

NASA Data Model

for use with Invantive SQL

24.0

invantive
the SQL company

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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 NASA API

Invantive SQL is the fastest, easiest and most reliable way to exchange data with the NASA 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.

NASA space information.

The NASA driver covers 11 tables and 160 columns.

NASA API Clients

Invantive SQL is available on many user interfaces ("clients" in traditional server-client paradigma). 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 NASA 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 NASA 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 NASA 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 NASA 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 NASA does not support partitioning. Define one data container in a database for each company in NASA 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.

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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 NASA the comparison of two texts is case sensitive by default.

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

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

Alias: `nasa`

Recommended alias: `nsa`

More technical documentation as provided by the supplier of the NASA API on the native APIconnection used can be found at https://https://api.nasa.gov/api.html#NeoWS.

General documentation on NASA is available at https://api.nasa.gov/api.html#NeoWS

Updated: 15-06-2022 21:39 using Invantive SQL version 22.0.232-PROD+3445.

2 SQL Driver Attributes for NASA API

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

The NASA 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 NASA 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.

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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 NASA driver can be configured using the following attributes:

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers 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	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers 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	✓	✓	✓	

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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.						
download-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	✓	✓	✓	
download-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	✓	✓	✓	
download-error-504-gateway-timeout-max-tries	Maximum number of tries when the website reports a gateway timeout.		10	✓	✓	✓	
download-error-504-gateway-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the website reports a gateway timeout.		10000	✓	✓	✓	
download-error-504-gateway-timeout-sleep-max-ms	Maximum sleep in milliseconds between retries when the website reports a gateway timeout.		300000	✓	✓	✓	
download-error-504-gateway-timeout-sleep-multiplicator	Multiplication factor for sleep between retries when the website reports a gateway timeout.		2	✓	✓	✓	
download-error-590-network-connect-timeout-max-tries	Maximum number of tries when the website reports a HTTP status 590.		10	✓	✓	✓	
download-error-590-network-connect-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the website reports a HTTP status 590.		10000	✓	✓	✓	
download-error-590-network-connect-timeout-sleep-max-ms	Maximum sleep in milliseconds between retries when the website reports a HTTP status 590.		300000	✓	✓	✓	
download-error-590-network-connect-timeout-sleep-multiplicator	Multiplication factor for sleep between retries when the website reports a HTTP status 590.		2	✓	✓	✓	
download-error-599-network-connect-timeout-max-tries	Maximum number of tries when the website reports a HTTP status 599.		10	✓	✓	✓	
download-error-599-network-connect-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the website reports a HTTP status 599.		10000	✓	✓	✓	
download-error-599-network-	Maximum sleep in milliseconds between retries when the website		300000	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers 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-down-max-tries	Maximum number of tries when the Internet connection seems down during retrieval of data.		10	✓	✓	✓	
download-error-internet-down-sleep-initial-ms	Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.		10000	✓	✓	✓	
download-error-internet-down-sleep-max-ms	Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.		300000	✓	✓	✓	
download-error-internet-down-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	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers 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 ocurrs during retrieval of data.		10000	✓	✓	✓	
download-error-other-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when an unqualified error ocurrs during retrieval of data.		300000	✓	✓	✓	
download-error-other-exception-sleep-multiplicator	Multiplication factor for sleep between retries when an unqualified error ocurrs during retrieval of data.		2	✓	✓	✓	
download-error-socket-exception-max-tries	Maximum number of tries when the network connection is forcible dropped during retrieval of data.		10	✓	✓	✓	
download-error-socket-exception-sleep-initial-ms	Initial sleep in milliseconds between retries when the network connection is forcible dropped during retrieval of data.		10000	✓	✓	✓	
download-error-socket-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when the network connection is forcible dropped during retrieval of data.		300000	✓	✓	✓	
download-error-socket-exception-sleep-multiplicator	Multiplication factor for sleep between retries when the network connection is forcible 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	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
download-error-web-exception-sleep-multiplicator	Multiplication factor for sleep between retries when a web connection failure occurs during retrieval of data.		2	✓	✓	✓	
download-error-web-not-implemented-max-tries	Maximum number of tries when the connection reports not implemented.		1	✓	✓	✓	
download-error-web-not-implemented-sleep-initial-ms	Initial sleep in milliseconds between retries when the connection reports not implemented.		10000	✓	✓	✓	
download-error-web-not-implemented-sleep-max-ms	Maximum sleep in milliseconds between retries when the connection reports not implemented.		300000	✓	✓	✓	
download-error-web-not-implemented-sleep-multiplicator	Multiplication factor for sleep between retries when the connection reports not implemented.		2	✓	✓	✓	
download-error-web-timeout-max-tries	Maximum number of tries when the connection reports a timeout.		10	✓	✓	✓	
download-error-web-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the connection reports a timeout.		1000	✓	✓	✓	
download-error-web-timeout-sleep-max-ms	Maximum sleep in milliseconds between retries when the connection reports a timeout.		30000	✓	✓	✓	
download-error-web-timeout-sleep-multiplicator	Multiplication factor for sleep between retries when the connection reports a timeout.		2	✓	✓	✓	
download-error-web-unauthorized-max-tries	Maximum number of tries when the connection reports an unauthorized error.		1	✓	✓	✓	
download-error-web-unauthorized-sleep-initial-ms	Initial sleep in milliseconds between retries when the connection reports an unauthorized error.		10000	✓	✓	✓	
download-error-web-unauthorized-sleep-max-ms	Maximum sleep in milliseconds between retries when the connection reports an unauthorized error.		300000	✓	✓	✓	
download-error-web-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		✓	✓	✓	

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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\Invantive\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	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers 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	✓	✓	✓	

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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		✓		✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers 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	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers 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	False	✓	✓	✓	
use-http-disk-cache-write	Whether to memorize HTTP responses on disk.	Shared	False	✓	✓	✓	
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	✓	✓	✓	

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3 Schema: NASA

3.1 Tables

3.1.1 asteroid_approaches: NASA Asteroid Approaches

Catalog: NASA

Schema: NASA

Primary Keys: id

Label: Asteroid Approaches

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

Select NASA API URL: `neo/rest/v1/neo/{asteroid_id}`

Insert NASA API URL: `neo/rest/v1/neo/{asteroid_id}`

Update NASA API URL: `neo/rest/v1/neo/{asteroid_id}`

Delete NASA API URL: `neo/rest/v1/neo/{asteroid_id}`

Field Selection Method: NotRequired

Base Path: `close_approach_data[*]`

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function asteroid_approaches. 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
asteroid_id	int64	☑		

Table Function Columns

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

Name	Data Type	Label	Required	Documentation
close_approach_data_miss_distance_astronomical	string		☐	

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Name	Data Type	Label	Required	Documentation
close_approach_data_miss_distance_kilometers	string		☐	
close_approach_data_miss_distance_lunar	string		☐	
close_approach_data_miss_distance_miles	string		☐	
close_approach_data_orbiting_body	string		☐	
close_approach_data_relative_velocity_kilometers_per_hour	string		☐	
close_approach_data_relative_velocity_kilometers_per_second	string		☐	
close_approach_data_relative_velocity_miles_per_hour	string		☐	
close_approach_date	datetime		☐	
epoch_date_close_approach	int64		☐	

3.1.2 asteroid_feeds: NASA Feeds

Catalog: NASA

Schema: NASA

Primary Keys: id

Label: Feeds

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

Select NASA API URL: `neo/rest/v1/feed?start_date={date}&end_date={date}`

Insert NASA API URL: `neo/rest/v1/feed?start_date={date}&end_date={date}`

Update NASA API URL: `neo/rest/v1/feed?start_date={date}&end_date={date}`

Delete NASA API URL: `neo/rest/v1/feed?start_date={date}&end_date={date}`

Field Selection Method: NotRequired

Base Path: `near_earth_objects.*.[*]`

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function asteroid_feeds. 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

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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
date	datetime	☑		

Table Function Columns

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

Name	Data Type	Label	Required	Documentation
absolute_magnitude_h	decimal		☐	
close_approach_date	string		☐	
close_approach_epoch_date	int64		☐	
close_approach_miss_distance_astronomical	string		☐	
close_approach_miss_distance_kilometers	string		☐	
close_approach_miss_distance_lunar	string		☐	
close_approach_miss_distance_miles	string		☐	
close_approach_orbiting_body	string		☐	
close_approach_relative_velocity_kilometers_per_hour	string		☐	
close_approach_relative_velocity_kilometers_per_second	string		☐	
close_approach_relative_velocity_miles_per_hour	string		☐	
estimated_diameter_feet_max	decimal		☐	
estimated_diameter_feet_min	decimal		☐	
estimated_diameter_kilometers_max	string		☐	
estimated_diameter_kilometers_min	decimal		☐	
estimated_diameter_meters_max	decimal		☐	
estimated_diameter_meters_min	decimal		☐	
estimated_diameter_miles_max	decimal		☐	
estimated_diameter_miles_min	decimal		☐	
is_potentially_hazardous_asteroid	boolean		☐	
name	string		☐	
nasa_jpl_url	string		☐	
neo_reference_id	string		☐	

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3.1.3 asteroids: NASA Asteroids

Catalog: NASA

Schema: NASA

Primary Keys: id

Label: Asteroids

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

Select NASA API URL: `neo/rest/v1/neo/{asteroid_id}`

Insert NASA API URL: `neo/rest/v1/neo/{asteroid_id}`

Update NASA API URL: `neo/rest/v1/neo/{asteroid_id}`

Delete NASA API URL: `neo/rest/v1/neo/{asteroid_id}`

Field Selection Method: NotRequired

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function asteroids. 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
asteroid_id	int64	☑		

Table Function Columns

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

Name	Data Type	Label	Required	Documentation
absolute_magnitude_h	decimal		☐	
close_approach_date	datetime		☐	
close_approach_epoch_date	int64		☐	

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Name	Data Type	Label	Required	Documentation
close_approach_miss_distance_astronomical	string		☐	
close_approach_miss_distance_kilometers	string		☐	
close_approach_miss_distance_lunar	string		☐	
close_approach_miss_distance_miles	string		☐	
close_approach_orbiting_body	string		☐	
close_approach_relative_velocity_kilometers_per_hour	string		☐	
close_approach_relative_velocity_kilometers_per_second	string		☐	
close_approach_relative_velocity_miles_per_hour	string		☐	
estimated_diameter_feet_max	string		☐	
estimated_diameter_feet_min	string		☐	
estimated_diameter_kilometers_max	string		☐	
estimated_diameter_kilometers_min	string		☐	
estimated_diameter_meters_max	string		☐	
estimated_diameter_meters_min	string		☐	
estimated_diameter_miles_max	string		☐	
estimated_diameter_miles_min	string		☐	
is_potentially_hazardous_asteroid	boolean		☐	
name	string		☐	
nasa_jpl_url	string		☐	
neo_reference_id	string		☐	
orbital_data_aphelion_distance	string		☐	
orbital_data_ascending_node_longitude	string		☐	
orbital_data_eccentricity	string		☐	
orbital_data_epoch_osculation	string		☐	
orbital_data_equinox	string		☐	
orbital_data_inclination	string		☐	
orbital_data_jupiter_tisserand_invariant	string		☐	
orbital_data_mean_anomaly	string		☐	
orbital_data_mean_motion	string		☐	
orbital_data_minimum_orbit_intersection	string		☐	
orbital_data_orbit_determination_date	datetime		☐	
orbital_data_orbit_id	int32		☐	
orbital_data_orbit_uncertainty	string		☐	

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Name	Data Type	Label	Required	Documentation
orbital_data_orbital_period	string		☐	
orbital_data_perihelion_argument	string		☐	
orbital_data_perihelion_distance	string		☐	
orbital_data_perihelion_time	string		☐	
orbital_data_semi_major_axis	string		☐	

3.1.4 astronomy_pictures_of_day: NASA Astronomy Pictures of Day

Catalog: NASA

Schema: NASA

Primary Keys: id

Label: Astronomy Pictures of Day

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

Select NASA API URL: `planetary/apod?date={apod_date}&hd={hd}`

Insert NASA API URL: `planetary/apod?date={apod_date}&hd={hd}`

Update NASA API URL: `planetary/apod?date={apod_date}&hd={hd}`

Delete NASA API URL: `planetary/apod?date={apod_date}&hd={hd}`

Field Selection Method: NotRequired

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function astronomy_pictures_of_day. 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
apod_date	datetime	☑		
hd	boolean	☑		

Table Function Columns

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

Name	Data Type	Label	Required	Documentation
date	string	Date	☐	
explanation	string		☐	
hdurl	string		☐	
media_type	string		☐	
service_version	string		☐	
title	string		☐	
url	string		☐	

3.1.5 astronomy_pictures_of_today: NASA Astronomy Pictures of Today

Catalog: NASA

Schema: NASA

Primary Keys: id

Label: Astronomy Pictures of Today

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

Select NASA API URL: `planetary/apod?`

Insert NASA API URL: `planetary/apod?`

Update NASA API URL: `planetary/apod?`

Delete NASA API URL: `planetary/apod?`

Field Selection Method: NotRequired

Table Columns

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

Name	Data Type	Label	Required	Documentation
date	string	Date	☐	
explanation	string		☐	
hdurl	string		☐	
media_type	string		☐	
service_version	string		☐	
title	string		☐	
url	string		☐	

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3.1.6 earth_polychromatic_imaging_camera_photos: NASA Earth Polychromatic Imaging Camera Photos

Catalog: NASA

Schema: NASA

Primary Keys: id

Label: Earth Polychromatic Imaging Camera Photos

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

Select NASA API URL: `EPIC/api/natural/date/{date}`

Insert NASA API URL: `Returns image of earth at the specified date`

Update NASA API URL: `EPIC/api/natural/date/{date}`

Delete NASA API URL: `EPIC/api/natural/date/{date}`

Field Selection Method: NotRequired

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function earth_polychromatic_imaging_camera_photos. 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
date	datetime	☑		

Table Function Columns

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

Name	Data Type	Label	Required	Documentation
caption	string		☐	
coords_attitude_quaternions_q1	decimal		☐	
coords_attitude_quaternions_q2	decimal		☐	
coords_attitude_quaternions_q3	decimal		☐	
coords_attitude_quaternions_q4	decimal		☐	

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Name	Data Type	Label	Required	Documentation
coords_centroid_coordinates_lat	double		☐	
coords_centroid_coordinates_lon	decimal		☐	
coords_dscovr_j2000_position_x	decimal		☐	
coords_dscovr_j2000_position_y	decimal		☐	
coords_dscovr_j2000_position_z	decimal		☐	
coords_lunar_j2000_position_x	decimal		☐	
coords_lunar_j2000_position_y	decimal		☐	
coords_lunar_j2000_position_z	decimal		☐	
coords_sun_j2000_position_x	decimal		☐	
coords_sun_j2000_position_y	decimal		☐	
coords_sun_j2000_position_z	decimal		☐	
date	datetime	Date	☐	
image	string		☐	

3.1.7 eonet_assets: NASA Earth Observatory Natural Event Tracker Assets

Catalog: NASA

Schema: NASA

Primary Keys: id

Label: Earth Observatory Natural Event Tracker Assets

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

Select NASA API URL: `planetary/earth/assets?lon={lon}&lat={lat}&begin={begin_date}&end={end_date}`

Insert NASA API URL: `planetary/earth/assets?lon={lon}&lat={lat}&begin={begin_date}&end={end_date}`

Update NASA API URL: `planetary/earth/assets?lon={lon}&lat={lat}&begin={begin_date}&end={end_date}`

Delete NASA API URL: `planetary/earth/assets?lon={lon}&lat={lat}&begin={begin_date}&end={end_date}`

Field Selection Method: NotRequired

Base Path: `results[*]`

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function eonet_assets. 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.

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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
begin_date	datetime	☑		
end_date	datetime	☑		
lat	decimal	☑		
lon	decimal	☑		

Table Function Columns

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

Name	Data Type	Label	Required	Documentation
results_date	datetime		☐	
results_id	string		☐	

3.1.8 eonet_images: NASA Earth Observatory Images

Catalog: NASA

Schema: NASA

Primary Keys: id

Label: Earth Observatory Images

Documentation:

Returns picture of earth at the specified longitude and latitude and the specified cloud score(percentage of image that is covered by clouds

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

Select NASA API URL: `planetary/earth/imagery?lon={lon}&lat={lat}&date={date}&cloud_score={cloud_score}`

Insert NASA API URL: `planetary/earth/imagery?lon={lon}&lat={lat}&date={date}&cloud_score={cloud_score}`

Update NASA API URL: `planetary/earth/imagery?lon={lon}&lat={lat}&date={date}&cloud_score={cloud_score}`

Delete NASA API URL: `planetary/earth/imagery?lon={lon}&lat={lat}&date={date}&cloud_score={cloud_score}`

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Field Selection Method: NotRequired

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function eonet_images. 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
cloud_score	boolean	☑		
date	datetime	☑		
lat	decimal	☑		
lon	decimal	☑		

Table Function Columns

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

Name	Data Type	Label	Required	Documentation
cloud_score	decimal		☐	
date	string	Date	☐	
hdurl	string		☐	
id	string		☐	
url	string		☐	

3.1.9 mars_rover_photo_cameras: NASA Mars Rover Photos Camera

Catalog: NASA

Schema: NASA

Primary Keys: id

Label: Mars Rover Photos Camera

Documentation:

Return photos made by the specified camera of the curiosity rover at the specified amount of sol(length of a day on mars)

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

Select NASA API URL: `mars-photos/api/v1/rovers/curiosity/photos?sol={sol}&camera={camera}`

Insert NASA API URL: `mars-photos/api/v1/rovers/curiosity/photos?sol={sol}&camera={camera}`

Update NASA API URL: `mars-photos/api/v1/rovers/curiosity/photos?sol={sol}&camera={camera}`

Delete NASA API URL: `mars-photos/api/v1/rovers/curiosity/photos?sol={sol}&camera={camera}`

Field Selection Method: NotRequired

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function mars_rover_photo_cameras. 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
camera	string	☑		
sol	int64	☑		

Table Function Columns

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

Name	Data Type	Label	Required	Documentation
photos__rover_cameras_full_name	string		☐	
photos__rover_cameras_name	string		☐	
photos__rover_landing_date	string		☐	
photos__rover_launch_date	string		☐	
photos__rover_max_date	string		☐	
photos__rover_max_sol	int32		☐	

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Name	Data Type	Label	Required	Documentation
photos__rover_status	string		☐	
photos__rover_total_photos	int32		☐	
photos_rover_id	int32		☐	
photos_rover_name	string		☐	

3.1.10 mars_rover_photos: NASA Mars Rover Photos

Catalog: NASA

Schema: NASA

Primary Keys: id

Label: Mars Rover Photos

Documentation:

Return photos made by the the curiosity rover at the specified amount of sol(length of a day on mars)

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

Select NASA API URL: `mars-photos/api/v1/rovers/curiosity/photos?sol={sol}`

Insert NASA API URL: `mars-photos/api/v1/rovers/curiosity/photos?sol={sol}`

Update NASA API URL: `mars-photos/api/v1/rovers/curiosity/photos?sol={sol}`

Delete NASA API URL: `mars-photos/api/v1/rovers/curiosity/photos?sol={sol}`

Field Selection Method: NotRequired

Base Path: `photos[*]`

Parameters of Table Function

The following parameters can be used to control the behaviour of the table function mars_rover_photos. 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

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default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
sol	int64	☑		

Table Function Columns

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

Name	Data Type	Label	Required	Documentation
photos_camera_full_name	string		☐	
photos_camera_id	int32		☐	
photos_camera_name	string		☐	
photos_camera_rover_id	int32		☐	
photos_earth_date	datetime		☐	
photos_id	int32		☐	
photos_img_src	string		☐	
photos_sol	int32		☐	

4 Schema: Native

4.1 Tables

4.1.1 NATIVEPLATFORMSCALARREQUESTS: NASA Native Platform Scalar Requests

Direct access to native API.

Catalog: NASA

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 NASA 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 NASA API server.

Retrieve: true

Insert: true

Update: false

Delete: false

View Columns

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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	☑	Indicator w hether a BLOB result is preferred over text.
BOL_RESPONSE_CACHE_MAX_AGE_SEC	int32	Response Cache Maximum Age (sec)	☐	Maximum age in seconds of Bridge Online response cache entries to be used.
CONTENT_TYPE	string(240)	Content Type	☐	
DATE_ENDED	datetime	End Date	☑	
DATE_STARTED	datetime	Start Date	☑	
DRY_RUN	boolean	Run w ithout Actions	☑	
DURATION_MS	int32	Duration (ms)	☑	
ERROR_MESSAGE_CODE	string(30)	Error Message Code	☐	
ERROR_MESSAGE_TEXT	string(32000)	Error Message Text	☐	
FAIL_ON_ERROR	boolean	Fail on Error	☑	Whether to raise an exception w hen processing the native request triggered an error from the provider.
HTTP_DISK_CACHE_MAX_AGE_SEC	int32	HTTP Disk Cache Maximum Age (sec)	☐	Maximum age in seconds of HTTP disk cache entries to be used.
HTTP_DISK_CACHE_SAVE	boolean	Save HTTP Disk Cache	☐	Whether results can be stored in HTTP disk cache.
HTTP_DISK_CACHE_USE	boolean	Use HTTP Disk Cache	☐	Whether results can be fetched from HTTP disk cache.
HTTP_MEMORY_CACHE_MAX_AGE_SEC	int32	HTTP Memory Cache Maximum Age (sec)	☐	Maximum age in seconds of HTTP memory cache entries to be used.
HTTP_MEMORY_CACHE_SAVE	boolean	Save HTTP Memory Cache	☐	Whether results can be stored in HTTP memory cache.
HTTP_MEMORY_CACHE_USE	boolean	Use HTTP Memory Cache	☐	Whether results can be fetched from HTTP memory cache.
HTTP_METHOD	string(30)	HTTP Method	☐	
HTTP_STATUS_CODE	int16	HTTP Status Code	☐	
ORIG_SYSTEM_GROUP	string(4000)	Original System Group	☐	
ORIG_SYSTEM_REFERENCE	string(4000)	Original System Reference	☐	
PAYLOAD_TEXT	string	Payload	☐	
RESULT_BLOB	byte[]	Result BLOB	☐	
RESULT_DATE_TIME_UTC	datetime		☐	
RESULT_NUMBER	decimal		☐	
RESULT_TEXT	string	Result Text	☐	
SUCCESSFUL	boolean	Succesful	☑	
TIMEOUT_SEC	int32	Timeout (sec)	☐	Timeout in seconds.
TRANSACTION_ID	int32	Transaction ID	☑	Incrementing ID of the transaction.

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Name	Data Type	Label	Required	Documentation
URL	string(4000)	URL	□	

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