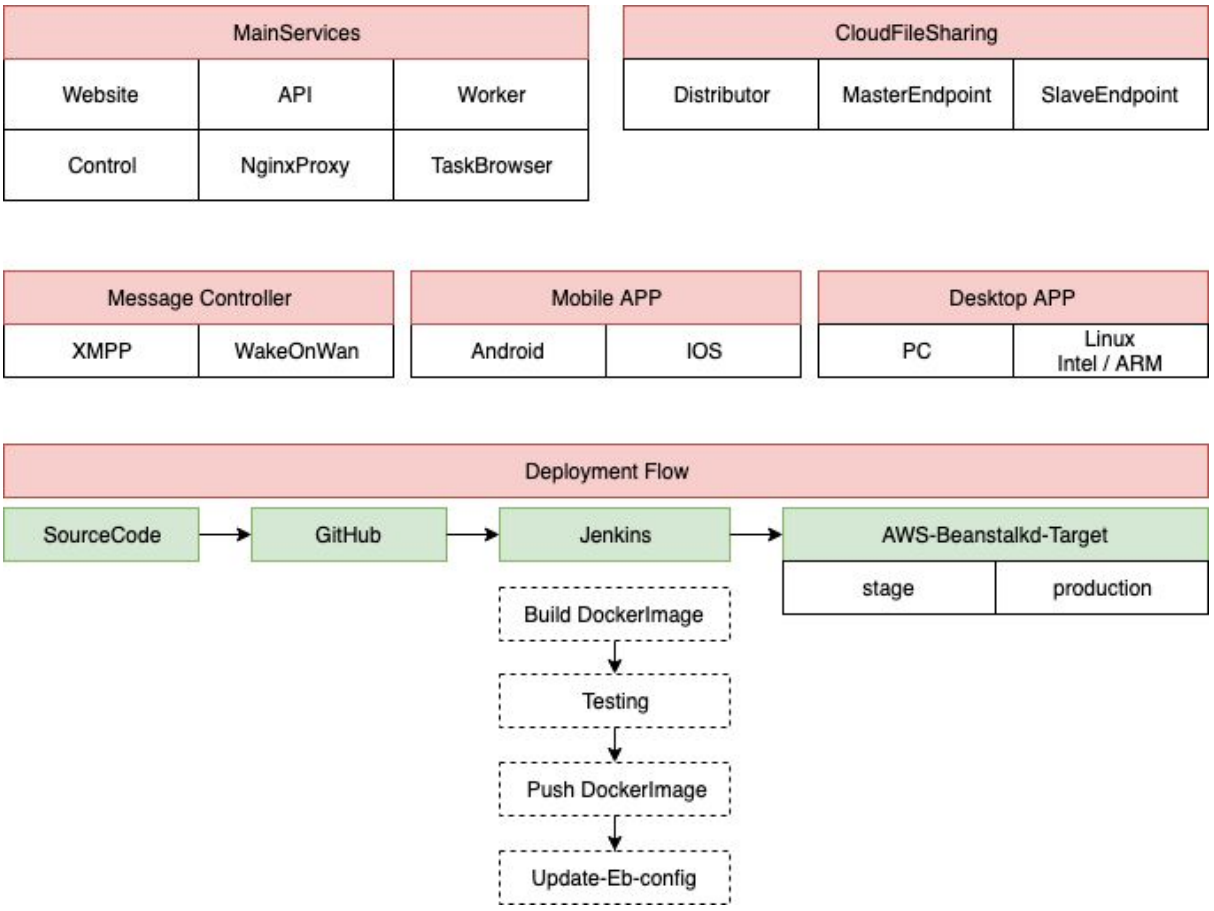
The Individual Cloud Services

System Infrasturcture

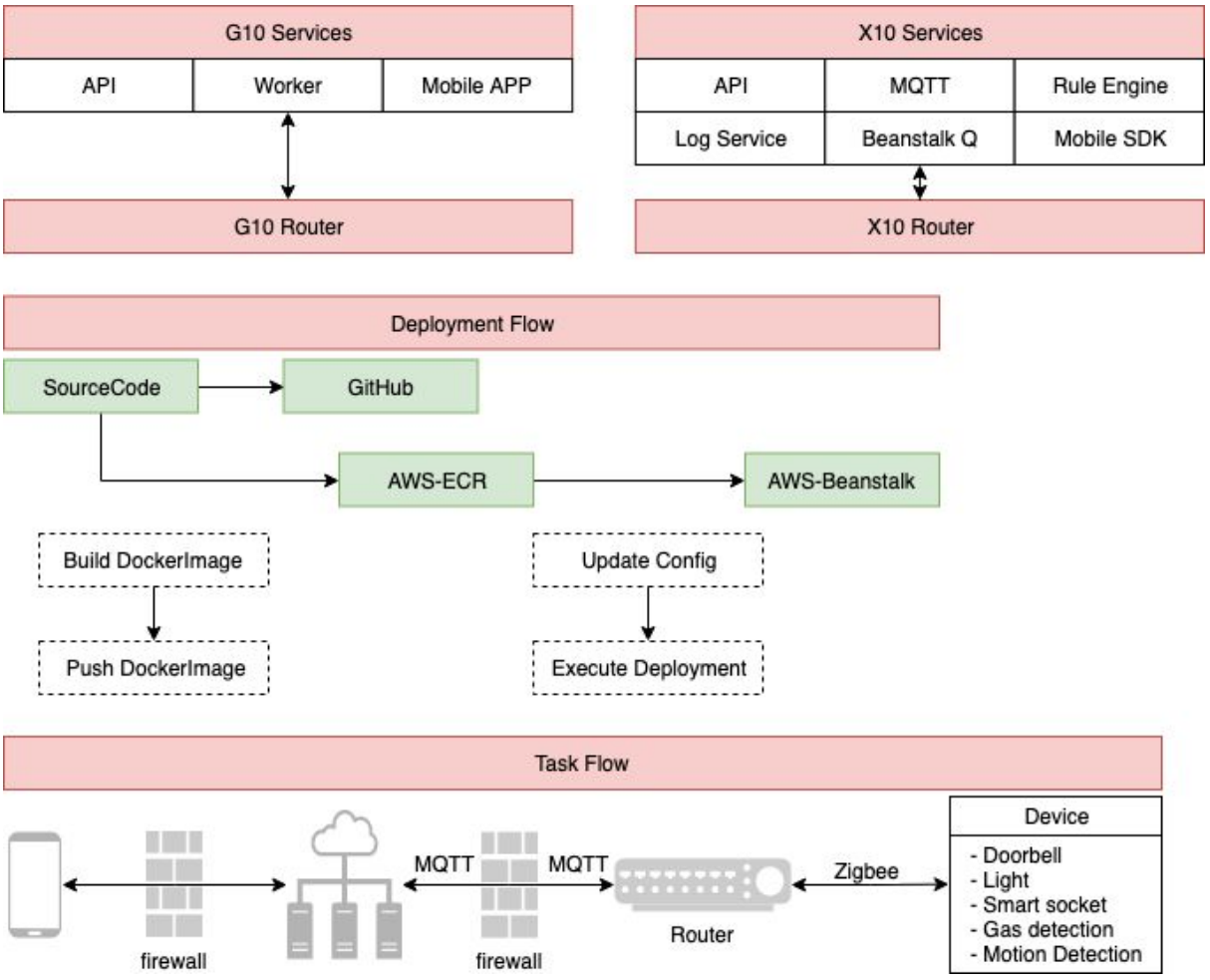


Main Contributions

- Systematically organize, recover the project's flowchart from left-behind source code, and to make the complete document and diagram.
- Build XMPP cluster.
- Refactor WatOnWan service, be a cluster.
- Lead the team to transfer Notification Service to FIREBASE.
- Build a Low-Network-Speed sandbox environment.
- Use Docker to refactor the Desktop APP structure. (Providing an easy and fast to build development environment)
- Use docker to optimize the development environment in MainServices. (Providing an environment that is easy to debug, maintain and add new functions)
- Optimize CI&CD, I build many scripts to simplify the complications.
- Add Cloud File Sharing Services.
- Build an OSX socket Desktop APP.
- Manage the Database migration and integration.
- Integrate the log with Papertrail.

The IoT System

System Composition



Main Contributions

- Maintain G10 API services and Deployment Policy.
- Build X10 API services.
- Build MQTT service. (Enabling message passing between cloud and device)
- Build Rule Engine.
    - Parsing all rules and executing each task, e.g. time-, location-, and event-sensitive.
    - Integrating with Firebase.
- Build Log Service and save all task log.
- Build Beanstalk Queue Service to monitor all tasks.
- Build IOS SDK to bridge backend and IOS.
- Build Deployment Policy and Sandbox Environment.
- Make the complete document and diagram.

The Ipcam Cloud Recording

System Composition

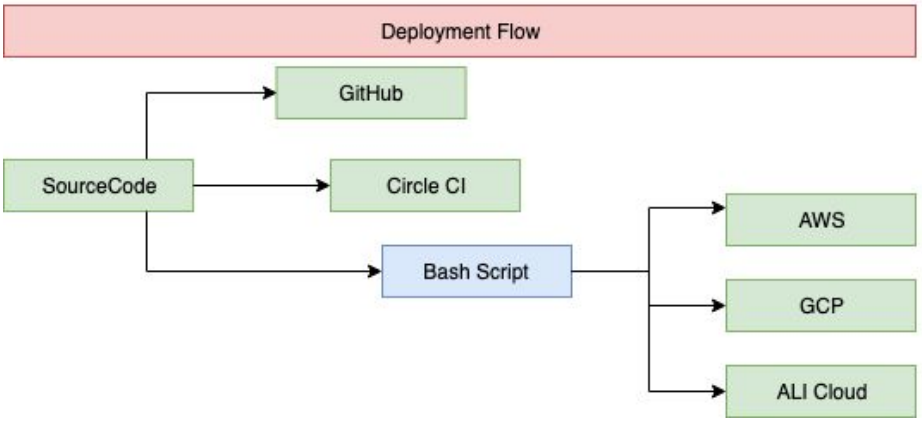
Manage Services	
Website	API
Worker	TaskBrowser
LogService	NginxProxy

Media Services		
MediaServer	NginxProxy	API
Minio/S3/GCS	Redis	CacheBrowser
Player Tools	Benchmark Tools	Database

Mobile APP
iOS

Message Controller		
MQTT	Firebase	Jiguang

Endpoint devices integration		
SENAO	APPRO	Raspberry PI

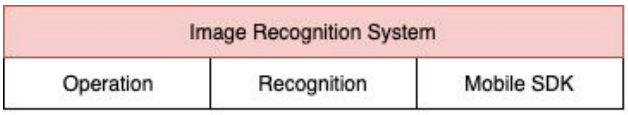


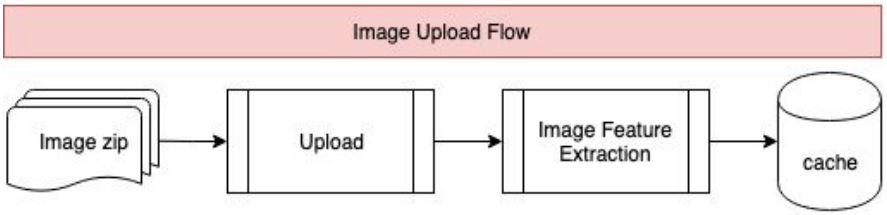
Main Contributions

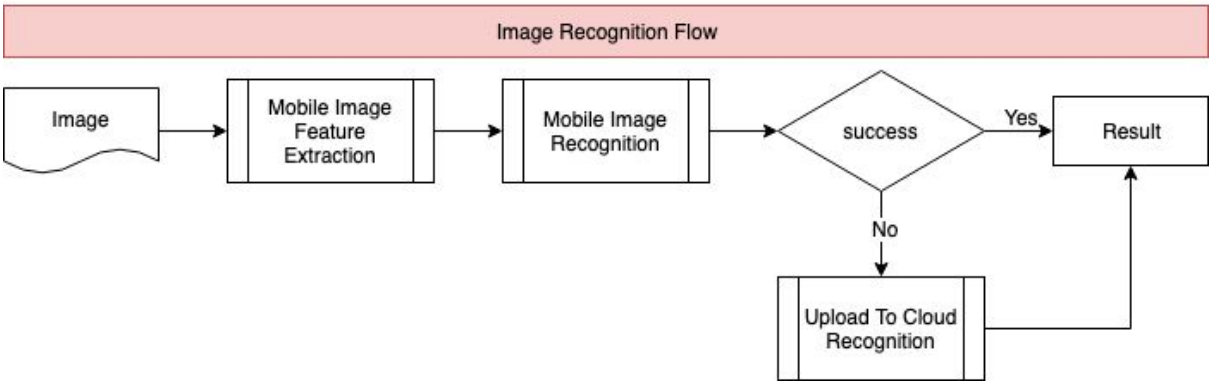
- Upstream Support Protocol : RTMPs, RTSP, RTMPTs.
- Downstream Support Protocol : RTMPs and HLS with HTTPS.
    - Considering information security, each HLS's TS file has individual encryption and could only be downloaded in a limited time.
- Build API service.
    - Multi-AUTH : Email, Facebook, Google, JSON WEB TOKEN, and OrbwebTK.
    - Device Bind/Manage/Share.
    - Subscription system.
- Notification services : Jiguang, Firebase, and Email.
- Message : MQTT.
- Integration with Papertrail.
- Use RPI as the device to integrate with AWS-Recognition and AWS-Polly.
- Build Sandbox Environment.
- Make the complete document and diagram.
- Intend to use Kubernetes to deploy.

The Image Recognition

System Flow





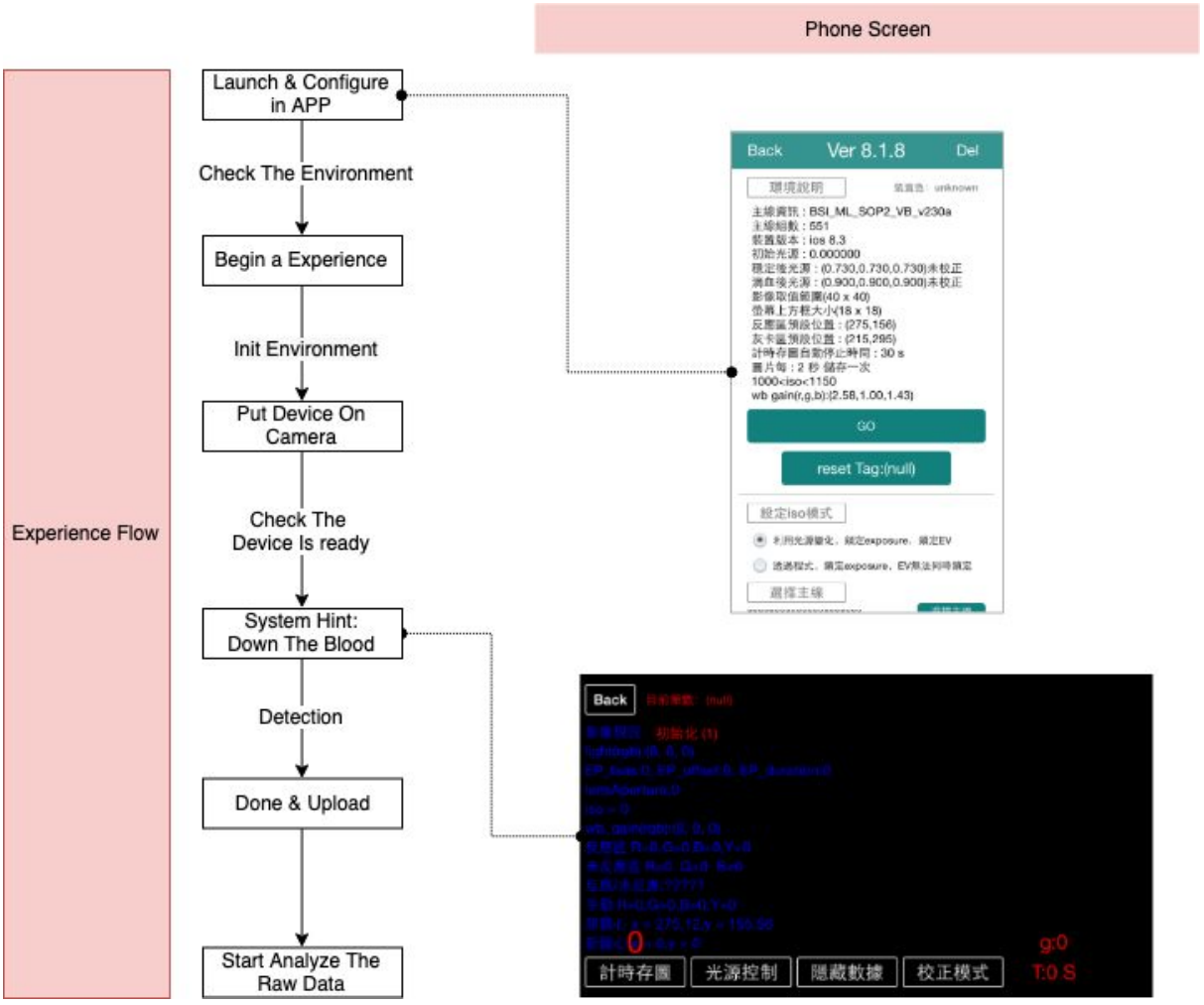


Main Contributions

- Build IOS APP and Image Recognition SDK.
- Build Image Operation System. Batch operates the images and manages the APP certificate.
- Optimize the image batch upload speed and use the multi-thread to process the feature extraction.
- Deploy to AWS.
- Manage and monitor cloud server.

The Blood Sugar Detection APP

Exp-APP Flow & Screen Shot



Main Contributions

- Build Production/Internal IOS APP, and lead Android APP Development.
- Help our data scientist to analyze raw data in an efficient way. (Making the data automatically passing from the APP to the internal database)
- Increase the research speed from twice a week to many times in one hour.
- Increase the accuracy from less than 60% to 93%.
- Build a relevant website.