OpenLEADR

An open source implementation of OpenADR in Python

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ElaadNL Foundation

- Founded in 2009 by the major Dutch Distribution System Operators
- Rolled out the world's first public charging network
- Invented the Open Charge Point Protocol, OCPP
- Continues to develop Smart Charging in different projects
OpenLEADR: (Open “LF Energy” ADR)

- OpenADR implementation in Python 3
- Usable for both VENs and VTNs
- ~2,000 lines of Python code
- Installable in a single command: pip install openleadr
- Integrate OpenADR into your own application in < 20 lines of code
- Documentation and example code available at openleadr.org/docs
Source Code on GitHub
Installable from the Python Package Index
Client

An OpenADR Client (Virtual End Node or VEN) usually represents an entity that owns controllable devices. This can be electric vehicles, generators, wind turbines, refrigerated warehouses, etc. The client connects to a server, usually representing a utility company, to discuss possible cooperation on energy usage throughout the day.

Example VEN

A straightforward example of an OpenADR VEN, which has one report and an event handler, would look like this:

```python
import asyncio
from datetime import timedelta
from openleadr import openADRClient, enable_default_logging

enable_default_logging()

async def collect_report_value():
    # This callback is called when you need to collect a value for your report
    return 1.23

async def handle_event(event):
    # This callback receives an Event dict.
    # You should include code here that sends control signals to your resources.
    return 'optin'

# Create the client object
client = openADRClient(ven_name='ven123',
                       vtn_url='http://localhost:8000/OpenADR2/Single/2.0')

# Add the report capability to the client
client.add_report(callback=collect_report_value,
                   resource_id='device001',
                   measurement='voltage',
                   sampling_rate=timedelta(seconds=10))

# Add event handling capability to the client
client.add_handler('on_event', handle_event)

# Run the client in the Python AsyncIO Event Loop
loop = asyncio.get_event_loop()
loop.run_forever()
```
Downloads from the Python Package Index

First Version Released
Webinars LF Energy

Nov Dec Jan Feb Mar
OpenLEADR might be useful for you if...

- ...you already have Python-based systems for energy management
- ...you're looking for an easy way to get started with OpenADR
- ...you're designing products or prototypes
- ...you're looking for a self-managed OpenADR VTN or VEN to 'talk to'
Want to try it out, or help us make it even better?

https://github.com/openleadadr