www.ezesoft.com

Eze EMS

Release Date: Nov 14, 2025
v2025.7.0

Eze EMS xAPI Python Sample Application Guide

This document contains information about getting started with Eze EMS xAPI using Python.

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What's New

This release includes the following updates:

Version No.	Date	Summary of Update
v2025.7.0.2848	Nov 14, 2025	There are no documentation updates in this EMS xAPI release.

Note: Refer to the Revision History section for detailed information on past release versions.

Introduction

The purpose of this document is to help clients get started with the EMS xAPI application on Python UI. This document provides a step-by-step process of installing Python on Windows and Linux and start using the APIs.

Eze EMS xAPI is robust and easy-to-use application that allows programmers and trading businesses to complete various trading workflows, and also access key information, including:

- Automating order routing - to smart order routers, algorithms and other trading systems.
- Routing orders to multiple brokers, dark pools, ATS, and MTFs via the Eze EMS Global Routing Network - across asset classes.
- Staging or routing single or pairs orders.
- Accessing balances, positions, executions, and other order details.
- Accessing comprehensive list and basket capabilities.

Although EMS xAPI can operate with all gRPC compatible languages, only Python language information is provided in this document as an example. Refer to this link for more information on gRPC.

Eze EMS xAPI Basics

The Eze EMS xAPI operates in conjunction with your existing Eze EMS account permissioning and entitlements. **The Eze EMS xAPI is not a standalone data feed application that is provided to you independent of the Eze EMS.** Please contact Eze Client Service if you need to request or make changes to appropriate permissions for your account.

Eze EMS xAPI Use Restrictions

As an Eze EMS xAPI user, you are prohibited from retransmitting any Eze Market Data using the Eze EMS xAPI, without the express prior written consent of Eze EMS and the exchanges or other third-party data providers (referred to as ***"Sources"*** in your end user agreement). Any unauthorized retransmission of Eze Market Data is a breach of your end user agreement and will cause immediate termination of your use of the Eze EMS, Eze Market Data, and the Eze EMS xAPI.

Any non-display usage of Eze Market Data, such as use of real- time data in algorithmic trading or program trading, is subject to the rules, regulations, and policies of the applicable exchanges and additional exchange fees may apply. In addition, you may have a non-display usage of Eze Market Data even if a display of real-time data occurs. Please review your Eze EMS end user agreement, and the exchanges' and third-party data providers' rules, regulations, and policies that apply to your use of the Eze EMS API (which apply to Eze EMS xAPI) and/or Eze Market Data. It is the sole responsibility of the Eze EMS xAPI user and each user receiving, directly or indirectly accessing or otherwise using Eze Market Data to determine whether your receipt, access or use is reportable and/or fee liable.

Eze EMS xAPI Version

This document covers all the APIs and updates to the Eze EMS xAPI that are part of 2025.7.0.2848 release.

Download EMS xAPI

Contact your SS&C Eze client service representative for downloading Eze EMS xAPI.

Developer Support

- If you are an existing Eze EMS User, log in to access developer support documentation and sample code.
- You can contact us or request a demo if you want to explore more about EMS xAPI.
- You can send us an e-mail apisupport@ezesoft.com or call +1 312-442-8122.

Getting Started Using EMS xAPI Python Sample Application

Prerequisites

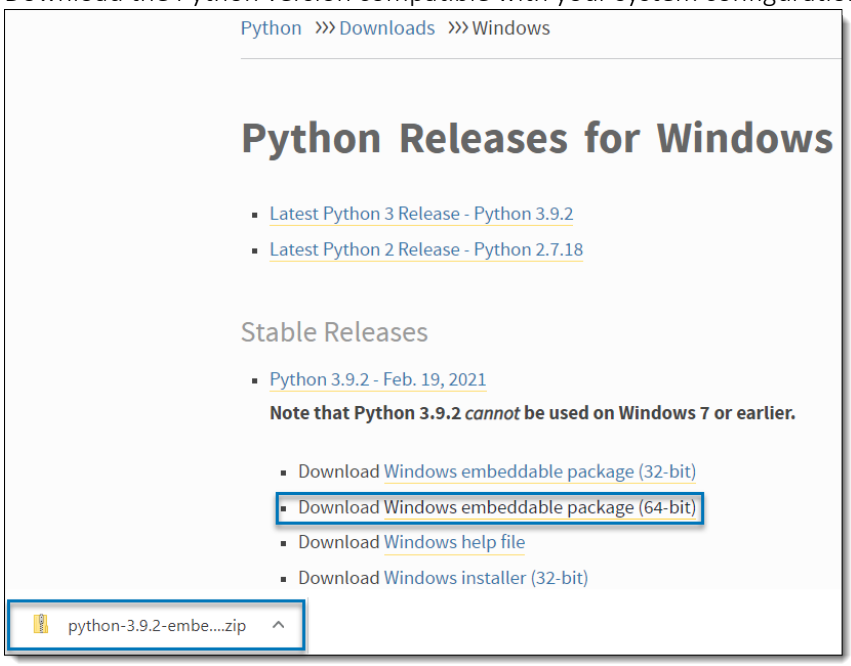
Eze EMS xAPI sample application can run on Python version 3 or above.

Installation Procedure

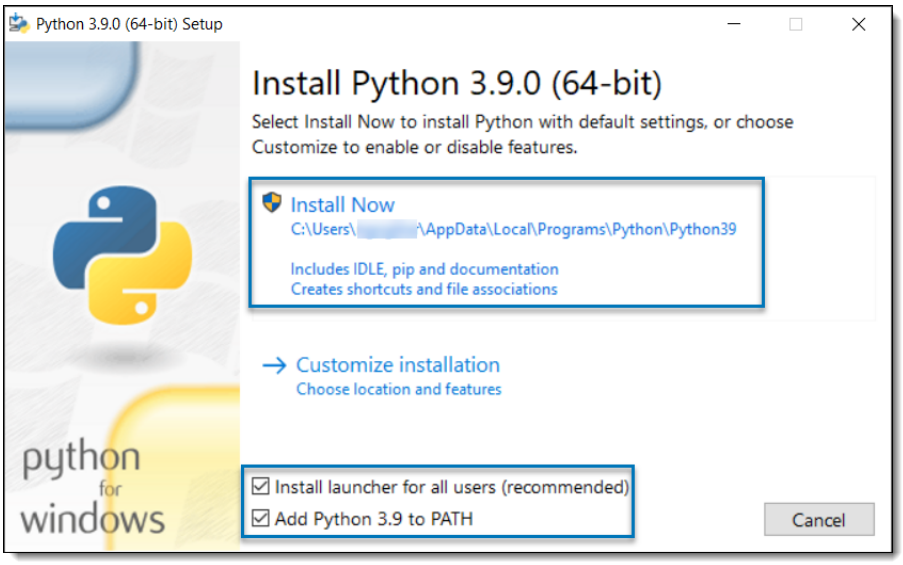
Windows

Follow the steps below to download and install Python for Windows.

1. To download the latest Python version for Windows OS visit the Python web page for downloads. Download the Python version compatible with your system configuration, as shown below.



2. Run the **Python Installer** after download.
3. Ensure that the **Install Now** and **Add Python to PATH** checkboxes are enabled, as shown below. Enabling **Add Python to PATH** will place the interpreter in the execution path. Click **Install Now**.



4. To verify or know the Python version installed on the machine, run command prompt and type **Python --version** or **Python**, as shown below. Close the command prompt.

```
C:\Users\USERNAME>Python --version
```

or

```
C:\Users\USERNAME>Python
```

Follow the steps below to create EMS xAPI repository and run EMS xAPI client on Windows.

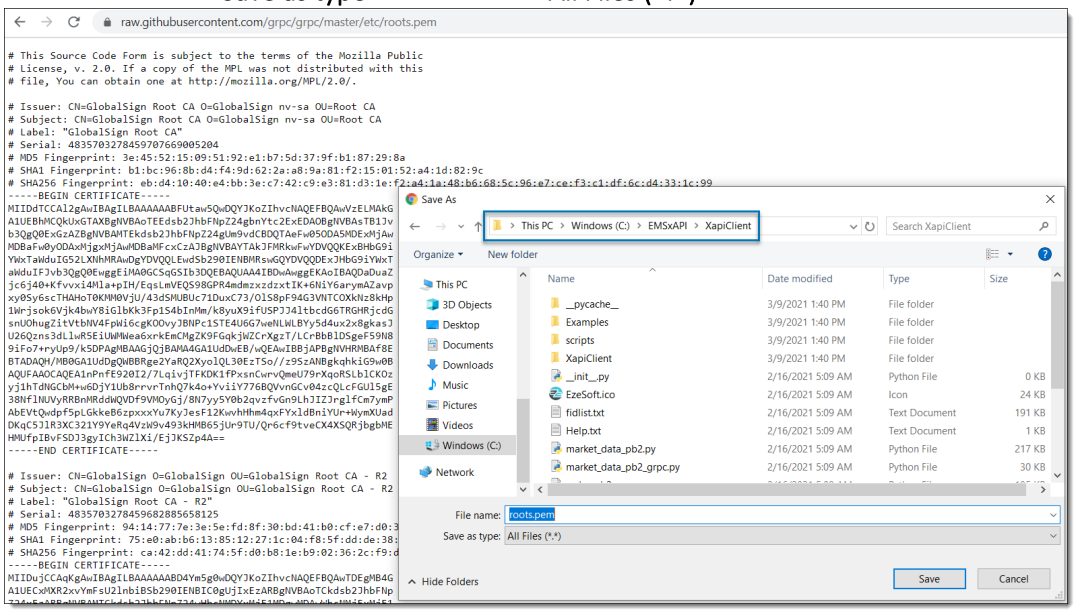
1. Run the following commands in command prompt to install **gRPC / gRPC tools** and **SRP**:

```
pip install grpcio==1.46.0
pip install grpcio-tools==1.46.0
pip install srp
pip install pycryptodomex
pip install protobuf==3.20.1
```

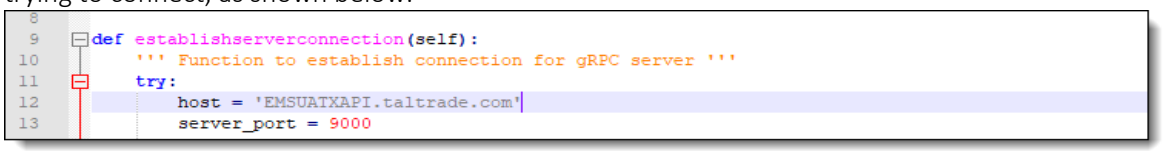
Note: For more information refer to this link.

2. Create a folder on your local machine (e.g., C:\EMSxAPI).
3. Contact your SS&C Eze client service representative for EMS xAPI sample files (XapiClient.zip). Unzip and place all the files in the same folder you created in step 2.

4. Download **roots.pem** file:
    a. Click open the gRPC GitHub repository.
    b. Click **Raw**.
    c. Right-click on the page and select **Save as...**.
    d. Save the **roots.pem** file in the same folder that was created by unzipping **xAPIclient** in step 3, as shown below. Make sure the file is saved as **roots.pem** without any additional extension and the **Save as type** must be set to **All Files (*.*)**.



5. Navigate to the **XapiClient** folder extracted in step 3, and open **xapi_client.py** file using notepad or any other text editor of your choice. Update the **host** with the actual EMS xAPI server you are trying to connect, as shown below.



Note: Contact your SS&C Eze client service representative for more information about **host** and **port number** details.

6. Follow the steps below to run the Python UI.
    a. Open command prompt and run the following command to navigate to the **XapiClient** folder.

Note: The command might vary based on the folder name you used in step 2.

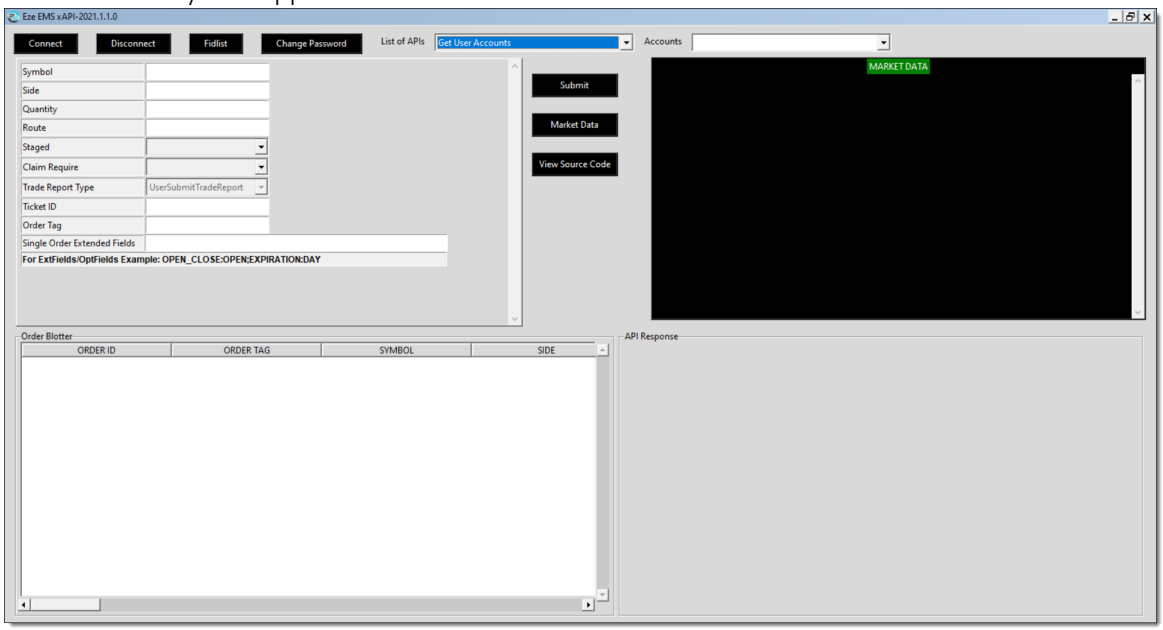
```
>cd C:\EMSxAPI\XapiClient
```

b. Run the following command to invoke EMS xAPI Python application.

```
C:\EMSxAPI\XapiClient>python xapi_client.py
```

Note: The **roots.pem** file must be available in the same folder that you created in step 3.

7. The EMS xAPI Python application is launched.



8. Click **Connect** to login. Refer to section Initial Setup to start using the client.

Linux

Follow the steps below to install and run Python application on Linux:

Ubuntu 20.04 and other versions of Debian Linux ship with pre-installed Python 3 version. If you want to update Python version, visit this link, and follow the instructions to install/upgrade Python.

1. To verify or know the Python version installed on the machine, open **Terminal** from **Applications** and type the command **python3 --version**, as shown below. Close the command prompt.

```
user@ubuntu: ~$ python3 --version
```

2. Run the following commands in Terminal to install **pip** and **tKinter** tools:

```
sudo apt install python3-pip
```

Enter your password `[sudo] password for user:`

Note: If the following prompt is displayed: **Do you want to continue? [Y/n]**. Type **Y**.

```
sudo apt-get install python3-tk
```

Note: If the following prompt is displayed: **Do you want to continue? [Y/n]**. Type **Y**.

3. Run the following commands in Terminal to install **gRPC/gRPC tools** and other required packages:

```
pip3 install grpcio==1.46.0
pip3 install grpcio-tools==1.46.0
pip3 install --upgrade protobuf
pip3 install srp
pip3 install pycryptodomex
pip3 install protobuf==3.20.1
```

Note: For more information refer to this link.

4. Create a folder on your desktop (e.g., EMSxAPI).

5. Contact your SS&C Eze client service representative for EMS xAPI sample files (XapiClient.zip). Unzip and place all the files in the same folder you created in step 4.

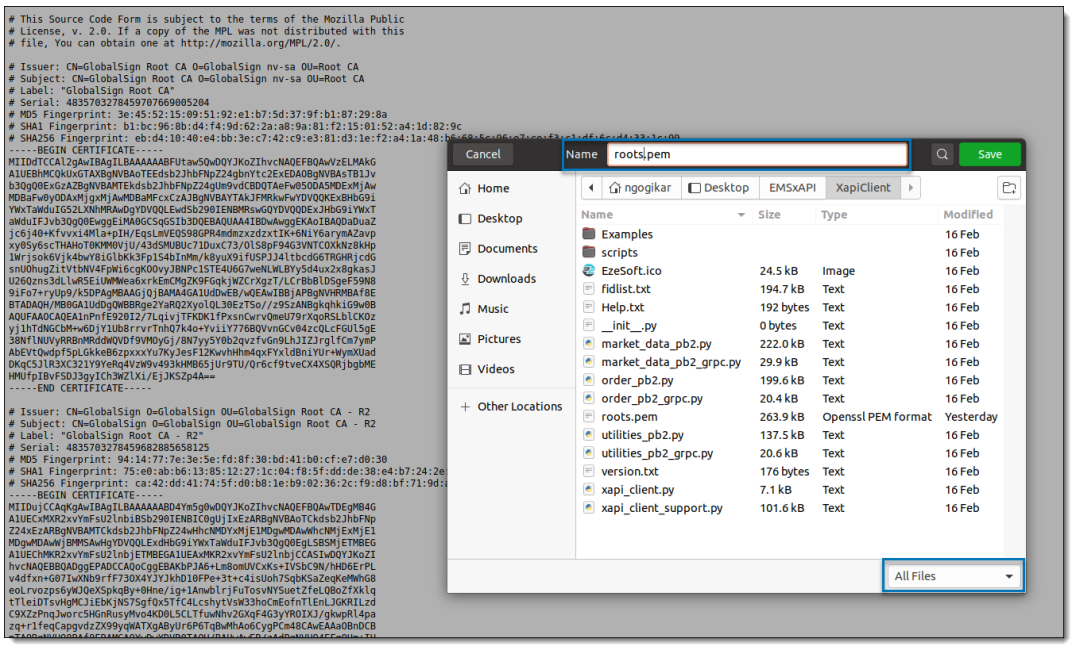
6. Follow the steps below to download **roots.pem** file.

   a. Click open the gRPC GitHub repository.

   b. Click **Raw**.

   c. Right-click on the page and select **Save Page As...**.

   d. Save the **roots.pem** file in the same folder that was created by unzipping **xAPIclient** in step 5, as shown below. Make sure the file is saved as **roots.pem** without any additional extension and select **All Files**.



Note: Contact your SS&C Eze client service representative for more information.

7. Navigate to **XapiClient** folder you created in step 5, and open **xapi_client.py** file using text editor or any other editor of your choice (e.g., vim, nano, etc.). Update the **host** with the actual EMS xAPI server you are trying to connect, as shown below.

```
 8
 9 def establishserverconnection(self):
10     ''' Function to establish connection for gRPC server '''
11     try:
12         host = 'EMSUATXAPI.taltrade.com'
13         server_port = 9000
```

Note: Contact your SS&C Eze client service representative for more information about **host** and **port number** details.

8. Follow the steps below to run the Python UI.
    a. Run the following command in Terminal to navigate to the **XapiClient** folder.

    Note: The command might vary based on the folder name you used in step 4.

    ```
    cd ~/Desktop/EMSxAPI
    ```

    b. Run the following command to invoke EMS xAPI Python application.

    ```
    $ python3 xapi_client.py
    ```

    Note: The **roots.pem** file must be available in the same folder that you created in step 5.

9. The EMS xAPI Python application is launched.
10. Click **Connect** to login. Refer to section Initial Setup to start using the client.

Compile Protobuf File

You can compile the protobuf in your preferred language. Follow the steps below to compile the protobuf file in Python language:

1. Create a **Protobuf** folder on your local machine (e.g., C:\EMSxAPI\Protobuf).
2. Download the **utilities.proto** file from GitHub or contact your SS&C client service representative for the file. Place this file in the Protobuf folder you created in above step.
3. Open command prompt and execute the following command.

```
python -m grpc_tools.protoc -I .\Protobuf --python_out=. --grpc_python_out=.
\Protobuf\utilities.proto
```

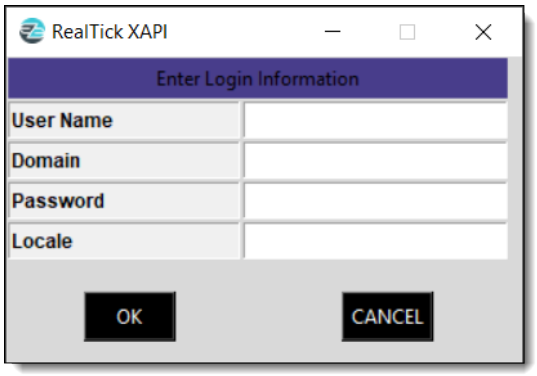
Note: Replace **.\Protobuf** with your local machine directory path. There are two (2) instances of it in the command.

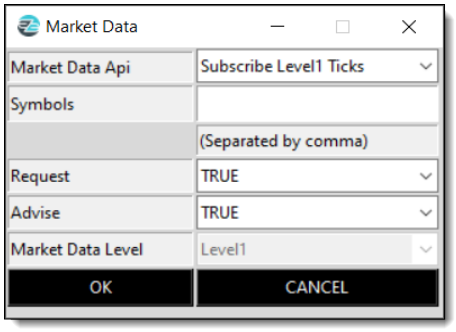
This generates **utilities_pb2.py** and **utilities_pb2_grpc.py** files. The utilities_pb2.py file contains the request and response classes and utilities_pb2_grpc.py contains client and server classes.

Follow the same procedure for compiling **order.proto** and **market_data.proto** files in Python language. For more information on using Python with a gRPC API, refer to this link.

Eze EMS xAPI Sample Application Workspace

The Python user interface provides you features to use APIs. The table below provides information about main features available on EMS xAPI Python Sample Application.

Feature	Description
Connect	Click to login. Fill in the credentials and click **OK**. On successful login you will receive a user token.  **Note:** Contact your SS&C Eze client service representative for any issues related to login. **Note:** Your account will be temporarily locked for 3 minutes if you attempt to log in three (3) times within 60 seconds, regardless of whether the attempts are successful or unsuccessful.
Disconnect	Click to end the connection. Once disconnected the user token gets expired, you need to login again to use the client.
FidList	Click to find additional information on extended and optional fields. **Note:** Contact your SS&C Eze client service representative to learn more about **FidList** and **Extended Fields**.
Market Data	Click to open **Market Data** window. This window provides you an option to subscribe/unsubscribe the Level 1 and 2 data.

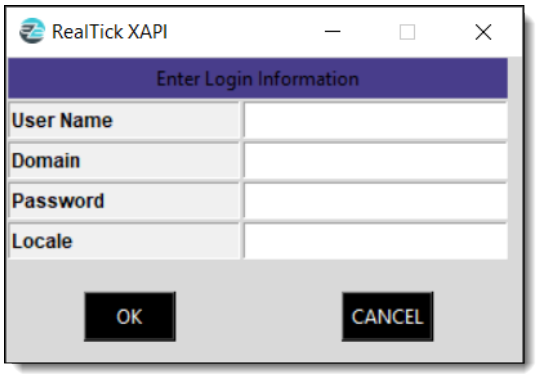
Feature	Description
	
List of APIs	Click to view the API's in a dropdown list.
Accounts	Click to view the list of available user accounts. These accounts are used to run the API's.
Submit	Click to submit an order.
View Source Code	Click to view the source code of API. Select an API from **List of APIs** or **Market Data** window and click **View Source Code**.
Order Blotter	Order Blotter provides you the complete details of order fills. You can Change or Cancel an order by selecting it in this window.
API Response	This window provides the data for API's requested today. Select a request API from **List of APIs** and click **Submit** to view data of that API.

Initial Setup

Logging into EMS xAPI Python Sample Application

To log in to the EMS xAPI Python Sample Application.

1. Click **Connect**.

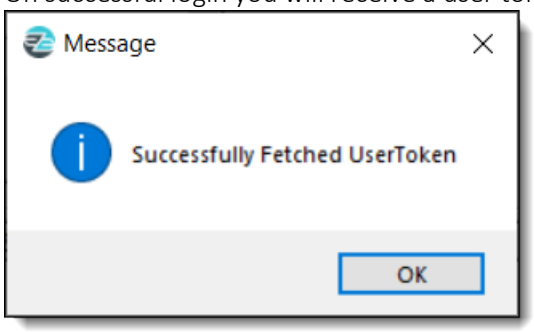


2. Fill in your login credentials.

Note: Contact your SS&C Eze client service representative for any issues related to login.

Note: Your account will be temporarily locked for 3 minutes if you attempt to log in three (3) times within 60 seconds, regardless of whether the attempts are successful or unsuccessful.

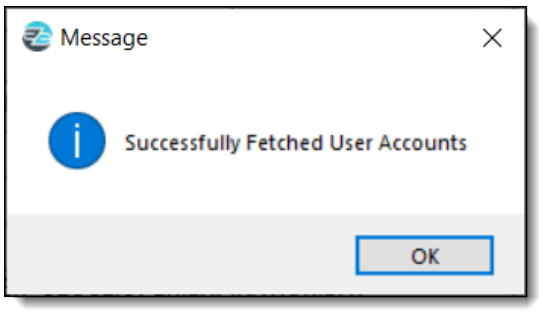
3. On successful login you will receive a user token, as shown below.



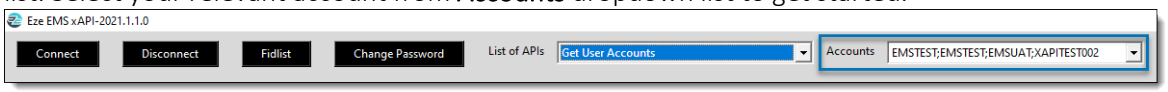
Get User Accounts

Follow the steps below to fetch your list of user accounts.

1. Click **List of APIs** dropdown and select **Get User Accounts** API and click **Submit** to fetch your available accounts.



2. On successful submission you can see the account details populated in the **Accounts** dropdown list. Select your relevant account from **Accounts** dropdown list to get started.

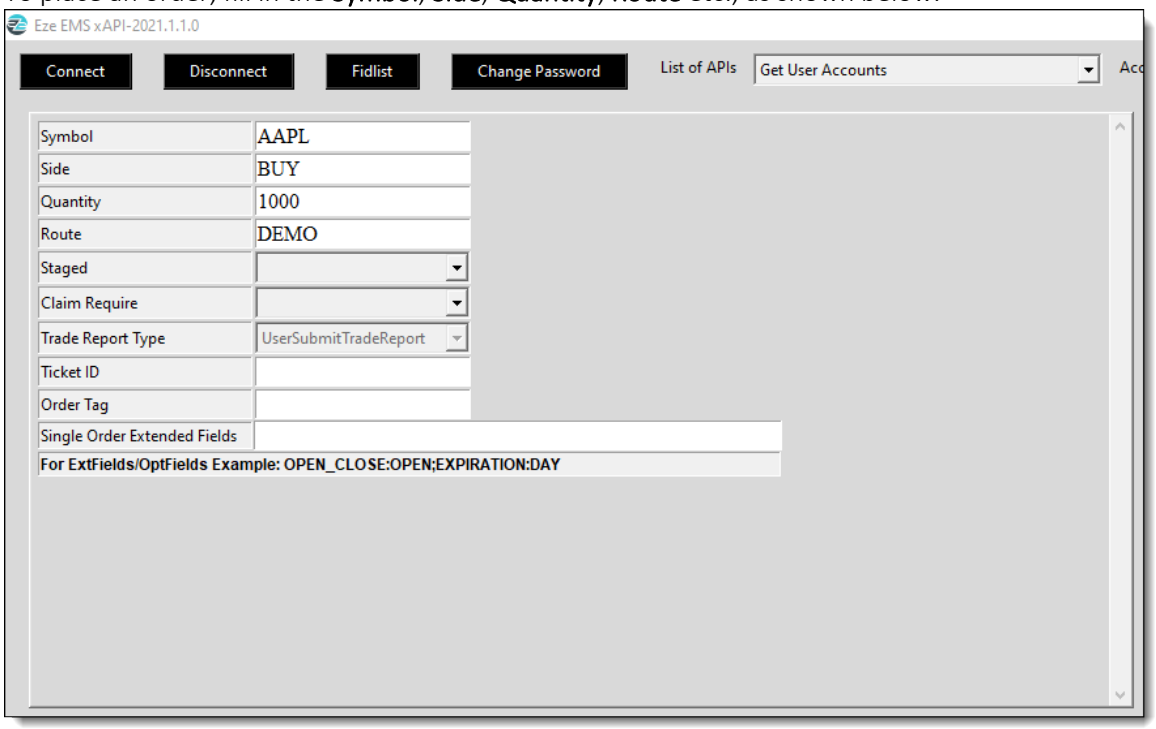


You have now successfully logged in on EMS xAPI Python sample application with specific user account.

Placing a Single Order

Follow the steps below to place a single order.

1. To place an order, fill in the **Symbol**, **Side**, **Quantity**, **Route** etc., as shown below.



   a. **Symbol**: Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc.

   b. **Side**: BUY, BUYMINUS, CROSS, CROSSSHORT, CROSSSHORTEXEMPT, NONE, SELL, SELLPLUS, SELLSHORT, SELLSHORTEXEMPT

   c. **Quantity**: Value > 0

   d. **Route**: Any permissioned route such as CITI-ALGO, BNP PAIRS etc.

   e. **Staged**: TRUE or FALSE (Note: in order to send a staged order, this field becomes mandatory and has to be set as TRUE only)

   f. **Claim Require**: TRUE or FALSE (Note: setting TRUE value envisages a user running Eze EMS who then claims the Order so it can switch from Pending to Live State)

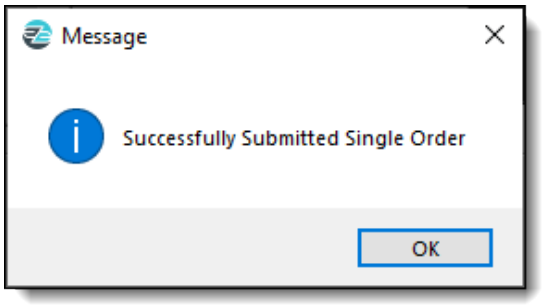
   g. **Trade Report Type**: UserSubmitTradeReport = 0; ForeignExecution = 1

   h. **Ticket ID**: Ticket ID

   i. **Order Tag**: Order Tag

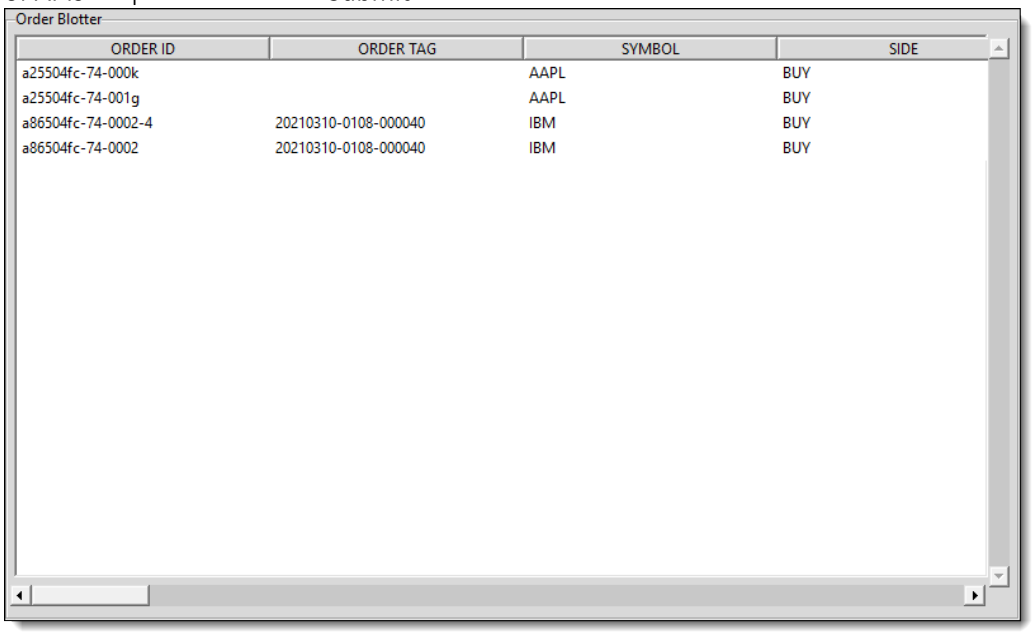
   j. **Single Order Extended Fields**: Refer the **fidlist.txt** file in xAPIclient sample files.

2. Select **Submit Single Order** in **List of APIs** dropdown list. Click **Submit**. A success message is displayed, as shown below.



Note: By default, the order is sent as a Market order. Refer Limit Order section to change order type.

3. You can view the submitted order details in the **Order Blotter**. Select **SubscribeOrderInfo** from **List of APIs** dropdown and click **Submit**.

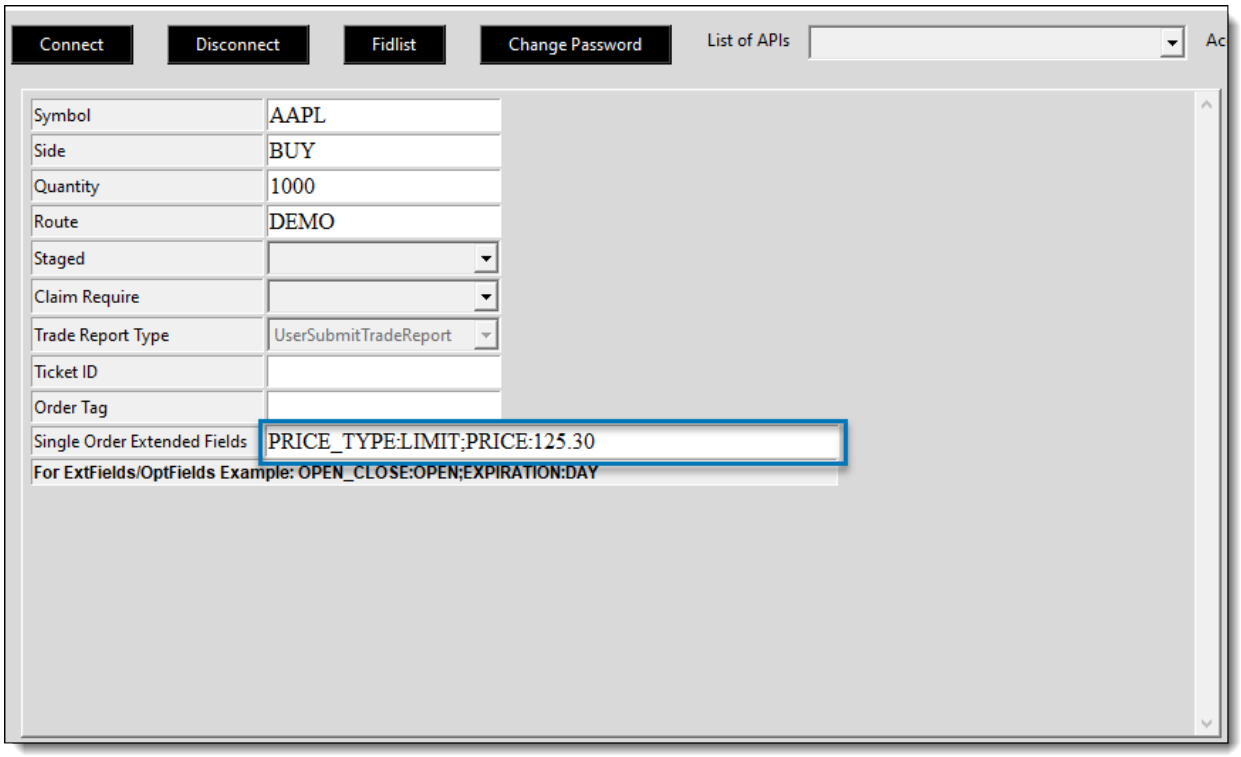


Placing a Limit Order

Follow the steps below to place a limit order.

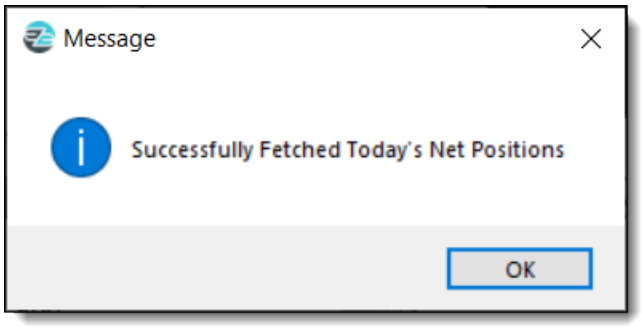
To place a limit order, fill in the **Symbol**, **Side**, **Quantity**, **Route** etc. You must enter the **PRICE_TYPE** and **PRICE** in **Single Order Extended Fields** e.g., PRICE_TYPE:LIMIT;PRICE:125.30, as shown below. The valid values are LIMIT for limit order and MARKET for market order.

Note: The Price field is mandatory when **PRICE_TYPE** is specified as **LIMIT**.

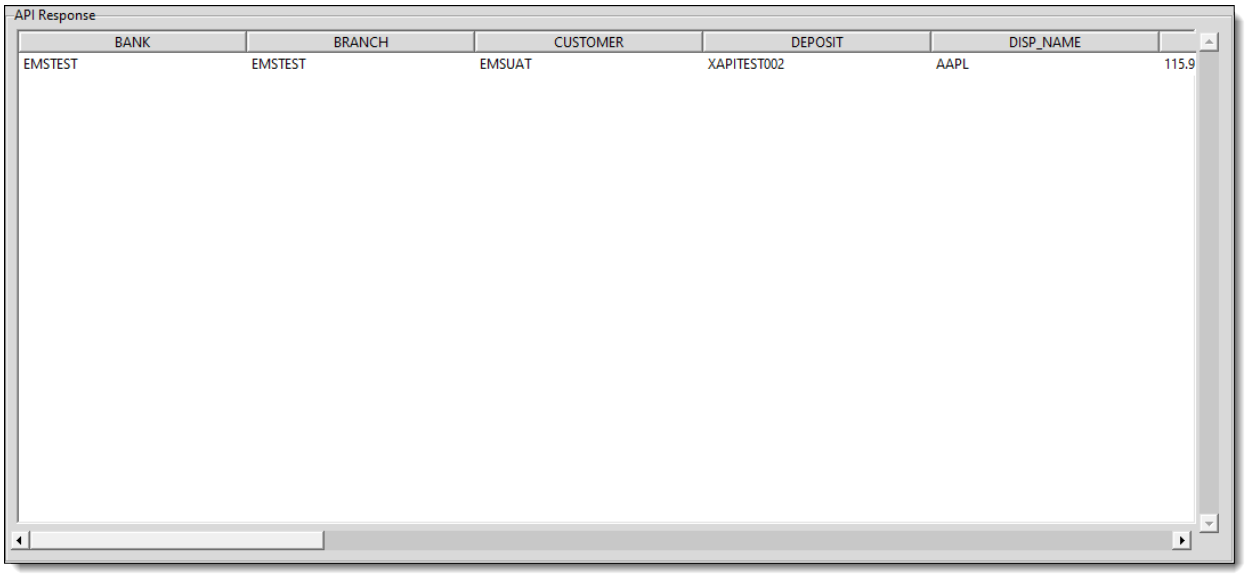


Get Net Positions

To fetch todays net positions, select **Get Today's NetPositions** from **List of APIs** and click **Submit**. A success message is displayed, click **OK**.



You can view the order details on the **API Response** blotter, as shown below. Refer EMS xAPI Technical Documentation for API response details.



Get Brokendown Positions

To fetch brokendown positions, select **Get Today's BrokendownPositions** from **List of APIs** and click **Submit**. A success message is displayed, click **OK**. You can view the details on the **API Response** blotter. Refer to the "EMS xAPI Technical Documentation" for API response details.

Get Todays Activity

To fetch todays activity, select **Get Today's Activity** from **List of APIs** and click **Submit**. A success message is displayed, click **OK**. You can view the details on the **API Response** blotter. Refer to the "EMS xAPI Technical Documentation" for API response details.

Subscribe Order Info

To subscribe for order info, select **Subscribe Order Info** from **List of APIs** and click **Submit**. A success message is displayed, click **OK**. You can view the details on the **API Response** blotter. Refer to the "EMS xAPI Technical Documentation" for API response details.