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Authentication4CloudiO

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Summary

1. Authentification
2. Cloud
3. Access rights

Introduction

- **Implementation a prototype to change the authentication architecture of an existing cloud.**
- **This cloud provides an infrastructure to monitor and control a large number of devices on a centralized cloud platform.**
- **The cloud has several micro-services running with RESTful APIs.**
- **The security of these APIs is a major issue.**
- **Several applications connect to this cloud, each application has its own authentication system .**

Methods

- Evaluation of the architecture of the entire cloud.iO project.
- Research on various authentication protocols.
- Evaluation of the chosen protocols and selection of the best one.
- Implementation of an open-source prototype simulating the cloud.iO architecture.
- Implementation of several features in order to transfer between the current version of the cloud and the new one.
- Project management to develop clear and precise functionalities for the client.

Results

- Creation of an environment like cloud.iO, database, Spring Boot, etc.
- Creation of a new authentication server with open-source program.

- Securing APIs through role management linked to the authentication server.
- Implementation of a single sign-on.
- Connection to various third-party applications such as Grafana.
- Link the authentication server to an Azure Active Directory user database.

Conclusions

- **The new authentication server can manage roles in order to give access or not to a resource server, to connect several applications using the same identifier and finally to connect with an Azure Directory database to the authentication server.**

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