IOTWeek

Dublin — June 20-23, 2022

# Using DLT for IoT security

Iordanis Papoutsoglou (Research Associate)

GLOBAL VISION:
IoT TODAY AND BEYOND

IOTForum

# Motivations for security



- Inspired by ENISA's threat taxonomy for IoT devices.
- **Access control policies** as a good practice to enforce authorization on resources.
- Consider resource capabilities and future application.

CYBERSECURITY

**Cloudflare mitigates 26mln request per second DDoS attack**

It is the the largest HTTPS DDoS attack on record

**Press Release**

June 15, 2022

Dubai, UAE: Last week, Cloudflare automatically detected and mitigated a 26 million request per second DDoS attack — the the largest HTTPS DDoS attack on record.

**IoT Attacks Skyrocket, Doubling in 6 Months**

Author:
Tara Seals

September 6, 2021
/ 8:00 am

3 minute read

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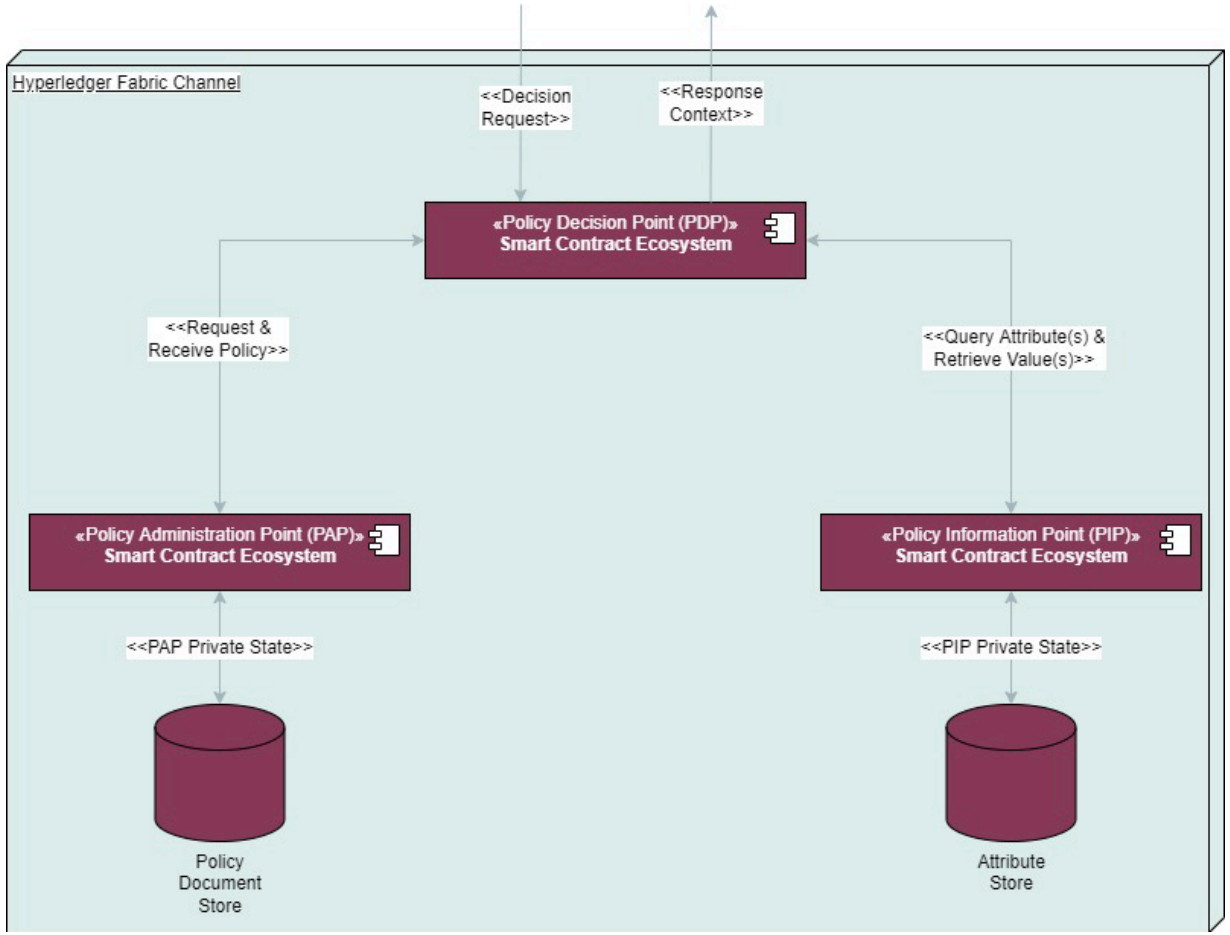
The first half of 2021 saw 1.5 billion attacks on smart devices, with attackers looking to steal data, mine cryptocurrency or build botnets.

# High-level architecture diagram



- XACML is used for **ABAC** based on Hyperledger Fabric.
- Decision-making is **decentralised**, as XACML components deployed on blockchain (PDP, PAP, PEP).
- Decisions are stored for future audits.



# XACML and Decentralisation for IoT devices



**XACML:**

- a flexible and distributed approach for policies,
- dynamic access control and fine-grained delegation with ABAC,
- alleviate maintenance and overhead.

**DLT:**

- data immutability,
- single point of failures avoidance,
- Performance,
- Consistency,
- Room for growth

# Contribution and novelty



The architecture is based on permissioned network and does not rely on public blockchain (no cryptocurrency).

The decision (inputs, evaluation) is made on-chain.

General applicability for imposing policies.

Demo based on ASSIST's port pilot.

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# Thank you!

**Find more:**

https://assist-iot.eu

iotweek.org

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