Computer Science Contract

Company:
BifrostConnect

Students:

Fei Gu

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Time period: 16th October 2023 – 30th January 2024

Preliminary title:
The implementation of Bifrostconnect Front-end scope, re-design and development with the relevant back-end support develop.

Appendix:
Conditions for the project

Project recourse

Description of the project

Project supervisor

Signed by:

Jesper Wass	Fei Gu	
Company	Students	Erhvervsakademi SydVest

Conditions for the project

All raw data, specifications and other information supplied by the company, as well as any products, data, specifications, reports, etc. prepared by the Business Academy South West's students in the solution of the project or otherwise obtained as a result, will be considered company property and may only be used by the Business Academy South West and its students for educational purposes in connection with the solution of the project. Any other use of the material must be supplied with the company's written permission.
The final project is the students' demonstration of their abilities, and it will be evaluated in a final oral exam. Therefor, it is unlikely that the process will lead to a final solution that can be implemented immediately in the company.

The above signature confirms that you agree with the above conditions.

Project resources

The Academy provides a supervisor to the students. Meetings are held between the group of students and the supervisor regularly throughout the project. The company has assigned a contact person that can answer business relevant questions. The group and the contact person agree how the contact should be held during the project. The company may provide office space for the students.

Description of the project

Background

The current BifrostConnect front-end components consist of the Device Manager (DM) and Remote Access Interface (RAI). The RAI consists of two different user interfaces referred to as the Classic RAI and Tunnel RAI.

The design logic of this product is not scalable, leading to decreasing user experience, and exponential growth of code complexity which makes it increasingly challenging to maintain and improve. The product design style lacks scalability due to lack of modularity and code consistency, and the operation logic is not clear.

Solution

To address this issue, there is a need to redesign and remake the front-end with a focus on implementing a modular unified front-end management system that encompasses all the necessary functionality. The goal is to provide users with seamless control, monitoring, and access to their devices from anywhere, enhancing their overall user experience and productivity while keeping code complexity as low as possible.

For the implementation to be successful, we also need to have a back-end service, including an API and Database. The back-end server will contain the necessary service for the front-end to reach the purpose. Such as the RESTful API service, authentication service, MQTT service, Tunnel service and Database.

Addition corresponding parts

This project will follow the software design process. Therefore, it will also include the Software Development method and DevOps on all process as well. This project is covered by NDA due to security and confidentiality reasons. Thus, the project will initially not be publicly deployed, however, I will described the deployment in my report as well.

Supervisor wanted

Henrik Boulund Meng Hansen