

Project proposal: Timely service for a global customer base

Introduction

The supply chain forecasting product that RELEX offers consists of a SaaS application that both performs ML calculations and serves a frontend to end users. The application is hosted on RELEX' own hardware. RELEX offers service level guarantees that are tied to individual customers' office hours. For example, it should be possible to use the UI of the RELEX application during the day, when users need to interact with the forecast data. In other words, the application should be "available". During the night, the UI does not necessarily need to be available if the hardware is needed to do heavy batch processing calculations instead.

RELEX employs monitoring tools that periodically check if the application is available and alert our engineering team if it is not. Since all of our customers have their own instances of the RELEX application, the monitoring tools need to keep track of the office hours schedules of each customer, to make sure alerts are not sent unnecessarily. And, since RELEX has a global customer base with users in all time zones, there are a lot of different office hours schedules to keep track of!

Project goals

Develop a new tool for the purpose of configuring our customers' office hours schedules in a format that our existing monitoring systems can use. The tool will be used internally at RELEX. Our monitoring and alerting systems will integrate with the tool to find out whether, at any given time, a customer is supposed to be able to use the RELEX application or not. The tool will provide an API for programmatic access as well as a frontend for our internal (human) users.

Although the use case at RELEX revolves around office hours schedules, the application will be generic enough to handle any similar use case of combining monitoring data with repeating time window schedules. It will be open-sourced so as to be of use to the wider monitoring community.

Technologies

Application monitoring at RELEX is based on Prometheus, an industry-standard time-series database (TSDB) and alerting platform. To make it possible to combine the time window schedules with other monitoring data, the application output will be in the standard Prometheus data format. Tools in the Prometheus ecosystem are commonly developed using Go, a statically typed language streamlined for cloud-native application development and used throughout industry. Although in principle any programming language can be used, Go has the advantage of being approachable by the wider Prometheus monitoring community. Since the application will be open-sourced, a goal should be to make it as easy as possible for the community to contribute patches.

Requirements for students

The team should ideally combine both frontend, backend and devops skills like setting up Continuous Integration pipelines. We expect the team to actively engage and collaborate with us in scoping out the work. Members should be OK with their code being open-sourced for anyone to scrutinize.

Legal issues

The results are published under the MIT open-source license, on the company GitHub profile (<https://github.com/relex>).

Client

RELEX Solutions is a leading provider of cutting-edge retail optimization software. We offer our customers radically improved demand forecasting and supply chain optimization, which then can be leveraged into exponential benefits — optimizing store space, allocation, workforce, pricing and promotion strategies, all within our unified platform.

RELEX is trusted by leading brands including Kesko, S Group, AutoZone, Rossmann, and has offices across North America, Europe, and the Asia Pacific region.

Client representatives

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Additional information

All project-related documentation will be provided in English, the working language at RELEX.