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Title:- Intelligent Monitoring of Cloud-Native Systems on Kubernetes

Abstract:-

This project presents the deployment of a cloud-native monitoring application within a Kubernetes cluster, emphasizing scalability, observability, and automation. Leveraging open-source monitoring tools such as Prometheus and Grafana, the solution ensures real-time metrics collection, visualization, and alerting for containerized workloads. It explores Helm charts for simplified deployment, service discovery for dynamic environments, and persistent storage for data retention. The system is designed to be highly fault-tolerant and adaptable to multi-cloud infrastructures. This implementation enables proactive system management and reduces downtime through intelligent alerting and insights. It provides a comprehensive framework for monitoring complex distributed systems in modern DevOps environments.

Title:- End-to-End CI/CD Delivery Using Terraform and AWS

Abstract:-

This project demonstrates the implementation of a fully automated Continuous Integration and Continuous Deployment (CI/CD) pipeline using Terraform and Amazon Web Services (AWS). Infrastructure as Code (IaC) principles are applied to provision and manage cloud resources, ensuring consistency and scalability. The pipeline automates code testing, building, and deployment processes, integrating tools such as GitHub Actions and AWS CodePipeline. Security, version control, and rollback strategies are incorporated to enhance deployment reliability. The architecture enables seamless integration between development and operations, fostering rapid software delivery cycles. This model showcases how DevOps practices can be streamlined through cloud-native tooling and automation to achieve robust production workflows.

Title:- Complete CI/CD Pipeline with Terraform and AWS

Abstract:-

This project implements a comprehensive CI/CD pipeline integrating Terraform for Infrastructure as Code (IaC) and Amazon Web Services (AWS) to automate software delivery and infrastructure provisioning. It emphasizes the seamless fusion of application deployment and infrastructure management within a unified DevOps lifecycle. By utilizing Git-based triggers, automated testing, and build mechanisms, the pipeline ensures code integrity, rapid iteration, and minimal human intervention. Terraform enables consistent, scalable cloud environments, while AWS services facilitate secure and resilient deployments. The solution accelerates development cycles, enhances operational efficiency, and supports agile methodologies. It establishes a blueprint for building reliable and automated cloud-native delivery pipelines in modern software engineering.