National College of Ireland

Configuration Manual

MSc Research Project
Research Project

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1 Introduction

By following the set of rules provided by the NCI research study, this document is created which contains the different tools used while doing the project, methods followed, and also the applications. To run the different deep learning models and for evaluating the results Google Colab is used as the platform and all my files and datasets are stored in my google drive for enhanced security. After the comparison of results, then LSTM model is found to be more appropriate.

After configuring the autoscaling group, as per the minimum count mentioned while creating, the auto scaling group launchers the EC2 instance. in my case it will be 1, so it will launch 1 EC2 instance. after that I have established the connection through SSH for that created instance. And all my files and dependencies are stored in the EBS volume. For data set forecasting the lstm.py Python file will increase the CPU load when performing total predictions/input sample. Finally, depending upon the CPU utilization the target tracking policy of the autoscaling group will modify the desired count and this will in turn adds or terminates resources(EC2 instances)

2 Deep learning models setup

Import all mentioned libraries with
pip3 install command
before running the program.

The figures are as follows:
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Figure 4: Google drive mount code to google colab 4

3 AWS Configuration

The Detaild screenshots of AWS Console is shown in this section. The figures are as follows:
Figure 5: Creating Launch Template – Dashboard5
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Figure 7: Creating AutoScaling Group – Dashboard7
Figure 8: Creating AutoScaling Group – Summary8

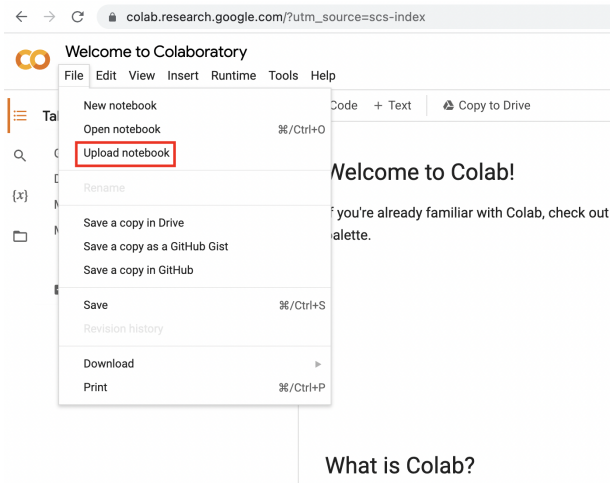

Figure 1: Google colab Setup

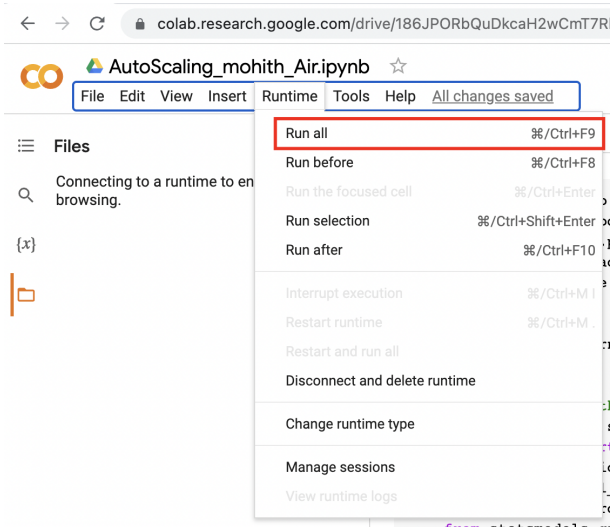

Figure 2: Run all for running all code blocks in order

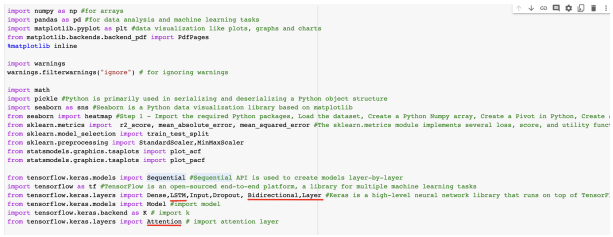

Figure 3: All the libraries imported

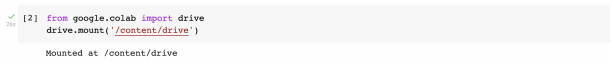

Figure 4: Google drive mount code to google colab

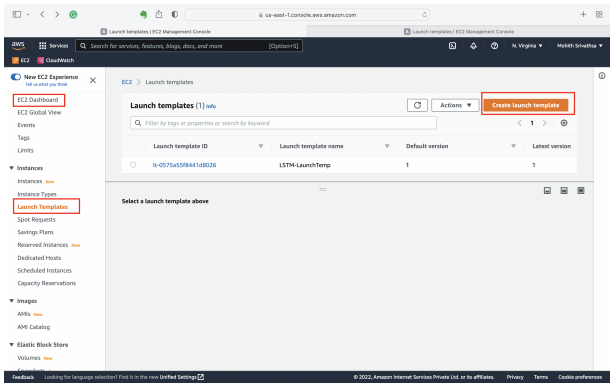

Figure 5: Creating Launch Template – Dashboard

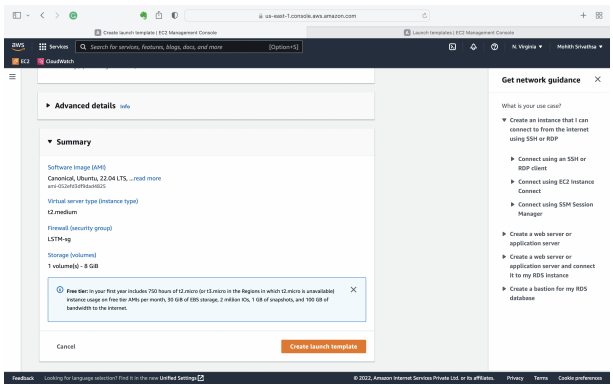

Figure 6: Creating Launch Template – Summary

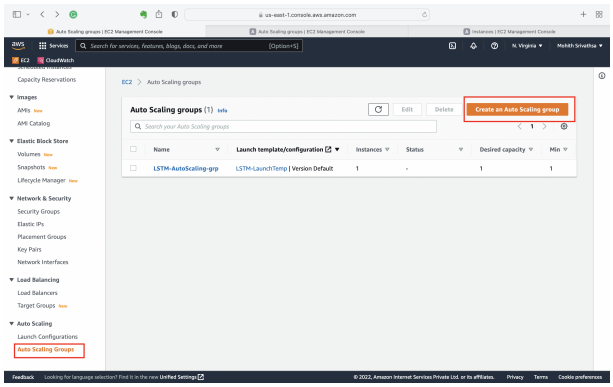

Figure 7: Creating AutoScaling Group – Dashboard

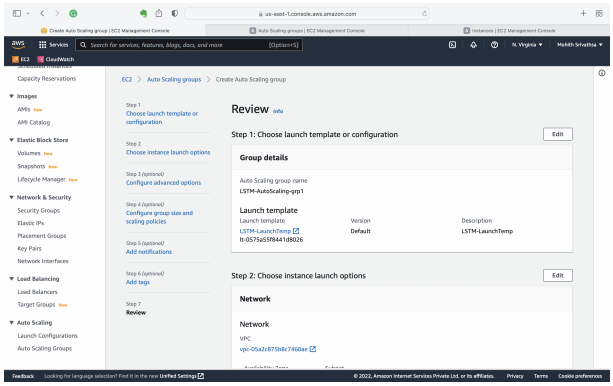

Figure 8: Creating AutoScaling Group – Summary

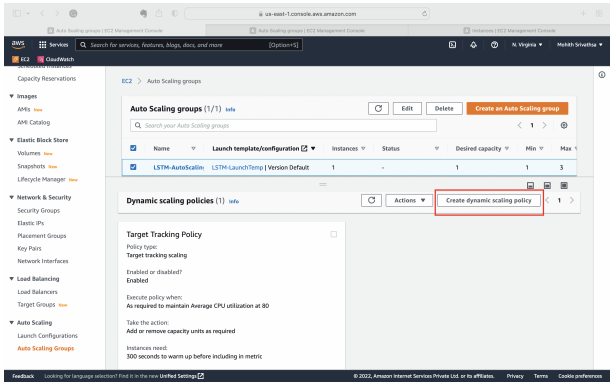

Figure 9: Creating Dynamic Scaling Policy

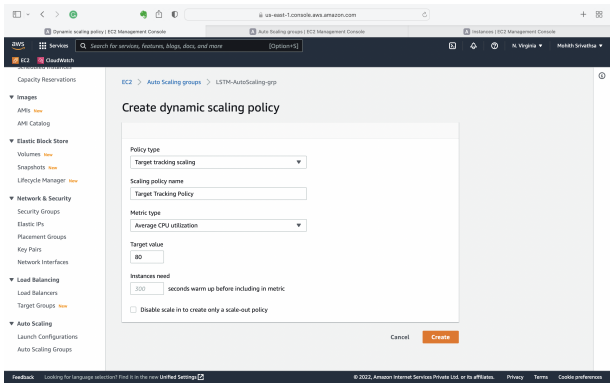

Figure 10: Configuring Target tracking policy by setting cpu utilization threshold of 80%

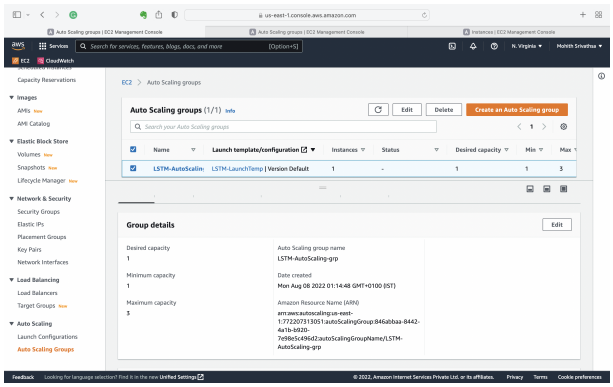

Figure 11: LSTM AutoScaling Group- Group Details

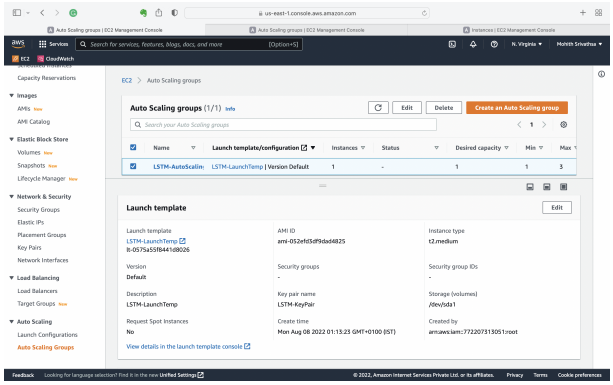

Figure 12: LSTM AutoScaling Group- Launch Templates