DataNews – 26 March 2019

ETS API 3.2 Technical Guidelines : Login/Logout, Market Results retrieval policies

Important information – Action required

- API Applications should log in only once a day ; Logout is not mandatory
- We encourage you to implement asap this login policy in order to optimize your application performances.
- API Applications should not retrieve market results more frequently than every 30 seconds (no less than 30s between two retrievals)
- Both will become mandatory as of ETS 3.3.1, planned in <u>simulation</u> for April 2019

EPEX analysed ETS API applications behaviours in production and would like to share with you good practices that they kindly ask you to implement.

The respect of these good practices is key to optimize the performance of your API application and of ETS systems.

Login / Logout

Today ETS API *Terms of Reference* mention in the "Requests" section that:

> **i. Login and logout**
>
> The client should not take up unnecessary resources. In particular login request should not be initiated for single requests.
>
> Logout request should be initiated once all requests have been executed.

Actually, considering the growth of API applications in 2018, **we need to go one step further.**
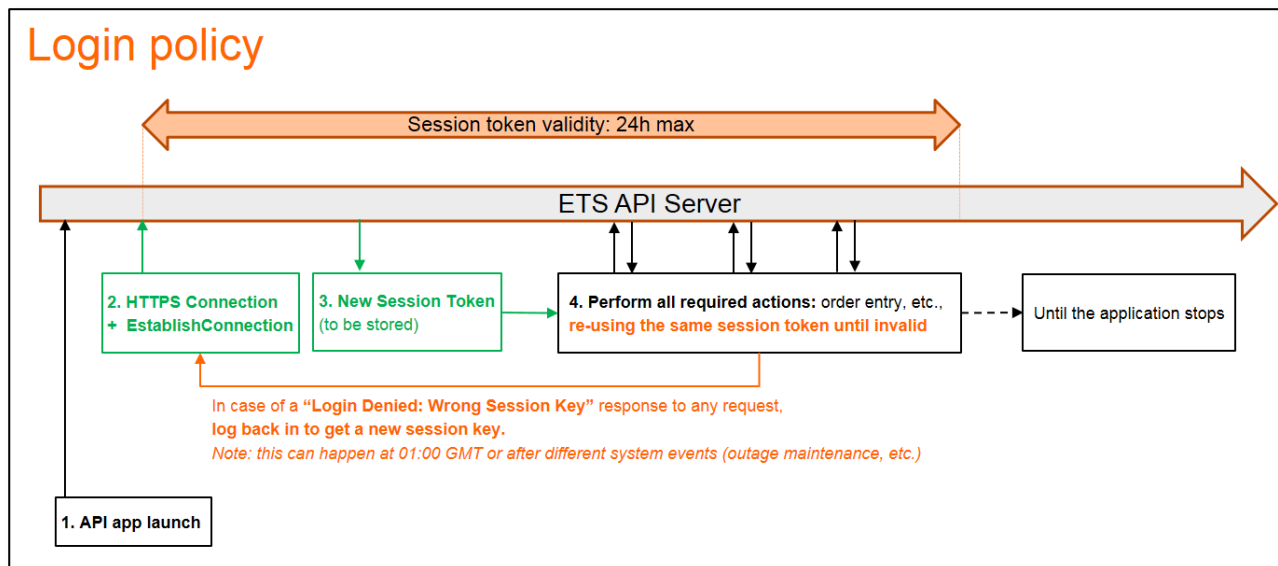
Indeed:
- EstablishConnection (Login) is the most demanding API method, its use should be minimized,
- the Session Token (User Login Name + Session Key) delivered in the Establish Connection response remains valid even if the HTTPS connection has been closed because of inactivity: it is not required to re-log in to get a new token.

As a result we ask you to follow the below connectivity cycle:
1. Your API application gets started
2. Log in: create an HTTPS connection and send an EstablishConnection method (user + password)
3. Store the responded Session Token (user + session key)
4. Perform all required further actions by sending requests re-using the same token, until invalid
5. Once invalid, any request using it receives the response: "Login Denied: Wrong Session Key"
   - This will happen every early morning at 01:00 UTC when all connections to API servers are automatically kicked out for security purposes. At this moment all session keys become invalid.
   - This can also happen in case of an ETS maintenance or of an ETS outage.
6. When this happens go back to step 2 to get a new session key for the same user

Note: no explicit Logout is mandatory. The Logout method is only offered for customers needing it to comply with their company security policy.

Login policy

Session token validity: 24h max

ETS API Server

2. HTTPS Connection + EstablishConnection

3. New Session Token (to be stored)

4. Perform all required actions: order entry, etc., **re-using the same session token until invalid**

Until the application stops

In case of a **"Login Denied: Wrong Session Key"** response to any request, **log back in to get a new session key.**
Note: this can happen at 01:00 GMT or after different system events (outage maintenance, etc.)

1. API app launch

HTTPS connections management:
- In case of an HTTPS connection loss, just create a new one before sending a new request with the same session token.
- Please reserve the use of the *Keep Alive* method only for testing purposes, to check that your application can communicate the ETS API server (which does not require to be logged in), rather than for maintaining the HTTPS connection alive.

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Market results retrieval

Market results must to be retrieved <u>only when relevant</u>:
- Starting at the theoretical auction publication time
- Stopping once the auction results are Final (and thus cannot be cancelled anymore)

<div style="border:1px solid black">

The shortest time interval between 2 *RetrieveMarketResultsFor* requests **should be 30 seconds.** Please make this interval **configurable** in your system.

</div>

Determining when to stop retrieving market results requires being aware of the different possible sequences of market results statuses and of what is available via the API.

The sequence of market results status depends on the nature of the auction:
- **Day-ahead Local auctions and intraday auctions:**
  - *Unavailable* (Not yet published) *-> Final*.
  - There is no cancellation possibility.
- **Day-ahead coupled auctions:**
  - *Unavailable -> Preliminary -> Final*
  - Thus this never happened yet in production, it is process wise possible that <u>preliminary</u> market results get cancelled:
    - *Unavailable -> Preliminary -> Cancelled -> Preliminary -> Final*
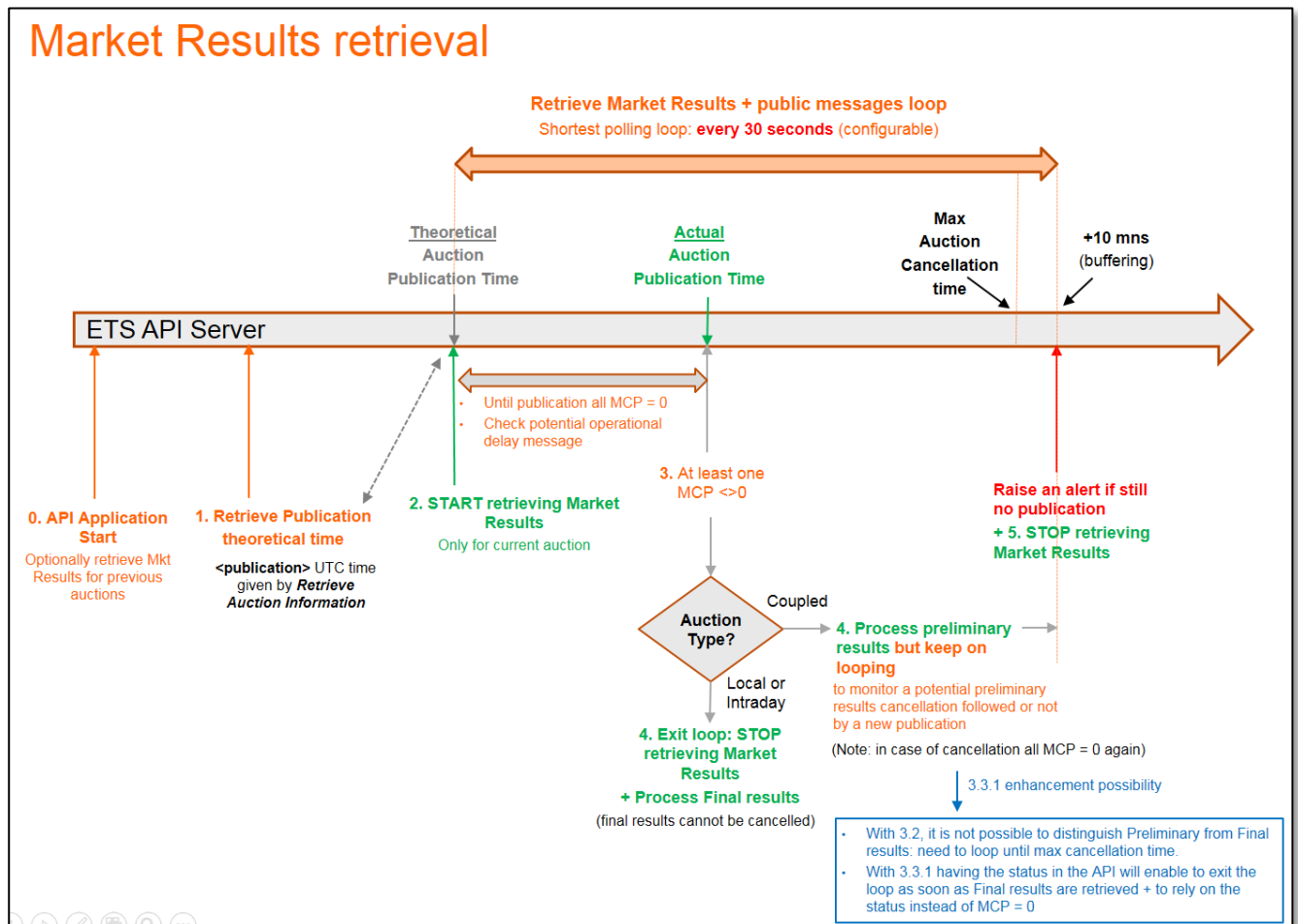
Please note that:
- though ETS displays market results in publication pop-ups, this information is not available via ETS API 3.2 and earlier versions.
- We plan to introduce this status in the API response as of ETS API 3.3.1.
- the *RetrieveMarketResultsFor* API method always sends a response with zero values when results have not yet been published.

As a result:
- it is required in ETS 3.2 that your API application relies on a **convention to determine whether market results have been published**: *as long as all Market Clearing Prices equal 0 in the RetrieveMarketResultsFor, please consider that results have not yet been published.*
- In cases where preliminary results are published first, it is not possible until ETS 3.3.1 for your application to distinguish in the *RetrieveMarketResultsFor* response if results are still Preliminary or Final:
  - Your application should keep on retrieving results until a maximum cancellation time (indicated in a table below), to ensure that results are still valid
  - As of ETS API 3.3.1, as soon as your application detects the switch to Final, it will not be necessary to keep on looping and retrieving again market results.
- At any stage of the publication process, your API application needs to read the content of public messages via the *RetrieveMessagesUnreadOnly* method: Delay information can be provided as public messages (e.g. for MRC: *[ExC_02]: Delay in Market Coupling Results publication* at 12:42 CET)

- Please use the *SetMessagesAsRead* method to change messages status Unread/Read.

The diagram below summarizes the logic to be implemented:

Market Results retrieval

Retrieve Market Results + public messages loop
Shortest polling loop: **every 30 seconds** (configurable)

Theoretical Auction Publication Time

Actual Auction Publication Time

Max Auction Cancellation time

+10 mns (buffering)

ETS API Server

- Until publication all MCP = 0
- Check potential operational delay message

3. At least one MCP <>0

Raise an alert if still no publication
+ 5. STOP retrieving Market Results

0. API Application Start
Optionally retrieve Mkt Results for previous auctions

1. Retrieve Publication theoretical time
<publication> UTC time given by *Retrieve Auction Information*

2. START retrieving Market Results
Only for current auction

Auction Type?

Coupled

Local or Intraday

4. Process preliminary results but keep on looping
to monitor a potential preliminary results cancellation followed or not by a new publication
(Note: in case of cancellation all MCP = 0 again)

4. Exit loop: STOP retrieving Market Results
+ Process Final results
(final results cannot be cancelled)

3.3.1 enhancement possibility

- With 3.2, it is not possible to distinguish Preliminary from Final results: need to loop until max cancellation time.
- With 3.3.1 having the status in the API will enable to exit the loop as soon as Final results are retrieved + to rely on the status instead of MCP = 0

We will make the *Max Auction Cancellation Time* available via the API in a further ETS version.

Note: In general **we recommend to have in parallel to the API application an operational staff** that will check their mailbox until the cancellation deadline, in order to monitor and be prepared for all situations (including a system down situation where the API would not be able to retrieve any information).

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Please find below for each auction the official key times to implement this logic:

Auction	Auction Technical Name (in API, FTP files)	Theoretical publication time (CET)	Status of the first results	Max Cancellation Time in operational procedures (CET)	Max Cancellation Time For API apps (+10 min margin) (CET)
SEM-DA	PWR-MRC-D+1	12:42	Preliminary	15:30	15:40
SEM-IDA1	PWR-SEM-GB-D+1	19:00	Preliminary	19:50	20:00
SEM-IDA2	PWR-SEM-GB-D	09:30	Preliminary	10:20	10:30
SEM-IDA3	PWR-SEM-D	15:15	Final	16:00	16:10

Timeline - Impact on future Conformance tests

We encourage you to implement asap this login/logout policy in order to optimize your application performances.

These policies will become mandatory as of ETS 3.3.1, planned in underline simulation for April 2019.
Terms of Reference and Conformance tests will be updated accordingly.

ETS API Simulation environments

We remind you that ETS Simulation 2 environment is available to enable you to implement these changes.

Environment	Simulation 2
ETS version	3.2.1
Server address	ets-simu3.svpx.epexspot.com port 4443
API server address	https://ets-simu3.svpx.api.epexspot.com:4444/OpenAccess/3.2
WSDL version	3.2