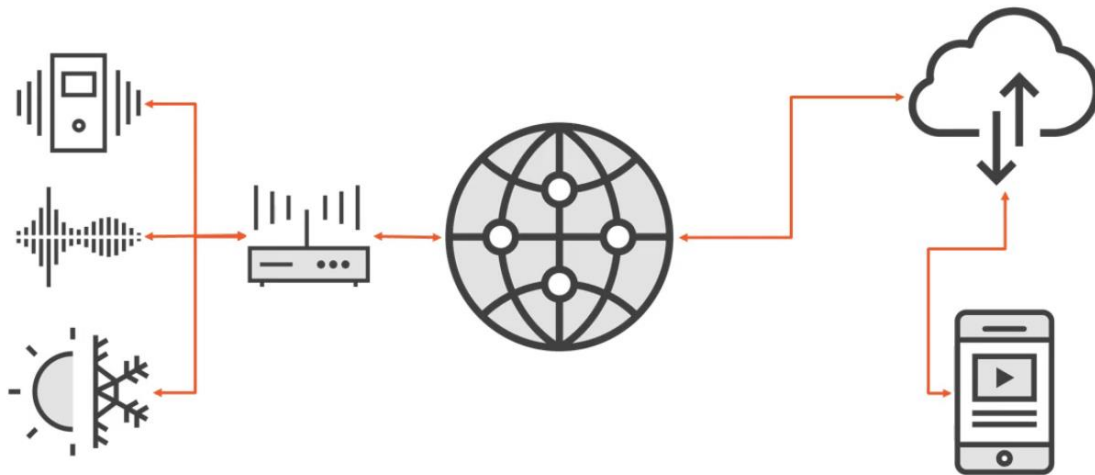# Security in Cloud

LAYERS OF THE IOT SYSTEM:

First, we will divide the IOT system to 4 layers:

- Edge layer
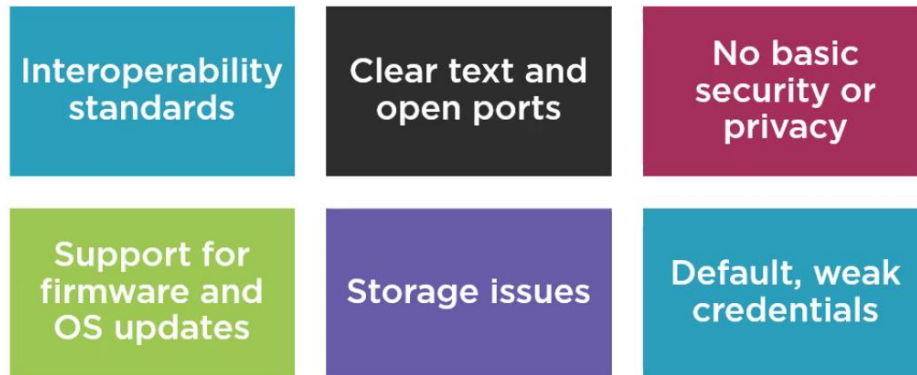- Access Gateway layer
- Internet layer
- Cloud layer

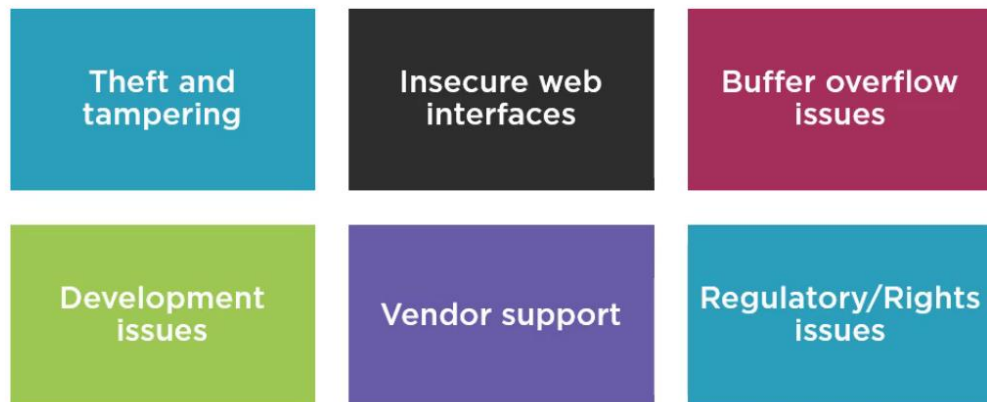We will talk about the security In the Cloud layer.

IOT CHALLENGES:

We can know the challenges of IOT in the figures as a summary

The Challenges IoT Presents

Interoperability standards	Clear text and open ports	No basic security or privacy
Support for firmware and OS updates	Storage issues	Default, weak credentials

The Challenges IoT Presents

Theft and tampering	Insecure web interfaces	Buffer overflow issues
Development issues	Vendor support	Regulatory/Rights issues

CLOUD SECURITY CHALLENGES:

Challenges in the security of the cloud can be summarized in the following points:

- Bad authenticated setup
- No Encryption in both storage and communication
- Web interface vulnerabilities

The next figure shows these challenges:

Secure Web UI

Authentication

Updates

Encryptions (communication and storage)

SOLUATIONS:

So, in our project we will focus on the next to solve these challenges:

- Use strong and suitable methods in authentication
- Encrypt data in the communication
- Make the stored data hashed or encrypted to prevent attackers to get data easily
- Use suitable encryption algorithms
- Secure the web interface from the web vulnerabilities
- Stablish firewall for the cloud to prevent common attacks like DDOS attack, etc...