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As-built Document of XCorp's Cloud Infrastructure

This document provides an overview of XCorp's cloud infrastructure, which includes Kubernetes, KEDA, NGINX Ingress Controller, AWS CloudFront, AWS S3, AWS ECR, AWS Router53, Oracle Cloud Instance, RabbitMQ, Redis for caching, MySQL Heatwave, Postgres Database, ElasticSearch for logging and APM, and PRTG.

# 1. Architecture

XCorp's cloud infrastructure is designed to be highly available, scalable, and secure. The infrastructure is built on top of AWS and Oracle Cloud, with Kubernetes serving as the container orchestration platform.

## 1.1 Kubernetes

Kubernetes is used to manage and orchestrate containers across multiple nodes in the cluster. The cluster consists of multiple worker nodes, each running multiple pods, which are the smallest deployable units of computing in Kubernetes.

## 1.2 KEDA

KEDA (Kubernetes Event-driven Autoscaling) is used to automatically scale pods based on the number of events or messages received by the pod. This allows for fine-grained control over the scaling of applications and ensures that resources are used efficiently.

## 1.3 NGINX Ingress Controller

NGINX Ingress Controller is used to route traffic to the appropriate pods in the cluster. It acts as a reverse proxy and load balancer, ensuring that traffic is distributed evenly across the cluster.

## 1.4 AWS CloudFront

AWS CloudFront is used as a content delivery network (CDN) to cache static content and serve it to users from the nearest edge location. This helps to improve the performance of the application and reduce the load on the backend servers.

## 1.5 AWS S3

AWS S3 is used as a storage service for static content, such as images and videos. It provides high availability and durability, and can be used to store large amounts of data at a low cost.

## 1.6 AWS ECR

AWS ECR (Elastic Container Registry) is used as a container registry to store and manage container images. It provides secure and scalable storage for container images, and can be used to deploy containers to the cluster.

### 1.7 AWS Router53

AWS Router53 is used as a DNS service to route traffic to the appropriate IP address. It provides high availability and scalability, and can be used to manage DNS records for the application.

# 2 Oracle Cloud Instance

Oracle Cloud Instance is used as a compute service