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Software Components of an IoT Monitoring Platform in Google Cloud Platform: A Descriptive Research and an Architectural Proposal (Conference Paper)

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Abstract

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As software engineers, it is not an easy task to build a software solution that customers consider easy to use, cost-benefit balanced, secured, high available and prepared for high demand. There are many solutions for building a monitoring platform with these previous attributes and we need to consider all the technical factors to achieve this goal. We proposed an agile methodology for the project management approach, acquired the necessary equipment and services and hired the staff to design and develop a monitoring platform in Google Cloud Platform (GCP) with edge frameworks and technologies. We implemented a software working solution composed of five applications (app) or services and configured services in the GCP: IoT data web service, frontend web app, backend web app, IoT app, and mobile app. They were developed using Python, ReactJS, and Java and deployed in Google Cloud Platform for being used in personal computers, laptops, mobile devices, and IoT devices. We defined this architecture with its main basis in a cloud platform that used the publish/subscribe pattern for efficient data ingestion and reporting. © 2020, Springer Nature Switzerland AG.

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Cloud computing IoT Monitoring system MQTT Software engineering

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