

A General Open Source Platform for Building Energy Management

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Outline

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Introduction

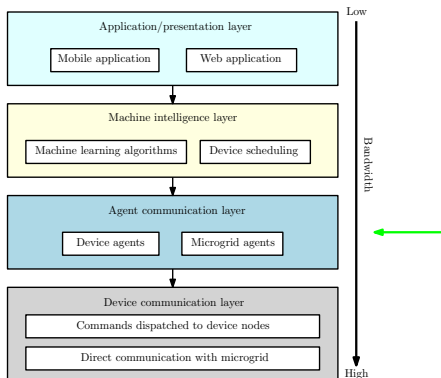


Figure: High level software architecture, currently working on determining and developing agents

- Fixed problem with login form not sending a HTTP POST request, had to add `method="post"` attribute to form element
- Began work on integrating SQLite3 database into web application, may switch to MySQL, PostgreSQL
- Created class `DatabaseConnection` for connecting to the database and closing the connection
- Create github repo at <https://github.com/blauer890/NewBEMS>

Rough plan for development

- ① Agent platform
- ② Device APIs (only WeMo switch for now)
- ③ Microgrid simulation
- ④ Flask app development
- ⑤ User interface development

Other steps will be added as development goes on

- Agent definition - autonomous software entity that is able to interact with its environment and other agents
- In platform, Python classes will represent agents with methods representing their corresponding behavior
- Requires view functions in flask applications to be able to publish messages to a central bus

Agents Planned

- DeviceAgent - can control and monitor devices on the network, for now will only be WeMo switch
- DiscoveryAgent - detecting devices on the network through their APIs
- MicrogridAgent - report on current state of the simulated microgrid, will require some research to determine how to build this application
- MetadataAgent - will accept SQL queries from agents and run them
- NotificationAgent - send necessary notifications to a user through either SMS or email
- RealtimeAgent - allows agents to submit queries or publish data to a database storing time data

Objectives

- Determine libraries to for building the message passing system
- Start writing agents
- Build WeMo API

For Further Reading I



BEMOSS Agent Background Wiki

Agent Background page

<https://github.com/bemoss/BEMOSS3.5/wiki/Agent-Background>



SPADE Read the Docs

SPADE documentation

<https://spade-mas.readthedocs.io/en/latest/readme.html>