

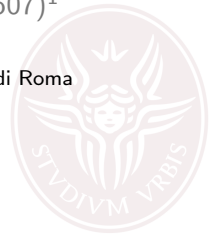
Group Project

Biometric Systems

Valerio Casalino (1916394)¹ Mario Tobia Vendrame (1922290)¹
Shaahin Sabeti Moghaddam (1917507)¹

¹Cybersecurity Master @ Sapienza Università di Roma

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Premise

Before we start, let us say that all of our work, included this own presentation, is open sourced and available on Github:



<https://github.com/casalinovalerio/biosys-project>

There is also a script to replicate our setup for future projects.

Overview

We wanted a face recognition based authentication application that is simple, yet particular. We deployed our test using:

- ▶ A **web interface**¹ that works as a demonstrative placeholder. It gets the face with the camera, makes requests to our API server, which returns only a binary value for the success of the authentication.
- ▶ An **API server**² that queries the faces database and recognizes faces using the **@ageitgey's tool**³.
- ▶ A **database based on Blockchain**⁴ that is an open source wrapper for a blockchain database that can be queried with standard SQL syntax. Implemented on the API server too.

¹Hosted by Github Pages: <https://pages.github.com/>

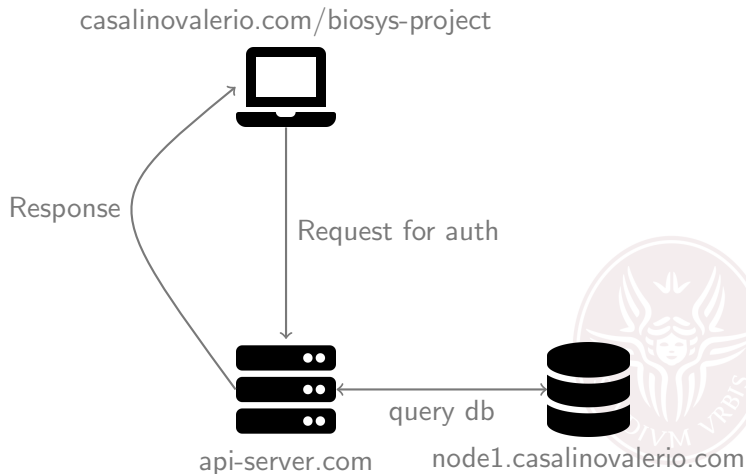
²Hosted by Digital Ocean: <https://www.digitalocean.com/>

³Github project here: https://github.com/ageitgey/face_recognition

⁴Implemented by Bigchaindb: <https://www.bigchaindb.com/>



Overview scheme⁵



⁵Icons are licensed under CC-BY 4.0. <https://fontawesome.com/license>

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The Block-chain database

As database for new faces, we implemented a **Block-chain**.

We used an open-source implementation of it, called BigchainDB⁶.

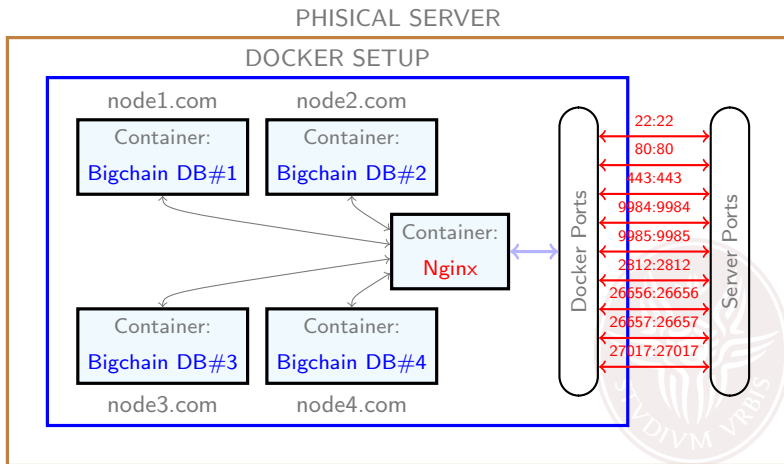
We also used Docker⁷ to deploy 4 containers running the application.



⁶Main page: <https://www.bigchaindb.com>. Documentation [here](#).

⁷Main page: <https://www.docker.com>.

Architecture Implementation⁸



⁸This is absolutely not meant for a real deployment!!

How to interact with the DB

We are assuming that we have an established connection set up.

Query data

```
connection.searchAssets('AwesomeAsset')  
.then(assets => console.log('Found assets:', assets))  
// Read the console to look at the assets
```

Load data (make a transaction)

```
// Create transaction first (txTransferBob)  
driver.Transaction.signTransaction(txTransferBob,  
  alice.privateKey);  
conn.postTransactionCommit(txTransferBobSigned);
```

Simple as that...

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