Security and Privacy Modeling and Implementation with XACML/ALFA and Fabric

Meeting Date: March 14th, 2022.

Start Time: 9:30 AM

End Time: 10:30 AM

Attendees: Dr. Yue, Dr. Sha, Venkata Naga Bhaavagni Maddi, Farhana Shaik Begum, Sripada Vallabh Kaparthi, Preethi Vuchuru, Madhuri Koduru

Prepared By: Venkata Naga Bhaavagni Maddi

Items Discussed:

1) Sripadh (Working on storing credentials into postgres database)

Show the demo for Login and register pages and storing credentials to postgres database

Dr. Yue and Dr. Sha

A) Yours is storing credentials for local application. Figure out a way to store credential for fabric.

2) Bhaavagni and Farhana (Working on Smart Contracts)

Bhaavagni - Asked for the approach which can be used for storing/accessing asset attributes and how can they be implemented in Smart Contracts.

Dr. Yue and Dr. Sha

A) Please use the general algorithm to implement in the smart contract. Store attributes in MSP/CA. As your ALFA policy is complicated with lots of variations. There are no complete guidelines Try mimicing smart contract environment. See Project.org, get asset from blockchain and understand the definition. Some of the attributes will need to be retrieved from smart contract and store in CouchDB. User.org = new object.proj.org. User organization, get it from MSP call, simulate a call. Look up Client Identity API. You also have object.proj.org. Get object from blockchain. Before that create blockchain asset or use Couchdb to insert objects into db and simulate a smart contract. Try experimenting policies.

Farhana - JSON file has attrbutes BCAsset type and ID, Should we store that as asset attribute or permission attributes?

Dr. Yue- Shown an example of JSON file. Make use of Fabric contract-go API. PutState is used for storing data into blockchain. Make use of interface.go (detail with definition). Key as asset type, value as assetID. isTopLevel is used for distinguishing project and subprojects. If toplevel is false, it means we need to have a parent project.

3)Preethi (Updates on Blockchain network setup)

All three machines are having a node a CA and couchdb containers, Ordered has a CA and CouchDB. Created channels for communication, 1 for communication all 2 peers, other org1 and org2, third for org2 and org3.

Dr. Yue

An ordered is a part of the organization. (Each org needs to have ordered, peers). Discussion on the Fabric-ca-server-config.yaml file.

Items for next week:

1) Trying out the sample policies to implement into Smart Contracts.
2) Modifying and accessing attributes using Smart Contracts/ Go File.
3) Adding certificates to the database.