OPCITO TECHNOLOGIES

Simplified Monitoring And Observability In Google Kubernetes Engine

About The Customer

The customer is a supply chain and logistics giant with a huge IT infrastructure and applications that involved multiple microservices to cater to its customer base with supply chain-related services.

Business Challenge

- **Monitoring Microservices:** With an increasing number of microservices running in GKE clusters, it became difficult to monitor the health and performance of each microservice individually.
- **Real-time Insights:** The operations team required real-time insights into the performance of the entire platform, including pod health, CPU and memory usage, network traffic, and more.
- **Troubleshooting and Debugging:** Identifying and resolving issues within the distributed microservices architecture was challenging, as traditional logging and monitoring tools were insufficient.
- **Resource Optimization:** The customer needed to optimize resource allocation to ensure cost efficiency and improve the overall performance of their platform.

How Opcito Helped

Opcito proposed a comprehensive solution that involved implementing robust monitoring and alerting on Google Kubernetes Engine using GCP-managed services and open-source tools such as Prometheus and Grafana. Opcito's SecOps experts started observing the below metrics provided by a customized GKE dashboard tailored by GCP:

- The cluster's key metrics, such as CPU utilization, memory utilization, and the number of open incidents.
- Cluster’s nodes, workloads, or services.
- Monitor nodes, workloads, services, pods, and containers.

Opcito also enabled GCP-managed Prometheus and deployed Grafana to visualize the resources in the form of charts.

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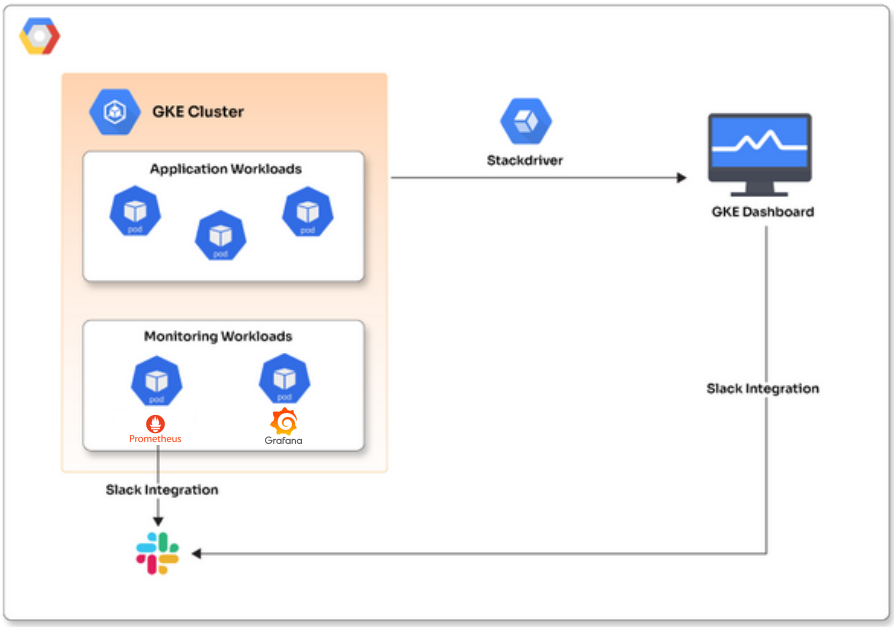
Below are the alerts Opcito implemented on the GKE clusters:

- Error in application logs
- Pod CPU limit usage
- Uptime failure
- K8s container restart count
- K8s node CPU usage
- K8s node disk usage
- K8s node memory usage
- Pod memory limit usage
- Pod CPU request usage
- Pod Memory request usage

All the above alerts were integrated with Slack so that the concerned teams could receive notifications via Slack.



Technologies, Tools, and Platforms used

GKE
GOOGLE CLOUD'S OPERATIONS SUITE (STACKDRIVER)
PROMETHEUS
GRAFANA
SLACK

Benefits

REAL-TIME MONITORING	The operations team gained real-time insights into the health and performance of the platform, enabling prompt detection and resolution of the issues.
IMPROVED TROUBLESHOOTING	The combination of logging, tracing, and monitoring tools made it easier to troubleshoot and debug issues within the distributed microservices architecture.
RESOURCE OPTIMIZATION	Analyzing performance metrics and logs optimized resource allocation, leading to improved cost efficiency and overall performance.

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PROACTIVE ISSUE DETECTION	Proactive monitoring and error reporting allowed the team to identify and address potential issues before they impacted the user experience.
ENHANCED USER EXPERIENCE	A reliable and performant platform provided a better user experience, leading to higher satisfaction and customer retention.

About Opcito

At Opcito, we believe in designing transformational solutions for our customers, start-ups, and enterprises, with our ability to unify quality, reliability, and cost-effectiveness at any scale. Our core work culture focuses on adding material value to your products by leveraging best practices in DevOps, like continuous integration, continuous delivery, and automation, coupled with disruptive technologies like containers, serverless computing, and microservice-based architectures. We also believe in high standards for quality with a zero-bug policy and zero downtime deployment approach.

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