RASA – Build Book

We might need the following scripts to containerize RASA Chatbot for the demo.

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| --- |
| sudo sh buildPython3.7.sh  sudo sh dockerBuild.sh  sudo sh dockerRun.sh |

Kindly refer the "Dockerfile" in [https://github.com/RasaHQ/rasa and poetry.lock](https://github.com/RasaHQ/rasa%20and%20poetry.lock) to build the RASA docker image. Also refer “Annexure 1” for the Requirements.txt.

|  |
| --- |
| Rasa Version : 2.8.16  Minimum Compatible Version: 2.8.9  Rasa SDK Version : 2.8.3  Rasa X Version : 0.39.3  Python Version : 3.7.12  Operating System : Linux-5.4.0-1065-aws-x86\_64-with-Ubuntu-18.04-bionic  Python Path : /home/ubuntu/rasa\_dev/venv/bin/python3.7 |

\*\* Note: If preferred OS is centos please use the same

**Sample Internal Corestack API endpoints to be invoked from RASA Chatbot based on user input in chat widget**

|  |
| --- |
| https://apidev2.corestack.io/cost/posture/service\_type  https://apidev2.corestack.io/cost/cost\_savings/cost\_saved\_recommendation?currency=USD  https://apidev2.corestack.io/cost/executive\_dashboard/spend-by-cloud  https://apidev2.corestack.io/cost/executive\_dashboard/cost\_trend\_by\_cloud  https://apidev2.corestack.io/users/filter-options  https://apidev2.corestack.io/cost/executive\_dashboard/budget\_drift |

**RASA Chatbot’s endpoints to be exposed to the Corestack Portal**

|  |
| --- |
| https://dev2-chatbot.corestack.io:5002/api |

**Action\_endpoint – Internal URL called by RASA chatbot to invoke custom actions**

|  |
| --- |
| http://localhost:5055/webhook |

Following are the Steps we do to run Rasa

**Step 1**

Execute the below command to run "Rasa Core"

|  |
| --- |
| rasa run --ssl-certificate /etc/rasa/certs/dev2-corestack.crt --ssl-keyfile /etc/rasa/private/dev2-corestack.key --m ./models --endpoints endpoints.yml --port 5005 -vv --enable-api --cors "\*" --credentials credentials.yml --log-file /var/log/rasa\_core.log |

**Step 2**

Execute the below command to run "Rasa Actions" {Customs Actions}

|  |
| --- |
| rasa --actions actions --log-file /var/log/rasa\_actions.log |

**Step 3**

Execute the below command to train "Rasa" and build a new NLU model when changes are done to nlu.yml, stories.yml and domain.yml.

|  |
| --- |
| rasa train |

We also customize the below yaml files to retrain & test the NLU model and dialogue flow.

|  |
| --- |
| ./data/nlu.yml  ./data/stories.yml  domain.yml  endpoints.yml  credentials.yml  config\_api.yml |

We developed/customized the below python files to implement RASA custom actions which intern invoke corestack internal APIs based on identified intents/entities and subsequent actions.

|  |
| --- |
| ./actions/actions.py  ./services/budget\_cost.py  ./services/cloudspend\_srv.py  ./services/config.py  ./services/corestack\_db.py  ./services/custom\_channel.py  ./services/forecast\_cost.py  ./services/month\_check.py  ./services/optimize\_srv.py  ./services/user\_condition.py |

MongoDB to store conversation events. Kindly refer endpoints.yml

|  |
| --- |
| tracker\_store:  type: mongod  url: mongodb://localhost:27017 |

Redis to cache the Service Account and Tenant IDs for a user session, so that we avoid subsequent calls to fetch account details of a logged-in user.

|  |
| --- |
| type: redis  url: localhost  port: 6379  password: redis123  db: 0  key\_prefix: None |

Annexure - 1

Below is the Requirements.txt for the current RASA installation @ 54.166.129.244

|  |
| --- |
| absl-py==0.13.0  aio-pika==6.8.0  aiofiles==0.8.0  aiohttp==3.8.1  aiormq==3.3.1  aiosignal==1.2.0  alembic==1.4.3  APScheduler==3.8.1  astunparse==1.6.3  async-generator==1.10  async-timeout==4.0.1  asynctest==0.13.0  attrs==19.3.0  backports.zoneinfo==0.2.1  bidict==0.21.4  boto3==1.20.24  botocore==1.23.24  CacheControl==0.12.10  cached-property==1.5.2  cachetools==4.2.4  certifi==2021.10.8  cffi==1.15.0  charset-normalizer==2.0.9  clang==5.0  cloudpickle==1.6.0  colorclass==2.2.2  coloredlogs==15.0.1  colorhash==1.0.4  croniter==1.1.0  cryptography==3.4.8  cycler==0.11.0  debtcollector==2.5.0  decorator==5.1.0  dm-tree==0.1.6  dnspython==1.16.0  docopt==0.6.2  fbmessenger==6.0.0  flatbuffers==1.12  frozenlist==1.2.0  future==0.18.2  gast==0.4.0  gitdb==4.0.9  GitPython==3.1.24  google-auth==1.35.0  google-auth-oauthlib==0.4.6  google-pasta==0.2.0  greenlet==1.1.2  grpcio==1.42.0  h11==0.9.0  h5py==3.1.0  httpcore==0.11.1  httptools==0.3.0  httpx==0.15.4  humanfriendly==10.0  idna==3.3  importlib-metadata==4.8.2  isodate==0.6.1  jmespath==0.10.0  joblib==1.0.1  jsonpickle==2.0.0  jsonschema==3.2.0  kafka-python==1.4.7  keras==2.6.0  Keras-Preprocessing==1.1.2  kiwisolver==1.3.2  loguru==0.6.0  Mako==1.1.6  Markdown==3.3.6  MarkupSafe==2.0.1  matplotlib==3.3.4  mattermostwrapper==2.2  msgpack==1.0.3  multidict==5.2.0  multipledispatch==0.6.0  netaddr==0.8.0  networkx==2.5.1  numpy==1.19.5  oauthlib==3.1.1  opt-einsum==3.3.0  oslo.config==8.8.0  oslo.i18n==5.1.0  packaging==20.9  pamqp==2.3.0  pandas==1.3.5  pbr==5.9.0  pika==1.2.0  Pillow==8.4.0  prettytable==3.3.0  prompt-toolkit==2.0.10  protobuf==3.19.1  psycopg2-binary==2.9.2  pyasn1==0.4.8  pyasn1-modules==0.2.8  pycparser==2.21  pydot==1.4.2  PyJWT==2.0.0  pykwalify==1.8.0  pymongo==3.10.1  pyparsing==3.0.6  pyrsistent==0.18.0  pyTelegramBotAPI==3.8.3  python-crfsuite==0.9.7  python-dateutil==2.8.2  python-editor==1.0.4  python-engineio==4.3.0  python-socketio==5.5.0  pytz==2021.3  pytz-deprecation-shim==0.1.0.post0  PyYAML==6.0  questionary==1.5.1  rasa==2.8.16  rasa-sdk==2.8.3  rasa-x==0.39.3  redis==3.5.3  regex==2021.7.6  requests==2.26.0  requests-oauthlib==1.3.0  requests-toolbelt==0.9.1  rfc3986==1.5.0  rocketchat-API==1.16.0  rsa==4.8  ruamel.yaml==0.16.13  ruamel.yaml.clib==0.2.6  s3transfer==0.5.0  sanic==20.12.4  Sanic-Cors==0.10.0.post3  sanic-jwt==1.6.0  Sanic-Plugins-Framework==0.9.5  scikit-learn==0.24.2  scipy==1.7.3  sentry-sdk==1.2.0  six==1.16.0  sklearn-crfsuite==0.3.6  slackclient==2.9.3  smmap==5.0.0  sniffio==1.2.0  SQLAlchemy==1.3.22  stevedore==3.5.0  tabulate==0.8.9  tarsafe==0.0.3  tensorboard==2.6.0  tensorboard-data-server==0.6.1  tensorboard-plugin-wit==1.8.0  tensorflow==2.6.2  tensorflow-addons==0.14.0  tensorflow-estimator==2.6.0  tensorflow-hub==0.12.0  tensorflow-probability==0.13.0  tensorflow-text==2.6.0  termcolor==1.1.0  terminaltables==3.1.10  threadpoolctl==3.0.0  tqdm==4.62.3  twilio==6.50.1  typeguard==2.13.3  typing-extensions==4.0.1  tzdata==2021.5  tzlocal==4.1  ujson==1.35  urllib3==1.26.7  uvloop==0.16.0  wcwidth==0.2.5  webexteamssdk==1.6  websockets==8.1  Werkzeug==2.0.2  wrapt==1.12.1  yarl==1.7.2  zipp==3.6.0 |

Annexure - 2

Kindly refer the Installation steps for Virtual Machine.

|  |
| --- |
| python3 --version  sudo apt-get install python3.7-dev  sudo apt-get install build-essential  sudo apt install python3-pip  sudo apt-get install python3-venv  mkdir rasa\_dev  cd rasa\_dev  python3 -m venv ./venv  source ./venv/bin/activate  pip3 install rasa-x==0.39.3 --extra-index-url <https://pypi.rasa.com/simple>  pip3 install -U pip setuptools  pip3 install SQLAlchemy==1.3.22  pip3 install sanic-jwt==1.6.0 |