

# Alacrity Platform Engineering Project

We believe the best method to assess an engineer's full skill-set is through an offline exercise that relates to the problem we are trying to solve. The goal is to produce a fully working service that will be the main subject of discussion on your technical interview. Be prepared to:

- Present your solution and demonstrate its operation end to end.
- Discuss about your decisions and how you justify them.
- Discuss the runtime characteristics of the system.
- Discuss future code scalability and development of your service.

## Problem Statement

Using Node.js and any datastore you see fit, you need to create a service that exposes two endpoints to save and retrieve values while storing them securely. All data at rest must be securely encrypted with the key provided by the clients. The service needs to be fault tolerant.

## Storing Endpoint

The storing endpoint needs to securely store the provided data, it should accept three parameters:

- **id** {string} The unique id to store the data on. If the same key already exists, the data value should be overwritten.
- **encryption\_key** {string} The key to encrypt the data with.
- **value** {\*} Can be any type, which should be retrieved as the original type.

## Retrieval Endpoint

The retrieval endpoint performs a query on the stored data, decrypts and returns the results. As multiple records might be requested the endpoint should always return an array of records. The required parameters are:

- **id** {string} The exact id to query with or using the special wildcard '\*' query for a set of records (e.g. *id: "engineering-jobs-"*).
- **encryption\_key** {string} The key to encrypt the data with.

## Retrieval Requirements

- If the encryption key is wrong, make a system log and do not return the item. That is, return an empty array instead of an error message.

## Deliverables

- Source code tracked on a public git repository.
- Demonstrate operation through live-demo.
- Installation and running instructions.

## Tips

- Don't spend more than a few hours on the project. We are looking for a strong understanding of the key concepts of services implementation, code quality and quality assurance methods. We are not looking for a perfect, production-ready implementation.
- The main areas we will be evaluating are organization of responsibility, conventions and consistency, QA, overall performance and resilience to failures.
- Have fun and keep in mind not all aspects of the evaluation need to be demonstrated in code. Explaining understanding via comments and/or verbal communication during the technical interview can be effective for the purpose of this project.