

IBM SMF Explorer with Python

z/OS Academy

November 23, 2022

Dorian Czichotzki
z/OS Developer

Agenda

- **Introduction**
 - What is SMF data?
 - Why SMF Explorer with Python?
 - Facts about Python
- **SMF Explorer Overview**
- **Lab: IBM SMF Explorer & DG Rest Services**



What are SMF records?

System Management Facility (SMF)

Logging capability provided by z/OS to capture detailed information about every activity happening within the system

System Management Facility (SMF) records

A wealth of useful information that can be generated automatically from the operating system

SMF records include details regarding

- Installation and configuration
- Activities of the z/OS systems,
- Job- related activities.
- Job Scheduling
- Security information and events
- Database information
- CPU utilization

SMF records provide insights that allow for greater understanding of your installation.



Why IBM SMF Explorer with Python



SMF records can be used to extract and leverage valuable insights for IT operations



Challenging to extract information out of SMF data



Relevance for new personas in the enterprise like data scientists, data engineers and novice system programmers



Need for easy access to Systems Management data



Need to understand and interpret Systems Management data

Facts about Python



One of the most popular programming languages



Easy to learn - design philosophy emphasizes code readability



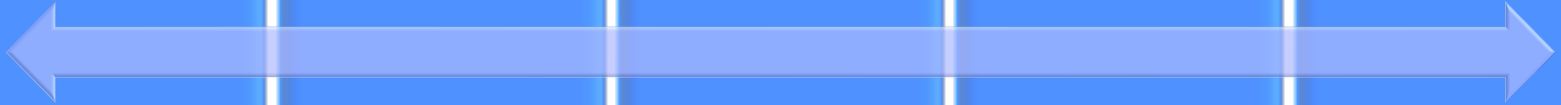
Highly extensible via modules and a large standard library



Includes packages for data analytics and machine learning



Write code in fewer lines than would be possible with other programming languages



What is IBM SMF Explorer with Python*?

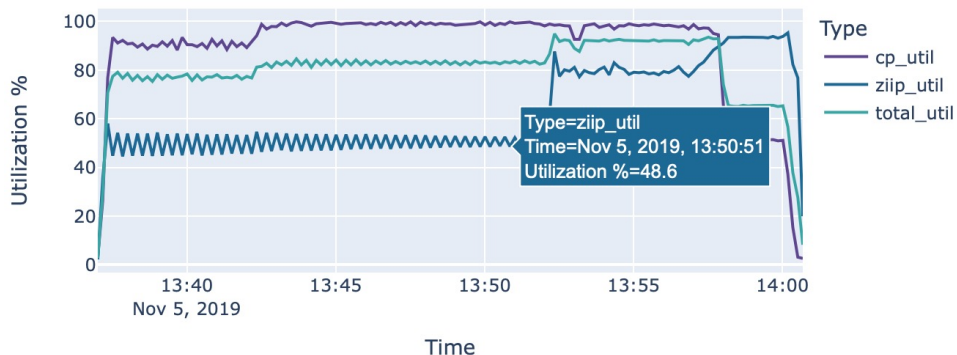
IBM SMF Explorer with Python is a Python framework designed to access SMF data using an explicit interface in an easy way

Data is returned as a Pandas DataFrame

Features:

- Filtering & Sorting
- Multi-data set access
- In code field descriptions
- Sample requests and virtual fields

System Utilisation



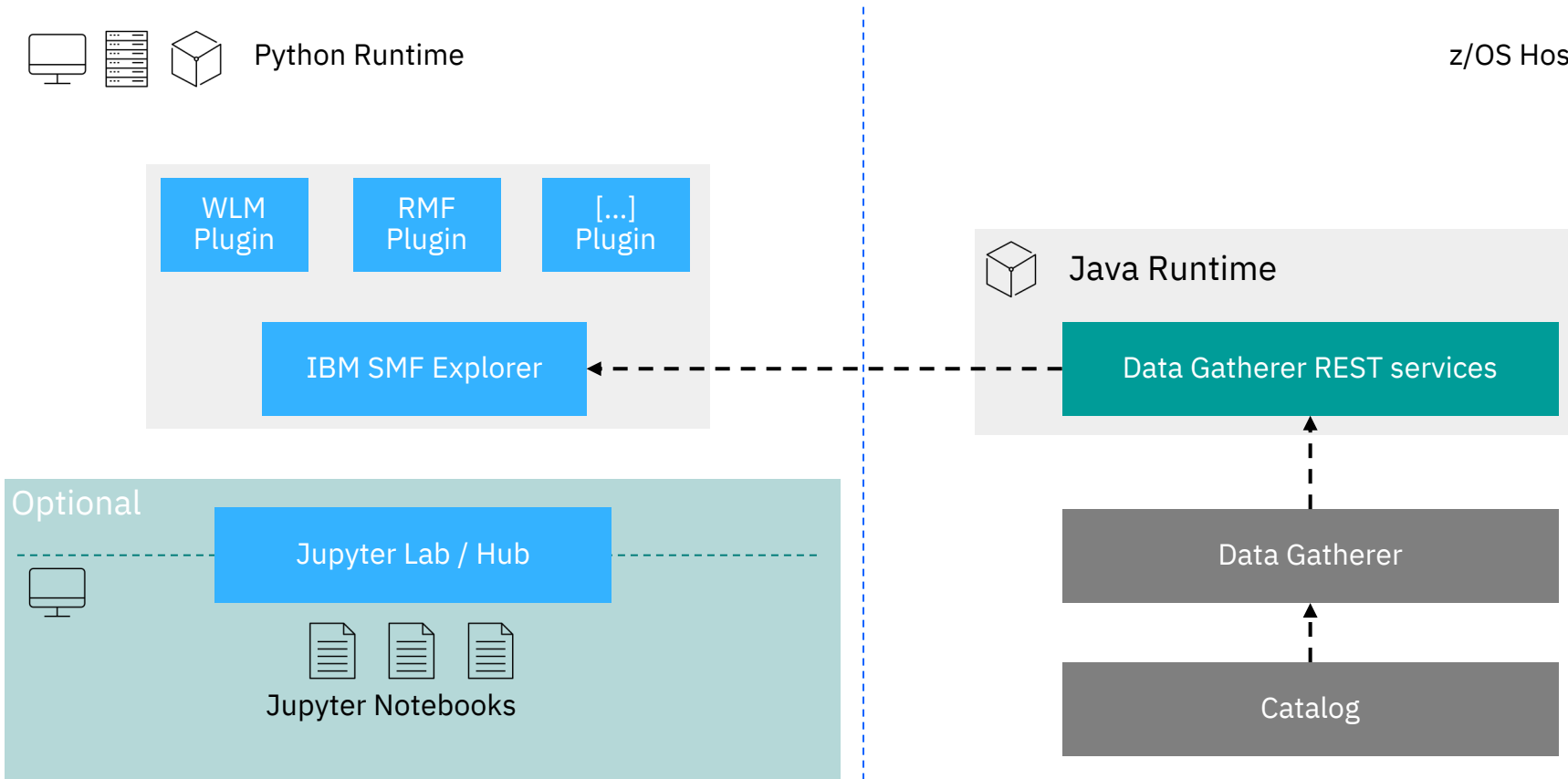
* aka IBM SMF Explorer

Architecture



Python Runtime

z/OS Host



Jupyter Notebooks & GitHub Community

Notebooks are the main deliverable besides the IBM SMF Explorer Python package

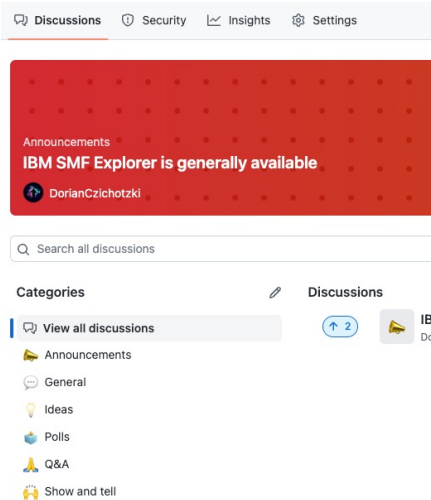
They give you an easy entry point to IBM SMF Explorer

Well established tool in the data science world

Straightforward user experience

We want to build a community around Notebooks

Using GitHub to share our and initial Notebooks and give everyone the opportunity to learn, adapt and contribute



Lab: IBM SMF Explorer with Python

JupyterHub Connection Information

- <https://ibm.biz/zosacad-smfexplorer> (will redirect to JupyterHub)
 - Make sure you get redirected to a HTTP not HTTPS connection
- Login using the provided username (*zosacademy[xx]*) and a password of your choice

Lab Materials (found in JupyterLab explorer)

- **IBM SMF Explorer Lab** folder with Tutorial/Exercise Notebooks
 - Copy the materials to your own folder
- **Shared** folder to share files
- The data set for this lab is **WLM.DATA.SMF**

Getting started with IBM SMF Explorer with Python

[IBM SMF Explorer with Python installation code](#)

- Available for z/OS 2.5
- Via Data Gatherer PTF UJ07630
- Requires Data Gatherer PTF UJ09235 and z/OSMF PTF UI82355

[IBM-SMF-Explorer GitHub repo](#)

- Simplify your first experience with SMF data analysis
- Collection of tutorials and showcase notebooks for data analysis in the “Notebooks” directory

[IBM HOT TOPICS article](#)

- How to turn your SMF data into valuable insights without z/OS expertise

