ME Journal

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Fall 2020

March 9, 2021 – Initial Script

OBJECTIVE: Start a python script that connects me to GridAPPS. Start playing around with queries.

OUTLINE:

Today's tasks were:

- Get a python file up and running

- Connect to a model via python api

- Get the model mrid

- Do some sort of live query

PROCEDURE:

Getting the script set up was routine. PyCharm is a lot more efficient than Spyder. I used a combination of the hackathon and instructions to generate the required code.

PARAMETERS:

N/A

OBSERVATIONS:

Everything worked as expected. The visualization id was easy to get from a query. The blazegraph part was harder. See data.

I had a hard time with the Pull Request. Make a new branch first locally, make changes, commit, push to remote, then make the pull request. Update main locally, and delete branches.

Some other issues and errors with the latex compiler. Turned off syncTex (which seems unnecessary to begin with, it just allows you to go directly to a pdf line from the code??) Needed another run command too, see options.

DATA:

- Code is on GitHub.

- sim id: '357545598'

- 13 node feeder MRID: '_49AD8E07-3BF9-A4E2-CB8F-C3722F837B62'

RESULTS:

Done.

March 1, 2021 – Initial Script

OBJECTIVE: Get GridAPPS-D running from a script.

OUTLINE:

Today's tasks were:

- Figure out how to set the configuration of a model from the python script
- Connect to and run the script

PROCEDURE:

First, I needed the command to get all the feeders in the database:

```
# list all the feeders, with substations and regions – DistFeeder
    PREFIX r:  <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
    PREFIX c:  <http://iec.ch/TC57/CIM100#>
    SELECT ?feeder ?fid ?station ?sid ?subregion ?sgrid ?region ?rgnid WHERE {
     ?s r:type c:Feeder.
     ?s c:IdentifiedObject.name ?feeder.
     ?s c:IdentifiedObject.mRID ?fid.
     ?s c:Feeder.NormalEnergizingSubstation ?sub.
     ?sub c:IdentifiedObject.name ?station.
     ?sub c:IdentifiedObject.mRID ?sid.
     ?sub c:Substation.Region ?sgr.
     ?sgr c:IdentifiedObject.name ?subregion.
     ?sgr c:IdentifiedObject.mRID ?sgrid.
     ?sgr c:SubGeographicalRegion.Region ?rgn.
     ?rgn c:IdentifiedObject.name ?region.
     ?rgn c:IdentifiedObject.mRID ?rgnid.
}
ORDER by ?station ?feeder
```

Then I wrote the code in the LogTest.py file to set up the simulation:

```
run_config_13 = {
    "power_system_config": {
        "GeographicalRegion_name": "_73C512BD-7249-4F50-50DA-D93849B89C43",
        "SubGeographicalRegion_name": "_ABEB635F-729D-24BF-B8A4-E2EF268D8B9E",
        "Line_name": "_49AD8E07-3BF9-A4E2-CB8F-C3722F837B62"
    },
    "application_config": {
        "applications": []
    },
    "simulation_config": {
        "start_time": "1570041113",
        "duration": "120",
        "simulator" : "GridLAB-D",
        "timestep_frequency": "1000",
        "timestep_increment": "1000",
        "run_realtime": True,
        "simulation_name": "ieee123",
        "power_flow_solver_method": "NR",
        "model_creation_config":{
            "load_scaling_factor": "1",
            "schedule_name": "ieeezipload",
            "z_fraction": "0",
```

```
                    "i_fraction": "1",
                    "p_fraction": "0",
                    "randomize_zipload_fractions": False,
                    "use_houses": False
            }

        },
```

Then I wrote the code to start the simulation.

PARAMETERS:

See above

OBSERVATIONS:

Need "[outputdir=auxil]minted" for minted in this document, as well as to change the auxil folder to the one in the journal folder.

RESULTS:

Done. Now able to run a 13-node simulation from the script.