

Open Exchange Rates API Data

Model

for use with Invantive SQL

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This manual is a reference guide intended to clarify usage. If data in the sample images match data in your system, the similarity is coincidental.

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1 SQL Driver for Open Exchange Rates API

Invantive SQL is the fastest, easiest and most reliable way to exchange data with the Open Exchange Rates API.

Use the "Search" option in the left menu to search for a specific term such as the table or column description. When you already know the term, please use the "Index" option. When you can't find the information needed, please click on the Chat button at the bottom or place your question in the [user community](#). Other users or Invantive Support will try to help you to our best.

Open Exchange Rates.

The Open Exchange Rates driver covers 8 tables and 458 columns.

Open Exchange Rates API Clients

Invantive SQL is available on many user interfaces ("clients" in traditional server-client paradigm). All Invantive SQL statements can be exchanged with a close to 100% compatibility across all clients and operating systems (Windows, MacOS, Linux, iOS, Android).

The clients include Microsoft Excel, Microsoft Power BI, Microsoft Power Query, Microsoft Word and Microsoft Outlook. Web-based clients include Invantive Cloud, Invantive Bridge Online as OData proxy, Invantive App Online for interactive apps, Online SQL Editor for query execution and Invantive Data Access Point as extended proxy.

For technical users there are command-line editions of Invantive Data Hub running on iOS, Android, Windows, MacOS and Linux. Invantive Data Hub is also often used for enterprise server applications such as ETL. High-volume replication of data taken from the Open Exchange Rates API into traditional databases such as SQL Server (on-premise and Azure), MySQL, PostgreSQL and Oracle is possible using [Invantive Data Replicator](#). Invantive Data Replicator automatically creates and maintains Open Exchange Rates datawarehouses, possibly in combination with data from over 70 other (cloud) platforms. Data Replicator supports data volumes up to over 1 TB and over 5.000 companies. The on-premise edition of Invantive Bridge offers an Open Exchange Rates ADO.net provider.

Monitor API Calls

When a query or DML-statement has been executed on Invantive SQL a developer can evaluate the actual calls made to the Open Exchange Rates API using a query on sessionios@DataDictionary. As an alternative, extensive request and response logging can be enabled by setting log-native-calls-to-disk to true. In the %USERPROFILE%\Invantive\NativeLog folder Invantive SQL will create log files per API request and response.

Specifications

The SQL driver for Open Exchange Rates does not support partitioning. Define one data container in a database for each company in Open Exchange Rates to enable parallel access for data from multiple companies.

An introduction into the concepts of Invantive SQL such as databases, data containers and partitioning can be found in the [Invantive SQL grammar](#).

The configuration can be changed using various attributes during log on and use. A full list of configuration options is listed in the [driver attributes](#) ².

The catalog name is used to compose the full qualified name of an object like a table or view. The schema name is used to compose the full qualified name of an object like a table or view. On Open Exchange Rates the comparison of two texts is case sensitive by default.

Changes and bug fixes on the Open Exchange Rates SQL driver can be found in the [release notes](#). There is currently no specific section on the [Invantive forums](#) for Open Exchange Rates. Please reach out to other users of Open Exchange Rates by leaving a question or contact request.

Driver code for use in settings.xml: `OpenExchangeRates`

Alias: `openexra`

Recommended alias: `exr`

More technical documentation as provided by the supplier of the Open Exchange Rates API on the native APIconnection used can be found at <https://docs.openexchangerates.org/>.

General documentation on Open Exchange Rates is available at <https://docs.openexchangerates.org/docs>

Updated: 15-06-2022 20:38 using Invantive SQL version 22.0.232-PROD+3445.

2 SQL Driver Attributes for Open Exchange Rates API

The SQL driver for Open Exchange Rates has many attributes that can be finetuned to improve handling in scenarios with unreliable network connections to the API server of Open Exchange Rates or high-volumes of data. Also, many drivers have driver-specific attributes to finetune actual behaviour or handle data not matching specifications.

The Open Exchange Rates driver attributes are assigned a default value which seldom requires change. However, changes can be applied when needed on four levels, which are reflected in the table below by separate checkmarks:

- Connection string: the connection string from the settings*.xml file and applied during log on.
- Set SQL statement: a set SQL-statement to be executed once connection has been established.
- Drivers file: the providers.xml file (obsolete starting release 17.32).
- Log on: value to be specified interactively by user during log on in a user interface.

The connection string for Open Exchange Rates can be found in the settings*.xml file used for the database. Settings*.xml files are typically located in the %USERPROFILE%\invantive folder in most deployment scenarios. The reference manuals contain instructions how to relocate the settings*.xml files. Each data container of a database in the connection string can have a `connectionString` element specifying the name and values of attributes. Both name and value must be properly escaped according to XML-semantics. Actual application of the value is solely done during log on. A new connection must be established to change the value of a driver attribute using a connection string.

The set SQL statement can be executed after log on. The syntax is: `set NAME VALUE`, or for a distributed database: `set NAME@ALIAS VALUE`. In some scenarios you may need to enclose the driver attribute name in square brackets to escape it from parsing, for instance when a reserved SQL keyword is part of the name. The new value takes effect straight after execution of the set-statement. The set-statement can be executed as often as needed during a session.

Driver attributes that can be interactively set to a value are typically presented in the log on window. Depending on the platform and design decisions of the user interface designer, some or all of the available driver attributes can have been made available.

The Open Exchange Rates driver can be configured using the following attributes:

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Driver's File	Set from Log On
add-odata-mandatory-filters	Whether to automatically add OData filters deemed necessary by the platform.	OData	False	✓	✓	✓	
analysis-enforce-row-uniqueness	Use for analysis only! Enforce rows to be unique.	Shared	False	✓	✓	✓	
api-url	URL to access the API.	OData		✓		✓	
bulk-delete-page-size-rows	Number of rows to delete per batch when bulk deleting	Shared	10000	✓	✓	✓	
bulk-insert-page-size-bytes	Approximate maximum size in bytes of batch when bulk inserting	Shared	10000000	✓	✓	✓	
bulk-insert-page-size-rows	Number of rows to insert per batch when bulk inserting	Shared	250	✓	✓	✓	
download-error-400-bad-request-max-tries	Maximum number of tries when OData server reports bad format during retrieval of data.		3	✓	✓	✓	
download-error-400-bad-request-sleep-initial-ms	Initial sleep in milliseconds between retries when OData server reports that the API server is unavailable during retrieval of data.		500	✓	✓	✓	
download-error-400-bad-request-sleep-max-ms	Maximum sleep in milliseconds between retries when OData server reports that the API server is unavailable during retrieval of data.		5000	✓	✓	✓	
download-error-400-bad-request-sleep-multiplicator	Multiplication factor for sleep between retries OData server reports that the API server is unavailable during retrieval of data.		2	✓	✓	✓	
download-error-408-request-timeout-max-tries	Maximum number of tries when the website reports a HTTP status 408.		10	✓	✓	✓	
download-error-408-request-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the website reports a HTTP status 408.		10000	✓	✓	✓	
download-error-408-request-timeout-sleep-max-ms	Maximum sleep in milliseconds between retries when the website reports a HTTP status 408.		300000	✓	✓	✓	
download-error-408-request-timeout-sleep-multiplicator	Multiplication factor for sleep between retries when the website reports a HTTP status 408.		2	✓	✓	✓	
download-error-422-bad-request-max-tries	Maximum number of tries when OData server reports unprocessable entity during retrieval of data.		30	✓	✓	✓	
download-error-422-bad-request-	Initial sleep in milliseconds between retries when OData server reports		10000	✓	✓	✓	

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Driver's File	Set from Log On
sleep-initial-ms	unprocessable entity during retrieval of data.						
download-error-422-bad-request-sleep-max-ms	Maximum sleep in milliseconds between retries when OData server reports unprocessable entity during retrieval of data.		300000	✓	✓	✓	
download-error-422-bad-request-sleep-multiplicator	Multiplication factor for sleep between retries OData server reports unprocessable entity during retrieval of data.		2	✓	✓	✓	
download-error-429-too-many-requests-max-tries	Maximum number of tries when the website reports that too many requests have been made during a timeslot of one minute or one day.		10	✓	✓	✓	
download-error-429-too-many-requests-sleep-initial-ms	Initial sleep in milliseconds between retries when the website reports that too many requests have been made during a timeslot of one minute or one day.		10000	✓	✓	✓	
download-error-429-too-many-requests-sleep-max-ms	Maximum sleep in milliseconds between retries when the website reports that too many requests have been made during a timeslot of one minute or one day.		300000	✓	✓	✓	
download-error-429-too-many-requests-sleep-multiplicator	Multiplication factor for sleep between retries when the website reports that too many requests have been made during a timeslot of one minute or one day.		2	✓	✓	✓	
download-error-502-server-unavailable-max-tries	Maximum number of tries when OData server reports a bad gateway during retrieval of data.		30	✓	✓	✓	
download-error-502-server-unavailable-sleep-initial-ms	Initial sleep in milliseconds between retries when OData server reports a bad gateway during retrieval of data.		10000	✓	✓	✓	
download-error-502-server-unavailable-sleep-max-ms	Maximum sleep in milliseconds between retries when OData server reports that a bad gateway during retrieval of data.		300000	✓	✓	✓	
download-error-502-server-unavailable-sleep-multiplicator	Multiplication factor for sleep between retries OData server reports a bad gateway during retrieval of data.		2	✓	✓	✓	
download-error-503-server-unavailable-max-tries	Maximum number of tries when OData server reports that the API server is unavailable during retrieval of data.		30	✓	✓	✓	
download-error-503-server-	Initial sleep in milliseconds between retries when OData server reports		10000	✓	✓	✓	

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
unavailable-sleep-initial-ms	that the API server is unavailable during retrieval of data.						
dow nload-error-503-server-unavailable-sleep-max-ms	Maximum sleep in milliseconds between retries when OData server reports that the API server is unavailable during retrieval of data.		300000	✓	✓	✓	
dow nload-error-503-server-unavailable-sleep-multiplicator	Multiplication factor for sleep between retries OData server reports that the API server is unavailable during retrieval of data.		2	✓	✓	✓	
dow nload-error-504-gateway-timeout-max-tries	Maximum number of tries when the website reports a gateway timeout.		10	✓	✓	✓	
dow nload-error-504-gateway-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the website reports a gateway timeout.		10000	✓	✓	✓	
dow nload-error-504-gateway-timeout-sleep-max-ms	Maximum sleep in milliseconds between retries when the website reports a gateway timeout.		300000	✓	✓	✓	
dow nload-error-504-gateway-timeout-sleep-multiplicator	Multiplication factor for sleep between retries when the website reports a gateway timeout.		2	✓	✓	✓	
dow nload-error-590-netw ork-connect-timeout-max-tries	Maximum number of tries when the website reports a HTTP status 590.		10	✓	✓	✓	
dow nload-error-590-netw ork-connect-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the website reports a HTTP status 590.		10000	✓	✓	✓	
dow nload-error-590-netw ork-connect-timeout-sleep-max-ms	Maximum sleep in milliseconds between retries when the website reports a HTTP status 590.		300000	✓	✓	✓	
dow nload-error-590-netw ork-connect-timeout-sleep-multiplicator	Multiplication factor for sleep between retries when the website reports a HTTP status 590.		2	✓	✓	✓	
dow nload-error-599-netw ork-connect-timeout-max-tries	Maximum number of tries when the website reports a HTTP status 599.		10	✓	✓	✓	
dow nload-error-599-netw ork-connect-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the website reports a HTTP status 599.		10000	✓	✓	✓	
dow nload-error-599-netw ork-	Maximum sleep in milliseconds between retries when the website		300000	✓	✓	✓	

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Driver's File	Set from Log On
connect-timeout-sleep-max-ms	reports a HTTP status 599.						
download-error-599-network-connect-timeout-sleep-multiplicator	Multiplication factor for sleep between retries when the website reports a HTTP status 599.		2	✓	✓	✓	
download-error-argument-exception-max-tries	Maximum number of tries when an argument exception is returned when downloading a blob.		10	✓	✓	✓	
download-error-argument-exception-sleep-initial-ms	Initial sleep in milliseconds between retries when an argument exception is returned when downloading a blob.		10000	✓	✓	✓	
download-error-argument-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when an argument exception is returned when downloading a blob.		300000	✓	✓	✓	
download-error-argument-exception-sleep-multiplicator	Multiplication factor for sleep between retries when an argument exception is returned when downloading a blob.		2	✓	✓	✓	
download-error-internet-download-max-tries	Maximum number of tries when the Internet connection seems down during retrieval of data.		10	✓	✓	✓	
download-error-internet-download-sleep-initial-ms	Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.		10000	✓	✓	✓	
download-error-internet-download-sleep-max-ms	Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.		300000	✓	✓	✓	
download-error-internet-download-sleep-multiplicator	Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.		2	✓	✓	✓	
download-error-io-exception-max-tries	Maximum number of tries when a network I/O connection failure occurs during retrieval of data.		10	✓	✓	✓	
download-error-io-exception-sleep-initial-ms	Initial sleep in milliseconds between retries when a network I/O connection failure occurs during retrieval of data.		10000	✓	✓	✓	
download-error-io-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when a network I/O connection failure occurs during retrieval of data.		300000	✓	✓	✓	
download-error-io-exception-sleep-multiplicator	Multiplication factor for sleep between retries when a network I/O connection failure occurs during retrieval of data.		2	✓	✓	✓	

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Driver's File	Set from Log On
download-error-json-exception-max-tries	Maximum number of tries when an invalid JSON body is returned.		3	✓	✓	✓	
download-error-json-exception-sleep-initial-ms	Initial sleep in milliseconds between retries when an invalid JSON body is returned.		1000	✓	✓	✓	
download-error-json-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when an invalid JSON body is returned.		10000	✓	✓	✓	
download-error-json-exception-sleep-multiplicator	Multiplication factor for sleep between retries when an invalid JSON body is returned.		2	✓	✓	✓	
download-error-other-exception-max-tries	Maximum number of tries when an unqualified error occurs during retrieval of data.		3	✓	✓	✓	
download-error-other-exception-sleep-initial-ms	Initial sleep in milliseconds between retries when an unqualified error occurs during retrieval of data.		10000	✓	✓	✓	
download-error-other-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when an unqualified error occurs during retrieval of data.		300000	✓	✓	✓	
download-error-other-exception-sleep-multiplicator	Multiplication factor for sleep between retries when an unqualified error occurs during retrieval of data.		2	✓	✓	✓	
download-error-socket-exception-max-tries	Maximum number of tries when the network connection is forcibly dropped during retrieval of data.		10	✓	✓	✓	
download-error-socket-exception-sleep-initial-ms	Initial sleep in milliseconds between retries when the network connection is forcibly dropped during retrieval of data.		10000	✓	✓	✓	
download-error-socket-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when the network connection is forcibly dropped during retrieval of data.		300000	✓	✓	✓	
download-error-socket-exception-sleep-multiplicator	Multiplication factor for sleep between retries when the network connection is forcibly dropped during retrieval of data.		2	✓	✓	✓	
download-error-web-exception-max-tries	Maximum number of tries when a web connection failure occurs during retrieval of data.		10	✓	✓	✓	
download-error-web-exception-sleep-initial-ms	Initial sleep in milliseconds between retries when a web connection failure occurs during retrieval of data.		10000	✓	✓	✓	
download-error-web-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when a web connection failure occurs during retrieval of data.		300000	✓	✓	✓	

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Driver's File	Set from Log On
dow nload-error-w eb-exception-sleep-multiplicator	Multiplication factor for sleep between retries when a web connection failure occurs during retrieval of data.		2	✓	✓	✓	
dow nload-error-w eb-not-implemented-max-tries	Maximum number of tries when the connection reports not implemented.		1	✓	✓	✓	
dow nload-error-w eb-not-implemented-sleep-initial-ms	Initial sleep in milliseconds between retries when the connection reports not implemented.		10000	✓	✓	✓	
dow nload-error-w eb-not-implemented-sleep-max-ms	Maximum sleep in milliseconds between retries when the connection reports not implemented.		300000	✓	✓	✓	
dow nload-error-w eb-not-implemented-sleep-multiplicator	Multiplication factor for sleep between retries when the connection reports not implemented.		2	✓	✓	✓	
dow nload-error-w eb-timeout-max-tries	Maximum number of tries when the connection reports a timeout.		10	✓	✓	✓	
dow nload-error-w eb-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the connection reports a timeout.		1000	✓	✓	✓	
dow nload-error-w eb-timeout-sleep-max-ms	Maximum sleep in milliseconds between retries when the connection reports a timeout.		30000	✓	✓	✓	
dow nload-error-w eb-timeout-sleep-multiplicator	Multiplication factor for sleep between retries when the connection reports a timeout.		2	✓	✓	✓	
dow nload-error-w eb-unauthorized-max-tries	Maximum number of tries when the connection reports an unauthorized error.		1	✓	✓	✓	
dow nload-error-w eb-unauthorized-sleep-initial-ms	Initial sleep in milliseconds between retries when the connection reports an unauthorized error.		10000	✓	✓	✓	
dow nload-error-w eb-unauthorized-sleep-max-ms	Maximum sleep in milliseconds between retries when the connection reports an unauthorized error.		300000	✓	✓	✓	
dow nload-error-w eb-unauthorized-sleep-multiplicator	Multiplication factor for sleep between retries when the connection reports an unauthorized error.		2	✓	✓	✓	
force-case-sensitive-identifiers	Consider identifiers as case-sensitive independent of the platform capabilities.	Shared	False	✓	✓	✓	
forced-casing-identifiers	Forced casing of identifiers. Choose from Unset, Lower, Upper and	Shared		✓	✓	✓	

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
	Mixed.						
http-disk-cache-compression-level	Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.	Shared	5	✓	✓	✓	
http-disk-cache-directory	Directory where HTTP cache is stored.	Shared	C:\Users\gle3.WS212\Invasive\Cache\http\gle3\shared	✓	✓	✓	
http-disk-cache-ignore-write-errors	Whether to ignore write errors to disk cache.	Shared	False	✓	✓	✓	
http-disk-cache-max-age-sec	Maximum acceptable age in seconds for use of data in the HTTP disk cache.	Shared	2592000	✓	✓	✓	
http-get-timeout-max-ms	HTTP GET maximum timeout on retry (ms).		300000	✓	✓	✓	
http-get-timeout-ms	HTTP GET timeout (ms).		60000	✓	✓	✓	
http-memory-cache-compression-level	Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.	OData	5	✓	✓	✓	
http-memory-cache-max-age-sec	Maximum acceptable age in seconds for use of data in the HTTP memory cache.	OData	14400	✓	✓	✓	
http-post-timeout-max-ms	HTTP POST maximum timeout on retry (ms).		300000	✓	✓	✓	
http-post-timeout-ms	HTTP POST timeout (ms).		300000	✓	✓	✓	
ignore-http-400-errors	Ignore HTTP 400 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-401-errors	Ignore HTTP 401 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-402-errors	Ignore HTTP 402 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-403-errors	Ignore HTTP 403 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-404-errors	Ignore HTTP 404 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-422-errors	Ignore HTTP 422 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-429-errors	Ignore HTTP 429 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Driver's File	Set from Log On
ignore-http-500-errors	Ignore HTTP 500 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-502-errors	Ignore HTTP 502 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-503-errors	Ignore HTTP 503 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
invalid-json-on-get-max-tries	Maximum number of tries when the JSON received on GET is invalid.		10	✓	✓	✓	
invalid-json-on-get-sleep-initial-ms	Initial sleep in milliseconds between retries when the JSON received on GET is invalid.		10000	✓	✓	✓	
invalid-json-on-get-sleep-max-ms	Maximum sleep in milliseconds between retries when the JSON received on GET is invalid.		300000	✓	✓	✓	
invalid-json-on-get-sleep-multiplicator	Multiplication factor for sleep between retries when the JSON received on GET is invalid.		2	✓	✓	✓	
invalid-json-on-post-max-tries	Maximum number of tries when the JSON received on POST is invalid.		1	✓	✓	✓	
invalid-json-on-post-sleep-initial-ms	Initial sleep in milliseconds between retries when the JSON received on POST is invalid.		10000	✓	✓	✓	
invalid-json-on-post-sleep-max-ms	Maximum sleep in milliseconds between retries when the JSON received on POST is invalid.		300000	✓	✓	✓	
invalid-json-on-post-sleep-multiplicator	Multiplication factor for sleep between retries when the JSON received on POST is invalid.		2	✓	✓	✓	
invantive-sql-compress-sparse-arrays	Whether to compress sparse arrays in result sets during compression.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-correct-invalid-date	Whether to correct dates considered invalid since they are before 01-01-1753. When nullable, they are removed. Otherwise they are replaced by 01-01-1753.	SQL Engine V1	False	✓	✓	✓	
invantive-sql-forward-filters-to-data-containers	Whether to forward filters to data containers.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-share-byte-arrays	Whether to share the memory used by identical byte arrays in result sets during compression.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-share-strings	Whether to share the memory used by identical strings in result sets during compression.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-shuffle-fetch	Whether to shuffle results fetched from data containers.	SQL Engine V1	False	✓	✓	✓	

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
results-data-containers							
invantive-use-cache	Whether to cache the results of a query.	SQL Engine V1	True	✓	✓	✓	
join-set-points-per-request	Maximum number of values in a request when executing a join set.	OData	60	✓	✓	✓	
limit-partition-calls-left	Minimum number of remaining API calls on a partition towards a hard limit. When below, an error is raised.	OData	500	✓	✓	✓	
log-native-calls-to-disk-max-events	Maximum number of events to register from last activation.	Shared		✓	✓	✓	
log-native-calls-to-disk-max-seconds	Maximum number of seconds to register from last activation.	Shared		✓	✓	✓	
log-native-calls-to-disk-on-error	Registers native calls to data container backend as disk files when an error occurred.	Shared	False	✓	✓	✓	
log-native-calls-to-disk-on-success	Registers native calls to data container backend as disk files when successful.	Shared	False	✓	✓	✓	
log-native-calls-to-trace	Log native calls to data container backend on the trace.	Shared	False	✓	✓	✓	
maximum-length-identifiers	Non-default maximum length in characters of identifier names.	Shared		✓	✓	✓	
max-odata-filters	The maximum number of OData filter elements.	OData	100	✓	✓	✓	
max-url-length-accepted	The maximum accepted URL length before raising an error.	Shared	8000	✓	✓	✓	
max-url-length-desired	The maximum desired URL length.	Shared	8000	✓	✓	✓	
metadata-cache-max-age-sec	Maximum acceptable age in seconds for re-use of metadata.	OData		✓	✓	✓	
oauth-unauthorized-max-tries	Maximum number of tries when an OAuth exception occurs.	OData	2	✓	✓	✓	
oauth-unauthorized-sleep-initial-ms	Initial sleep in milliseconds between OAuth reauthentication tries when the OAuth authentication fails.	OData	10000	✓	✓	✓	
oauth-unauthorized-sleep-max-ms	Maximum sleep in milliseconds between OAuth reauthentication tries when the OAuth authentication fails.	OData	1000	✓	✓	✓	
oauth-unauthorized-sleep-multiplicator	Multiplication factor for sleep between OAuth reauthentication tries when the OAuth authentication fails.	OData	2	✓	✓	✓	
partition-slot-based-rate-limit-length-ms	Total length in ms across all slots of a partition-based rate limit.	Shared	60000	✓		✓	
partition-slot-based-rate-limit-slots	Number of slots per partition-based rate limit. Null means no slot-based	Shared		✓		✓	

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Driver's File	Set from Log On
	rate limit						
pre-request-delay-ms	Pre-request delay in milliseconds per request.	Shared	0	✓	✓	✓	
requested-page-size	Preferred number of rows to exchange per round trip; only effective on limited platforms such as AFAS Online	Shared		✓	✓	✓	
requests-parallel-max	Maximum number of parallel data requests from individual partitions on the data container.	Shared	32	✓	✓	✓	
simulate-http-400-errors	Simulate HTTP 400 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-400-errors-percentage	Percentage of simulated HTTP 400 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-401-errors	Simulate HTTP 401 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-401-errors-percentage	Percentage of simulated HTTP 401 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-403-errors	Simulate HTTP 403 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-403-errors-percentage	Percentage of simulated HTTP 403 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-408-errors	Simulate HTTP 408 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-408-errors-percentage	Percentage of simulated HTTP 408 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-429-errors	Simulate HTTP 429 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-429-errors-percentage	Percentage of simulated HTTP 429 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-500-errors	Simulate HTTP 500 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-500-errors-percentage	Percentage of simulated HTTP 500 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-502-errors	Simulate HTTP 502 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Driver's File	Set from Log On
simulate-http-502-errors-percentage	Percentage of simulated HTTP 502 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-503-errors	Simulate HTTP 503 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-503-errors-percentage	Percentage of simulated HTTP 503 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-protocol-errors	Simulate HTTP protocol errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-protocol-errors-percentage	Percentage of simulated HTTP protocol errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-timeout-errors	Simulate HTTP timeout errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-timeout-errors-percentage	Percentage of simulated HTTP timeout errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
slot-based-rate-limit-length-ms	Total length in ms across all slots of a slot-based rate limit.	Shared	60000	✓		✓	
slot-based-rate-limit-slots	Number of slots of a slot-based rate limit. Null means no slot-based rate limit	Shared		✓		✓	
standardize-identifiers	Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.	Shared	True	✓	✓	✓	
standardize-identifiers-casing	Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.	Shared	True	✓	✓	✓	
use-batch-insert	Whether to use batch insert.	OData	True	✓	✓	✓	
use-http-disk-cache-read	Whether to use HTTP responses from previous queries stored on disk to answer the current query.	Shared	True	✓	✓	✓	
use-http-disk-cache-write	Whether to memorize HTTP responses on disk.	Shared	True	✓	✓	✓	
use-http-memory-cache-read	Whether to use HTTP responses from previous queries stored in memory that can answer the current query.	OData	True	✓	✓	✓	
use-http-memory-cache-write	Whether to memorize HTTP responses from previous queries for use by future queries.	OData	True	✓	✓	✓	

3 Schema: Native

3.1 Tables

3.1.1 NATIVEPLATFORMSCALARREQUESTS: Open Exchange Rates Native Platform Scalar Requests

Direct access to native API.

Catalog: OpenExchangeRates

Schema: Native

Alias: npt

Label: Native Platform Scalar Requests

Documentation:

The NativePlatformScalarRequests table provides direct access to the native API protocol over an established connection to the Open Exchange Rates API server. It will contain a new row for every row inserted with a native API request in PAYLOAD_TEXT with the results of unaltered forwarding of the payload to the Open Exchange Rates API server.

Retrieve: true

Insert: true

Update: false

Delete: false

View Columns

The columns of the view NATIVEPLATFORMSCALARREQUESTS are shown below. Each column has an SQL data type. A new non-null value must be provided for every required column at all times during insert.

Name	Data Type	Label	Required	Documentation
BLOB_PREFERRED	boolean	BLOB Preferred	<input checked="" type="checkbox"/>	Indicator whether a BLOB result is preferred over text.
BOL_RESPONSE_CACHE_MAX_AGE_SEC	int32	Response Cache Maximum Age (sec)	<input type="checkbox"/>	Maximum age in seconds of Bridge Online response cache entries to be used.
CONTENT_TYPE	string(240)	Content Type	<input type="checkbox"/>	
DATE_ENDED	datetime	End Date	<input checked="" type="checkbox"/>	
DATE_STARTED	datetime	Start Date	<input checked="" type="checkbox"/>	
DRY_RUN	boolean	Run without Actions	<input checked="" type="checkbox"/>	
DURATION_MS	int32	Duration (ms)	<input checked="" type="checkbox"/>	
ERROR_MESSAGE_CODE	string(30)	Error Message Code	<input type="checkbox"/>	
ERROR_MESSAGE_TEXT	string(32000)	Error Message Text	<input type="checkbox"/>	
FAIL_ON_ERROR	boolean	Fail on Error	<input checked="" type="checkbox"/>	Whether to raise an exception when processing the native request triggered an error from the provider.
HTTP_DISK_CACHE_MAX_AGE_SEC	int32	HTTP Disk Cache Maximum Age (sec)	<input type="checkbox"/>	Maximum age in seconds of HTTP disk cache entries to be used.

Name	Data Type	Label	Required	Documentation
HTTP_DISK_CACHE_SAVE	boolean	Save HTTP Disk Cache	<input type="checkbox"/>	Whether results can be stored in HTTP disk cache.
HTTP_DISK_CACHE_USE	boolean	Use HTTP Disk Cache	<input type="checkbox"/>	Whether results can be fetched from HTTP disk cache.
HTTP_MEMORY_CACHE_MAX_AGE_SEC	int32	HTTP Memory Cache Maximum Age (sec)	<input type="checkbox"/>	Maximum age in seconds of HTTP memory cache entries to be used.
HTTP_MEMORY_CACHE_SAVE	boolean	Save HTTP Memory Cache	<input type="checkbox"/>	Whether results can be stored in HTTP memory cache.
HTTP_MEMORY_CACHE_USE	boolean	Use HTTP Memory Cache	<input type="checkbox"/>	Whether results can be fetched from HTTP memory cache.
HTTP_METHOD	string(30)	HTTP Method	<input type="checkbox"/>	
HTTP_STATUS_CODE	int16	HTTP Status Code	<input type="checkbox"/>	
ORIG_SYSTEM_GROUP	string(4000)	Original System Group	<input type="checkbox"/>	
ORIG_SYSTEM_REFERENCE	string(4000)	Original System Reference	<input type="checkbox"/>	
PAYLOAD_TEXT	string	Payload	<input type="checkbox"/>	
RESULT_BLOB	byte[]	Result BLOB	<input type="checkbox"/>	
RESULT_DATE_TIME_UTC	datetime		<input type="checkbox"/>	
RESULT_NUMBER	decimal		<input type="checkbox"/>	
RESULT_TEXT	string	Result Text	<input type="checkbox"/>	
SUCCESSFUL	boolean	Successful	<input checked="" type="checkbox"/>	
TIMEOUT_SEC	int32	Timeout (sec)	<input type="checkbox"/>	Timeout in seconds.
TRANSACTION_ID	int32	Transaction ID	<input checked="" type="checkbox"/>	Incrementing ID of the transaction.
URL	string(4000)	URL	<input type="checkbox"/>	

4 Schema: OpenExchangeRates

4.1 Tables

4.1.1 ConvertAmount: Open Exchange Rates Convert Amount

Catalog: OpenExchangeRates

Schema: OpenExchangeRates

Label: Convert Amount

Documentation:

Convert any money value from one currency to another at the latest API rates using the /convert API endpoint. This feature works differently to other endpoints in our API, using a REST-based approach and an alternate response format. Currency conversion requests are currently available for clients on the Unlimited plan.

This is a read-only table function. The Open Exchange Rates API may not support changing the data or the Invariantive SQL driver for Open Exchange Rates does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the Open Exchange Rates API.

Select Open Exchange Rates API URL: `convert/{value}/{from}/{to}`

Insert Open Exchange Rates API URL: `convert/{value}/{from}/{to}`

Update Open Exchange Rates API URL: `convert/{value}/{from}/{to}`

Delete Open Exchange Rates API URL: `convert/{value}/{from}/{to}`

Field Selection Method: NotRequired

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function `ConvertAmount`. A value must be provided at all times for required parameters, but optional parameters in general do not need to have a value and the execution will default to a pre-defined behaviour. Values can be specified by position and by name. In both cases, all parameters not specified will be treated using their default values.

Value specification by position is done by listing all values from the first to the last needed value. For example with ``select * from table(value1, value2, value3)`` on a table with four parameters will use the default value for the fourth parameter and the specified values for the first three.

Value specification by name is done by listing all values that require a value. For example with ``select * from table(name1 => value1, name3 => value3)`` on the same table will use the default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
from	string	<input checked="" type="checkbox"/>		The base ('from') currency (3-letter code).
to	string	<input checked="" type="checkbox"/>		The target ('to') currency (3-letter code).
value	string	<input checked="" type="checkbox"/>		The value to be converted.

Table Function Columns

The columns of the table function `ConvertAmount` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
amount	decimal	Amount	<input type="checkbox"/>	
from	string	From	<input type="checkbox"/>	
query	string	Query	<input type="checkbox"/>	
rate	decimal	Rate	<input type="checkbox"/>	
response	decimal	Response	<input type="checkbox"/>	
timestamp	datetime		<input type="checkbox"/>	
to	string	To	<input type="checkbox"/>	

4.1.2 Currencies: Open Exchange Rates Currencies

Catalog: OpenExchangeRates

Schema: OpenExchangeRates

Label: Currencies

Documentation:

List of all currency symbols available from the Open Exchange Rates API, along with their full names, for use in your integration. This list will always mirror the currencies available in the latest rates (given as their 3-letter codes).

This is a read-only table function. The Open Exchange Rates API may not support changing the data or the Invantive SQL driver for Open Exchange Rates does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the Open Exchange Rates API.

Select Open Exchange Rates API URL: `currencies.json?show_alternative={show_alternative}`

Insert Open Exchange Rates API URL: `currencies.json?show_alternative={show_alternative}`

Update Open Exchange Rates API URL: `currencies.json?show_alternative={show_alternative}`

Delete Open Exchange Rates API URL: `currencies.json?show_alternative={show_alternative}`

Field Selection Method: NotRequired

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function `Currencies`. A value must be provided at all times for required parameters, but optional parameters in general do not need to have a value and the execution will default to a pre-defined behaviour. Values can be specified by position and by name. In both cases, all parameters not specified will be treated using their default values.

Value specification by position is done by listing all values from the first to the last needed value. For example with ``select * from table(value1, value2, value3)`` on a table with four parameters will use the default value for the fourth parameter and the specified values for the first three.

Value specification by name is done by listing all values that require a value. For example with ``select * from table(name1 => value1, name3 => value3)`` on the same table will use the default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
<code>show_alternative</code>	boolean	<input type="checkbox"/>	True	Include alternative currencies.

Table Function Columns

The columns of the table function `Currencies` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
AED	string		<input type="checkbox"/>	
AFN	string		<input type="checkbox"/>	

Name	Data Type	Label	Required	Documentation
ALL	string		<input type="checkbox"/>	
AMD	string		<input type="checkbox"/>	
ANG	string		<input type="checkbox"/>	
AOA	string		<input type="checkbox"/>	
ARS	string		<input type="checkbox"/>	
AUD	string		<input type="checkbox"/>	
AWG	string		<input type="checkbox"/>	
AZN	string		<input type="checkbox"/>	
BAM	string		<input type="checkbox"/>	
BBD	string		<input type="checkbox"/>	
BDT	string		<input type="checkbox"/>	
BGN	string		<input type="checkbox"/>	
BHD	string		<input type="checkbox"/>	
BIF	string		<input type="checkbox"/>	
BMD	string		<input type="checkbox"/>	
BND	string		<input type="checkbox"/>	
BOB	string		<input type="checkbox"/>	
BRL	string		<input type="checkbox"/>	
BSD	string		<input type="checkbox"/>	
BTC	string		<input type="checkbox"/>	
BTN	string		<input type="checkbox"/>	
BTS	string		<input type="checkbox"/>	
BWP	string		<input type="checkbox"/>	
BYN	string		<input type="checkbox"/>	
BZD	string		<input type="checkbox"/>	
CAD	string		<input type="checkbox"/>	
CDF	string		<input type="checkbox"/>	
CHF	string		<input type="checkbox"/>	
CLF	string		<input type="checkbox"/>	
CLP	string		<input type="checkbox"/>	
CNH	string		<input type="checkbox"/>	
CNY	string		<input type="checkbox"/>	
COP	string		<input type="checkbox"/>	
CRC	string		<input type="checkbox"/>	
CUC	string		<input type="checkbox"/>	
CUP	string		<input type="checkbox"/>	
CVE	string		<input type="checkbox"/>	
CZK	string		<input type="checkbox"/>	
DASH	string		<input type="checkbox"/>	
DJF	string		<input type="checkbox"/>	
DKK	string		<input type="checkbox"/>	

Name	Data Type	Label	Required	Documentation
DOGE	string		<input type="checkbox"/>	
DOP	string		<input type="checkbox"/>	
DZD	string		<input type="checkbox"/>	
EAC	string		<input type="checkbox"/>	
EGP	string		<input type="checkbox"/>	
EMC	string		<input type="checkbox"/>	
ERN	string		<input type="checkbox"/>	
ETB	string		<input type="checkbox"/>	
ETH	string		<input type="checkbox"/>	
EUR	string		<input type="checkbox"/>	
FCT	string		<input type="checkbox"/>	
FJD	string		<input type="checkbox"/>	
FKP	string		<input type="checkbox"/>	
FTC	string		<input type="checkbox"/>	
GBP	string		<input type="checkbox"/>	
GEL	string		<input type="checkbox"/>	
GGP	string		<input type="checkbox"/>	
GHS	string		<input type="checkbox"/>	
GIP	string		<input type="checkbox"/>	
GMD	string		<input type="checkbox"/>	
GNF	string		<input type="checkbox"/>	
GTQ	string		<input type="checkbox"/>	
GYD	string		<input type="checkbox"/>	
HKD	string		<input type="checkbox"/>	
HNL	string		<input type="checkbox"/>	
HRK	string		<input type="checkbox"/>	
HTG	string		<input type="checkbox"/>	
HUF	string		<input type="checkbox"/>	
IDR	string		<input type="checkbox"/>	
ILS	string		<input type="checkbox"/>	
IMP	string		<input type="checkbox"/>	
INR	string		<input type="checkbox"/>	
IQD	string		<input type="checkbox"/>	
IRR	string		<input type="checkbox"/>	
ISK	string		<input type="checkbox"/>	
JEP	string		<input type="checkbox"/>	
JMD	string		<input type="checkbox"/>	
JOD	string		<input type="checkbox"/>	
JPY	string		<input type="checkbox"/>	
KES	string		<input type="checkbox"/>	
KGS	string		<input type="checkbox"/>	

Name	Data Type	Label	Required	Documentation
KHR	string		<input type="checkbox"/>	
KMF	string		<input type="checkbox"/>	
KPW	string		<input type="checkbox"/>	
KRW	string		<input type="checkbox"/>	
KWD	string		<input type="checkbox"/>	
KYD	string		<input type="checkbox"/>	
KZT	string		<input type="checkbox"/>	
LAK	string		<input type="checkbox"/>	
LBP	string		<input type="checkbox"/>	
LD	string		<input type="checkbox"/>	
LKR	string		<input type="checkbox"/>	
LRD	string		<input type="checkbox"/>	
LSL	string		<input type="checkbox"/>	
LTC	string		<input type="checkbox"/>	
LYD	string		<input type="checkbox"/>	
MAD	string		<input type="checkbox"/>	
MDL	string		<input type="checkbox"/>	
MGA	string		<input type="checkbox"/>	
MKD	string		<input type="checkbox"/>	
MMK	string		<input type="checkbox"/>	
MNT	string		<input type="checkbox"/>	
MOP	string		<input type="checkbox"/>	
MRO	string		<input type="checkbox"/>	
MRU	string		<input type="checkbox"/>	
MUR	string		<input type="checkbox"/>	
MVR	string		<input type="checkbox"/>	
MWK	string		<input type="checkbox"/>	
MXN	string		<input type="checkbox"/>	
MYR	string		<input type="checkbox"/>	
MZN	string		<input type="checkbox"/>	
NAD	string		<input type="checkbox"/>	
NGN	string		<input type="checkbox"/>	
NIO	string		<input type="checkbox"/>	
NMC	string		<input type="checkbox"/>	
NOK	string		<input type="checkbox"/>	
NPR	string		<input type="checkbox"/>	
NVC	string		<input type="checkbox"/>	
NXT	string		<input type="checkbox"/>	
NZD	string		<input type="checkbox"/>	
OMR	string		<input type="checkbox"/>	
PAB	string		<input type="checkbox"/>	

Name	Data Type	Label	Required	Documentation
PEN	string		<input type="checkbox"/>	
PGK	string		<input type="checkbox"/>	
PHP	string		<input type="checkbox"/>	
PKR	string		<input type="checkbox"/>	
PLN	string		<input type="checkbox"/>	
PPC	string		<input type="checkbox"/>	
PYG	string		<input type="checkbox"/>	
QAR	string		<input type="checkbox"/>	
RON	string		<input type="checkbox"/>	
RSD	string		<input type="checkbox"/>	
RUB	string		<input type="checkbox"/>	
RWF	string		<input type="checkbox"/>	
SAR	string		<input type="checkbox"/>	
SBD	string		<input type="checkbox"/>	
SCR	string		<input type="checkbox"/>	
SDG	string		<input type="checkbox"/>	
SEK	string		<input type="checkbox"/>	
SGD	string		<input type="checkbox"/>	
SHP	string		<input type="checkbox"/>	
SLL	string		<input type="checkbox"/>	
SOS	string		<input type="checkbox"/>	
SRD	string		<input type="checkbox"/>	
SSP	string		<input type="checkbox"/>	
STD	string		<input type="checkbox"/>	
STN	string		<input type="checkbox"/>	
STR	string		<input type="checkbox"/>	
SVC	string		<input type="checkbox"/>	
SYP	string		<input type="checkbox"/>	
SZL	string		<input type="checkbox"/>	
THB	string		<input type="checkbox"/>	
TJS	string		<input type="checkbox"/>	
TMT	string		<input type="checkbox"/>	
TND	string		<input type="checkbox"/>	
TOP	string		<input type="checkbox"/>	
TRY	string		<input type="checkbox"/>	
TTD	string		<input type="checkbox"/>	
TWD	string		<input type="checkbox"/>	
TZS	string		<input type="checkbox"/>	
UAH	string		<input type="checkbox"/>	
UGX	string		<input type="checkbox"/>	
USD	string		<input type="checkbox"/>	

Name	Data Type	Label	Required	Documentation
UYU	string		<input type="checkbox"/>	
UZS	string		<input type="checkbox"/>	
VEF_BLKMKMT	string		<input type="checkbox"/>	
VEF_DICOM	string		<input type="checkbox"/>	
VEF_DIPRO	string		<input type="checkbox"/>	
VEF	string		<input type="checkbox"/>	
VES	string		<input type="checkbox"/>	
VND	string		<input type="checkbox"/>	
VTC	string		<input type="checkbox"/>	
VUV	string		<input type="checkbox"/>	
WST	string		<input type="checkbox"/>	
XAF	string		<input type="checkbox"/>	
XAG	string		<input type="checkbox"/>	
XAU	string		<input type="checkbox"/>	
XCD	string		<input type="checkbox"/>	
XDR	string		<input type="checkbox"/>	
XMR	string		<input type="checkbox"/>	
XOF	string		<input type="checkbox"/>	
XPD	string		<input type="checkbox"/>	
XPF	string		<input type="checkbox"/>	
XPM	string		<input type="checkbox"/>	
XPT	string		<input type="checkbox"/>	
XRP	string		<input type="checkbox"/>	
YER	string		<input type="checkbox"/>	
ZAR	string		<input type="checkbox"/>	
ZMW	string		<input type="checkbox"/>	
ZWL	string		<input type="checkbox"/>	

4.1.3 HistoricalRatesByDateAndBase

Catalog: OpenExchangeRates

Schema: OpenExchangeRates

Documentation:

Provides a standard response object containing all the conversion rates for all available symbols/currencies on your requested date, labeled by their international-standard 3-letter ISO currency codes. Historical data are End-Of-Day values, and are currently available from Jan 1st, 1999.

This is a read-only table function. The Open Exchange Rates API may not support changing the data or the Invariantive SQL driver for Open Exchange Rates does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the Open Exchange Rates API.

Select Open Exchange Rates API URL: `historical/{date}.json?base={base}&show_alternative={show_alternative}`

Insert Open Exchange Rates API URL: `historical/{date}.json?base={base}&show_alternative={show_alternative}`

Update Open Exchange Rates API URL: `historical/{date}.json?base={base}&show_alternative={show_alternative}`

Delete Open Exchange Rates API URL: `historical/{date}.json?base={base}&show_alternative={show_alternative}`

Field Selection Method: NotRequired

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function `HistoricalRatesByDateAndBase`. A value must be provided at all times for required parameters, but optional parameters in general do not need to have a value and the execution will default to a pre-defined behaviour. Values can be specified by position and by name. In both cases, all parameters not specified will be treated using their default values.

Value specification by position is done by listing all values from the first to the last needed value. For example with ``select * from table(value1, value2, value3)`` on a table with four parameters will use the default value for the fourth parameter and the specified values for the first three.

Value specification by name is done by listing all values that require a value. For example with ``select * from table(name1 => value1, name3 => value3)`` on the same table will use the default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
base	string	<input type="checkbox"/>	USD	Change base currency (3-letter code, default: USD)
date	datetime	<input checked="" type="checkbox"/>		Date without time.
show_alternative	boolean	<input type="checkbox"/>	True	Extend returned values with alternative, black market and digital currency rates

Table Function Columns

The columns of the table function `HistoricalRatesByDateAndBase` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
base	string		<input type="checkbox"/>	
name	string		<input type="checkbox"/>	
rate	decimal	Rate	<input type="checkbox"/>	
timestamp_utc	datetime	Timestamp (UTC)	<input type="checkbox"/>	

4.1.4 LatestRatesByBase

Catalog: OpenExchangeRates

Schema: OpenExchangeRates

Documentation:

Provides a standard response object containing all the conversion rates for all of the currently available symbols/currencies, labeled by their international-standard 3-letter ISO currency codes. The latest rates will always be the most up -to-date data available on your plan.

This is a read-only table function. The Open Exchange Rates API may not support changing the data or the Invariantive SQL driver for Open Exchange Rates does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the Open Exchange Rates API.

Select Open Exchange Rates API URL: `latest.json?base={base}&show_alternative={show_alternative}`

Insert Open Exchange Rates API URL: `latest.json?base={base}&show_alternative={show_alternative}`

Update Open Exchange Rates API URL: `latest.json?base={base}&show_alternative={show_alternative}`

Delete Open Exchange Rates API URL: `latest.json?base={base}&show_alternative={show_alternative}`

Field Selection Method: NotRequired

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function `LatestRatesByBase`. A value must be provided at all times for required parameters, but optional parameters in general do not need to have a value and the execution will default to a pre-defined behaviour. Values can be specified by position and by name. In both cases, all parameters not specified will be treated using their default values.

Value specification by position is done by listing all values from the first to the last needed value. For example with ``select * from table(value1, value2, value3)`` on a table with four parameters will use the default value for the fourth parameter and the specified values for the first three.

Value specification by name is done by listing all values that require a value. For example with ``select * from table(name1 => value1, name3 => value3)`` on the same table will use the default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
base	string	<input type="checkbox"/>	USD	Change base currency (3-letter code, default: USD).
show_alternative	boolean	<input type="checkbox"/>	True	Extend returned values with alternative, black market and digital currency rates.

Table Function Columns

The columns of the table function `LatestRatesByBase` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
base	string		<input type="checkbox"/>	
name	string		<input type="checkbox"/>	
rate	decimal	Rate	<input type="checkbox"/>	
timestamp_utc	datetime	Timestamp (UTC)	<input type="checkbox"/>	

4.1.5 OpenHighLowClose: Open Exchange Rates Exchange Rates across a Day: Open, High, Low and Close

Catalog: `OpenExchangeRates`

Schema: `OpenExchangeRates`

Label: Exchange Rates across a Day: Open, High, Low and Close

Documentation:

Get historical Open, High Low, Close (OHLC) and Average exchange rates for a given time period, ranging from 1 month to 1 minute, where available. Values for 'high', 'low' and 'average' are based on all recorded prices we published (up to every 1 second). OHLC requests are currently available for clients of our VIP Platinum tier.

This is a read-only table function. The Open Exchange Rates API may not support changing the data or the Invariantive SQL driver for Open Exchange Rates does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the Open Exchange Rates API.

Select Open Exchange Rates API URL: `ohlcv.json?start_time={start_time}&period={period}&base={base}`

Insert Open Exchange Rates API URL: `ohlcv.json?start_time={start_time}&period={period}&base={base}`

Update Open Exchange Rates API URL: `ohlcv.json?start_time={start_time}&period={period}&base={base}`

Delete Open Exchange Rates API URL: `ohlcv.json?start_time={start_time}&period={period}&base={base}`

Field Selection Method: `NotRequired`

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function `OpenHighLowClose`. A value must be provided at all times for required parameters, but optional parameters in general do not need to have a value and the execution will default to a pre-defined behaviour. Values can be specified by position and by name. In both cases, all parameters not specified will be treated using their default values.

Value specification by position is done by listing all values from the first to the last needed value. For example with ``select * from table(value1, value2, value3)`` on a table with four parameters will use the default value for the fourth parameter and the specified values for the first three.

Value specification by name is done by listing all values that require a value. For example with `select * from table(name1 => value1, name3 => value3)` on the same table will use the default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
base	string	<input type="checkbox"/>	USD	Change base currency (3-letter code, default: USD).
period	string	<input checked="" type="checkbox"/>		The requested period (starting on the start_time), e.g. 1m, 30m, 1d.
start_time	datetime	<input checked="" type="checkbox"/>		The start time for the requested OHLC period (ISO-8601 format, UTC only).

Table Function Columns

The columns of the table function `OpenHighLowClose` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
base	string		<input type="checkbox"/>	
end_time	datetime		<input type="checkbox"/>	
EUR_average	decimal		<input type="checkbox"/>	
EUR_close	decimal		<input type="checkbox"/>	
EUR_high	decimal		<input type="checkbox"/>	
EUR_low	decimal		<input type="checkbox"/>	
EUR_open	decimal		<input type="checkbox"/>	
start_time	datetime		<input type="checkbox"/>	

4.1.6 RateTimeSeriesByDateRangeAndBase: Open Exchange Rates Exchange Rate Time Series by Date Range and Base Currency

Catalog: OpenExchangeRates

Schema: OpenExchangeRates

Label: Exchange Rate Time Series by Date Range and Base Currency

Documentation:

Get historical exchange rates for a given time period, where available, using the time series / bulk download API endpoint. Please read all the details before integrating. Time Series requests are currently available for clients on the Enterprise and Unlimited plans.

This is a read-only table function. The Open Exchange Rates API may not support changing the data or the Invariantive SQL driver for Open Exchange Rates does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the Open Exchange Rates API.

Select Open Exchange Rates API URL: `time-series.json?start={start}&end={end}&base={base}&show_alternative={show_alternative}`

Insert Open Exchange Rates API URL: `time-series.json?start={start}&end={end}&base={base}&show_alternative={show_alternative}`

Update Open Exchange Rates API URL: `time-series.json?start={start}&end={end}&base={base}&show_alternative={show_alternative}`

Delete Open Exchange Rates API URL: `time-series.json?start={start}&end={end}&base={base}&show_alternative={show_alternative}`

Field Selection Method: NotRequired

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function `RateTimeSeriesByDateRangeAndBase`. A value must be provided at all times for required parameters, but optional parameters in general do not need to have a value and the execution will default to a pre-defined behaviour. Values can be specified by position and by name. In both cases, all parameters not specified will be treated using their default values.

Value specification by position is done by listing all values from the first to the last needed value. For example with ``select * from table(value1, value2, value3)`` on a table with four parameters will use the default value for the fourth parameter and the specified values for the first three.

Value specification by name is done by listing all values that require a value. For example with ``select * from table(name1 => value1, name3 => value3)`` on the same table will use the default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
base	string	<input type="checkbox"/>	USD	Change base currency (3-letter code, default: USD).
end	datetime	<input checked="" type="checkbox"/>		The time series end date without time.
show_alternative	boolean	<input type="checkbox"/>	True	Extend returned values with alternative, black market and digital currency rates.
start	datetime	<input checked="" type="checkbox"/>		The time series start date without time.

Table Function Columns

The columns of the table function `RateTimeSeriesByDateRangeAndBase` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
base	string		<input type="checkbox"/>	
date	string		<input type="checkbox"/>	
end_date	datetime		<input type="checkbox"/>	
rate_AED	decimal		<input type="checkbox"/>	
rate_AFN	decimal		<input type="checkbox"/>	
rate_ALL	decimal		<input type="checkbox"/>	
rate_AMD	decimal		<input type="checkbox"/>	

Name	Data Type	Label	Required	Documentation
rate_ANG	decimal		<input type="checkbox"/>	
rate_AOA	decimal		<input type="checkbox"/>	
rate_ARS	decimal		<input type="checkbox"/>	
rate_AUD	decimal		<input type="checkbox"/>	
rate_AWG	decimal		<input type="checkbox"/>	
rate_AZN	decimal		<input type="checkbox"/>	
rate_BAM	decimal		<input type="checkbox"/>	
rate_BBD	decimal		<input type="checkbox"/>	
rate_BDT	decimal		<input type="checkbox"/>	
rate_BGN	decimal		<input type="checkbox"/>	
rate_BHD	decimal		<input type="checkbox"/>	
rate_BIF	decimal		<input type="checkbox"/>	
rate_BMD	decimal		<input type="checkbox"/>	
rate_BND	decimal		<input type="checkbox"/>	
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rate_BSD	decimal		<input type="checkbox"/>	
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rate_BTN	decimal		<input type="checkbox"/>	
rate_BTS	decimal		<input type="checkbox"/>	
rate_BWP	decimal		<input type="checkbox"/>	
rate_BYN	decimal		<input type="checkbox"/>	
rate_BZD	decimal		<input type="checkbox"/>	
rate_CAD	decimal		<input type="checkbox"/>	
rate_CDF	decimal		<input type="checkbox"/>	
rate_CHF	decimal		<input type="checkbox"/>	
rate_CLF	decimal		<input type="checkbox"/>	
rate_CLP	decimal		<input type="checkbox"/>	
rate_CNH	decimal		<input type="checkbox"/>	
rate_CNY	decimal		<input type="checkbox"/>	
rate_COP	decimal		<input type="checkbox"/>	
rate_CRC	decimal		<input type="checkbox"/>	
rate_CUC	decimal		<input type="checkbox"/>	
rate_CUP	decimal		<input type="checkbox"/>	
rate_CVE	decimal		<input type="checkbox"/>	
rate_CZK	decimal		<input type="checkbox"/>	
rate_DASH	decimal		<input type="checkbox"/>	
rate_DJF	decimal		<input type="checkbox"/>	
rate_DKK	decimal		<input type="checkbox"/>	
rate_DOGE	decimal		<input type="checkbox"/>	
rate_DOP	decimal		<input type="checkbox"/>	

Name	Data Type	Label	Required	Documentation
rate_DZD	decimal		<input type="checkbox"/>	
rate_EAC	decimal		<input type="checkbox"/>	
rate_EGP	decimal		<input type="checkbox"/>	
rate_EMC	decimal		<input type="checkbox"/>	
rate_ERN	decimal		<input type="checkbox"/>	
rate_ETB	decimal		<input type="checkbox"/>	
rate_ETH	decimal		<input type="checkbox"/>	
rate_EUR	decimal		<input type="checkbox"/>	
rate_FCT	decimal		<input type="checkbox"/>	
rate_FJD	decimal		<input type="checkbox"/>	
rate_FKP	decimal		<input type="checkbox"/>	
rate_FTC	decimal		<input type="checkbox"/>	
rate_GBP	decimal		<input type="checkbox"/>	
rate_GEL	decimal		<input type="checkbox"/>	
rate_GGP	decimal		<input type="checkbox"/>	
rate_GHS	decimal		<input type="checkbox"/>	
rate_GIP	decimal		<input type="checkbox"/>	
rate_GMD	decimal		<input type="checkbox"/>	
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rate_GYD	decimal		<input type="checkbox"/>	
rate_HKD	decimal		<input type="checkbox"/>	
rate_HNL	decimal		<input type="checkbox"/>	
rate_HRK	decimal		<input type="checkbox"/>	
rate_HTG	decimal		<input type="checkbox"/>	
rate_HUF	decimal		<input type="checkbox"/>	
rate_IDR	decimal		<input type="checkbox"/>	
rate_ILS	decimal		<input type="checkbox"/>	
rate_IMP	decimal		<input type="checkbox"/>	
rate_INR	decimal		<input type="checkbox"/>	
rate_IQD	decimal		<input type="checkbox"/>	
rate_IRR	decimal		<input type="checkbox"/>	
rate_ISK	decimal		<input type="checkbox"/>	
rate_JEP	decimal		<input type="checkbox"/>	
rate_JMD	decimal		<input type="checkbox"/>	
rate_JOD	decimal		<input type="checkbox"/>	
rate_JPY	decimal		<input type="checkbox"/>	
rate_KES	decimal		<input type="checkbox"/>	
rate_KGS	decimal		<input type="checkbox"/>	
rate_KHR	decimal		<input type="checkbox"/>	
rate_KMF	decimal		<input type="checkbox"/>	

Name	Data Type	Label	Required	Documentation
rate_KPW	decimal		<input type="checkbox"/>	
rate_KRW	decimal		<input type="checkbox"/>	
rate_KWD	decimal		<input type="checkbox"/>	
rate_KYD	decimal		<input type="checkbox"/>	
rate_KZT	decimal		<input type="checkbox"/>	
rate_LAK	decimal		<input type="checkbox"/>	
rate_LBP	decimal		<input type="checkbox"/>	
rate_LD	decimal		<input type="checkbox"/>	
rate_LKR	decimal		<input type="checkbox"/>	
rate_LRD	decimal		<input type="checkbox"/>	
rate_LSL	decimal		<input type="checkbox"/>	
rate_LTC	decimal		<input type="checkbox"/>	
rate_LYD	decimal		<input type="checkbox"/>	
rate_MAD	decimal		<input type="checkbox"/>	
rate_MDL	decimal		<input type="checkbox"/>	
rate_MGA	decimal		<input type="checkbox"/>	
rate_MKD	decimal		<input type="checkbox"/>	
rate_MMK	decimal		<input type="checkbox"/>	
rate_MNT	decimal		<input type="checkbox"/>	
rate_MOP	decimal		<input type="checkbox"/>	
rate_MRO	decimal		<input type="checkbox"/>	
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rate_MUR	decimal		<input type="checkbox"/>	
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rate_MXN	decimal		<input type="checkbox"/>	
rate_MYR	decimal		<input type="checkbox"/>	
rate_MZN	decimal		<input type="checkbox"/>	
rate_NAD	decimal		<input type="checkbox"/>	
rate_NGN	decimal		<input type="checkbox"/>	
rate_NIO	decimal		<input type="checkbox"/>	
rate_NMC	decimal		<input type="checkbox"/>	
rate_NOK	decimal		<input type="checkbox"/>	
rate_NPR	decimal		<input type="checkbox"/>	
rate_NVC	decimal		<input type="checkbox"/>	
rate_NXT	decimal		<input type="checkbox"/>	
rate_NZD	decimal		<input type="checkbox"/>	
rate_OMR	decimal		<input type="checkbox"/>	
rate_PAB	decimal		<input type="checkbox"/>	
rate_PEN	decimal		<input type="checkbox"/>	
rate_PGK	decimal		<input type="checkbox"/>	

Name	Data Type	Label	Required	Documentation
rate_PHP	decimal		<input type="checkbox"/>	
rate_PKR	decimal		<input type="checkbox"/>	
rate_PLN	decimal		<input type="checkbox"/>	
rate_PPC	decimal		<input type="checkbox"/>	
rate_PYG	decimal		<input type="checkbox"/>	
rate_QAR	decimal		<input type="checkbox"/>	
rate_ROM	decimal		<input type="checkbox"/>	
rate_RSD	decimal		<input type="checkbox"/>	
rate_RUB	decimal		<input type="checkbox"/>	
rate_RWF	decimal		<input type="checkbox"/>	
rate_SAR	decimal		<input type="checkbox"/>	
rate_SBD	decimal		<input type="checkbox"/>	
rate_SCR	decimal		<input type="checkbox"/>	
rate_SDG	decimal		<input type="checkbox"/>	
rate_SEK	decimal		<input type="checkbox"/>	
rate_SGD	decimal		<input type="checkbox"/>	
rate_SHP	decimal		<input type="checkbox"/>	
rate_SLL	decimal		<input type="checkbox"/>	
rate_SOS	decimal		<input type="checkbox"/>	
rate_SRD	decimal		<input type="checkbox"/>	
rate_SSP	decimal		<input type="checkbox"/>	
rate_STD	decimal		<input type="checkbox"/>	
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rate_SZL	decimal		<input type="checkbox"/>	
rate_THB	decimal		<input type="checkbox"/>	
rate_TJS	decimal		<input type="checkbox"/>	
rate_TMT	decimal		<input type="checkbox"/>	
rate_TND	decimal		<input type="checkbox"/>	
rate_TOP	decimal		<input type="checkbox"/>	
rate_TRY	decimal		<input type="checkbox"/>	
rate_TTD	decimal		<input type="checkbox"/>	
rate_TWD	decimal		<input type="checkbox"/>	
rate_TZS	decimal		<input type="checkbox"/>	
rate_UAH	decimal		<input type="checkbox"/>	
rate_UGX	decimal		<input type="checkbox"/>	
rate_USD	decimal		<input type="checkbox"/>	
rate_UYU	decimal		<input type="checkbox"/>	
rate_UZS	decimal		<input type="checkbox"/>	

Name	Data Type	Label	Required	Documentation
rate_VEF_BLKMKMKT	decimal		<input type="checkbox"/>	
rate_VEF_DICOM	decimal		<input type="checkbox"/>	
rate_VEF_DIPRO	decimal		<input type="checkbox"/>	
rate_VEF	decimal		<input type="checkbox"/>	
rate_VES	decimal		<input type="checkbox"/>	
rate_VND	decimal		<input type="checkbox"/>	
rate_VTC	decimal		<input type="checkbox"/>	
rate_VUV	decimal		<input type="checkbox"/>	
rate_WST	decimal		<input type="checkbox"/>	
rate_XAF	decimal		<input type="checkbox"/>	
rate_XAG	decimal		<input type="checkbox"/>	
rate_XAU	decimal		<input type="checkbox"/>	
rate_XCD	decimal		<input type="checkbox"/>	
rate_XDR	decimal		<input type="checkbox"/>	
rate_XMR	decimal		<input type="checkbox"/>	
rate_XOF	decimal		<input type="checkbox"/>	
rate_XPD	decimal		<input type="checkbox"/>	
rate_XPF	decimal		<input type="checkbox"/>	
rate_XPM	decimal		<input type="checkbox"/>	
rate_XPT	decimal		<input type="checkbox"/>	
rate_XRP	decimal		<input type="checkbox"/>	
rate_YER	decimal		<input type="checkbox"/>	
rate_ZAR	decimal		<input type="checkbox"/>	
rate_ZMW	decimal		<input type="checkbox"/>	
rate_ZWL	decimal		<input type="checkbox"/>	
start_date	datetime		<input type="checkbox"/>	

4.1.7 Usage: Open Exchange Rates Usage

Catalog: OpenExchangeRates

Schema: OpenExchangeRates

Label: Usage

Documentation:

Get basic plan information and usage statistics for an Open Exchange Rates App ID.

This is a read-only table. The Open Exchange Rates API may not support changing the data or the Invariant SQL driver for Open Exchange Rates does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the Open Exchange Rates API.

Select Open Exchange Rates API URL: `usage.json`

Insert Open Exchange Rates API URL: `usage.json`

Update Open Exchange Rates API URL: `usage.json`

Delete Open Exchange Rates API URL: `usage.json`

Field Selection Method: NotRequired

Table Columns

The columns of the table `Usage` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
<code>app_id</code>	string	App ID	<input type="checkbox"/>	
<code>plan_convert</code>	boolean		<input type="checkbox"/>	
<code>plan_experimental</code>	boolean		<input type="checkbox"/>	
<code>plan_features_base</code>	boolean		<input type="checkbox"/>	
<code>plan_name</code>	string		<input type="checkbox"/>	
<code>plan_quota</code>	string		<input type="checkbox"/>	
<code>plan_symbols</code>	boolean		<input type="checkbox"/>	
<code>plan_time_series</code>	boolean		<input type="checkbox"/>	
<code>plan_update_frequency</code>	string		<input type="checkbox"/>	
<code>status</code>	string		<input type="checkbox"/>	
<code>usage_daily_average</code>	int32		<input type="checkbox"/>	
<code>usage_days_elapsed</code>	int32		<input type="checkbox"/>	
<code>usage_days_remaining</code>	int32		<input type="checkbox"/>	
<code>usage_requests_quota</code>	int32		<input type="checkbox"/>	
<code>usage_requests_remaining</code>	int32		<input type="checkbox"/>	
<code>usage_requests</code>	int32		<input type="checkbox"/>	

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