User Guide to ODE-Client Application

This guide is intended to help users who download the client application associated with SEMI-ODE repository on the USDOT's Open Source Application Development Portal. Please refer to the project documentation for additional information. This folder consists of the client applications that run using the Operational Data Environment. ODE pushes out Connected Vehicle data from the South East Michigan (SEMI) Testbed through web-sockets to applications running on client machines, similar to the ones provided here. Four applications are provided in this repository. They are Speed Harmonization (coded as INFLO), Incident Zone Alerts (coded as INC-ZONE), Eco-Approach and Departure (coded as EAD) and Motorists Advisories and Warnings (coded as MAW). INFLO aims at using the CV data to identify congestion on a roadway and provide harmonized speeds to upstream vehicles. INC-ZONE application produces alerts and warnings to warn drivers approaching a location of incidents. EAD application uses real-time phase and time-remaining information from signalized intersections to provide fuel-optimal vehicle speed advisories to approaching connected vehicles. MAW application provides alerts to vehicles approaching zones of weather events.

Install the required software:

Python 2.7 is required to run the client application package and is available at www.python.org. Additional libraries that are needed to enable the applications and the graphical user interface are listed below and need to be installed prior to running the application:

1. Sys
2. PySide
3. Thread
4. Logging
5. DateTime
6. MatPlotLib
7. Win32COM
8. PythonCOM
9. JSON

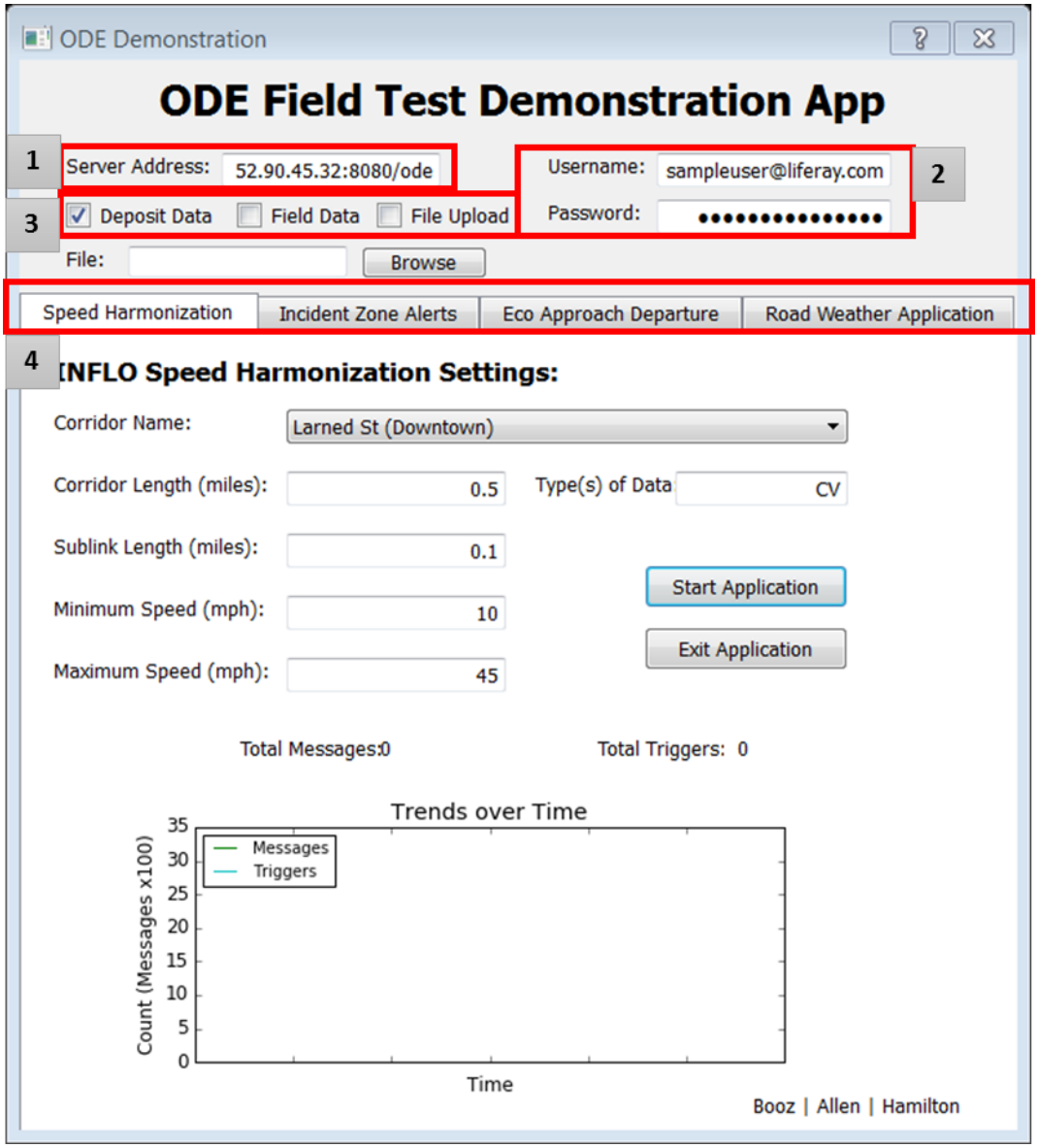
Several of these packages might be installed along with basic Python, but others might need additional supplementary libraries. Please refer to their installation instructions for details.

Additional Installation:

1. OdeClient library should be installed and is available in the /libraries/ folder. This can be set up by running /libraries/setup.py.
2. Install INFLO application available at http://www.itsforge.net/index.php/community/explore-applications/for-search-results#/30/58. Point the /Applications/InfloLink.lnk to the INFLOApps.exe in this installation. While running INFLO, set up the sync-file to point to /Applications/Data.txt. (This file will be generated automatically during the runs).
3. Configure INFLOConfig.xml within INFLO Installation to use the configuration set up from corresponding INFLODatabase.accdb in the /Applications folder.

Running the applications:

The master application file is /Applications/ODE_v2.py. Upon opening the application, ODE-specific configuration should be inserted into the application interface. This is explained using the figure below:



As shown, the ODE's server address and log-in credentials go into boxes 1 and 2. The applications can be run using either deposit data, field data or file upload as indicated in box 3. Deposit data uses a built-in deposit function which deposits data from a local json file to the ODE and return it. Field data uses live-streaming data from ODE. File Upload uses a json file in the local computer indicated in the file upload box and does not pass through ODE. Box 4 refers to selection of applications available in the client application suite. Additional settings for each application are provided in each tab of the application. Please note that multiple instances can be run, but only one application can be started from each instance.

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