Design and Implementation of Distributed Application: Project Report

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Abstract

In this paper we present a simplified function-as-a-service cloud platform, which enables the distributed execution of a chain of operators on a shared storage. The system consists of one scheduler and multiple worker and storage nodes. Workload is balanced equally between workers through the scheduler. Data consistency and fault tolerance are guaranteed by the storage nodes. We present the problem and motivation first, then describe our solution in detail, and evaluate it at last in this paper.

1. Introduction

Distributed function-as-a-service cloud platforms are increasing in popularity with big cloud providers like AWS and Google Cloud offering custom solutions. They offer great flexibility with of the shelf plug and play options as well as customizable and self-developed options. For this project we developed our own distributed function-as-a-service cloud platform, a simplified version of other platforms. We focused on its design, implementation and evaluation in the project and this paper.

2. Problem

3. Solution

3.1. Design

3.2. Implementation

4. Evaluation

5. Conclusion