Python and SAS® Viya™ Integration

Installation Steps for the Client Modules

January, 2017

Python-SWAT (Scripting Wrapper for Analytics Transfer) package, is a Python interface to SAS Cloud Analytic Services (CAS) which is required to make a connection to a SAS Viya Platform. It allows users to execute CAS actions and process the results all from Python.

https://github.com/sassoftware/python-swat

Requirements

- A client machine to install Python with the required packages
- SAS Viya connection details for saasnow server
  a. Hostname (e.g. vdmml-sasmea.saasnow.com)
  b. Username/Password (e.g. foo/bar)
  c. Port Number (e.g. 8443)

A) Client Installation on LINUX - Connecting to SAS Viya using Python Open API

1. Download and install Python-Anaconda on the client machine: https://docs.continuum.io/anaconda/install
   64-bit Python version of 2.7, 3.4, or 3.5 is required.
   Anaconda also installs Jupyter notebook and the most popular Python packages.

2. Install SWAT-Python package from GitHub: https://github.com/sassoftware/python-swat
   >> pip install https://github.com/sassoftware/python-swat/releases/download/v1.0.0/python-swat-1.0.0-linux64.tar.gz

3. Test connection from client machine to SAS Viya server
   >> ping <replace-this-with-your-valid-SASViya-hostname>
   e.g. ping vdmml-sasmea.saasnow.com

4. Start up Jupyter notebook on the client machine
   >> jupyter notebook -ip='*' -port=8888 -no-browser
   The option “ip” allows connection from other machines. If you would like to allow the connection only from one machine then replace ‘*’ with the IP address.
   e.g. jupyter notebook -ip=’192.168.0.7’ -port=8888 -no-browser
   If you are running Jupyter on your localhost, you can ignore the “ip” option.
   e.g. jupyter notebook -port=8888 -no-browser
5. Connect to Jupyter notebook on Linux client from a browser
   http://[replace-this-with-your-valid-client-hostname]:8888/tree
   e.g. http://192.168.0.7:8888/tree

6. Open a new Python notebook on Jupyter and type the following code:

   # Import SWAT package
   from swat import *

   # Set up a connection to SAS Viya
   conn = swat.CAS("https://[replace-this-with-your-valid-SASViya-hostname]", username='[replace-this-with-your-username]', password='[replace-this-with-your-password]
   # conn = swat.CAS("https://vdmml-sasmea.saasnow.com:8443", username='foo', password='bar')

   # Load SAS VDMML action sets in-memory (for data prep, modeling, assessing)
   actionsets = ['cardinality', 'sampling', 'fedSQL', 'decisionTree', 'neuralNet', 'svm', 'astore']
   [s.builtins.loadactionset(i) for i in actionsets]

   You are ready to go!

B) Client Installation on WINDOWS or Other OS - Connecting to SAS Viya using REST API

Follow the steps in A) by replacing the pip install link in the 2nd step with the following:
   >> pip install https://github.com/sassoftware/python-swat/archive/v1.0.0.tar.gz

Online documentation

A sample machine learning code and other examples available on GitHub
   https://github.com/sassoftware/sas-viya-programming/tree/master/communities

Other materials available on SAS Communities:

a. Your First CAS Connection from Python
b. Getting CAS Action Help from Python
c. Loading Data from Python into CAS
d. Getting Started with Creating Charts in Python
e. Running Data Step from Python
f. Getting a Python CASTable Object from an Existing CAS Table
g. Simple Statistics in Python