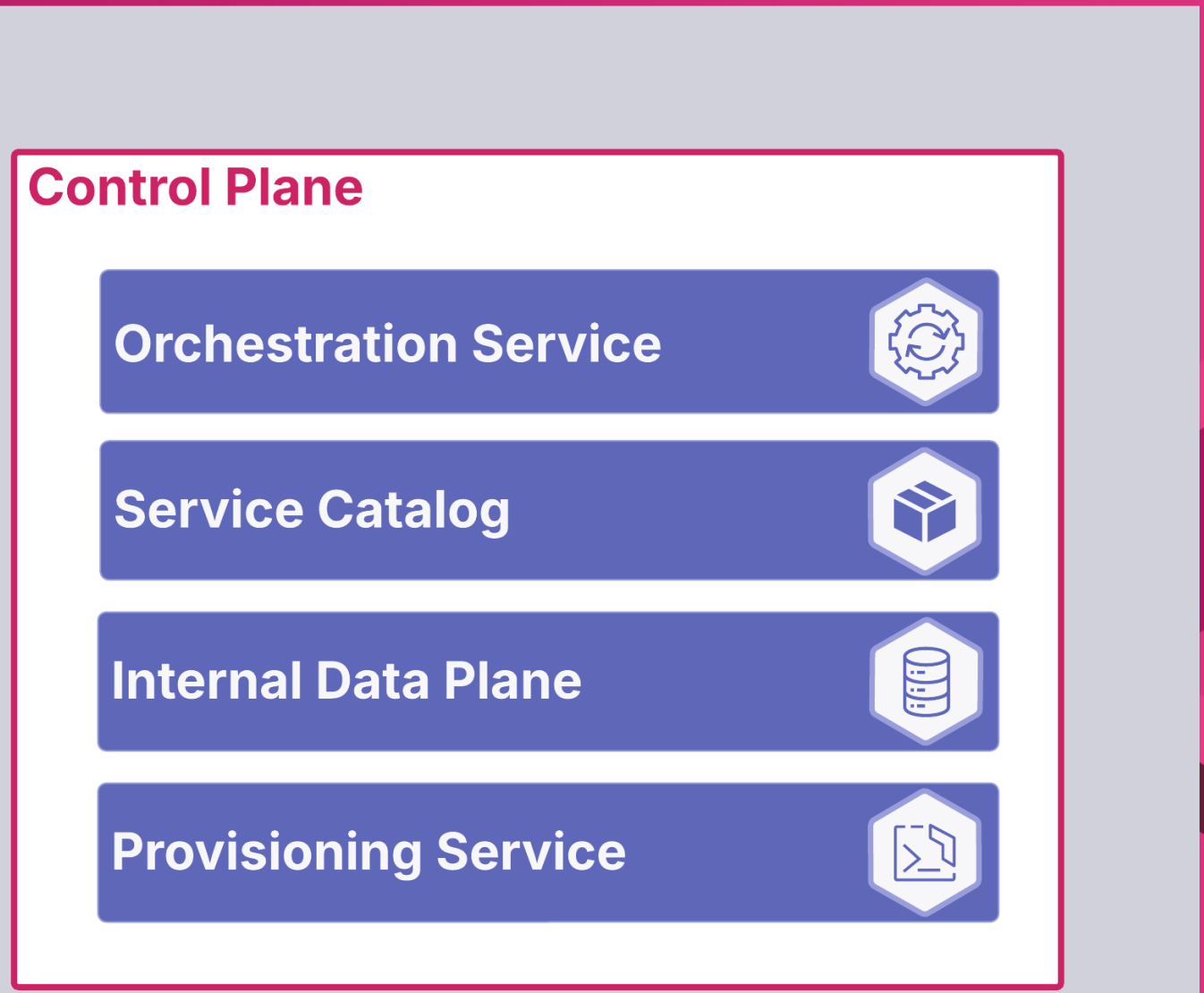
Gemini

Pega Cloud Architecture




Control Plane
Orchestration Service
Service Catalog
Internal Data Plane
Provisioning Service

Control Plane

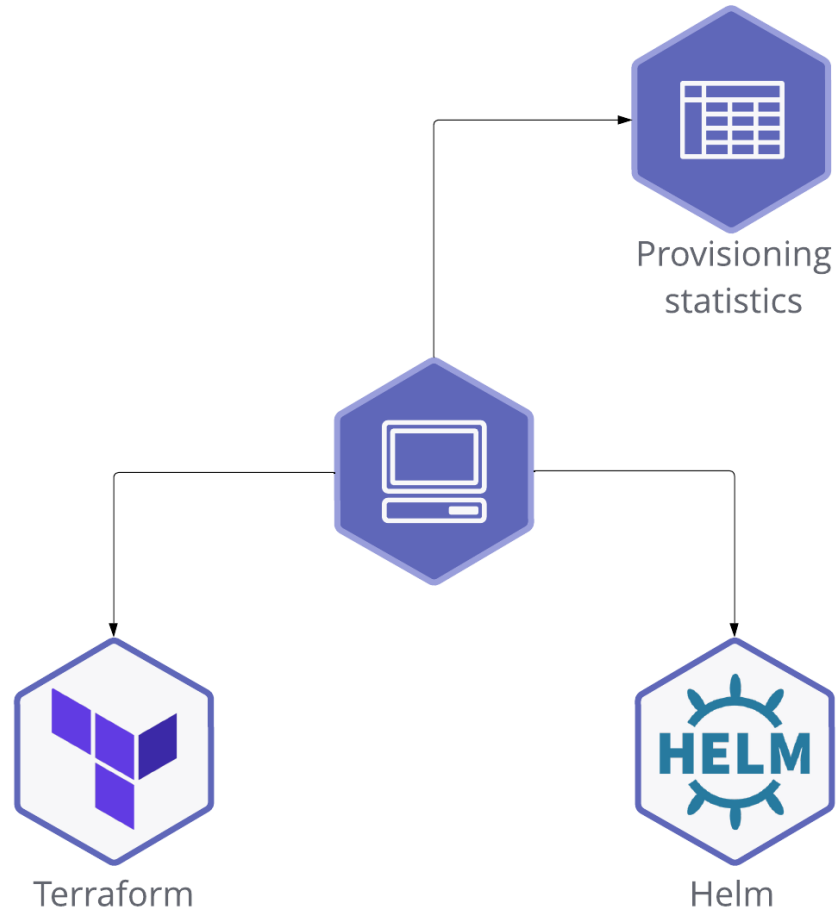
Orchestration Service

Service Catalog

Internal Data Plane

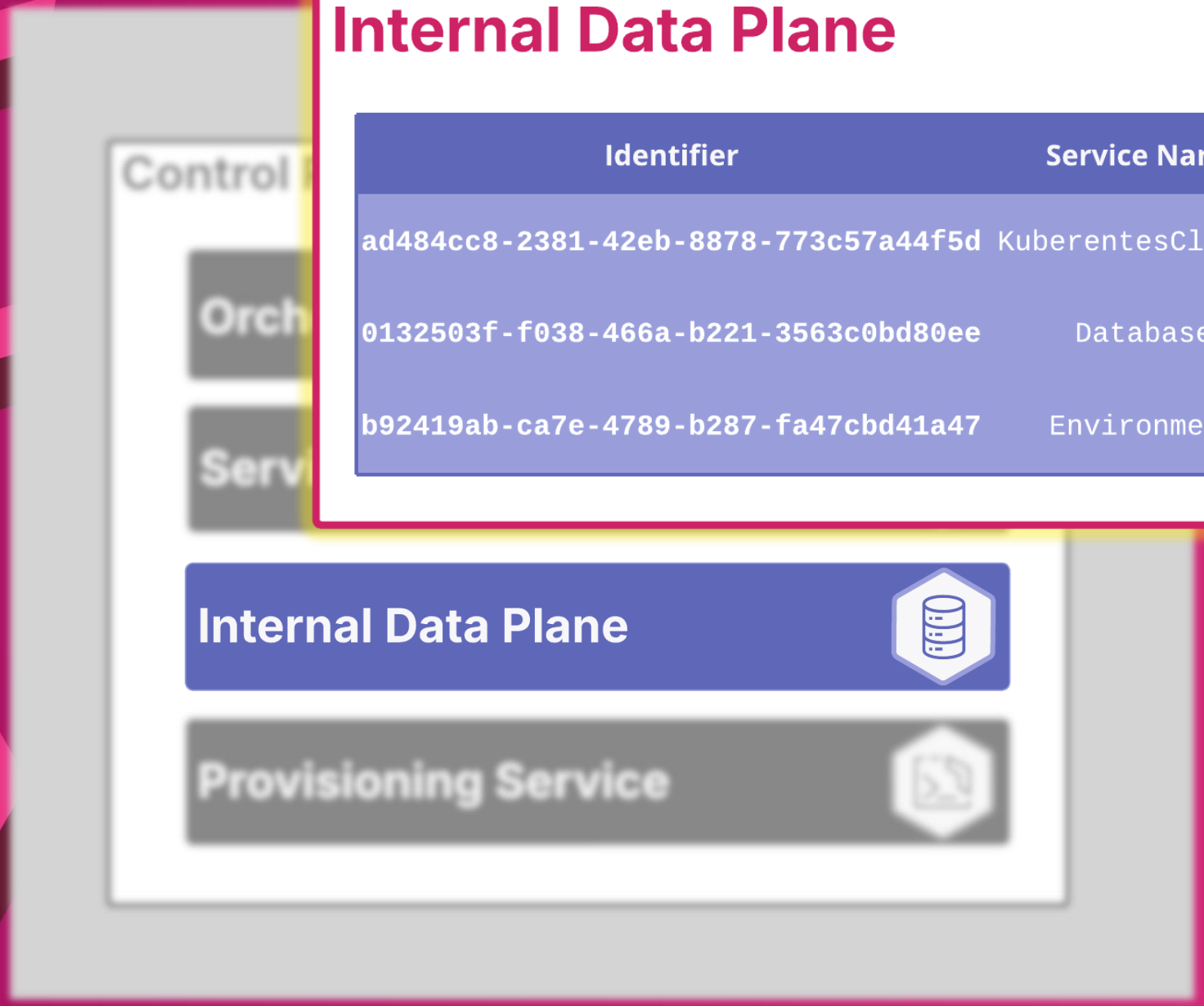
Provisioning Service

Provisioning Service



Internal Data Plane

Identifier	Service Name	Service Version	Parameters
ad484cc8-2381-42eb-8878-773c57a44f5d	KuberentesCluster	1.3.0	Provider=EKS;...
0132503f-f038-466a-b221-3563c0bd80ee	Database	5.8.1	PostgresVesion=17.2;...
b92419ab-ca7e-4789-b287-fa47cbd41a47	Environment	9.1.3	PegaVersion=25.1;...



Control Plane

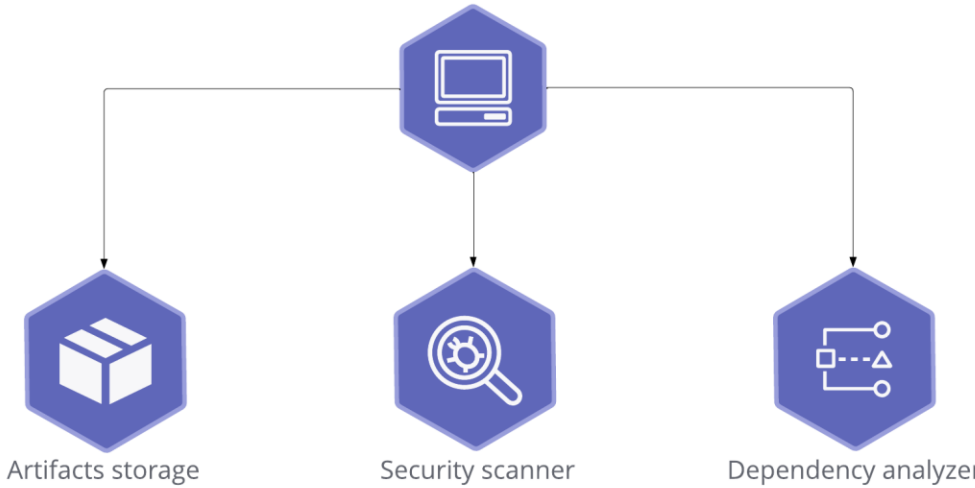
Orchestration Service

Service Catalog

Internal Data Plane

Provisioning Service

Service Catalog



Control Plane

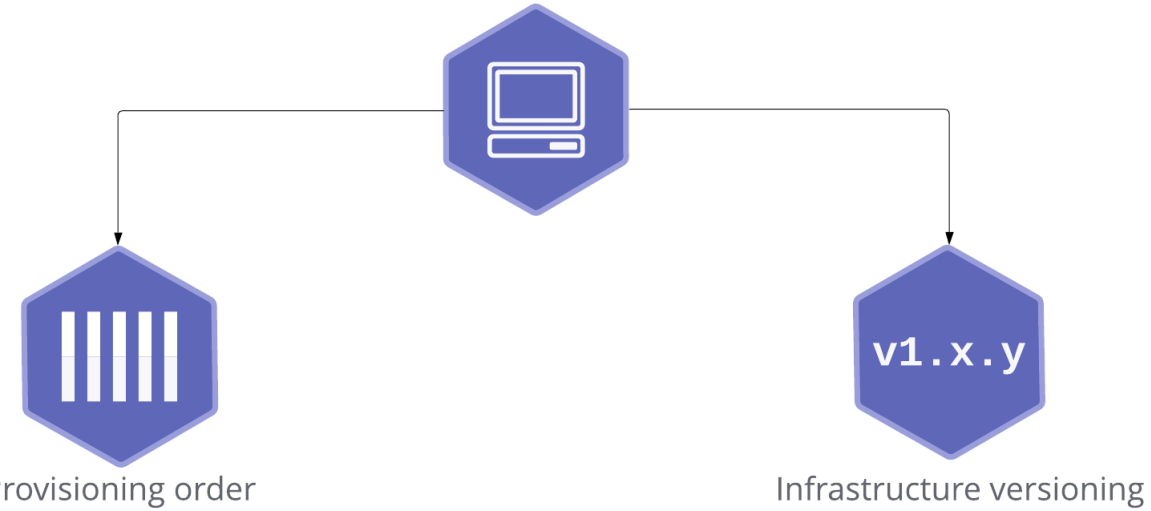
Orchestration Service

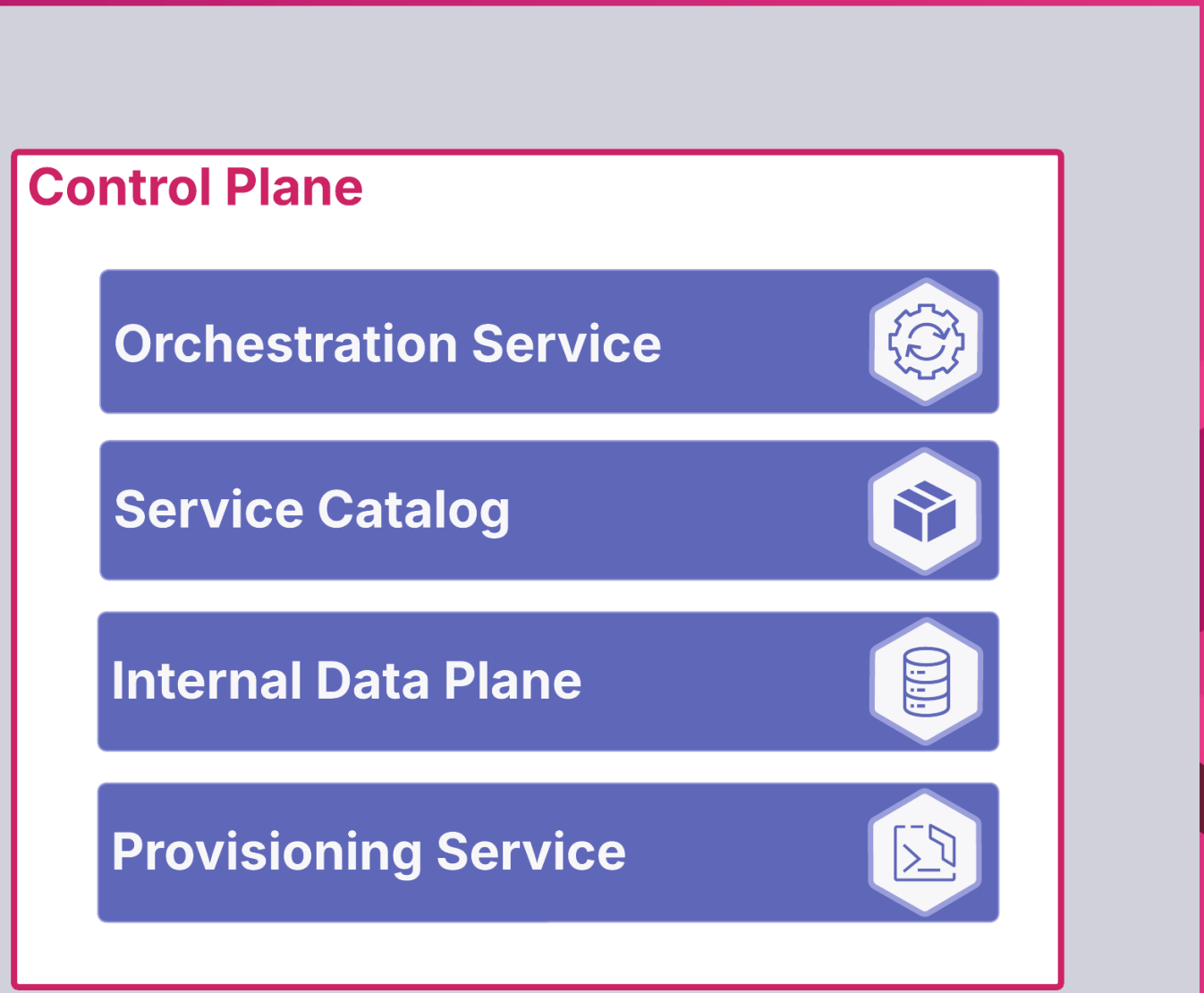
Service Catalog

Internal Data Plane

Provisioning Service

Orchestration Service




Control Plane
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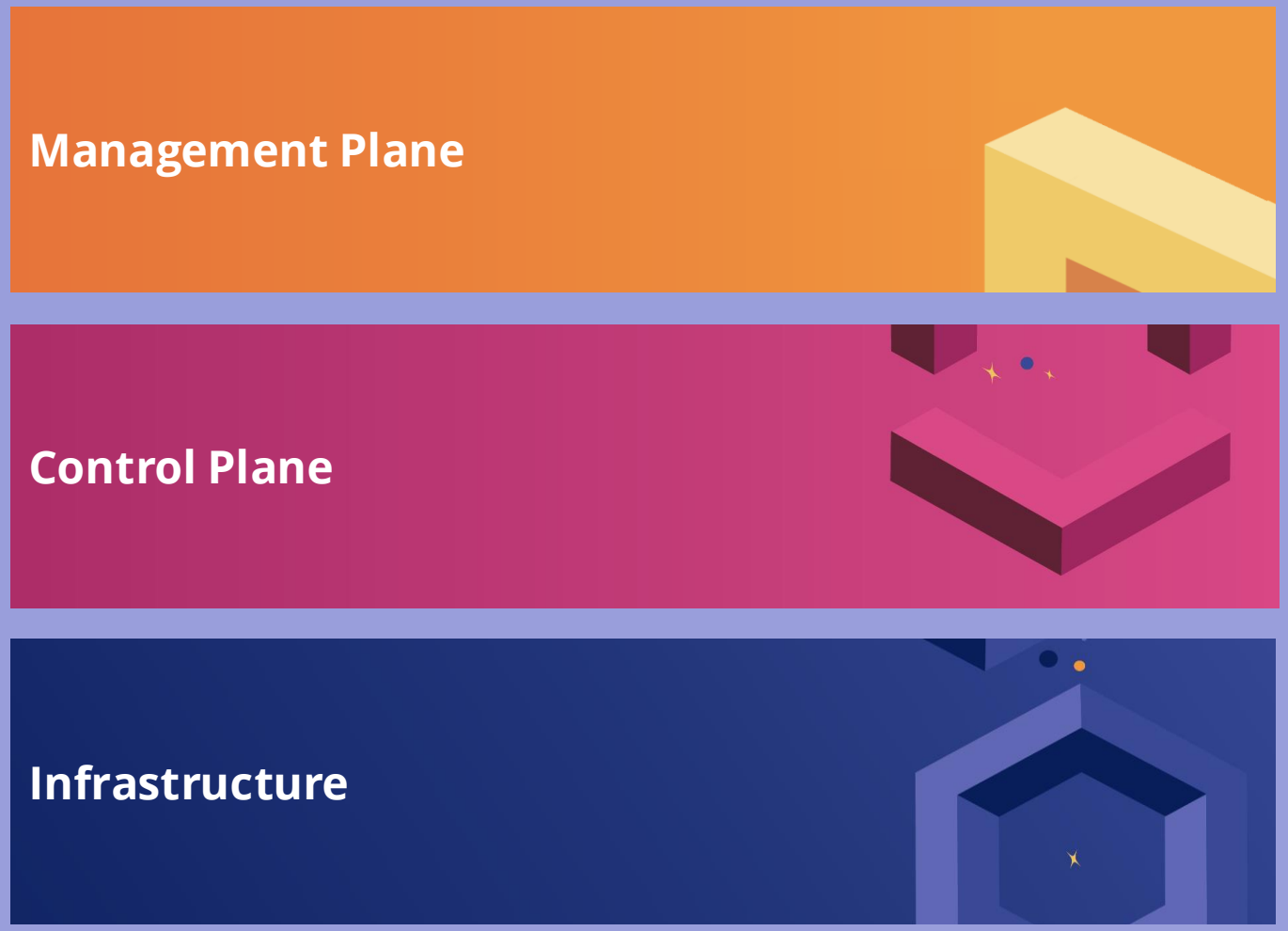
Service Catalog
Internal Data Plane
Provisioning Service

Pega Cloud Architecture

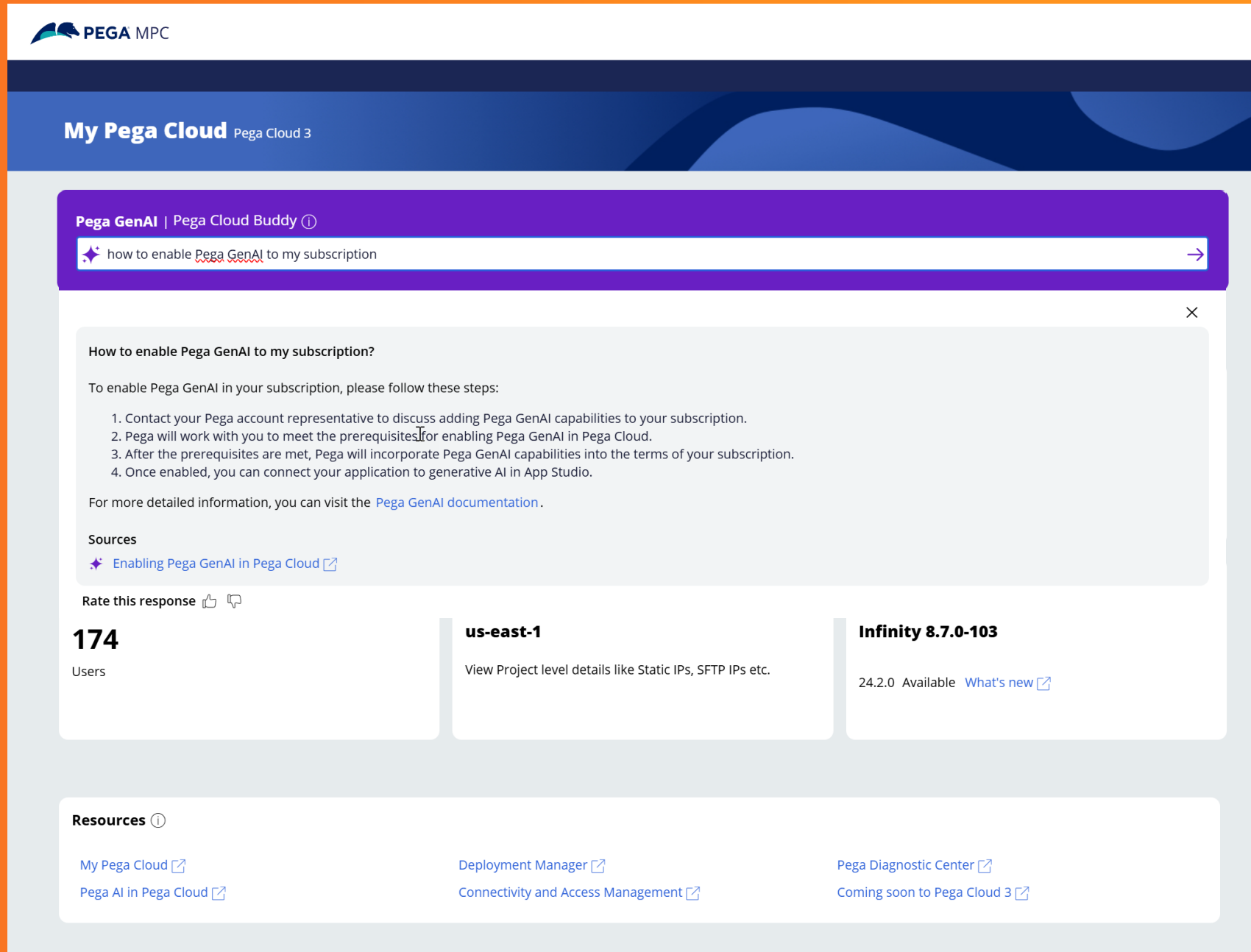


Management Plane

- My Pega Cloud
- Global Operations Center
- My Support Portal
- Pega Diagnostic Center
- Deployment Manager
- Cloud Commercial Service

My Pega Cloud

- **My Pega Cloud** provides a seamless client self-service experience.
- Offers a one-stop solution to restart environments, download/analyze log files, and view scheduled maintenances etc.,
- Empowers users to manage environments effectively and keep current by initiating perform updates, ensuring the best experience with Pega Cloud Services.



PU-10507

pdck-dt 8.24.51 Platform Update

Actions

Account type	Production
Environment Name	pdck-dt
PAC ID	C6010A
Account name	Cloud Systems - PDC
Project Name	PDC - CloudK Dev
Source pega build version	8.23.2
Target pega version	24.2.1
Target pega build version	8.24.51
SR ID	CM-C22290
Master SR	CMD-B235
Initiated from	MPC
Initiated by	REG-281186
SOP Document	Minor update guide
Created	MPCCloudKGOCAPIUser 16 days ago
Updated	Agent(System-Queue-ServiceLevel.ProcessEvent) 8 days ago

Details
Environment details
Manual Interventions
Pulse

Pre Update Details

Task Name	Status	Start Time	End Time
Dry Run	Completed	Apr 22, 2025 5:35:51 AM	Apr 22, 2025 5:38:13 AM
Create catalog Entry	Completed	Apr 22, 2025 5:38:13 AM	Apr 22, 2025 5:38:18 AM
Pre schedule validation	Completed	Apr 22, 2025 5:38:18 AM	Apr 22, 2025 5:40:20 AM

Update Details

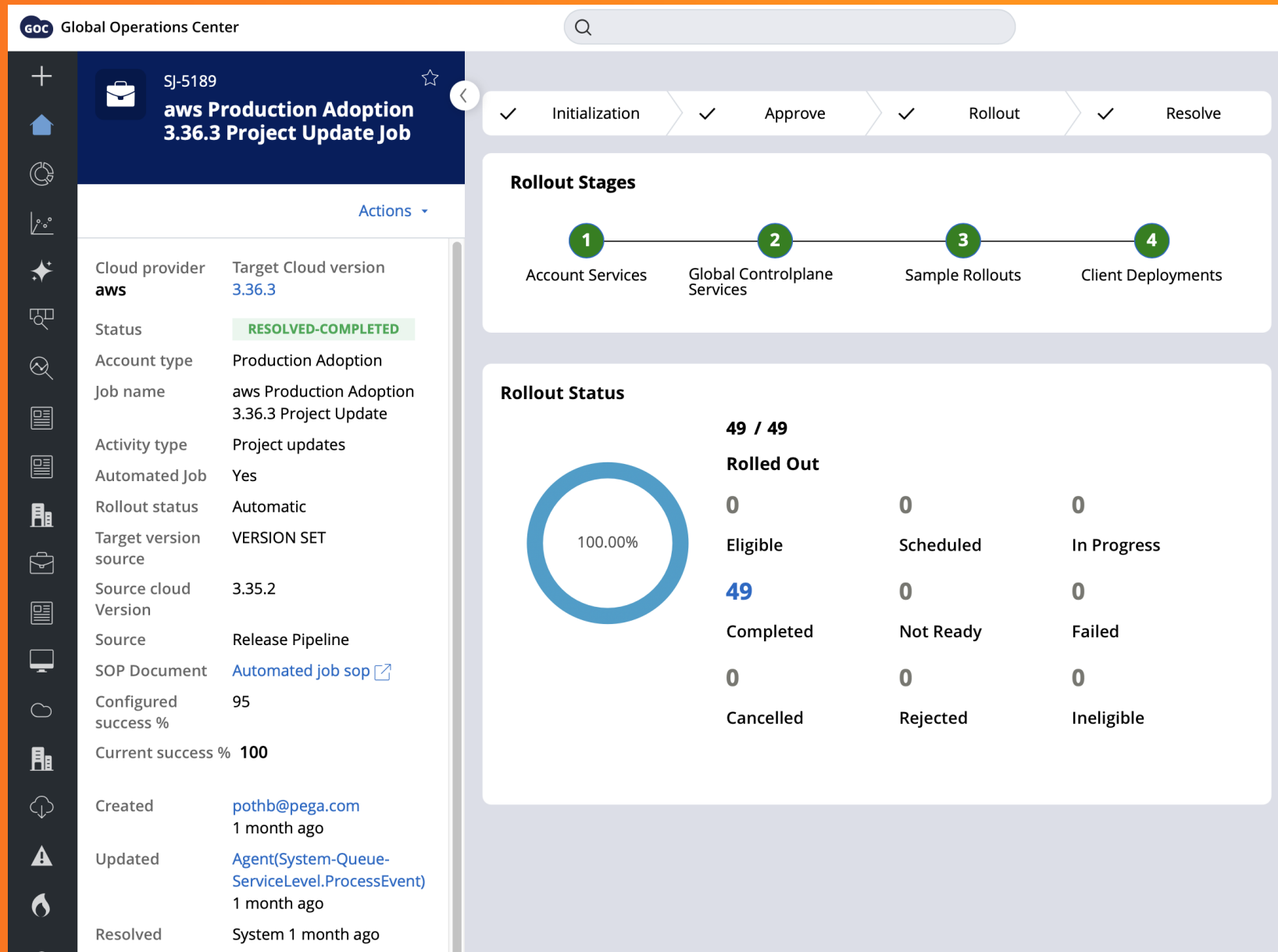
Task name	Status	Start time	End time
Conflict check	Completed	Apr 22, 2025 11:00:13 PM	Apr 22, 2025 11:00:13 PM
Pre update validation	Completed	Apr 22, 2025 11:00:13 PM	Apr 22, 2025 11:02:38 PM
Mute monitoring	Completed	Apr 22, 2025 11:18:41 PM	Apr 22, 2025 11:18:41 PM
Update	Completed	Apr 22, 2025 11:18:49 PM	Apr 23, 2025 1:55:02 AM
Unmute monitoring	Skipped	Apr 23, 2025 1:55:03 AM	Apr 23, 2025 1:55:03 AM
Sync environment	Completed	Apr 23, 2025 1:55:03 AM	Apr 23, 2025 1:55:04 AM

Post Update Details

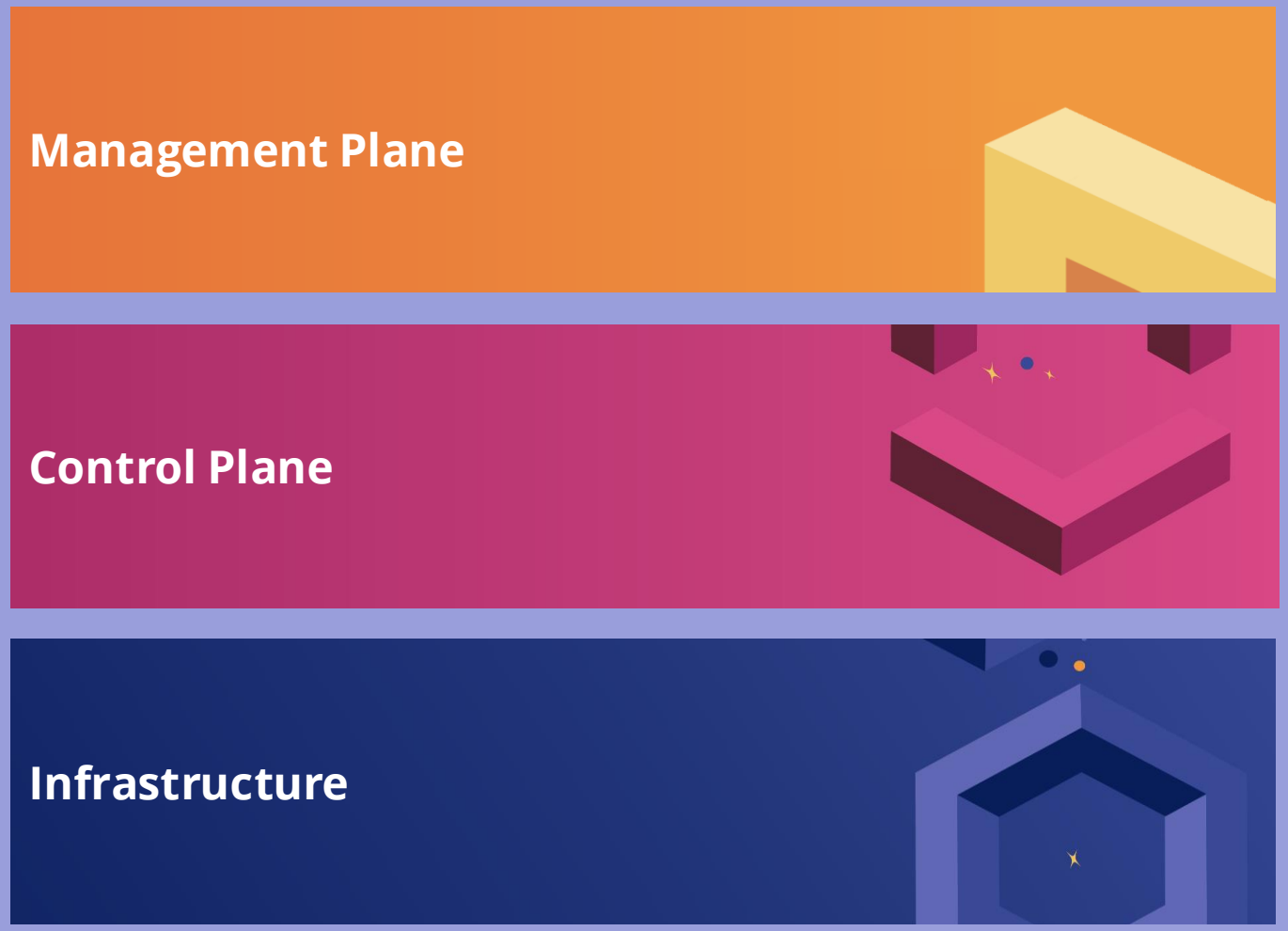
Task name	Status	Start time	End time
Post update validation	Completed	Apr 23, 2025 1:55:04 AM	Apr 23, 2025 1:57:10 AM
Schema cleanup	Completed	Apr 30, 2025 1:57:11 AM	Apr 30, 2025 2:07:37 AM

Pega Cloud continuous infrastructure updates

- Pega provides continuous infrastructure updates for clients to support the newest Pega Cloud infrastructure features and enhancements, including performance and security improvements.
- Continuous infrastructure updates take place without downtime, and you can continue to use your applications during this time.
- At least one update every 20 minutes, 24x7x365.



Pega Cloud Architecture



The Pega Cloud Architecture

Keep it Simple

- Predictable solutions
- Break up complexity
- Automation for scale

Business Driven

- Durable and available
- Scalable
- Aligned to the products we offer

Well Architected

- Build for change™
- End to end agency
- Organizationally aligned with processes

PegaWorld

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