

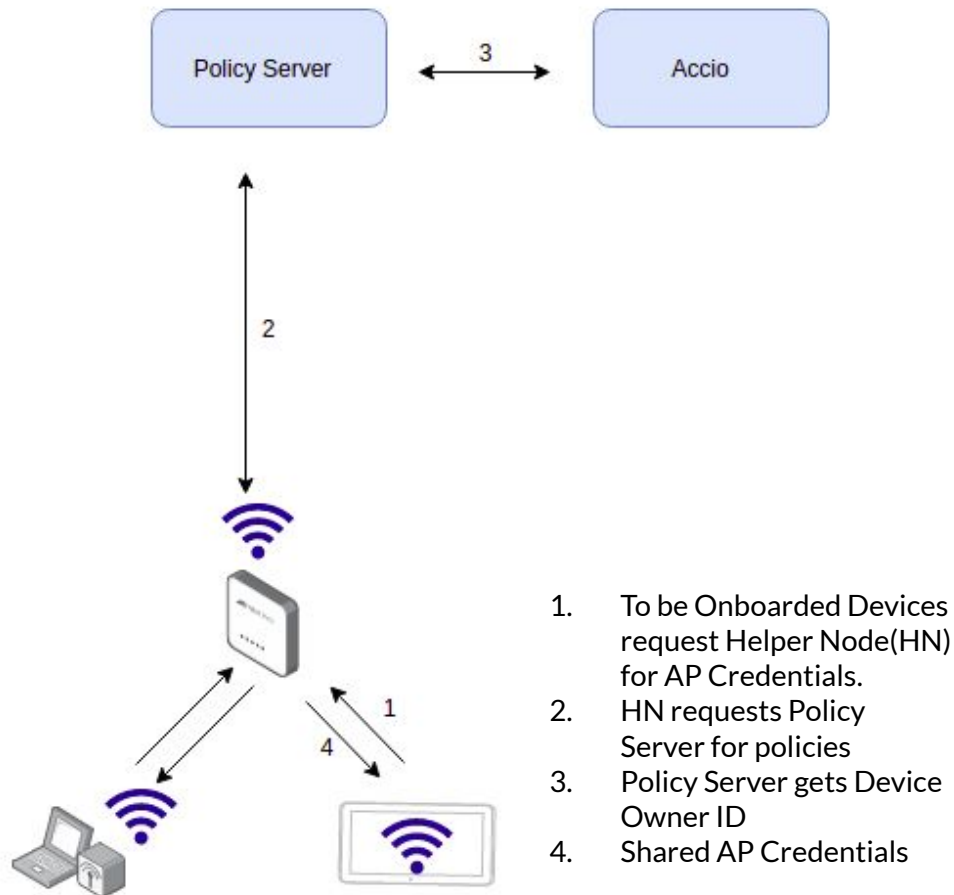
Policy Server

Problem Statement

- To design and implement a friendly web - policy server

Policy Server Requirements

- For Server:
 - Node.js \geq v12.0.0
- For Database:
 - MongoDB

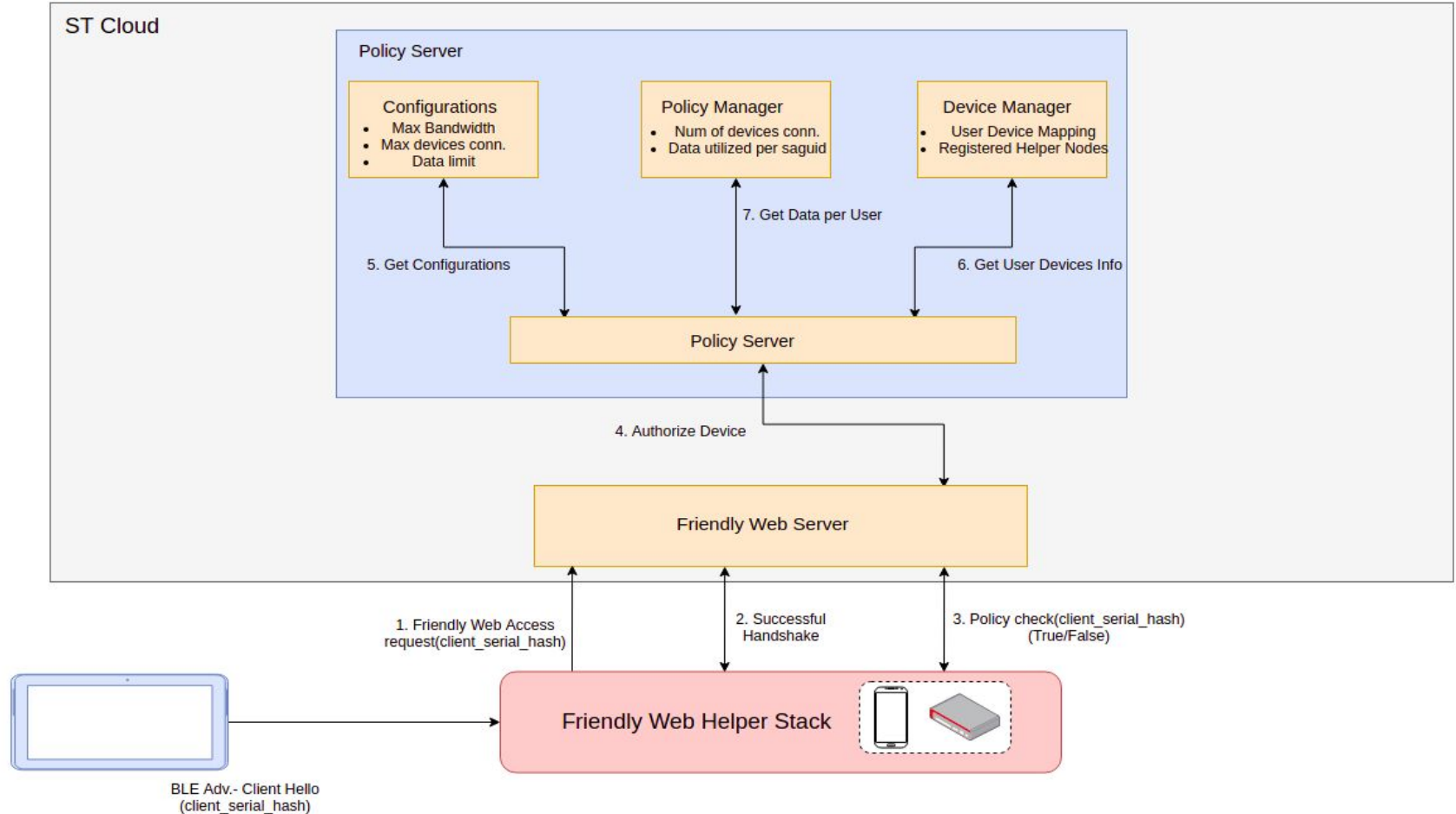


Policies

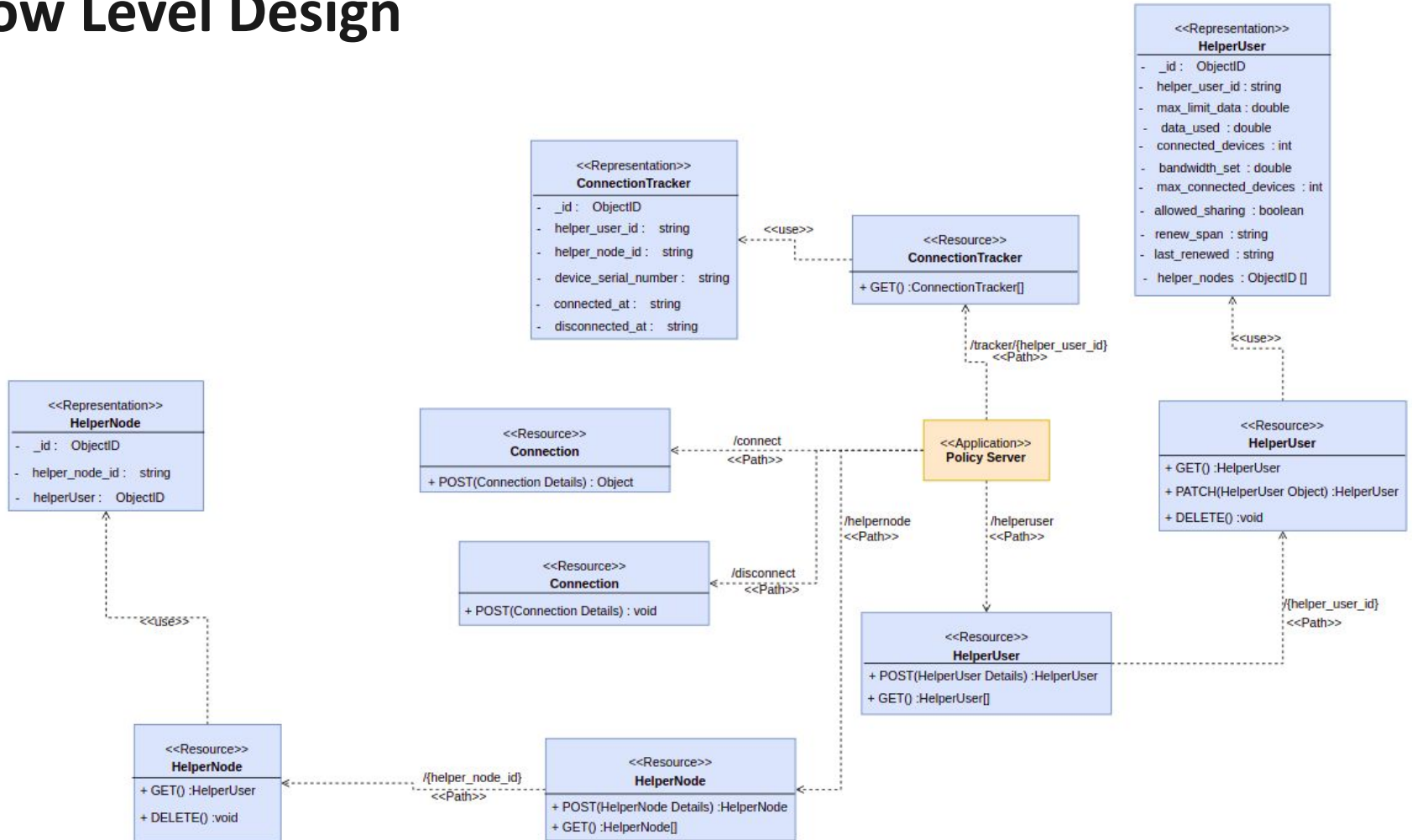
- Max Bandwidth
- Maximum Number of Connected Devices
- Maximum Data Shared for Onboarding

** Policies applicable only when the device and the helper node doesn't belong to same user.*

High Level Design



Low Level Design



Database Design

The database for policy server contains basically three schemas which plays an important role.

- HelperUser:
Primarily stores Helper User's data like connected devices , maximum data limits, etc as shown in Figure 1.0
- HelperNode
Primarily stores Helper Node's data like connected devices , maximum data limits, etc as shown in Figure 1.0
- ConnectionTracker
Primarily tracks the connection of a device through a Helper Node which is associated to a Helper User as shown in Figure 1.0

Figure 1.0

HelperUser		
PK	_id	ObjectID
	helper_user_id	String
	max_limit_data	Double
	data_used	Double
	allowed_sharing	Boolean
	last_renewed	String
	renew_span	String
	bandwidth_set	Double
	connected_devices	Integer
	max_limit_connected_devices	Integer
	created_at	String
	updated_at	String
FK	helperNodes	ObjectID[]

ConnectionTracker		
PK	_id	ObjectID
	helper_user_id	String
	helper_node_id	String
	connected_at	String
	disconnected_at	String
	data_used	Double
	device_serial_number	String
	created_at	String
	updated_at	String

HelperNode		
PK	_id	ObjectID
	helper_node_id	String
FK	helper_user_id	ObjectID
	created_at	String
	updated_at	String

Key Learnings

- Learned various technologies like NodeJS, API Testing tools,etc
- Problem division into smaller components is inversely proportional to Time Taken upto a certain extent.
- Regular Team Discussion plays an important role in success of Project.
- There is enormous content available out on Internet. So, look up of documentation, articles ,etc should be done in a systematic manner. Not doing so can result team members to revolve in a loop hole of learning forever.
- Knowledge without Implementation is worthless.