

Configuration Manual

MSc Research Project
MSc Cloud Computing

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Project Submission Sheet
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Configuration Manual

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1 System Configuration

The given code is running on a system with the following configuration:

1. Processor: Intel Core i5 9300H 2.4GHz
2. Graphic Card: 4GB of Nvidia GeForce GTX 1650
3. Memory: 8GB of Memory

2 Libraries

The below table shows the libraries that we are using in this project:

Table 1: Libraries Used In Project

Python
TensorFlow 2.0
Pandas
SciPy
Numpy

3 Running the Code

1. To run the code we will first install virtual environment Python (n.d.) using `py -m pip install {user virtualenv}`.

```
PS D:\thesis\thesis-demo> py -m pip install --user virtualenv
Requirement already satisfied: virtualenv in c:\users\asus\appdata\roaming\python\python310\site-packages (20.15.1)
Requirement already satisfied: filelock<4, >=3.2 in c:\users\asus\appdata\roaming\python\python310\site-packages (from virtualenv) (3.4.2)
Requirement already satisfied: distlib<3, >=2.3.1 in c:\users\asus\appdata\roaming\python\python310\site-packages (from virtualenv) (0.3.6)
Requirement already satisfied: six<2, >=1.9.0 in c:\users\asus\appdata\local\programs\python\python310\lib\site-packages (from virtualenv) (1.15.0)
Requirement already satisfied: platformdirs<3, >=2 in c:\users\asus\appdata\roaming\python\python310\site-packages (from virtualenv) (2.4.1)
PS D:\thesis\thesis-demo>
```

Figure 1: Installing Virtual Environment

2. Now create a new virtual environment using `py -m venv env`
3. Now activate the virtual environment using `env\Scripts\activate`

```
PS D:\thesis\thesis-demo> py -m venv env1
PS D:\thesis\thesis-demo> .\env1\Scripts\activate
(env1) PS D:\thesis\thesis-demo> 
```

Figure 2: Creating and Activating Virtual Environment

4. Now we can install the dependencies in this environment using pip install -r requirements.txt

```
(env1) PS D:\thesis\thesis-demo> pip install -r .\requirements.txt
Collecting absl-py==1.3.0
  Using cached absl_py-1.3.0-py3-none-any.whl (124 kB)
Collecting asgiref==3.5.2
  Using cached asgiref-3.5.2-py3-none-any.whl (22 kB)
Collecting astunparse==1.6.3
  Using cached astunparse-1.6.3-py2.py3-none-any.whl (12 kB)
Collecting cachetools==5.2.0
  Using cached cachetools-5.2.0-py3-none-any.whl (9.3 kB)
Collecting certifi==2022.12.7
  Using cached certifi-2022.12.7-py3-none-any.whl (155 kB)
```

Figure 3: Installing the Requirements

5. Now run the main.py file using py main.py

Figure 4: Running The Code

4 Changing the Parameters

We will be changing four parameters to evaluate our results that are number of user, N , the data arrival rate, λ_{param} , the Lyapunovs parameter, V , and the power constraint, $energy_thresh$.

1. To change the Data arrival rate we should change the λ_{param} on line 65 in main.py.
2. To change the Lyapunovs Parameter you should change V in the line number 63 of main.py
3. To change the power constraint, $energy_thresh$ we change the multiplication factor on line 59 of main.py
4. To change number of users we change N at line 52 of main.py

