Wei Xiaopeng

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Education

Southern University of Science and Technology **Sep. 2015 – Jun. 2019**
Bachelor of Engineering in Communication Engineering, GPA: 3.41/4.0 *Shen Zhen, China*

Work Experience

SenseTime **Jul. 2020 – Present**
Software Development Engineer | Full-Time *Shen Zhen, China*

- Responsible for the development of the SenseFoundry product view device management service and image ingress service. Have completed development work for 7 versions.
- Led the writing of project technical solutions for the above services, code development, modification of deployed Helm Charts, and subsequent operation and maintenance document writing.
- Refactored part of the view access service code (introduced Redis to store large images), improving service access performance by 20%. Applied for 2 industry-related patents during employment.
- Completed multiple versions of migrations for the view device management service, including cross-cluster, cross-version migration, and MySQL migration to TiDB.

SenseTime **Jul. 2019 – Jun. 2020**
Software Development Engineer in Test | Full-Time *Shen Zhen, China*

- Responsible for testing the SenseFoundry product device management service, image ingress service, and video ingress service. Includes developing test plans, automated scripts, and test reports.
- Developed automated test scripts which using Python to complete functional, business flow, accuracy, and performance testing of product services. Completed testing work for 3 versions.
- Completed 0-1 functional and performance testing of the internally developed goSIP library, and conducted performance comparison tests against other SIP protocol libraries.

Projects

SenseFoundry Image Ingress Servicve (IIS) | *Go, gRPC, Zookeeper, OSS, Redis, Kafka, Prometheus+Grafana*

- IIS receives picture stream messages from SDK cameras and other view protocols, structures the data with different protocols and data structures, cleans and normalizes it to a specified data structure, and finally writes it to storage media for subsequent analysis by the view parsing service.
- Service is based on gRPC, uses OSS, Redis, Kafka (MQTT/FTP), and is deployed in a K8s cluster using Helm Charts.
- Service provides data link governance, combs the input to output metrics, and uses Prometheus+Grafana to achieve visualized monitoring.
- The early service uses self-developed OSS to store images, then writes the messages to Kafka. Later, due to the excessive transmission pressure of large messages in Kafka, Redis is used to cache larger images. After the parsing service consumes them, the cached images are pulled to reduce the pressure on Kafka. The overall service access performance is improved by 20% compared with before.
- Developed a CLI tool to support service performance testing, mock upstream and downstream services and data, locate operational problems, detect anomalies, etc.

SenseFoundry Device Manager Servicve (DMS) | *Go, gRPC, MySQL/TiDB, Prometheus+Grafana*

- Access devices such as cameras, NVRs, IOT devices, etc. into the system for unified management. The main functions of the service include device status management, device access task management, and device UUID generation.
- Service is based on gRPC. UUID uses Zookeeper distributed locks. Data is stored in MySQL (currently TiDB). It is deployed in a K8s cluster using Helm Charts.
- Service supports multi-tenant mode, and sharding tables in MySQL.
- Initially adopted the MariaDB Galera Cluster+ProxySQL deployment solution to achieve read-write separation and improve the overall service access capacity. Subsequently switched the database to TiDB.

Skills

- **Go**: GC garbage collection strategy, GMP scheduling, Go pprof performance problem positioning and analysis.
- **Kafka**: Familiar Kafka High performance and high availability, and partition balancing strategy.
- **Kubernetes**: Familiar with Docker and Kubernetes ecosystem, such as Helm Chart deployment