Zap!

Alternatives to traditional text-based authentication

Group H
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Previously on Zap!

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- ➔ Drawbacks for text password
- ➔ Previous work
- ➔ 1 web based experiment
- ➔ 3 implementations

Zap!


9gag
"Sorry, your password must contain a capital letter, two numbers, a symbol, an inspiring message, a spell, a gang sign, a hieroglyph and the blood of a virgin"

Zap!

- ➔ Android application
- ➔ Ruby on Rails RESTFul service
- ➔ Microsoft Cognitive Service
- ➔ Data collection

Three Implementations

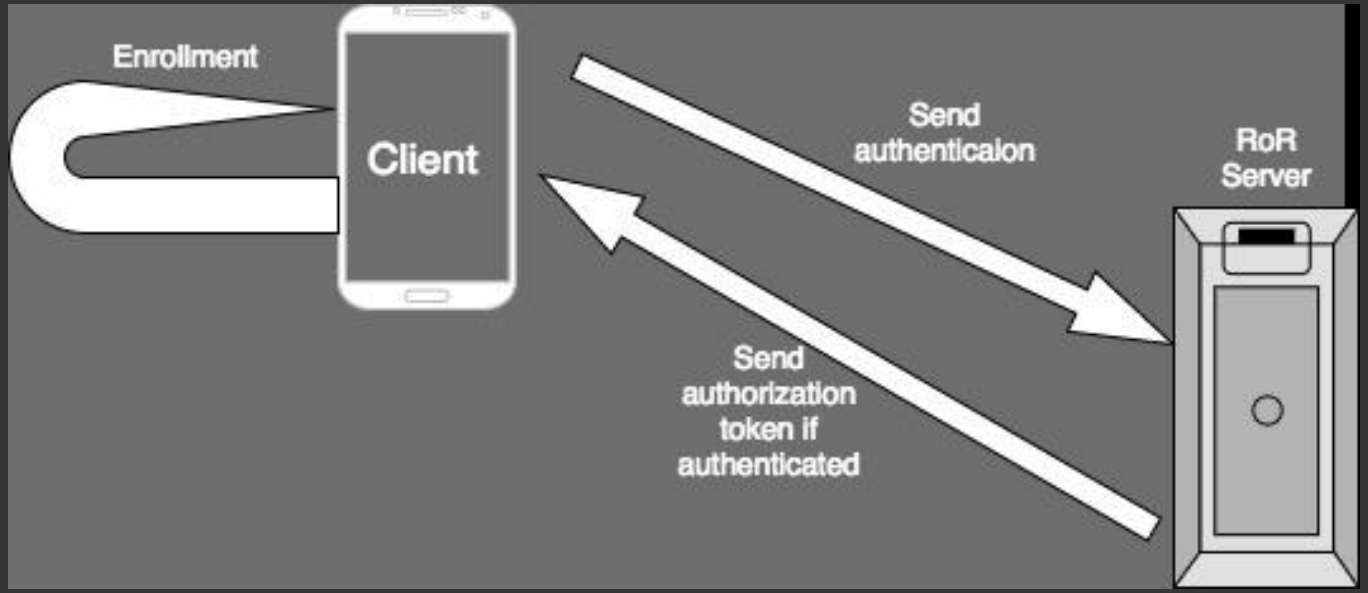
Server

- ➔ Ruby on Rails
- ➔ Restful service
- ➔ Handles authentication using token

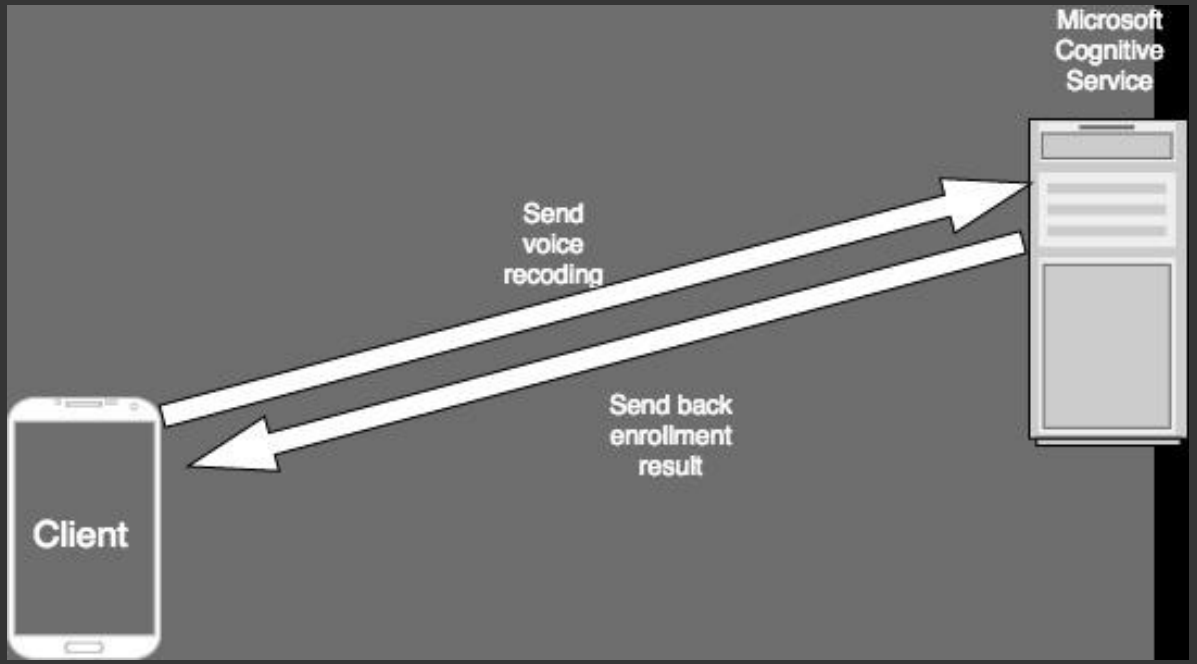
App

- ➔ User registration
- ➔ Verify the user with the Ruby on Rails server

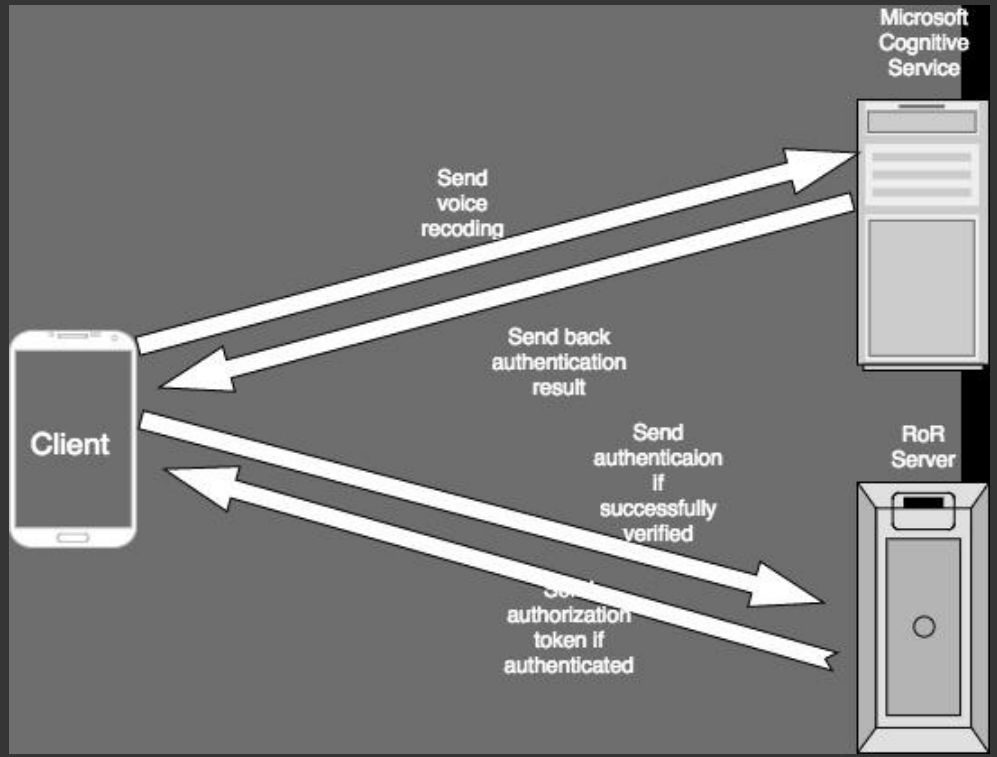
Fingerprint



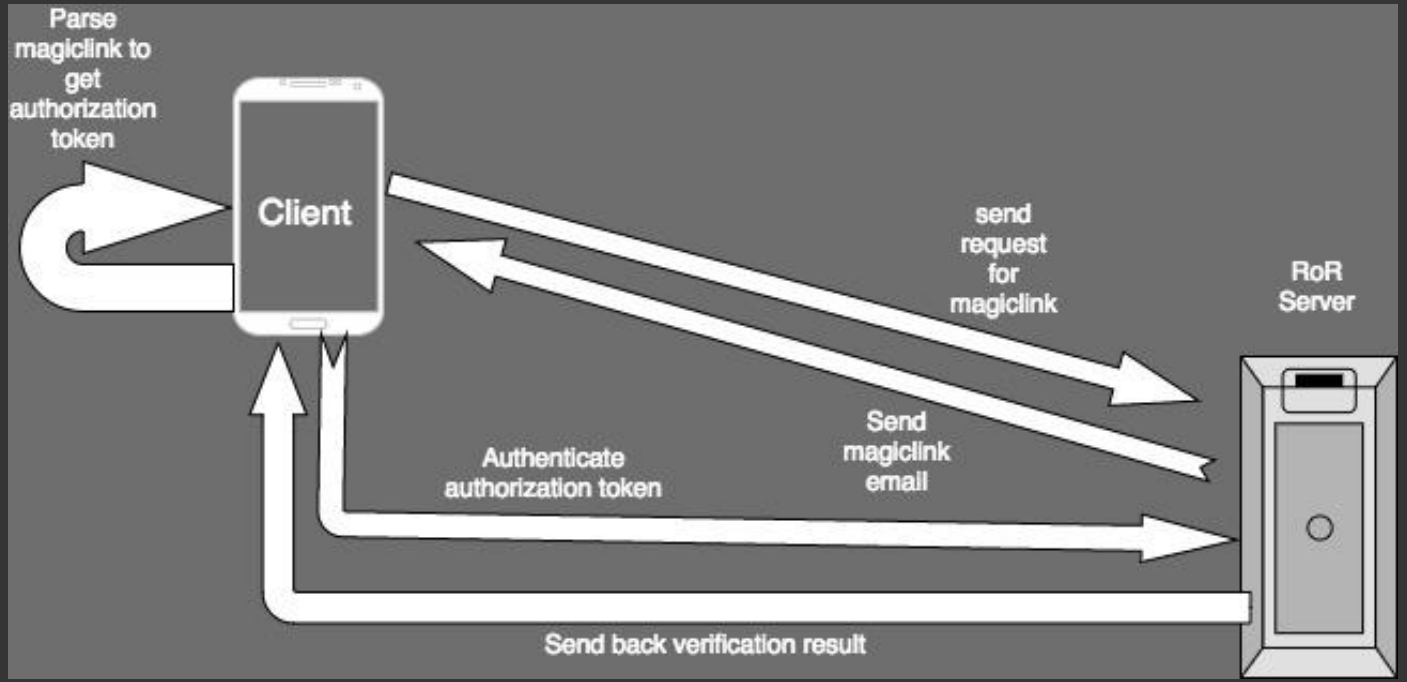
Voice enrollment



Voice authentication



Magiclink


Parse magiclink to get authorization token
Client
send request for magiclink
RoR Server
Send magiclink email
Authenticate authorization token
Send back verification result

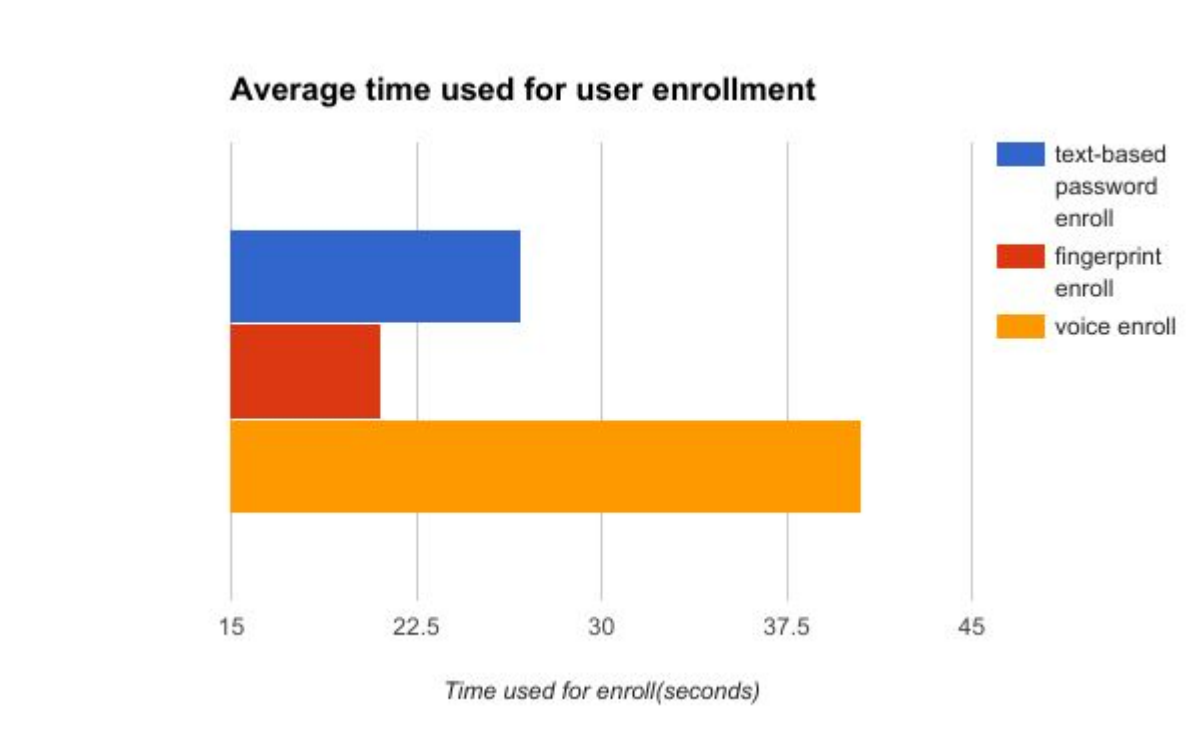
User Evaluation

User evaluation

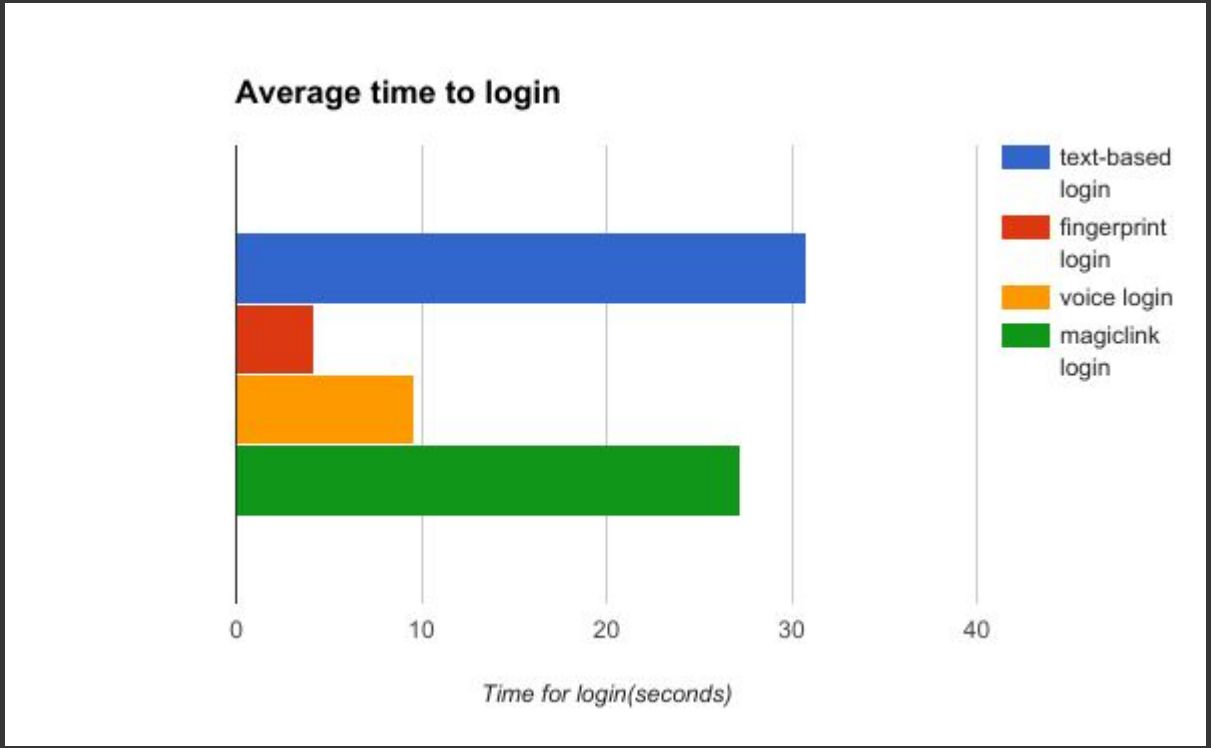
- ➔ Observe participants on each authentication method and time them.
- ➔ Participants rank 4 methods (including text-based as baseline)
- ➔ Collect feedback on those authentication methods.

Result

Enroll

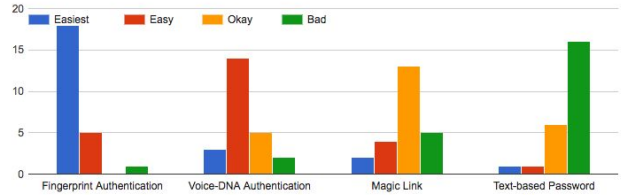

Average time used for user enrollment
text-based password enroll
fingerprint enroll
voice enroll
15
22.5
30
37.5
45
Time used for enroll(seconds)

Login

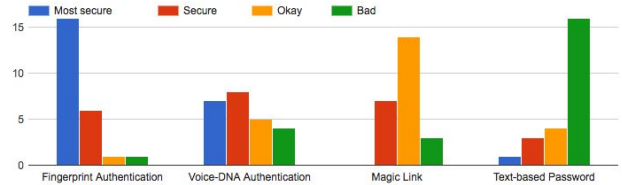

Average time to login
text-based login
fingerprint login
voice login
magiclink login
0
10
20
30
40
Time for login(seconds)

Ranking

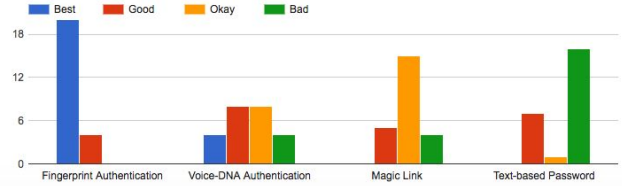
Rank these authentication methods based on how easy to use they were



Rank these authentication methods based on their security (your opinion of how secure they are)



Rank these authentication methods overall (which you'd like to use)



Best one

Best one

➔ FIngerprint

Best one

- ➔ Voice is promising for applications like Alexa

- ➔ Magic Link can be faster if existing a mechanism for application to parse the link automatically in the background

Thank you all for your participation!

https://tiny.cc/groupH