POLYVERIFICATION SUITE SETUP AND CONFIGURATION

This document contains the information of Setup and Installation process for PolyVerification suite in Linux/Unix. We have modified some of the open source packages which are added in repository.

System Requirements:

• CPU: at least 8 core CPU

• GPU: Nvidia GTX 1080 (8GB memory) or higher

• OS: Ubuntu 18.04 and above 64-bit

• Python 3.8

Below are list of component and dependencies need to be installed for before start the PolyVerif suite.

- ✓ AutowareAuto
- ✓ Lgsvl_msgs
- ✓ Ros2-lgsvl-bridge
- ✓ PolyVerif repository
    - PythonAPI
    - Scenic SDL
    - OSSDC-SIM-v1_1-Linux
    - Avp_demo
    - Perception Validation Node
    - Control Validation Node
    - Test_Cases
    - PolyVerif Suite

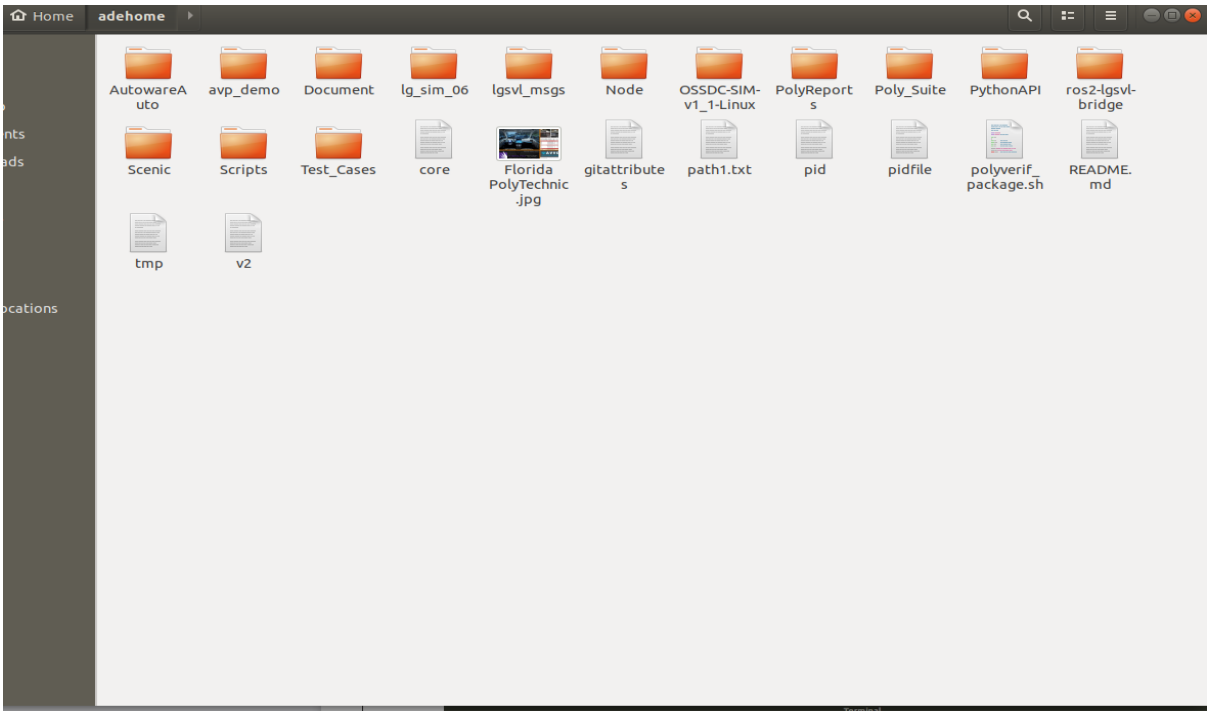
Above package and module need to be install and configured in the same sequence

And directory structure should look like this –

- **adehome**
    - **AutowareAuto**
    - **lgsvl_msgs**
    - **ros2-lgsvl-bridge**
    - **OSSDC-SIM-v1_1-Linux**
    - **PythonAPI**
    - **Scenic**
    - **Avp_demo**

- Node
  - Node_Perception_Validation
  - Node_Control_Validation
  - Node_Localization_Validation
  - Node_Path_Planner_Validation
- Test_Cases
- PolyReports
- Poly_Suite

Below is the screenshot of the mention structure –



1. Dependencies install in Ubuntu-

Python3.8 –

```
$ sudo apt update
$ sudo apt install software-properties-common
$ sudo add-apt-repository ppa:deadsnakes/ppa

When prompted press Enter to continue
$ sudo apt install python3.8

Verify that the installation was successful by typing:
$ python3.8 --version
```

Watchdog –

```
$ sudo apt update
$ pip install watchdog
```

Pandas –

```
$ sudo apt update
$ pip install pandas
```

2. Setup Docker

Uninstall old versions:

```
$ sudo apt-get remove docker docker-engine docker.io containerd runc
```

The contents of /var/lib/docker/, including images, containers, volumes, and networks, are preserved.

If you do not need to save your existing data, and want to start with a clean installation, run below cmds else skip.

```
$ sudo apt-get purge docker-ce docker-ce-cli containerd.io docker-compose-plugin

$ sudo rm -rf /var/lib/docker

$ sudo rm -rf /var/lib/containerd
```

Follow below steps for installation and set up the repository:

```
# Add Docker's official GPG key:

$ sudo apt-get update

$ sudo apt-get install ca-certificates curl gnupg

$ sudo install -m 0755 -d /etc/apt/keyrings


$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg

$ sudo chmod a+r /etc/apt/keyrings/docker.gpg


# Add the repository to Apt sources:

$ echo \
  "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.gpg] https://download.docker.com/linux/ubuntu \
  $(. /etc/os-release && echo "$VERSION_CODENAME") stable" | \
  sudo tee /etc/apt/sources.list.d/docker.list > /dev/null


$ sudo apt-get update
```

```
$ sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin
docker-compose-plugin
```

Start docker service and run to check that docker installed properly.

```
$ sudo service docker start

$ sudo docker run hello-world

$ sudo groupadd docker

$ sudo usermod -aG docker $USER

$ newgrp docker

$ docker run hello-world
```

/***Docker Installed successfully*****/**

Now need to install nvidia docker

To Install nvidia docker.

Add the package repositories:

```
$ distribution=$(. /etc/os-release;echo $ID$VERSION_ID)

$ curl -s -L https://nvidia.github.io/nvidia-docker/gpgkey | sudo
apt-key add -

$ curl -s -L https://nvidia.github.io/nvidia-docker/$distribution/nvidia-
docker.list | sudo tee /etc/apt/sources.list.d/nvidia-docker.list


$ sudo apt-get update

$ sudo apt-get install -y nvidia-container-toolkit

$ sudo systemctl restart docker
```

Upgrading with nvidia-docker2

```
$ sudo apt-get --only-upgrade install docker-ce nvidia-docker2

$ sudo systemctl restart docker
```

Configure Docker to start on boot

```
$ sudo systemctl enable docker.service

$ sudo systemctl enable containerd.service

$ sudo systemctl daemon-reload

$ sudo systemctl restart docker.service
```

Restart machine

3. PolyVerif setup:

For PolyVerif setup we need to run **Polyeverif-Setup.sh** script. It will automatically setup and installed all packages and nodes of PolyVerif suite.

Note: We need to give execute permission to Polyverif-Setup script. For that run below command in directory where we downloaded Polyverif-Setup.sh script.

```
$ sed -i 's/\r$//' Polyverif-Setup.sh

$ sudo chmod +x Polyverif-Setup.sh
```

*Please find **Polyeverif-Setup.sh** script in script directory in adehome. .*