

Raihan Khan

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EXPERIENCE

• AppsCode Ltd.

Software Engineer

Dhaka, Bangladesh

Aug 2021 - Present

Maintain and Develop various CRD based features for the KubeDB Kubernetes Operator to simplify and automate routine database tasks such as Provisioning, Monitoring, Upgrading, Patching, Scaling, Volume Expansion, Backup, Recovery, Failure detection, and Repair for various popular databases on private and public clouds.

PROJECTS

KubeDB

Go, Kubernetes, Docker, Kafka, Elasticsearch, OpenSearch, Kibana, Prometheus, Grafana

AppsCode Inc.

August 2021 - Present

- Designed the architecture for Kafka controller and implemented using Kubernetes CRD and Kubebuilder SDK to provision and manage a TLS-secure Apache Kafka cluster in Zookeeperless Kraft mode along with the necessary Kubernetes resources.
- Designed the architecture for Dashboard controller and implemented using Kubernetes CRD and Kubebuilder SDK to provision Kibana and OpenSearch Dashboards for connecting KubeDB managed Elasticsearch and OpenSearch databases in Kubernetes native way.
- Extended support for performing Upgrade, Restart, HorizontalScaling, VerticalScaling, VolumeExpansion and ReconfigureTLS in KubeDB managed Elasticsearch and OpenSearch cluster for day 2 lifecycle management
- Integrated Cruise Control with Kafka controller to fully automate the dynamic workload rebalance and self-healing Kafka clusters. Also Built custom docker image along with necessary scripts to bootstrap Kafka and Cruise Control containers with required configurations for clustering, security and connectivity to external systems.
- Secured communication between Elasticsearch/OpenSearch nodes and their corresponding dashboards by adding TLS support through operator generated certificates embedded in Kubernetes secret.
- Added Elasticsearch user credential synchronization feature support for database built-in users by ensuring operator generated Kubernetes secrets prior to database provisioning
- Implemented feature support for monitoring kafka broker and quorum controllers using Prometheus and Grafana.
- Added integrated database health checker for Elasticsearch, OpenSearch, Kibana and Kafka by including concurrent read/write monitoring and a configurable api in the operator CRD that let users manage health-checking behaviors via managing interval, timeout, failure threshold for health check iterations and securely connect to cluster using an external Go-client.

Stash

Go, Kubernetes, Elasticsearch, OpenSearch

AppsCode Inc.

April 2023 - May 2023

- Improved user experience by adding support for Pre-calculated storage size for Persistent Volume to temporarily store database snapshot backups before uploading to remote cloud backend repository or restoring to database from it.

SKILLS

- **Tools and Technologies:** Kubernetes, Docker, Helm, Prometheus, Grafana, GKE, REST, gRPC, Git, CI/CD
- **Databases and Systems:** Kafka, Elasticsearch, OpenSearch, Kibana, Logstash, Fluentd, MySQL
- **Languages:** Go, C++, Python

EDUCATION

• Comilla University

Bachelor of Science in Computer Science and Engineering; GPA: 3.29/4.00

Comilla, Bangladesh

2016 - 2021

PUBLICATIONS

• Medication correlation analysis for outbreak prediction

Bulletin of Electrical Engineering and Informatics (BEEI) · Jan 8, 2023

ACHIEVEMENTS

- Participated in 15 national level programming contests including ICPC Dhaka Regional Contest 2019 (as CoU Dauntless) and National Collegiate Programming Contest 2018 and 2020 (as CoU Mirror Squad).