Web- UI development for SAFER

Akash Gupta
Openlab Summer Student
(Computer Security Team)
What is SAFER?
How does SAFER works?
Web - UI
Problems Faced
Future Work
The Team
Welcome to SAFER - The CERN IoT Security Framework

This portal is designed to inform you about the computer-security risk level of a large variety of IoT devices. For every device in our database, we provide information concerning vulnerabilities and assess the overall device risk.

Scan a device / subnet

You can directly scan a device or a subnet on the CERN network. Once the scan is completed, you get notified by email. At that point, you can review the risk assessment of the discovered device.
What is SAFER?


- Works on all the IoT devices at CERN, non-intrusively.
Did You Know?

~1000 IoT devices in General - Purpose Network at CERN.
So, how does SAFER work?
1. User logs in to SAFER
2. Backend Processing

1) Device Identification

2) Vulnerability Enrichment

3) Risk Scoring

Hostname

Result

Database
3. Getting Results

SAFER Web - UI

Scan Key

Result (JSON Format)

Database
Web - UI
Making a Request

curl https://********.web.cern.ch/initial_request_akash -X POST -H "Content-Type:application/json"--data'{"request_type":"0","ip":"IOT.CERN.CH","username":"","password":""}'}
Getting Results

curl https://********.web.cern.ch/initial_request_akash -X POST -H "Content-Type:application/json"-- data:{"request_type":0,"ip":"IOT.CERN.CH","username":"","password":""}

{"ip":"IOT.cern.ch","password":"","request_id":"b0795ac3-ad65-4d4f-8335-9dfe02110855","request_state":7,"request_type":0,"sl_result":{"Lights - Out - Management_Hewlett Packard_iLO4":0.26049022522828474,"Printer_Hewlett - Packard_DesignJet - T120":0.005788671671738991,"Printer_Hewlett - Packard_Laserjet - CP3525":0.005788671671738991},"subnet":"None","timestamp":"2019-07-25 16:36:09","trend_result_id":"Lights-Out-Management_Hewlett-Packard_iLO-4//2.55","username":""}
**Layman View**

- Images, icons, and text in a simplified format.
- Easy-to-understand information.

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**Expert View**

- Complex data and visuals.
- Detailed analysis and in-depth information.

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**Views**

- Comparison between Layman View and Expert View.
- Highlighting the differences in presentation and information depth.
Front - End Stack

- Reactjs
- HTML 5
- CSS
Deployment Stack

docker + NGiNX
Problems Faced

? Too many State variables for each Component.

React Hooks - A new addition to React v16.8

? Cross-Origin Request Blocked: The Same Origin Policy disallows reading the remote resource at somesite.
Future Work

Integrating my React Application with CERN Single-Sign On.

Using Flask to write the Backend Server.
THE TEAM

Back - End Guru

Pascal Oser
(Supervisor)
Email: - p.oser@cern.ch

Front - End Rookie

Akash Gupta
Email: - aksgupta3697@gmail.com
CERN Openlab Lightning Talks

Thank You