## Qlik Engine API

**Overview**

The Qlik Engine API is a WebSocket protocol that uses JSON to pass information between the Qlik Senseengine and the clients.

It can be used for:

* Building a client outside a web browser (for example, in .NET or Java)
* Extending the functionality of a web browser

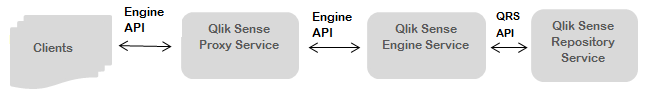
**The Qlik Engine API works on any platforms and with any programming language that include a WebSocket library**.

The protocol uses generic objects. The main concept is that a method points out to a JSON object that is generic and that has a hierarchical structure.

A generic object:

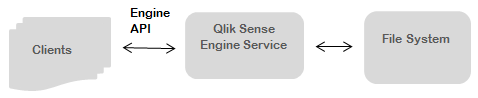
* Can be a sheet, a story, a list object, a hypercube, a slide, a bookmark, a dimension, a measure or a pointer to another generic object.
* Is hierarchical, meaning that it contains the definition of all its children and grandchildren.
* Can be the concatenation of several generic objects. For example, a generic object could be both a list object and a chart. In that case, it would contain the definition of a list object and the definition of a chart.
* A generic object can get any type. This implies that the engine does not care about the type of any object.
* Dynamic properties can be added to a generic object and these properties are persisted. For more information on dynamic properties, see [Properties that can be set](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/properties-that-can-be-set.htm).

**Qlik Sense server installation**



For more information on the QRS API, see the Qlik Sense repository server API documentation.

Qlik Sense local installation



If running a local installation of Qlik Sense, the proxy is not used since no authentication is needed.

## Prerequisites

### When working with web browsers

The following is necessary:

* The Qlik Sense engine
* A web browser that supports WebSocket and7.5 JSON format

### When working without web browsers

The following is necessary:

* The Qlik Sense engine
* A WebSocket library
* A JSON library

### Installation procedure

There is no separate installation package of the Qlik Engine API. This API is provided with the installation ofQlik Sense Desktop and Qlik Sense.

Methods that work only with a server installation are tagged as working only in server mode.

## Getting started

This section describes how you get started using the Qlik Engine API.

Before using this API, start reading the following sections:

* [Prerequisites](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/prerequisites.htm)
* [Syntax](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Syntax/syntax.htm)
* [Generic object definition](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/overview-generic-object.htm)

You can use the engine API explorer to get a view of all the classes and methods available in the Qlik Engine API.

## Syntax

### Overview

This part of the help gives you the syntax for:

* Messages coming to the Qlik engine: see [Request object syntax](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Syntax/request-object-syntax.htm).
* Messages coming from the Qlik engine: see [Response object syntax](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Syntax/response-object-syntax.htm).

#### Request object syntax

The request object follows the JSON-RPC 2.0 specifications and has the following members:

|  |  |  |
| --- | --- | --- |
| **Member** | **Description / Value** | **Mandatory** |
| jsonrpc | Version of JSON-RPC.  Equals 2.0 | Yes |
| id | Identifier established by the initiator of the request.  If this member is not present, the rpc call is assumed to be a notification. | No |
| method | Name of the method. | Yes |
| handle | Target of the method.  The member **handle**is not part of the JSON-RPC 2.0 specifications. | Yes |
| delta | Boolean. If set to true, the engine returns delta values.  The default value is false.  **Examples of use:**  The *delta*member is set to true to get the delta of the layout or the delta of the properties of an object. For more information, see [Get the delta of the layout](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/WorkingWithAppsAndVisualizations/RenderLayout/get-delta-layout.htm) and [Get the delta of properties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/WorkingWithAppsAndVisualizations/SetGetProperties/get-delta-properties.htm). | No |
| params | Sets the parameters.  The parameters can be provided by name through an object or by position through an array. | No |

See <http://www.jsonrpc.org/specification>for more information on the syntax.

###### Examples of request object

**Example 1:**

The parameters are provided by name through an object.

A request object could be as follows:

{

"jsonrpc": "2.0",

"id": 6,

"method": "DestroyChild",

"handle": 7,

"params": {

"qId": "LB02"

}

}

**Example 2:**

The parameters are provided by position through an array.

A request object could be as follows:

{

"jsonrpc": "2.0",

"id": 6,

"method": "DestroyChild",

"handle": 2,

"params": [

"LB02"

]

}

#### Response object syntax

The response object follows the JSON-RPC 2.0 specifications and has the following members:

|  |  |  |
| --- | --- | --- |
| **Member** | **Description / Value** | **Mandatory** |
| jsonrpc | Version of JSON-RPC.  Equals 2.0 | Yes |
| id | Identifier. This identifier must be identical to the identifier in the request object. | Yes |
| result or  error | The member **result**is required on success.  In case of failure, the member **error**is displayed. | Yes |
| change | Handles of the objects that have been updated. | No |
| closed | Handles that have been released (following a remove for example). | No |

See <http://www.jsonrpc.org/specification>for more information on the syntax.

###### Example of response object

A response object could be as follows:

{

"jsonrpc": "2.0",

"id": 3,

"result": {

"qReturn": {

"qType": "GenericObject",

"qHandle": 5

}

},

"change": [

5

]

}

## Generic object definition

### Overview

The engine API uses generic objects. The main concept is that a method points out to a JSON object that is generic and that has a hierarchical structure.

A generic object:

* Can be a sheet, a story, a list object, a hypercube, a slide, a bookmark, a dimension, a measure or a pointer to another generic object.
* Is hierarchical, meaning that it contains the definition of all its children and grandchildren.
* Can be the concatenation of several generic objects. For example, a generic object could be both a list object and a chart. In that case, it would contain the definition of a list object and the definition of a chart.
* A generic object can get any type. This implies that the engine does not care about the type of any object.
* Dynamic properties can be added to a generic object and these properties are persisted. For more information on dynamic properties, see [Properties that can be set](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/properties-that-can-be-set.htm).

### List object

Visualization that contains one dimension. When getting the layout of a list object, all values are rendered. If some selections are applied, selected values are displayed along with the excluded and optional values.

**Example of use:**

Filter panes are the concatenation of several list objects.

### Hypercube

A hypercube is a multi-dimensional visualization of one or several dimensions. It can contain both dimensions and measures. If selections are applied, only the selected values are calculated. A hypercube is an inference and aggregation interface. The results from the aggregation and the inference depend on the dimensions and measures contained in the hypercube.

**Example of use:**

Tables, charts, straight tables.

### Properties

This part of the help describes the properties that:

* Can be rendered for a generic object
* Can be set for a generic object

### Properties that can be set

#### Overview

This section describes the properties that can be set for a generic object.

You can set the properties of a generic object, when creating the object or after the creation of the object by using the [SetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-SetProperties-method.htm) or the [ApplyPatches method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-ApplyPatches-method.htm).

The engine API supports extra properties (dynamic properties) in addition to those statically declared (fixed properties).

#### Fixed properties

Fixed or static properties are mandatory properties of a generic object. For example, *qInfo*and *qExtendsId*are fixed properties inside the property *GenericObjectProperties*.

For more information on *GenericObjectProperties*, see [CreateChild method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-CreateChild-method.htm), [CreateObject method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateObject-method.htm) or[CreateSessionObject method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateSessionObject-method.htm).

#### Dynamic properties with known types

The type of these properties is recognized by the engine. They are dynamic meaning that extra properties can be added inside these properties.

**Examples**:

* qListObjectDef
* qHyperCubeDef
* qStringExpression

These properties are evaluated by the engine and have a dynamic layout. For example, *qListObjectDef*is evaluated in *qListObject*.

[Full dynamic properties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/properties-that-can-be-set.htm#Full) can be added inside any dynamic properties with known types.

#### Full dynamic properties

* The engine does not care about the type of these properties.
* These properties are not evaluated by the engine.
* These properties are not prefixed by **q** and are seen by the engine API as JSON ordinary values.

**Example**:

[[Closed](javascript:void(0);)In this example, a transient chart is created. The full dynamic properties **City**and **Region**are added inside the dynamic property with known type: **qHyperCubeDef**.](javascript:void(0);)

{

"jsonrpc": "2.0",

"id": 2,

"method": "CreateSessionObject",

"handle": 1,

"params": [

{

"qInfo": {

"qId": "BC01",

"qType": "Chart"

},

"qHyperCubeDef": {

"qDimensions": [

{

"qLibraryId": "",

"qDef": {

**"qFieldDefs": [**

**"City",**

**"Region"**

**]**,

"qFieldLabels": [

"Label"

],

"qSortCriterias": [

{

"qSortByLoadOrder": 1

}

],

"qReverseSort": false

}

}

],

"qMeasures": [

{

"qLibraryId": "",

"qDef": {

"qLabel": "Chart HC Properties measures label",

"qDef": "Count(Country1)"

}

}

],

"qSuppressZero": true,

"qSuppressMissing": true,

"qInitialDataFetch": [

{

"qTop": 0,

"qHeight": 1,

"qLeft": 0,

"qWidth": 2

}

]

},

"categories": {

"qValueExpression": "=Count(CategoryName1)"

},

"products": {

"qStringExpression": "=Count(ProductName1)"

}

}

]

}

This part of the help describes all the dynamic properties with known types.

## Classes

This section describes all the classes in the Qlik Engine API.

[App class](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class.htm) [GenericMeasure class](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class.htm)

[Field class](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class.htm) [GenericVariable class](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class.htm)

[GenericBookmark class](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class.htm) [Global class](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class.htm)

[GenericDimension class](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class.htm) [Variable class](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/VariableClass/Variable-class.htm)

[GenericObject class](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class.htm)

### App class

This class describes all the methods that apply at app level.

The *handle* member in the JSON request for all methods listed in this section is the handle of the app.

-[AbortModal method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-AbortModal-method.htm)

-[AddAlternateState method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-AddAlternateState-method.htm)

-[AddFieldFromExpression method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-AddFieldFromExpression-method.htm)

-[ApplyBookmark method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-ApplyBookmark-method.htm)

-[BackCount method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-BackCount-method.htm)

-[Back method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-Back-method.htm)

-[CheckExpression method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CheckExpression-method.htm)

-[CheckNumberOrExpression method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CheckNumberOrExpression-method.htm)

-[CheckScriptSyntax method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CheckScriptSyntax-method.htm)

-[ClearAll method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-ClearAll-method.htm)

-[ClearUndoBuffer method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-ClearUndoBuffer-method.htm)

-[CloneBookmark method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CloneBookmark-method.htm)

-[CloneDimension method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CloneDimension-method.htm)

-[CloneMeasure method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CloneMeasure-method.htm)

-[CloneObject method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CloneObject-method.htm)

-[CommitDraft method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CommitDraft-method.htm)

-[CreateBookmark method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateBookmark-method.htm)

-[CreateConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateConnection-method.htm)

-[CreateDimension method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateDimension-method.htm)

-[CreateDraft method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateDraft-method.htm)

-[CreateMeasure method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateMeasure-method.htm)

-[CreateObject method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateObject-method.htm)

-[CreateSessionObject method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateSessionObject-method.htm)

-[CreateSessionVariable method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateSessionVariable-method.htm)

-[CreateVariable method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateVariable-method.htm)

-[CreateVariableEx method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateVariableEx-method.htm)

-[DeleteConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DeleteConnection-method.htm)

-[DestroyBookmark method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroyBookmark-method.htm)

-[DestroyDimension method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroyDimension-method.htm)

-[DestroyDraft method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroyDraft-method.htm)

-[DestroyMeasure method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroyMeasure-method.htm)

-[DestroyObject method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroyObject-method.htm)

-[DestroySessionObject method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroySessionObject-method.htm)

-[DestroySessionVariable method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroySessionVariable-method.htm)

-[DestroyVariableById method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroyVariableById-method.htm)

-[DestroyVariableByName method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroyVariableByName-method.htm)

-[DoReload method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DoReload-method.htm)

-[DoReloadEx method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DoReloadEx-method.htm)

-[DoSave method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DoSave-method.htm)

-[Evaluate method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-Evaluate-method.htm)

-[EvaluateEx method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-EvaluateEx-method.htm)

-[FindMatchingFields method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-FindMatchingFields-method.htm)

-[ForwardCount method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-ForwardCount-method.htm)

-[Forward method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-Forward-method.htm)

-[GetAllInfos method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetAllInfos-method.htm)

-[GetAppLayout method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetAppLayout-method.htm)

-[GetAppProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetAppProperties-method.htm)

-[GetAssociationScores method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetAssociationScores-method.htm)

-[GetBookmark method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetBookmark-method.htm)

-[GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm)

-[GetConnections method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnections-method.htm)

-[GetContentLibraries method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetContentLibraries-method.htm)

-[GetDatabaseInfo method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDatabaseInfo-method.htm)

-[GetDatabaseOwners method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDatabaseOwners-method.htm)

-[GetDatabases method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDatabases-method.htm)

-[GetDatabaseTableFields method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDatabaseTableFields-method.htm)

-[GetDatabaseTablePreview method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDatabaseTablePreview-method.htm)

-[GetDatabaseTables method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDatabaseTables-method.htm)

-[GetDimension method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDimension-method.htm)

-[GetEmptyScript method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetEmptyScript-method.htm)

-[GetFavoriteVariables method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFavoriteVariables-method.htm)

-[GetFieldDescription method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFieldDescription-method.htm)

-[GetField method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetField-method.htm)

-[GetFileTableFields method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFileTableFields-method.htm)

-[GetFileTablePreview method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFileTablePreview-method.htm)

-[GetFileTablesEx method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFileTablesEx-method.htm)

-[GetFileTables method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFileTables-method.htm)

-[GetFolderItemsForConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFolderItemsForConnection-method.htm)

-[GetIncludeFileContent method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetIncludeFileContent-method.htm)

-[GetLibraryContent method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetLibraryContent-method.htm)

-[GetLocaleInfo method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetLocaleInfo-method.htm)

-[GetLooselyCoupledVector method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetLooselyCoupledVector-method.htm)

-[GetMatchingFields method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetMatchingFields-method.htm)

-[GetMediaList method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetMediaList-method.htm)

-[GetMeasure method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetMeasure-method.htm)

-[GetObject method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetObject-method.htm)

-[GetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetProperties-method.htm)

-[GetScriptBreakpoints method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetScriptBreakpoints-method.htm)

-[GetScript method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetScript-method.htm)

-[GetTableData method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetTableData-method.htm)

-[GetTablesAndKeys method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetTablesAndKeys-method.htm)

-[GetTextMacros method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetTextMacros-method.htm)

-[GetVariable method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetVariable-method.htm)

-[GetVariableById method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetVariableById-method.htm)

-[GetVariableByName method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetVariableByName-method.htm)

-[GetViewDlgSaveInfo method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetViewDlgSaveInfo-method.htm)

-[GuessFileType method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GuessFileType-method.htm)

-[LockAll method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-LockAll-method.htm)

-[ModifyConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-ModifyConnection-method.htm)

-[Publish method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-Publish-method.htm)

-[Redo method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-Redo-method.htm)

-[RemoveAlternateState method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-RemoveAlternateState-method.htm)

-[RemoveVariable method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-RemoveVariable-method.htm)

-[Resume method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-Resume-method.htm)

-[SaveObjects method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SaveObjects-method.htm)

-[SearchAssociations method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchAssociations-method.htm)

-[SearchResults method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchResults-method.htm)

-[SearchSuggest method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchSuggest-method.htm)

-[SelectAssociations method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SelectAssociations-method.htm)

-[SendGenericCommandTo CustomConnector method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SendGenericCommandToCustomConnector-method.htm)

-[SetAppProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SetAppProperties-method.htm)

-[SetFavoriteVariables method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SetFavoriteVariables-method.htm)

-[SetFetchLimit method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SetFetchLimit-method.htm)

-[SetLooselyCoupledVector method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SetLooselyCoupledVector-method.htm)

-[SetScriptBreakpoints method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SetScriptBreakpoints-method.htm)

-[SetScript method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SetScript-method.htm)

-[SetViewDlgSaveInfo method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SetViewDlgSaveInfo-method.htm)

-[Undo method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-Undo-method.htm)

-[UnlockAll method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-UnlockAll-method.htm)

-[UnPublish method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-UnPublish-method.htm)

#### AbortModal method

Aborts any selection mode in an app. For more information about selection mode, see [BeginSelections method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-BeginSelections-method.htm).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qAccept | Set this parameter to true to accept the selections before exiting the selection mode. | Boolean |

##### Outputs

The following is returned in the output:

"result": {}

#### AddAlternateState method

Adds an alternate state in the app.

You can create multiple states within a Qlik Sense app and apply these states to specific objects within the app. Objects in a given state are not affected by user selections in the other states.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateName | Name of the alternate state.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### AddFieldFromExpression method

Adds a field on the fly.

The expression of a field on the fly is persisted but not its values.

###### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field. | String |
| qExpr | Expression value.  It is not possible to use all aggregation functions. For example, you cannot add a field on the fly with an expression that uses the *Sum*or *Count*aggregation functions. | String |

###### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### ApplyBookmark method

##### Overview

Applies a bookmark.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the bookmark | String |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### BackCount method

##### Overview

Returns the number of entries on the Back stack.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <Number of entries in the back stack>

}

#### Back method

##### Overview

Loads the last logical operation (if any).

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### CheckExpression method

##### Overview

Checks if a given expression is valid.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qExpr | Expression to check. | String |
| qLabels | List of labels.  This parameter is optional. | Array of String |

##### Outputs

The following is returned in the output:

{

"jsonrpc": "2.0",

"id": 2,

"result": {

"qErrorMsg": "<message displayed when there is a syntax error>",

"qBadFieldNames": [

{

"qFrom": <position in the expression of the first character of the field name>,

"qCount": <number of characters of the field name>

}

],

"qDangerousFieldNames": []

}

}

The expression is correct if the parameters *qErrorMsg*, *qBadFieldNames*and*qDangerousFieldNames*are empty.

#### CheckNumberOrExpression method

##### Overview

Checks if:

* a given expression is valid
* a number is correct according to the locale.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qExpr | Expression to check. | String |

##### Outputs

The following is returned in the output:

{

"jsonrpc": "2.0",

"id": 2,

"result": {

"qErrorMsg": "<message displayed when there is a syntax error>",

"qBadFieldNames": [

{

"qFrom": <position in the expression of the first character of the field name>,

"qCount": <number of characters of the field name>

}

]

}

}

The expression is correct if the parameters *qErrorMsg* and *qBadFieldNames*are empty.

#### CheckScriptSyntax method

##### Overview

Checks the syntax of a script.

##### Parameters

None

##### Outputs

The engine returns the list of syntax errors in the script.

###### If there is no error

The following is returned in the output:

"result": {

"qErrorList": []

}

###### If there are some errors

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qErrLen | Length of the word where the error is located | Integer |
| qTabIx | Number of the faulty section | Integer |
| qLineInTab | Line number in the section where the error is located | Integer |
| qColInLine | Position of the erroneous text from the beginning of the line | Integer |
| qTextPos | Position of the erroneous text from the beginning of the script | Integer |
| qSecondaryFailure | The default value is false. | Boolean |

**Example:**

"result": {

"qErrorList": [

{

"qErrLen": 3,

"qTabIx": 0,

"qLineInTab": 0,

"qColInLine": 0,

"qTextPos": 0

},

{

"qErrLen": 5,

"qTabIx": 0,

"qLineInTab": 0,

"qColInLine": 1,

"qTextPos": 4,

"qSecondaryFailure": true

}

]

}

The first area is the primary error area, the second area is the secondary error area. The second area is optional and is shown only if qSecondaryFailure is set to true. The second area ends when the next statement in the script begins.

#### ClearAll method

##### Overview

Clears all selections in all fields of the current app.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLockedAlso | This parameter is optional.  Default is false. Selections on locked fields are not cleared.  Set this parameter to true to clear all selections, including the locked fields. | Boolean |
| qStateName | Name of the alternate state.  If an alternate state is defined in *qStateName*, only the selections related to this alternate state are cleared.  This parameter is optional.  Default state is current selections. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### ClearUndoBuffer method

##### Overview

Clears entirely the undo and redo buffer.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### CloneBookmark method

##### Overview

Clones a bookmark.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object to clone | String |

##### Outputs

The following is returned in the output:

"result": {

"qCloneId": "<identifier of the clone>"

}

The identifier is set by the engine.

#### CloneDimension method

##### Overview

Clones a dimension.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object to clone | String |

##### Outputs

The following is returned in the output:

"result": {

"qCloneId": "<identifier of the clone>"

}

The identifier is set by the engine.

#### CloneMeasure method

##### Overview

Clones a measure.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object to clone | String |

##### Outputs

The following is returned in the output:

"result": {

"qCloneId": "<identifier of the clone>"

}

The identifier is set by the engine.

#### CloneObject method

##### Overview

Clones any visualizations, sheets and stories. The clone method works for both app objects and child objects.

When you clone an object that contains children, the children are cloned as well.

It is not possible to clone a session object.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object to clone | String |

##### Outputs

The following is returned in the output:

"result": {

"qCloneId": "<identifier of the clone>"

}

The identifier is set by the engine.

#### CommitDraft method

##### Overview

Commits the draft of an object that was previously created by invoking the [CreateDraft method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateDraft-method.htm).

Committing a draft replaces the corresponding published object.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the draft to commit. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### CreateDraft method

##### Overview

Creates a draft of an object.

This method can be used to create a draft of a sheet or a story that is published. This is a way to continue working on a sheet or a story that is published.

Replace the published object by the content of the draft by invoking the [CommitDraft method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CommitDraft-method.htm).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object to create a draft from. | String |

##### Outputs

The following is returned in the output:

"result": {

"qDraftId": "<identifier of the draft>"

}

The identifier is set by the engine.

#### CommitDraft method

##### Overview

Commits the draft of an object that was previously created by invoking the [CreateDraft method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateDraft-method.htm).

Committing a draft replaces the corresponding published object.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the draft to commit. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### CreateBookmark method

##### Overview

Creates a bookmark.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the object.  This parameter is mandatory. | *GenericBookmarkProperties*  See[GenericBookmarkProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateBookmark-method.htm#GenericBookmarkProperties). |

[Closed](javascript:void(0);)[GenericBookmarkProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the bookmark.  This parameter is mandatory. | *NxInfo* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericBookmark",

"qHandle": <handle of the bookmark>

},

"qInfo": {

"qId": "<identifier of the bookmark>",

"qType": "Bookmark"

}

}

#### CreateConnection method

##### Overview

Creates a connection. A connection indicates from which data source, the data should be taken.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnection | Information about the connection.  This parameter is mandatory. | [Connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateConnection-method.htm#Connection) |

[Closed](javascript:void(0);)[Connection](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the connection.  Is generated by the engine and is unique. | String |
| qName | Name of the connection.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qConnectionString | One of:   * ODBC CONNECT TO [<provider name>] * OLEDB CONNECT TO [<provider name>] * CUSTOM CONNECT TO [<provider name>] * "<local absolute or relative path,UNC path >" * "<URL>"   Connection string.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qType | One of:   * ODBC * OLEDB * <Name of the custom connection file> * folder * internet   Type of the connection.  This parameter is mandatory and must be set when creating or modifying a connection.  For ODBC, OLEDB and custom connections, the engine checks that the connection type matches the connection string.  The type is not case sensitive. | String |
| qUserName | Name of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the user name. | String |
| qPassword | Password of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the password. | String |
| qModifiedDate | Is generated by the engine.  Creation date of the connection or last modification date of the connection. | String |
| qMeta | Information about the connection. | *NxMeta* |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

##### Outputs

The following is returned in the output:

"result": {

"qConnectionId": "<identifier of the connection>"

}

#### CreateDimension method

##### Overview

Creates a master dimension.

A master dimension is stored in the library of an app and can be used in many objects. Several generic objects can contain the same dimension.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the properties  This parameter is mandatory. | [GenericDimensionProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateDimension-method.htm#GenericDimensionProperties) |

[Closed](javascript:void(0);)[GenericDimensionProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the dimension.  This parameter is mandatory. | *NxInfo* |
| qDim | Definition of the dimension.  This parameter is mandatory. | *NxLibraryDimensionDef* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)NxLibraryDimensionDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qGrouping | Information about the grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qFieldDefs | Array of dimension names. | Array of String |
| qFieldLabels | Array of dimension labels. | Array of String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericDimension",

"qHandle": <handle of the dimension>

},

"qInfo": {

"qId": "<identifier of the dimension>",

"qType": "Dimension"

}

}

#### CloneMeasure method

##### Overview

Clones a measure.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object to clone | String |

##### Outputs

The following is returned in the output:

"result": {

"qCloneId": "<identifier of the clone>"

}

The identifier is set by the engine.

#### CloneObject method

##### Overview

Clones any visualizations, sheets and stories. The clone method works for both app objects and child objects.

When you clone an object that contains children, the children are cloned as well.

It is not possible to clone a session object.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object to clone | String |

##### Outputs

The following is returned in the output:

"result": {

"qCloneId": "<identifier of the clone>"

}

The identifier is set by the engine.

#### CommitDraft method

##### Overview

Commits the draft of an object that was previously created by invoking the [CreateDraft method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateDraft-method.htm).

Committing a draft replaces the corresponding published object.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the draft to commit. | String |

##### Outputs

The following is returned in the output:

"result": {}

**See also:**

[Create a draft and commit it](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/WorkingWithAppsAndVisualizations/PublishAppVisualizations/create-draft-commit-draft.htm)

#### CreateBookmark method

##### Overview

Creates a bookmark.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the object.  This parameter is mandatory. | *GenericBookmarkProperties*  See[GenericBookmarkProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateBookmark-method.htm#GenericBookmarkProperties). |

[ClosedGenericBookmarkProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the bookmark.  This parameter is mandatory. | *NxInfo* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericBookmark",

"qHandle": <handle of the bookmark>

},

"qInfo": {

"qId": "<identifier of the bookmark>",

"qType": "Bookmark"

}

}

#### CreateConnection method

##### Overview

Creates a connection. A connection indicates from which data source, the data should be taken.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnection | Information about the connection.  This parameter is mandatory. | [Connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateConnection-method.htm#Connection) |

[ClosedConnection](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the connection.  Is generated by the engine and is unique. | String |
| qName | Name of the connection.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qConnectionString | One of:   * ODBC CONNECT TO [<provider name>] * OLEDB CONNECT TO [<provider name>] * CUSTOM CONNECT TO [<provider name>] * "<local absolute or relative path,UNC path >" * "<URL>"   Connection string.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qType | One of:   * ODBC * OLEDB * <Name of the custom connection file> * folder * internet   Type of the connection.  This parameter is mandatory and must be set when creating or modifying a connection.  For ODBC, OLEDB and custom connections, the engine checks that the connection type matches the connection string.  The type is not case sensitive. | String |
| qUserName | Name of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the user name. | String |
| qPassword | Password of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the password. | String |
| qModifiedDate | Is generated by the engine.  Creation date of the connection or last modification date of the connection. | String |
| qMeta | Information about the connection. | *NxMeta* |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

##### Outputs

The following is returned in the output:

"result": {

"qConnectionId": "<identifier of the connection>"

}

#### CreateDimension method

##### Overview

Creates a master dimension.

A master dimension is stored in the library of an app and can be used in many objects. Several generic objects can contain the same dimension.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the properties  This parameter is mandatory. | [GenericDimensionProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateDimension-method.htm#GenericDimensionProperties) |

[ClosedGenericDimensionProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the dimension.  This parameter is mandatory. | *NxInfo* |
| qDim | Definition of the dimension.  This parameter is mandatory. | *NxLibraryDimensionDef* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)NxLibraryDimensionDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qGrouping | Information about the grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qFieldDefs | Array of dimension names. | Array of String |
| qFieldLabels | Array of dimension labels. | Array of String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericDimension",

"qHandle": <handle of the dimension>

},

"qInfo": {

"qId": "<identifier of the dimension>",

"qType": "Dimension"

}

}

#### CreateDraft method

##### Overview

Creates a draft of an object.

This method can be used to create a draft of a sheet or a story that is published. This is a way to continue working on a sheet or a story that is published.

Replace the published object by the content of the draft by invoking the [CommitDraft method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CommitDraft-method.htm).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object to create a draft from. | String |

##### Outputs

The following is returned in the output:

"result": {

"qDraftId": "<identifier of the draft>"

}

The identifier is set by the engine.

#### CreateMeasure method

##### Overview

Creates a master measure.

A master measure is stored in the library of an app and can be used in many objects. Several generic objects can contain the same measure.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the properties  This parameter is mandatory. | [GenericMeasureProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateMeasure-method.htm#GenericMeasureProperties) |

[ClosedGenericMeasureProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the measure.  This parameter is mandatory. | *NxInfo* |
| qMeasure | Definition of the measure.  This parameter is mandatory. | *NxLibraryMeasureDef* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)NxLibraryMeasureDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLabel | Label of the measure. | String |
| qDef | Definition of the measure. | String |
| qGrouping | Used to define a cyclic group or drill-down group.  This parameter is optional.  Default value is no grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qExpressions | Array of expressions. | Array of String |
| qActiveExpression | Index to the active expression in a measure. | Integer |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericMeasure",

"qHandle": <handle of the measure>

},

"qInfo": {

"qId": "<identifier of the measure>",

"qType": "Measure"

}

}

#### CreateObject method

##### Overview

Creates a generic object at app level. For more information on generic objects, see [Generic object definition](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/overview-generic-object.htm).

It is possible to create a generic object that is linked to another object.

A linked object is an object that points to a linking object. The linking object is defined in the properties of the linked object (in *qExtendsId*).

The linked object has the same properties as the linking object.

The linking object cannot be a transient object.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the object  This parameter is mandatory. | *GenericObjectProperties*  See[GenericObjectProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateObject-method.htm#GenericObjectProperties). |

[ClosedGenericObjectProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qExtendsId | Should be set to create an object that is linked to another object. Enter the identifier of the linking object (i.e the object you want to link to).  This parameter is mandatory.  If you do not want to link your object, set this parameter to an empty string. | String |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

In addition to the parameters specified above, the parameter qProp can get any properties defined in the [Generic object definition](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/overview-generic-object.htm) section.

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericObject",

"qHandle": <handle of the new object>

},

"qInfo": {

"qId": "<identifier of the new object>",

"qType": "<type of the new object>"

}

}

#### CreateSessionObject method

##### Overview

Creates a transient object. For example, you can use a transient object to create an app overview or a story overview.

It is possible to create a transient object that is linked to another object.

A linked object is an object that points to a linking object. The linking object is defined in the properties of the linked object (in *qExtendsId*).

The linked object has the same properties as the linking object.

The linking object cannot be a transient object.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the object  This parameter is mandatory. | *GenericObjectProperties*  See [GenericObjectProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateSessionObject-method.htm#GenericObjectProperties) |

[ClosedGenericObjectProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qExtendsId | Should be set to create an object that is linked to another object. Enter the identifier of the linking object (i.e the object you want to link to).  This parameter is mandatory.  If you do not want to link your object, set this parameter to an empty string. | String |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

In addition to the parameters specified above, the parameter qProp can get any properties defined in the [Generic object definition](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/overview-generic-object.htm) section.

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericObject",

"qHandle": <handle>

}

}

#### CreateSessionVariable method

##### Overview

Creates a transient variable.

To set some properties to the variable, use the [SetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-SetProperties-method.htm).

##### Definition

A variable in Qlik Sense is a named entity, containing a data value. This value can be static or be the result of a calculation. A variable acquires its value at the same time that the variable is created or after when updating the properties of the variable. Variables can be used in bookmarks and can contain numeric or alphanumeric data. Any change made to the variable is applied everywhere the variable is used.

When a variable is used in an expression, it is substituted by its value or the variable's definition.

**Example:**

The variable *x* contains the text string *Sum(Sales)* .

In a chart, you define the expression *$(x)/12* . The effect is exactly the same as having the chart expression*Sum(Sales)/12* .

However, if you change the value of the variable *x* to *Sum(Budget)*, the data in the chart are immediately recalculated with the expression interpreted as *Sum(Budget)/12* .

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Name of the variable. Variable names are case sensitive.  This parameter is mandatory. | [GenericVariableProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateSessionVariable-method.htm#GenericVariableProperties) |

[Closed](javascript:void(0);)[GenericVariableProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qMetaDef | Meta data. | Dynamic properties |
| qName | Name of the variable.  The name must be unique.  This parameter is mandatory. | String |
| qComment | Comment related to the variable.  This parameter is optional. | String |
| qNumberPresentation | Defines the format of the value.  This parameter is optional. | *FieldAttributes* |
| qIncludeInBookmark | Set this property to true to update the variable when applying a bookmark. The variable value will be persisted in the bookmark.  The value of a variable can affect the state of the selections.  Script variables cannot be persisted in the bookmark.  The default value is false. | Boolean |
| qDefinition | Definition of the variable. | String |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)FieldAttributes](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the field.  Default is U. | One of:  • U for UNKNOWN type.  • A for ASCII; Numeric fields values contain only standard ASCII characters.  • I for INTEGER; Numeric fields values are shown as integer numbers.  • R for REAL; Numeric fields values are shown as real numbers.  • F for FIX; Numeric fields values are shown as numbers with a fix number of decimals.  • M for MONEY; Numeric fields values are shown as in the money format.  • D for DATE; Numeric fields values are shown as dates.  • T for TIME; Numeric fields values are shown as times.  • TS TIMESTAMP; Numeric fields values are shown as time stamps.  • IV for INTERVAL; Numeric fields values are shown as intervals. |
| qnDec | Number of decimals.  Default is 10. | Integer between 0 and 15. |
| qUseThou | Defines whether or not a thousands separator must be used.  Default is 0. | One of:   * 0 for false * 1 for true |
| qFmt | Defines the format pattern that applies to*qText*.  Is used in connection to the type of the field (parameter **qType**).  For more information, see Struct[FieldAttributes](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldAttributes.htm).  Example: *YYYY-MM-DD* for a date | String |
| qDec | Defines the decimal separator.  Example:**.** | String |
| qThou | Defines the thousand separator (if any).  Is used if **qUseThou**is set to 1.  Example:**,** | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericVariable",

"qHandle": <Handle of the variable>

}

}

#### CreateSessionVariable method

##### Overview

Creates a transient variable.

To set some properties to the variable, use the [SetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-SetProperties-method.htm).

##### Definition

A variable in Qlik Sense is a named entity, containing a data value. This value can be static or be the result of a calculation. A variable acquires its value at the same time that the variable is created or after when updating the properties of the variable. Variables can be used in bookmarks and can contain numeric or alphanumeric data. Any change made to the variable is applied everywhere the variable is used.

When a variable is used in an expression, it is substituted by its value or the variable's definition.

**Example:**

The variable *x* contains the text string *Sum(Sales)* .

In a chart, you define the expression *$(x)/12* . The effect is exactly the same as having the chart expression*Sum(Sales)/12* .

However, if you change the value of the variable *x* to *Sum(Budget)*, the data in the chart are immediately recalculated with the expression interpreted as *Sum(Budget)/12* .

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Name of the variable. Variable names are case sensitive.  This parameter is mandatory. | [GenericVariableProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateSessionVariable-method.htm#GenericVariableProperties) |

[ClosedGenericVariableProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qMetaDef | Meta data. | Dynamic properties |
| qName | Name of the variable.  The name must be unique.  This parameter is mandatory. | String |
| qComment | Comment related to the variable.  This parameter is optional. | String |
| qNumberPresentation | Defines the format of the value.  This parameter is optional. | *FieldAttributes* |
| qIncludeInBookmark | Set this property to true to update the variable when applying a bookmark. The variable value will be persisted in the bookmark.  The value of a variable can affect the state of the selections.  Script variables cannot be persisted in the bookmark.  The default value is false. | Boolean |
| qDefinition | Definition of the variable. | String |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)FieldAttributes](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the field.  Default is U. | One of:  • U for UNKNOWN type.  • A for ASCII; Numeric fields values contain only standard ASCII characters.  • I for INTEGER; Numeric fields values are shown as integer numbers.  • R for REAL; Numeric fields values are shown as real numbers.  • F for FIX; Numeric fields values are shown as numbers with a fix number of decimals.  • M for MONEY; Numeric fields values are shown as in the money format.  • D for DATE; Numeric fields values are shown as dates.  • T for TIME; Numeric fields values are shown as times.  • TS TIMESTAMP; Numeric fields values are shown as time stamps.  • IV for INTERVAL; Numeric fields values are shown as intervals. |
| qnDec | Number of decimals.  Default is 10. | Integer between 0 and 15. |
| qUseThou | Defines whether or not a thousands separator must be used.  Default is 0. | One of:   * 0 for false * 1 for true |
| qFmt | Defines the format pattern that applies to*qText*.  Is used in connection to the type of the field (parameter **qType**).  For more information, see Struct[FieldAttributes](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldAttributes.htm).  Example: *YYYY-MM-DD* for a date | String |
| qDec | Defines the decimal separator.  Example:**.** | String |
| qThou | Defines the thousand separator (if any).  Is used if **qUseThou**is set to 1.  Example:**,** | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericVariable",

"qHandle": <Handle of the variable>

}

}

#### CreateVariable method

##### Overview

Creates a variable.

This method is deprecated (not recommended to use). Use [CreateVariableEx method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateVariableEx-method.htm) instead.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the variable. Variable names are case sensitive.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <true/false>

}

The operation is successful if qReturn is set to true.

#### CreateVariableEx method

##### Overview

Creates a variable.

To create a variable via a script, you need to use the [SetScript method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SetScript-method.htm). For more information, see [Create a variable](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/WorkingWithAppsAndVisualizations/CreateVariables/create-variable.htm).

To set some properties to the variable, use the [SetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-SetProperties-method.htm).

In a published app, only transient variables can be created. See [CreateSessionVariable method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateSessionVariable-method.htm).

##### Definition

A variable in Qlik Sense is a named entity, containing a data value. This value can be static or be the result of a calculation. A variable acquires its value at the same time that the variable is created or after when updating the properties of the variable. Variables can be used in bookmarks and can contain numeric or alphanumeric data. Any change made to the variable is applied everywhere the variable is used.

When a variable is used in an expression, it is substituted by its value or the variable's definition.

**Example:**

The variable *x* contains the text string *Sum(Sales)* .

In a chart, you define the expression *$(x)/12* . The effect is exactly the same as having the chart expression*Sum(Sales)/12* .

However, if you change the value of the variable *x* to *Sum(Budget)*, the data in the chart are immediately recalculated with the expression interpreted as *Sum(Budget)/12* .

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Name of the variable. Variable names are case sensitive and must be unique.  This parameter is mandatory. | [GenericVariableProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateVariableEx-method.htm#GenericVariableProperties) |

[ClosedGenericVariableProperties](javascript:void(0);)

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

[[Closed](javascript:void(0);)FieldAttributes](javascript:void(0);)

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | [NxInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-CreateVariableEx-method.htm#NxInfo) |

[Closed](javascript:void(0);)[NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

#### DeleteConnection method

##### Overview

Deletes a connection.

When running Qlik Sense in server mode, there is an additional file connection named*AttachedFiles*. The AttachedFiles connection can only be removed by the administrator of the system.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection to remove.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### DestroyBookmark method

##### Overview

Removes a bookmark.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the bookmark | String |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### DestroyDimension method

##### Overview

Removes a dimension.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the dimension to remove.  This parameter is mandatory. | String |

##### Outputs

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### DestroyDraft method

##### Overview

Removes the draft of an object.

The children of the draft object (if any) are removed as well.

This method can be used to cancel the work on the draft of an object. For example, if you had created a draft of a sheet that is published, you might not want anymore to replace the published sheet.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the draft object to remove.  This parameter is mandatory. | String |
| qSourceId | Identifier of the source object (the object from which a draft was created). | String |

##### Outputs

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### DestroyMeasure method

##### Overview

Removes a generic measure.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the measure to remove.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### DestroyDraft method

##### Overview

Removes the draft of an object.

The children of the draft object (if any) are removed as well.

This method can be used to cancel the work on the draft of an object. For example, if you had created a draft of a sheet that is published, you might not want anymore to replace the published sheet.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the draft object to remove.  This parameter is mandatory. | String |
| qSourceId | Identifier of the source object (the object from which a draft was created). | String |

##### Outputs

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### DestroyMeasure method

##### Overview

Removes a generic measure.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the measure to remove.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### DestroyObject method

##### Overview

Removes an app object.

The children of the object (if any) are removed as well.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object to remove.  This parameter is mandatory. | String |

##### Outputs

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### DestroySessionObject method

##### Overview

Removes a transient object.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the transient object to remove.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true, false>

},

"close": [

<handle of the object that is closed>

]

The operation is successful if **qSuccess**is set to true.

#### DestroySessionVariable method

##### Overview

Removes a transient variable.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the variable. | String |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### DestroyVariableById method

##### Overview

Removes a variable.

Script-defined variables cannot be removed using the [DestroyVariableById method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroyVariableById-method.htm) or the[DestroyVariableByName method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroyVariableByName-method.htm). For more information, see [Remove a variable](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/WorkingWithAppsAndVisualizations/CreateVariables/remove-variable.htm).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the variable. | String |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

**See also:**

[Remove a variable](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/WorkingWithAppsAndVisualizations/CreateVariables/remove-variable.htm)

#### DestroyVariableByName method

##### Overview

Removes a variable.

Script-defined variables cannot be removed using the [DestroyVariableById method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroyVariableById-method.htm) or the[DestroyVariableByName method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroyVariableByName-method.htm). For more information, see [Remove a variable](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/WorkingWithAppsAndVisualizations/CreateVariables/remove-variable.htm).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the variable. | String |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### DoReload method

##### Overview

Reloads the script that is set in an app.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMode | Error handling mode  One of:   * 0: for default mode * 1: for ABEND; the reload of the script ends if an error occurs. * 2: for ignore; the reload of the script continues even if an error is detected in the script.   This parameter is optional. | Integer |
| qPartial | Set to true for partial reload.  This parameter is optional.  The default value is false. | Boolean |
| qDebug | Set to true if debug breakpoints are to be honored. The execution of the script will be in debug mode.  This parameter is optional.  The default value is false. | Boolean |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <true or false>

}

The operation is successful if **qReturn** is set to true.

##### Logs

When this method is called, audit activity logs are produced to track the user activity.

In the case of errors, both audit activity logs and system services logs are produced.

The log files are named as follows:

|  |  |
| --- | --- |
| **Audit activity log** | **System service log** |
| *<MachineName>\_AuditActivity\_Engine.txt in server mode*  *<MachineName>\_AuditActivity\_Engine.log in desktop mode* | *<MachineName>\_Service\_Engine.txt* in server mode  *<MachineName>\_Service\_Engine.log* in desktop mode |

###### Where to find the log files

The location of the log files depends on if you are running Qlik Sense Desktop or Qlik Sense.

|  |  |
| --- | --- |
| **Qlik Sense** | **Qlik Sense Desktop** |
| *%ProgramData%/Qlik/Sense/Log/Engine* | *%UserProfile%/Documents/Qlik/Sense/Log* |

For more information, see Qlik Sense troubleshooting guide.

#### DoReloadEx method

##### Overview

Reloads the script that is set in an app and returns the path to the script log file.

A log file is created per reload.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qParams | This parameter is optional. | [DoReloadExParams](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DoReloadEx-method.htm#DoReloadExParams) |

[Closed](javascript:void(0);)[DoReloadExParams](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMode | Error handling mode  One of:   * 0: for default mode * 1: for ABEND; the reload of the script ends if an error occurs. * 2: for ignore; the reload of the script continues even if an error is detected in the script.   This parameter is optional. | Integer |
| qPartial | Set to true for partial reload.  This parameter is optional.  The default value is false. | Boolean |
| qDebug | Set to true if debug breakpoints are to be honored. The execution of the script will be in debug mode.  This parameter is optional.  The default value is false. | Boolean |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qResult | This parameter is optional. | [DoReloadExResult](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DoReloadEx-method.htm#DoReloadExResult) |

[Closed](javascript:void(0);)[DoReloadExResult](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSuccess | The operation is successful if *qSuccess* is set to True. | Boolean |
| qScriptLogFile | Path to the script log file. | String |

##### Logs

When this method is called, audit activity logs are produced to track the user activity.

In the case of errors, both audit activity logs and system services logs are produced.

The log files are named as follows:

|  |  |
| --- | --- |
| **Audit activity log** | **System service log** |
| *<MachineName>\_AuditActivity\_Engine.txt in server mode*  *<MachineName>\_AuditActivity\_Engine.log in desktop mode* | *<MachineName>\_Service\_Engine.txt* in server mode  *<MachineName>\_Service\_Engine.log* in desktop mode |

###### Where to find the log files

The location of the log files depends on if you are running Qlik Sense Desktop or Qlik Sense.

|  |  |
| --- | --- |
| **Qlik Sense** | **Qlik Sense Desktop** |
| *%ProgramData%/Qlik/Sense/Log/Engine* | *%UserProfile%/Documents/Qlik/Sense/Log* |

For more information, see Qlik Sense troubleshooting guide.

#### DoSave method

##### Overview

Saves an app. All objects and data in the data model are saved.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFileName | Name of the file to save.  This parameter is optional. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### Evaluate method

##### Overview

Evaluates an expression as a string.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qExpression | Expression to evaluate. | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <expression evaluated as a string>

}

###### Example

The app used in this example is *Golf quest*.

The client sends:

{

"handle": 1,

"method": "Evaluate",

"params": {

"qExpression": "Sum(Holes)"

},

"id": 6,

"jsonrpc": "2.0"

}

The engine returns:

{

"jsonrpc": "2.0",

"id": 6,

"result": {

"qReturn": "361716"

}

}

#### EvaluateEx method

##### Overview

Evaluates an expression as a dual.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qExpression | Expression to evaluate. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValue | Expression to evaluate. | [FieldValue](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-EvaluateEx-method.htm#FieldValue) |

[Closed](javascript:void(0);)[FieldValue](javascript:void(0);)

###### Example

The app used in this example is *Golf quest*.

The client sends:

{

"handle": 1,

"method": "EvaluateEx",

"params": {

"qExpression": "Sum(Holes)"

},

"id": 7,

"jsonrpc": "2.0"

}

The engine returns:

{

"jsonrpc": "2.0",

"id": 7,

"result": {

"qValue": {

"qText": "361716",

"qIsNumeric": true,

"qNumber": 361716

}

}

}

#### FindMatchingFields method

##### Overview

Retrieves any fields that belong to the same archipelago as the specified field and that match at least one of the specified tags.

Tags set by Qlik Sense are prefixed by the *$* sign.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFieldName | Name of the field.  This method looks for fields that belong to the same archipelago as this specified field. | String |
| qTags | List of tags.  This method looks for fields that match at least one of the tags in this list. | Array of String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFieldNames | List of matching fields | Array of[NxMatchingFieldInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-FindMatchingFields-method.htm#NxMatchingFieldInfo) |

[Closed](javascript:void(0);)[NxMatchingFieldInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field | String |
| qTags | List of tags | Array of String |

#### ForwardCount method

##### Overview

Returns the number of entries on the Forward stack.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <Number of entries in the forward stack>

}

#### Forward method

##### Overview

Loads the next logical operation (if any).

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### GetAllInfos method

##### Overview

Returns the identifier and the type of any generic object in the app.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfos | Information about all generic objects in the app. | Array of [NxInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetAllInfos-method.htm#NxInfo). |

[ClosedNxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

#### GetAppLayout method

##### Overview

Evaluates an app.

Returns dynamic properties (if any) in addition to the engine (fixed) properties.

##### Parameters

None

##### Outputs

A data set is returned.

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLayout | A data set | [NxAppLayout](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetAppLayout-method.htm#NxAppLayout) |

###### [Closed](javascript:void(0);)[NxAppLayout](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTitle | Title of the app. | String |
| qFileName | In server mode, this property corresponds to the app identifier (GUID).  In desktop mode, this property corresponds to the full path of the app. | String |
| qLastReloadTime | Date and time of the last reload of the app in ISO format. | String |
| qModified | Is set to true if the app has been updated since the last save. | Boolean |
| qHasScript | Is set to true if a script is defined in the app. | Boolean |
| qStateNames | Array of alternate states. | Array of String |
| qMeta | Information on publishing and permissions. | *NxMeta* |
| qLocaleInfo | Information about the locale. | *LocaleInfo* |
| qHasData | Is set to true if the app contains data following a script reload. | Boolean |
| qReadOnly | If set to true, it means that the app is read-only. | Boolean |
| qIsOpenedWithoutData | If set to true, it means that the app was opened without loading its data. | Boolean |
| qThumbnail | App thumbnail. | *StaticContentUrl* |

Desktop mode

In desktop mode, this structure can contain dynamic properties.

Server mode

In server mode, only a few dynamic properties at app level are persisted.

The persisted dynamic properties are the following:

* modifiedDate
* published
* publishTime
* privileges
* description
* dynamicColor

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

[[Closed](javascript:void(0);)LocaleInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDecimalSep | Decimal separator. | String |
| qThousandSep | Thousand separator. | String |
| qListSep | List separator. | String |
| qMoneyDecimalSep | Money decimal separator. | String |
| qMoneyThousandSep | Money thousand separator. | String |
| qCurrentYear | Current year. | Integer |
| qMoneyFmt | Money format.  Example: *#.##0,00 kr;-#.##0,00 kr* | String |
| qTimeFmt | Time format.  Example: *hh:mm:ss* | String |
| qDateFmt | Date format.  Example: *YYYY-MM-DD* | String |
| qTimestampFmt | Time stamp format.  Example: *YYYY-MM-DD hh:mm:ss[.fff]* | String |
| qCalendarStrings | Information about the calendar. | *CalendarStrings* |
| qFirstWeekDay | First day of the week, starting from 0.  According to ISO 8601, *Monday*is the first day of the week.   * 0 = Monday * 1 = Tuesday * .. * 6 = Sunday   If this property has not been set in a script, the returned value comes from the Windows operating system. | Integer |
| qBrokenWeeks | Is set to true if broken weeks are allowed in a year.  According to ISO 8601, no broken weeks should be allowed.  This property is not shown if set to false.  If *qBrokenWeeks*is set to true, *qReferenceDay*is irrelevant.  If this property has not been set in a script, the returned value comes from the Windows operating system. | Boolean |
| qReferenceDay | Day in the year that is always in week 1.  According to ISO 8601, January 4th should always be part of the first week of the year (*qReferenceDay*=4).  Recommended values are in the range 1 and 7.  If this property has not been set in a script, the returned value comes from the Windows operating system.  This property is not relevant if there are broken weeks in the year. | Integer |
| qFirstMonthOfYear | First month of the year, starting from 1.  According to ISO 8601, *January*is the first month of the year.   * 1 = January * 2 = February * 12 = January   If this property has not been set in a script, the returned value comes from the Windows operating system. | Integer |
| qCollation | Locale name (following language tagging convention RFC 4646):  *<language>-<REGION>*  Where   * *language*is a lowercase ISO 639 language code * *REGION*specifies an uppercase ISO 3166 country code.   If this property has not been set in a script, the returned value comes from the Windows operating system. | String |

[[Closed](javascript:void(0);)CalendarStrings](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDayNames | List of short day names. | Array of String |
| qMonthNames | List of short month names. | Array of String |
| qLongDayNames | List of long day names. | Array of String |
| qLongMonthNames | List of long month names. | Array of String |

[[Closed](javascript:void(0);)StaticContentUrl](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUrl | Relative path of the thumbnail. | String |

In addition, this structure can return dynamic properties.

#### GetAppProperties method

##### Overview

Gets the properties of an app.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the properties of the app. | [NxAppProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetAppProperties-method.htm#NxAppProperties) |

###### [[Closed](javascript:void(0);)NxAppProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTitle | App title. | String |
| qLastReloadTime | Last reload time of the app. | String |
| qThumbnail | App thumbnail. | *StaticContentUrlDef* |
| qMigrationHash | Internal property reserved for app migration.  Patch version of the app.  Do not update. | String |
| qSavedInProductVersion | Internal property reserved for app migration.  The app is saved in this version of the product.  Do not update. | String |

Desktop mode

In desktop mode, this structure can contain dynamic properties.

Server mode

In server mode, only a few dynamic properties at app level are persisted.

The persisted dynamic properties are the following:

* modifiedDate
* published
* publishTime
* privileges
* description
* dynamicColor

[[Closed](javascript:void(0);)StaticContentUrlDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUrl | Relative path of the thumbnail. | String |

In addition, this structure can contain dynamic properties.

#### GetAssociationScores method

##### Overview

Computes a set of association scores for each pair of fields between two given tables that have been loaded in an app.

When a table contains some synthetic keys, all fields in the synthetic key tables are analyzed against fields in other tables. To denote that a field is a synthetic key, the field name is prefixed by *[Synthetic Key]:*.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTable1 | Name of the first table. | String |
| qTable2 | Name of the second table. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qScore | Array of computed scores. | Array of [AssociationScore](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetAssociationScores-method.htm#AssociationScore) |

[Closed](javascript:void(0);)[AssociationScore](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFieldPairName | Pair of fields.  *<FieldName1>*/ *<FieldName2>*  Where:  <*FieldName1*> is a field in the table 1 (defined in *qTable1*)  <*FieldName2*> is a field in the table 2 (defined in *qTable2*)  If the field is a synthetic key, the name of the field is preceded by*[Synthetic key]:*. | String |
| qScoreSummary | Flag used to interpret calculated scores.  One of the following values or sum of values that apply:   * 0: The cardinal ratio cannot be zero but the symbol score and the row score can be zero. * -1: The fields do not have the same type. * -2: The number of rows of the field*FieldName1*is zero. * -4: The number of distinct values of the field *FieldName1*is zero. * -8: The number of rows of the field*FieldName2*is zero. * -16: The number of distinct values of the field *FieldName2*is zero.   Example:  The number of rows of the field *FieldName1*is zero, and the number of distinct values of the field *FieldName2*is zero, then*qScoreSummary*is -18. | Integer |
| qField1Scores | Association information about the field*FieldName1*defined in *qFieldPairName*. | *FieldScores* |
| qField2Scores | Association information about the field*FieldName2*defined in *qFieldPairName*. | *FieldScores* |

[[Closed](javascript:void(0);)FieldScores](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFieldName | Field name.  One of the field names defined in*qFieldPairName.* | String |
| qCardinalRatio | Cardinality of a column/field divided by the number of rows in the table.  If the cardinal ratio is 1, it means that the column is a candidate/primary key. | double |
| qSymbolScore | Number of distinct matches between the two fields defined in *qFieldPairName*divided by the number of distinct values in the field*qFieldName*.  If 0, it means that there are no common values between the two fields defined in*qFieldPairName*. | double |
| qRowScore | Number of matches between the two fields defined in *qFieldPairName*divided by the number of values in the field *qFieldName*.  If 0, it means that there are no common values between the two fields defined in*qFieldPairName*. | double |

#### GetBookmark method

##### Overview

Returns the handle of a bookmark.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the bookmark. | String |

##### Outputs

The following is returned in the output:

{

"jsonrpc": "2.0",

"id": 3,

"result": {

"qReturn": {

"qType": "GenericBookmark",

"qHandle": <handle of the bookmark>

}

}

}

#### GetConnection method

##### Overview

Retrieves a connection and returns:

* The creation time of the connection
* The identifier of the connection
* The type of the connection
* The name of the connection
* The connection string

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnection | Information about the connection.  This parameter is mandatory. | [Connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm#Connection) |

[ClosedConnection](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the connection.  Is generated by the engine and is unique. | String |
| qName | Name of the connection.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qConnectionString | One of:   * ODBC CONNECT TO [<provider name>] * OLEDB CONNECT TO [<provider name>] * CUSTOM CONNECT TO [<provider name>] * "<local absolute or relative path,UNC path >" * "<URL>"   Connection string.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qType | One of:   * ODBC * OLEDB * <Name of the custom connection file> * folder * internet   Type of the connection.  This parameter is mandatory and must be set when creating or modifying a connection.  For ODBC, OLEDB and custom connections, the engine checks that the connection type matches the connection string.  The type is not case sensitive. | String |
| qUserName | Name of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the user name. | String |
| qPassword | Password of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the password. | String |
| qModifiedDate | Is generated by the engine.  Creation date of the connection or last modification date of the connection. | String |
| qMeta | Information about the connection. | *NxMeta* |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

#### GetConnections method

##### Overview

Lists the connections in an app.

When running Qlik Sense in server mode, there is an additional file connection named*AttachedFiles*. This connection is stored in the Qlik Sense repository.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnections | List of connections.  This parameter is mandatory. | Array of [Connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnections-method.htm#Connection) |

[ClosedConnection](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the connection.  Is generated by the engine and is unique. | String |
| qName | Name of the connection.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qConnectionString | One of:   * ODBC CONNECT TO [<provider name>] * OLEDB CONNECT TO [<provider name>] * CUSTOM CONNECT TO [<provider name>] * "<local absolute or relative path,UNC path >" * "<URL>"   Connection string.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qType | One of:   * ODBC * OLEDB * <Name of the custom connection file> * folder * internet   Type of the connection.  This parameter is mandatory and must be set when creating or modifying a connection.  For ODBC, OLEDB and custom connections, the engine checks that the connection type matches the connection string.  The type is not case sensitive. | String |
| qUserName | Name of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the user name. | String |
| qPassword | Password of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the password. | String |
| qModifiedDate | Is generated by the engine.  Creation date of the connection or last modification date of the connection. | String |
| qMeta | Information about the connection. | *NxMeta* |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

#### GetContentLibraries method

##### Overview

Lists the content libraries.

To differentiate a global content library from an app specific content library, you can check the property*qAppSpecific*. If this property is set to true, it means that the content library is app specific.

There is always one specific content library per app.

###### Qlik Sense

Returns the global content libraries and the app specific content library.

When using Qlik Sense, you can have more than one global content library. The global content libraries are common to all apps in the Qlik Sense repository.

By default, there is one global content library named *Default*.

###### Qlik Sense Desktop

Returns the global content library and the app specific content library from the disk.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qList | List the content libraries. | [ContentLibraryList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetContentLibraries-method.htm#ContentLibraryList) |

[Closed](javascript:void(0);)[ContentLibraryList](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | Information about the content library. | *ContentLibraryListItem* |

[[Closed](javascript:void(0);)ContentLibraryListItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the library. | String |
| qAppSpecific | Is set to true if the library is specific to the app (not a global content library). | Boolean |
| qMeta | Information about publishing and permissions. | Null or *NxMeta* |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

#### GetDatabaseInfo method

##### Overview

Gives information about an ODBC, OLEDB or CUSTOM connection. See [Outputs](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDatabaseInfo-method.htm#Outputs) for more details.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Name of the connection  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the connection | [DatabaseInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDatabaseInfo-method.htm#DatabaseInfo) |

[Closed](javascript:void(0);)[DatabaseInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDBMSName | Name of the product accessed by the provider | String |
| qDBUsage | If set to true, it means that the data source contains some databases. | Boolean |
| qOwnerUsage | If set to true, it means that the data source contains some owners. | Boolean |
| qDBSeparator | Character string used after the database name  Example with separator "**.**":  **FROM LinkedTablesData.dbo.Months**  Where:   * LinkedTablesData is the database name * dbo is the owner name * Months is the table name | String |
| qOwnerSeparator | Character string used after the owner name  Example with separator "**.**":  **FROM LinkedTablesData.dbo.Months**  Where:   * LinkedTablesData is the database name * dbo is the owner name * Months is the table name | String |
| qDBFirst | If set to true, it means that the database is displayed first, before the owners and tables. | Boolean |
| qQuotePreffix | Prefix used with field, database or owner names that contain special characters or keywords. | String |
| qQuoteSuffix | Suffix used with field, database or owner names that contain special characters or keywords. | String |
| qSpecialChars | List of the special characters | String |
| qDefaultDatabase | Name of the default database | String |
| qKeywords | List of the script keywords | Array of String |

#### GetDatabaseOwners method

##### Overview

Lists the owners of a database for a ODBC, OLEDB or CUSTOM connection.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection  This parameter is mandatory. | String |
| qDatabase | Name of the database  This parameter is optional. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOwners | List of owner names | Array of [DatabaseOwner](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDatabaseOwners-method.htm#DatabaseOwner). |

[[Closed](javascript:void(0);)DatabaseOwner](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the owner | String |

#### GetDatabases method

##### Overview

Lists the databases inside a ODBC, OLEDB or CUSTOM data source.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDatabases | List of databases. | Array of [Database](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDatabases-method.htm#Database) |

[[Closed](javascript:void(0);)Database](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the database. | String |
| qIsDefault | Is set to true if the database is set by default. | Boolean |

#### GetDatabaseTableFields method

##### Overview

Lists the fields inside a table of a database for a ODBC, OLEDB or CUSTOM connection.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection  This parameter is mandatory. | String |
| qDatabase | Name of the database  This parameter is optional.  If *qDatabase*is not set then *qOwner*must be set. | String |
| qOwner | Owner of the database  This parameter is optional.  If *qOwner*is not set then *qDatabase*must be set. | String |
| qTable | Name of the table  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFields | List of the fields. | Array of [DataField](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDatabaseTableFields-method.htm#DataField) |

[Closed](javascript:void(0);)[DataField](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field. | String |
| qIsKey | Is set to true if the field is a primary key. | Boolean |
| qOriginalFieldName | Is shown for fixed records.  *qOriginalFieldName*and *qName*are identical if no field names are used in the file.  *qOriginalFieldName*differs from *qName*if embedded file names are used in the file. | String |

#### GetDatabaseTablePreview method

##### Overview

Retrieves the values of the specified table of a database for a ODBC, OLEDB or CUSTOM connection.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection.  This parameter is mandatory. | String |
| qDatabase | Name of the database.  This parameter is optional.  If *qDatabase*is not set then *qOwner*must be set. | String |
| qOwner | Owner of the database.  This parameter is optional.  If *qOwner*is not set then *qDatabase*must be set. | String |
| qTable | Name of the table.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPreview | List the values in the table. | Array of [DataRecord](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDatabaseTablePreview-method.htm#DataRecord). |

[[Closed](javascript:void(0);)DataRecord](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValues | List of values inside the table.  The first values (in *result/qPreview/0/qValues*) correspond to the field names in the table.  The following values (from*result/qPreview/1/qValues*) are the values of the fields in the table. | Array of String |

#### GetDatabaseTables method

##### Overview

Lists the tables inside a database for a ODBC, OLEDB or CUSTOM connection.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection.  This parameter is mandatory. | String |
| qDatabase | Name of the database.  This parameter is optional.  If *qDatabase*is not set then *qOwner*must be set. | String |
| qOwner | Owner of the database.  This parameter is optional.  If *qOwner*is not set then *qDatabase*must be set. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTables | List of the tables. | Array of [DataTable](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetDatabaseTables-method.htm#DataTable) |

[[Closed](javascript:void(0);)DataTable](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the table. | String |
| qType | Type of the table.  For examples: Table, View | String |

#### GetDimension method

##### Overview

Returns the handle of a dimension.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the dimension  This parameter is mandatory | String |

##### Outputs

The following is returned in the output:

{

"jsonrpc": "2.0",

"id": 3,

"result": {

"qReturn": {

"qType": "GenericDimension",

"qHandle": <handle of the dimension>

}

}

}

 The handle of the dimension is returned.

#### GetEmptyScript method

##### Overview

Creates a script that contains one section. This section contains **Set**statements that give localized information from the regional settings of the computer.

The computer regional settings are retrieved when the engine starts.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLocalizedMainSection | Name of the script section.  The default value is *Main*.  This parameter is optional. | String |

##### Outputs

The following is returned in the output:

{

"jsonrpc": "2.0",

"id": 4,

"result": {

"qReturn": <List of script variables>

}

#### GetFavoriteVariables method

##### Overview

Retrieves the variables that are tagged as favorite.

##### Parameters

None.

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qNames | Favorite variables to retrieve. | Array of String |

#### GetFieldDescription method

##### Overview

Retrieves the description of a field.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFieldName | Name of the field  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qReturn | Information about the field  This parameter is mandatory. | [FieldDescription](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFieldDescription-method.htm#FieldDescription) |

[Closed](javascript:void(0);)[FieldDescription](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInternalNumber | Internal number of the field. | Integer |
| qName | Name of the field. | String |
| qSrcTables | List of table names. | Array of String |
| qIsSystem | If set to true, it means that the field is a system field.  The default value is false. | Boolean |
| qIsHidden | If set to true, it means that the field is hidden.  The default value is false. | Boolean |
| qIsSemantic | If set to true, it means that the field is a semantic.  The default value is false. | Boolean |
| qDistinctOnly | If set to true, only distinct field values are shown.  The default value is false. | Boolean |
| qCardinal | Number of distinct field values. | Integer |
| qTotalCount | Total number of field values. | Integer |
| qIsLocked | If set to true, it means that the field is locked.  The default value is false. | Boolean |
| qAlwaysOneSelected | If set to true, it means that the field has one and only one selection (not 0 and not more than 1).  If this property is set to true, the field cannot be cleared anymore and no more selections can be performed in that field.  The default value is false. | Boolean |
| qAndMode | If set to true a logical AND (instead of a logical OR) is used when making selections in a field.  The default value is false. | Boolean |
| qIsNumeric | Is set to true if the value is a numeric.  The default value is false. | Boolean |
| qComment | Field comment. | String |
| qTags | Gives information on a field. For example, it can return the type of the field.  Examples: key, text, ASCII | Array of String |
| qIsDefinitionOnly | If set to true, it means that the field is a field on the fly.  The default value is false. | Boolean |

#### GetField method

##### Overview

Retrieves the handle of a field.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFieldName | Name of the field.  This parameter is mandatory. | String |
| qStateName | Name of the alternate state.  This parameter is optional.  Default state is current selections. | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "Field",

"qHandle": <handle of the field>

}

}

#### GetField method

##### Overview

Retrieves the handle of a field.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFieldName | Name of the field.  This parameter is mandatory. | String |
| qStateName | Name of the alternate state.  This parameter is optional.  Default state is current selections. | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "Field",

"qHandle": <handle of the field>

}

}

#### GetFileTableFields method

##### Overview

Lists the fields of a table for a folder connection.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection.  This parameter is mandatory. | String |
| qRelativePath | Path of the connection file  This parameter is optional. | String |
| qDataFormat | Type of the file. | [FileDataFormat](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFileTableFields-method.htm#FileDataFormat) |
| qTable | Name of the table  This parameter must be set for *XLS*, *XLSX*,*HTML*and *XML*files. | String |

[Closed](javascript:void(0);)[FileDataFormat](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the file. | *FileType* |
| qLabel | One of:   * embedded labels (field names are present in the file) * no labels * explicit labels (for DIFfiles) | String |
| qQuote | One of:   * None (no quotes) * MSQ (Modern Style Quoting) * Standard (quotes " " or ' ' can be used, but only if they are the first and last non blank characters of a field value.)   This property is used for delimited files. | String |
| qComment | String that marks the beginning of the comment line.  Example: “#” or “//”  The engine ignores the commented lines during the data load.  This property is only used for delimited files. | String |
| qDelimiter | Information about the delimiter.  This property is used for delimited files. | *DelimiterInfo* |
| qCodePage | Character set used in the file. | Integer |
| qHeaderSize | Size of the header.  Example: If the header size is 2, the first two rows in the file are considered as header and not as data. The header can contain the field names. | Integer |
| qRecordSize | Record length.  Each record (row of data) contains a number of columns with a fixed field size.  This property is used for fixed record data files. | Integer |
| qTabSize | Number of spaces that one tab character represents in the table file.  This property is used for fixed record data files. | Integer |
| qIgnoreEOF | Is set to true, the end-of-file character is not taken into account during reload.  This property is used for delimited files and fixed record data files. | Boolean |
| qFixedWidthDelimiters | Positions of the field breaks in the table.  This property is used for fixed record data files. | String |

[[Closed](javascript:void(0);)FileType](javascript:void(0);)

Recognized file formats are:

* *CSV*for Delimited
* *FIX* for Fixed Record
* *DIF*for Data Interchange Format
* *EXCEL\_BIFF* for Microsoft Excel (XLS)
* *EXCEL\_OOXML* for Microsoft Excel (XLSX)
* *HTML*for HTML
* *QVD* for QVD file
* *XML* for XML
* *QVX* for QVX file
* *JSON*for JSON format
* *KML*for KML file

[[Closed](javascript:void(0);)DelimiterInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the delimiter.  Example:  "Tab\_DELIMITER" | String |
| qScriptCode | Representation of the delimiter value that is used in the script.  Example:  "'\t'" | String |
| qNumber | Delimiter character number used by the engine to determine how to separate the values. | Integer |
| qIsMultiple | Is set to true if multiple spaces are used to separate the values. | Boolean |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFields | List of the tables | Array of [DataField](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFileTableFields-method.htm#DataField) |
| qFormatSpec | List of format specification items, within brackets.  Examples of specification items:   * file type * embedded labels, no labels * table is <table name> | String |

[ClosedDataField](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field. | String |
| qIsKey | Is set to true if the field is a primary key. | Boolean |
| qOriginalFieldName | Is shown for fixed records.  *qOriginalFieldName*and *qName*are identical if no field names are used in the file.  *qOriginalFieldName*differs from *qName*if embedded file names are used in the file. | String |

#### GetFileTablePreview method

##### Overview

Lists the values in a table for a folder connection.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection.  This parameter is mandatory. | String |
| qRelativePath | Path of the connection file  This parameter is optional. | String |
| qDataFormat | Type of the file. | [FileDataFormat](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFileTablePreview-method.htm#FileDataFormat) |
| qTable | Name of the table  This parameter must be set for *XLS*, *XLSX*,*HTML*and *XML*files. | String |

[ClosedFileDataFormat](javascript:void(0);)

[[Closed](javascript:void(0);)FileType](javascript:void(0);)

[[Closed](javascript:void(0);)DelimiterInfo](javascript:void(0);)

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPreview | List of the tables | Array of [DataRecord](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFileTablePreview-method.htm#DataRecord) |
| qFormatSpec | List of format specification items, within brackets.  Examples of specification items:   * file type * embedded labels, no labels * table is <table name> | String |

[ClosedDataRecord](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValues | List of values inside the table.  The first values (in *result/qPreview/0/qValues*) correspond to the field names in the table.  The following values (from*result/qPreview/1/qValues*) are the values of the fields in the table. | Array of String |

#### GetFileTablesEx method

##### Overview

Lists the tables and fields of a JSON or XML file for a folder connection.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection.  This parameter is mandatory. | String |
| qRelativePath | Path of the connection file  This parameter is optional. | String |
| qDataFormat | Type of the file. | [FileDataFormat](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFileTablesEx-method.htm#FileDataFormat) |

[ClosedFileDataFormat](javascript:void(0);)

[[Closed](javascript:void(0);)DelimiterInfo](javascript:void(0);)

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTables | List of the tables | Array of [DataTableEx](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFileTablesEx-method.htm#DataTableEx) |

[Closed](javascript:void(0);)[DataTableEx](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the table. | String |
| qFields | List of the fields in the table. | Array of *DataField* |
| qFormatSpec | List of format specification items, within brackets.  Examples of specification items:   * file type * embedded labels, no labels * table is <table name> | String |

[[Closed](javascript:void(0);)DataField](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field. | String |
| qIsKey | Is set to true if the field is a primary key. | Boolean |
| qOriginalFieldName | Is shown for fixed records.  *qOriginalFieldName*and *qName*are identical if no field names are used in the file.  *qOriginalFieldName*differs from *qName*if embedded file names are used in the file. | String |

#### GetFileTables method

##### Overview

Lists the tables for a folder connection.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection.  This parameter is mandatory. | String |
| qRelativePath | Path of the connection file.  This parameter is mandatory. | String |
| qDataFormat | Type of the file. | [FileDataFormat](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFileTables-method.htm#FileDataFormat) |

[ClosedFileDataFormat](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the file. | *FileType* |
| qLabel | One of:   * embedded labels (field names are present in the file) * no labels * explicit labels (for DIFfiles) | String |
| qQuote | One of:   * None (no quotes) * MSQ (Modern Style Quoting) * Standard (quotes " " or ' ' can be used, but only if they are the first and last non blank characters of a field value.)   This property is used for delimited files. | String |
| qComment | String that marks the beginning of the comment line.  Example: “#” or “//”  The engine ignores the commented lines during the data load.  This property is only used for delimited files. | String |
| qDelimiter | Information about the delimiter.  This property is used for delimited files. | *DelimiterInfo* |
| qCodePage | Character set used in the file. | Integer |
| qHeaderSize | Size of the header.  Example: If the header size is 2, the first two rows in the file are considered as header and not as data. The header can contain the field names. | Integer |
| qRecordSize | Record length.  Each record (row of data) contains a number of columns with a fixed field size.  This property is used for fixed record data files. | Integer |
| qTabSize | Number of spaces that one tab character represents in the table file.  This property is used for fixed record data files. | Integer |
| qIgnoreEOF | Is set to true, the end-of-file character is not taken into account during reload.  This property is used for delimited files and fixed record data files. | Boolean |
| qFixedWidthDelimiters | Positions of the field breaks in the table.  This property is used for fixed record data files. | String |

[[Closed](javascript:void(0);)FileType](javascript:void(0);)

Recognized file formats are:

* *CSV*for Delimited
* *FIX* for Fixed Record
* *DIF*for Data Interchange Format
* *EXCEL\_BIFF* for Microsoft Excel (XLS)
* *EXCEL\_OOXML* for Microsoft Excel (XLSX)
* *HTML*for HTML
* *QVD* for QVD file
* *XML* for XML
* *QVX* for QVX file
* *JSON*for JSON format
* *KML*for KML file

[[Closed](javascript:void(0);)DelimiterInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the delimiter.  Example:  "Tab\_DELIMITER" | String |
| qScriptCode | Representation of the delimiter value that is used in the script.  Example:  "'\t'" | String |
| qNumber | Delimiter character number used by the engine to determine how to separate the values. | Integer |
| qIsMultiple | Is set to true if multiple spaces are used to separate the values. | Boolean |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTables | List of the tables | Array of [DataTable](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFileTables-method.htm#DataTable) |

[ClosedDataTable](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the table. | String |
| qType | Type of the table.  For examples: Table, View | String |

#### GetFolderItemsForConnection method

##### Overview

Lists the items for a folder connection.

##### Parameters

Three are two ways to specify the directory to retrieve the files from:

* Enter the connection identifier; the directory associated to the connection is used.
* Enter the connection identifier and a relative path

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection.  This parameter is mandatory. | String |
| qRelativePath | Relative path of the connection.  This parameter is optional. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFolderItems | List of the folder items.  This parameter is mandatory. | Array of [FolderItem](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetFolderItemsForConnection-method.htm#FolderItem) |

[Closed](javascript:void(0);)[FolderItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the folder item. | String |
| qType | Type of the folder item. | One of:   * FOLDER * FILE * OTHER |

#### GetIncludeFileContent method

##### Overview

Gets the content of a file.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path of the file to get the content from. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qContent | Content of the file. | String |

#### GetLibraryContent method

##### Overview

Returns the content of a library.

##### Global content library

In desktop mode, the content files are retrieved from:

*%userprofile%\Documents\Qlik\Sense\Content\Default*

In server mode, the content files are retrieved from the Qlik Sense repository.

##### App specific content library

The embedded files are returned.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the content library.  It corresponds to the property*qContentLibraryListItem/qName* returned by the[GetContentLibraries method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetContentLibraries-method.htm). | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qList | List the content files in the content library. | [StaticContentList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetLibraryContent-method.htm#StaticContentList) |

[Closed](javascript:void(0);)[StaticContentList](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | Information about the list of content files. | *StaticContentListItem* |

[[Closed](javascript:void(0);)StaticContentListItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUrlDef | Relative path to the content file. The URL is static.  In server mode, content files located:  • in the */content/<content library name>/* folder are part of a global content library.  • in the */appcontent/* folder are part of the app specific library.  The content files are never embedded in the*qvf*file.  In desktop mode, content files located:  • in the */content/default/* folder are outside the qvf file.  • in the */media/ folder*are embedded in the qvf file. | String |
| qUrl | Relative path to the content file. The URL is static.  In server mode, content files located:  • in the */content/<content library name>/* folder are part of a global content library.  • in the */appcontent/* folder are part of the app specific library.  The content files are never embedded in the*qvf*file.  In desktop mode, content files located:  • in the */content/default/* folder are outside the qvf file.  • in the */media/ folder*are embedded in the qvf file. | String |

In addition, this structure can return dynamic properties.

#### GetLocaleInfo method

##### Overview

Retrieves locale information.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qReturn | Information about the locale. | [LocaleInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetLocaleInfo-method.htm#LocaleInfo) |

[Closed](javascript:void(0);)[LocaleInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDecimalSep | Decimal separator. | String |
| qThousandSep | Thousand separator. | String |
| qListSep | List separator. | String |
| qMoneyDecimalSep | Money decimal separator. | String |
| qMoneyThousandSep | Money thousand separator. | String |
| qCurrentYear | Current year. | Integer |
| qMoneyFmt | Money format.  Example: *#.##0,00 kr;-#.##0,00 kr* | String |
| qTimeFmt | Time format.  Example: *hh:mm:ss* | String |
| qDateFmt | Date format.  Example: *YYYY-MM-DD* | String |
| qTimestampFmt | Time stamp format.  Example: *YYYY-MM-DD hh:mm:ss[.fff]* | String |
| qCalendarStrings | Information about the calendar. | *CalendarStrings* |
| qFirstWeekDay | First day of the week, starting from 0.  According to ISO 8601, *Monday*is the first day of the week.   * 0 = Monday * 1 = Tuesday * .. * 6 = Sunday   If this property has not been set in a script, the returned value comes from the Windows operating system. | Integer |
| qBrokenWeeks | Is set to true if broken weeks are allowed in a year.  According to ISO 8601, no broken weeks should be allowed.  This property is not shown if set to false.  If *qBrokenWeeks*is set to true, *qReferenceDay*is irrelevant.  If this property has not been set in a script, the returned value comes from the Windows operating system. | Boolean |
| qReferenceDay | Day in the year that is always in week 1.  According to ISO 8601, January 4th should always be part of the first week of the year (*qReferenceDay*=4).  Recommended values are in the range 1 and 7.  If this property has not been set in a script, the returned value comes from the Windows operating system.  This property is not relevant if there are broken weeks in the year. | Integer |
| qFirstMonthOfYear | First month of the year, starting from 1.  According to ISO 8601, *January*is the first month of the year.   * 1 = January * 2 = February * 12 = January   If this property has not been set in a script, the returned value comes from the Windows operating system. | Integer |
| qCollation | Locale name (following language tagging convention RFC 4646):  *<language>-<REGION>*  Where   * *language*is a lowercase ISO 639 language code * *REGION*specifies an uppercase ISO 3166 country code.   If this property has not been set in a script, the returned value comes from the Windows operating system. | String |

[[Closed](javascript:void(0);)CalendarStrings](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDayNames | List of short day names. | Array of String |
| qMonthNames | List of short month names. | Array of String |
| qLongDayNames | List of long day names. | Array of String |
| qLongMonthNames | List of long month names. | Array of String |

#### GetLooselyCoupledVector method

##### Overview

Returns a vector of loosely coupled state flags, one element for each table in the app.

The last three values in the vector are extra values. These values are for internal use.

In case of circular references, the engine automatically create loosely coupled tables so that the circular references do not create a loop.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qv": [<array of bytes>]

}

Where <array of bytes> is an array of state flags, one for each table in the app.

The following applies:

* 0 means that the table is not loose
* 1 means that the table is loose
* 2 means that the table is always loose and cannot be unloose using the Qlik Engine API.

#### GetMatchingFields method

##### Overview

Retrieves any fields that match all or one of the specified tags in the data model of an app.

Tags set by Qlik Sense are prefixed by the *$* sign.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTags | List of tags.  The *GetMatchingFields* method looks for fields that match one or all of the tags in this list, depending on the value of *qMatchingFieldMode*. | Array of String |
| qMatchingFieldMode | Matching field mode.  This parameter is optional.  The default value is 0. | One of:   * 0; the field must contain all tags defined in *qTags*. * 1; the field must contain at least one of the tags listed in *qTags*. |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFieldNames | List of matching fields | Array of[NxMatchingFieldInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetMatchingFields-method.htm#NxMatchingFieldInfo) |

[ClosedNxMatchingFieldInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field | String |
| qTags | List of tags | Array of String |

#### GetMediaList method

##### Overview

Lists the media files.

This method is deprecated (not recommended to use). Use [GetLibraryContent method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetLibraryContent-method.htm) instead.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qReturn | Is set to true if the operation is successful. | Boolean |
| qList | Information about the media files. | [MediaList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetMediaList-method.htm#MediaList) |

[Closed](javascript:void(0);)[MediaList](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | Information about the list of media files.  In local installation mode, the media files are retrieved from:  *%userprofile%\Documents\Qlik\Sense\Content\Default*  In server mode, the media files are retrieved from:  *<installation\_directory>\Qlik\Sense\Repository\Content\Default*  The default installation directory is *ProgramData*. | Array of *MediaListItem* |

[[Closed](javascript:void(0);)MediaListItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUrlDef | Relative path to the media file. The URL is static.  Media files located:  • in the */content/default/* folder are outside the qvf file.  • in the */media/ folder*are embedded in the qvf file. | String |
| qUrl | Relative path to the media file.  Media files located:  • in the */content/default/* folder are outside the qvf file.  • in the */media/ folder* are embedded in the qvf file. | String |

In addition, this structure can return dynamic properties.

#### GetMeasure method

##### Overview

Returns the handle of a measure.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the measure.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

{

"jsonrpc": "2.0",

"id": 3,

"result": {

"qReturn": {

"qType": "GenericMeasure",

"qHandle": <handle of the measure>

}

}

}

 The handle of the measure is returned.

#### GetObject method

##### Overview

Returns the type of the app object and the corresponding handle.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object to retrieve.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericObject",

"qHandle": <handle>

}

}

#### GetProperties method

##### Overview

Gets the properties of an app.

This method is deprecated (not recommended to use). Use [GetAppProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetAppProperties-method.htm) instead.

##### GetScriptBreakpoints method

##### Overview

Lists the breakpoints in the script of an app.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qBreakpoints | Information about the breakpoints. | Array of [EditorBreakpoint](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetScriptBreakpoints-method.htm#EditorBreakpoint) |

[Closed](javascript:void(0);)[EditorBreakpoint](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qbufferName | Name of the breakpoint. | String |
| qlineIx | Line number in the script where the breakpoint is set. | Integer |
| qEnabled | If set to true then the breakpoint is enabled (in use). | Boolean |

#### GetScript method

##### Overview

Gets values in script.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qScript": "<script values>"

}

#### GetTableData method

##### Overview

Retrieves the data of a specific table.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOffset | Position from the top, starting from 0.  If the offset is set to 0, the rows starting from the position/index 0 are showed. | Integer |
| qRows | Number of rows to show. | Integer |
| qSyntheticMode | If this parameter is set to true, the internal data/table representation is shown. Synthetic fields are present (if any). | Boolean |
| qTableName | Name of the table. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qData | Array of data. | Array of [TableRow](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetTableData-method.htm#TableRow) |

[Closed](javascript:void(0);)[TableRow](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValue | Array of field values | Array of [FieldValue](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetTableData-method.htm#FieldValue) |

[ClosedFieldValue](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text related to the field value  This parameter is optional. | String |
| qIsNumeric | Is set to true if the value is a numeric.  This parameter is optional. Default is false. | Boolean |
| qNumber | Numeric value of the field.  This parameter is displayed if *qIsNumeric*is set to true.  This parameter is optional. | Double |

#### GetTablesAndKeys method

##### Overview

Returns:

* the list of tables in an app and the fields inside each table
* the list of derived fields
* the list of key fields

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qWindowSize | Defines the size of the window that is used to display the results. | [Size](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetTablesAndKeys-method.htm#Size) |
| qNullSize |  | [Size](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetTablesAndKeys-method.htm#Size) |
| qCellHeight | Height of a cell in a table in pixels. | Integer |
| qSyntheticMode | One of:   * *true*for internal table viewer * *false*for source table viewer   This parameter is mandatory. | Boolean |
| qIncludeSysVars | If set to true, the system variables are included. | Boolean |

[Closed](javascript:void(0);)[Size](javascript:void(0);)

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qtr | List of tables. | Array of [TableRecord](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetTablesAndKeys-method.htm#TableRecord) |
| qk | List of keys. | Array of [SourceKeyRecord](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetTablesAndKeys-method.htm#SourceKeyRecord) |

[Closed](javascript:void(0);)[TableRecord](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the table. | String |
| qLoose | This property is set to true if the table is loose. | Boolean |
| qNoOfRows | Number of rows in the table. | Integer |
| qFields | Information about the fields in the table. | Array of *FieldInTableData*. |
| qPos | Information about the position of the table. | *Point* |
| qComment | Comment related to the table. | String |
| qIsDirectDiscovery | If set to true, Direct Discovery is used.  Direct Discovery fields are not loaded into memory and remain in the external database. | Boolean |
| qIsSynthetic | This property is set to true if the table contains a synthetic key. | Boolean |

[[Closed](javascript:void(0);)FieldInTableData](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field. | String |
| qOriginalFields | Is shown for fixed records.  *qOriginalFieldName*and *qName*are identical if no field names are used in the file.  *qOriginalFieldName*differs from *qName*if embedded file names are used in the file. | Array of String |
| qPresent |  | Boolean |
| qHasNull | This property is set to true if the field contains some Null values. | Boolean |
| qHasWild |  | Boolean |
| qHasDuplicates | This property is set to true if the field contains some duplicate values. | Boolean |
| qIsSynthetic | This property is set to true if the field contains a synthetic key. | Boolean |
| qInformationDensity | Number of records that have values (i.e. not NULL) in the field as compared to the total number of records in the table. | Double |
| qnNonNulls | Number of values that are non Null. | Integer |
| qnRows | Number of rows in the field | Integer |
| qSubsetRatio | Number of distinct values in the field (in the current table) as compared to the total number of distinct values of this field (in all tables). | Double |
| qnTotalDistinctValues | Number of distinct values in the field. | Integer |
| qnPresentDistinctValues |  | Integer |
| qKeyType | Tells if the field is a key field. | One of:   * NOT\_KEY * ANY\_KEY * PRIMARY\_KEY * PERFECT\_KEY |
| qComment | Comment related to the field. | String |
| qTags | List of tags related to the field. | Array of String |
| qDerivedFields | List of the derived fields. | Array of*DerivedFieldsInTableData*. |

[[Closed](javascript:void(0);)DerivedFieldsInTableData](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDefinitionName | Name of the derived definition. | String |
| qTags | List of tags. | Array of String |
| qActive | Is set to true is the derived field is in use. | Boolean |

[[Closed](javascript:void(0);)Point](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qx | x-coordinate in pixels.  The origin is the top left of the screen. | Integer |
| qy | y-coordinate in pixels.  The origin is the top left of the screen. | Integer |

[Closed](javascript:void(0);)[SourceKeyRecord](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qKeyFields | Name of the key field. | Array of String |
| qTables | Table the key belongs to. | Array of String |

#### GetTextMacros method

##### Overview

Fetches updated variables after a statement execution.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMacros | List of variables. | Array of *TextMacro* |

[[Closed](javascript:void(0);)TextMacro](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTag | Name of the variable. | String |
| qRefSeqNo | Order in which the variable was referenced during the script execution.  The same number sequence is used for both*qRefSeqNo*and *qSetSeqNo*. | Integer |
| qSetSeqNo | Order in which the variable was updated during the script execution.  The same number sequence is used for both*qRefSeqNo*and *qSetSeqNo*. | Integer |
| qDisplayString | Variable value. | String |
| qIsSystem | Is set to true if the variable is a system variable. | Boolean |
| qIsReserved | Is set to true if the variable is a reserved variable. | Boolean |

If qRefSeqNo and qSetSeqNo are set to 0, it means that the variables were not updated.

#### GetVariable method

##### Overview

Gets the handle of a variable.

This method is deprecated (not recommended to use). Use [GetVariableById method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetVariableById-method.htm) or[GetVariableByName method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetVariableByName-method.htm) instead.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the variable.  This parameter is mandatory. | String. |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "Variable",

"qHandle": <Handle of the variable>

}

}

#### GetVariableById method

##### Overview

Gets the handle of a variable.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the variable.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericVariable",

"qHandle": <Handle of the variable>

}

}

#### GetVariableByName method

##### Overview

Gets the handle of a variable.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the variable.  This parameter is mandatory. | String. |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericVariable",

"qHandle": <Handle of the variable>

}

}

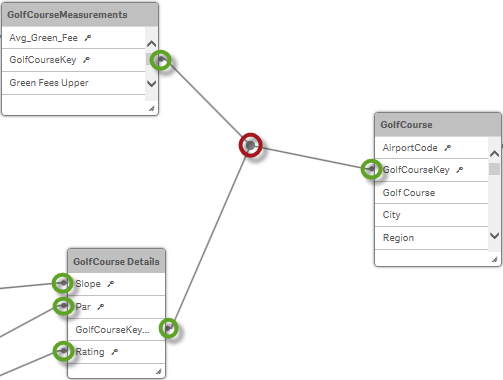
#### GetViewDlgSaveInfo method

##### Overview

Retrieves information about the position of the tables in the data model viewer.

The position of the broom points and the position of the connection points can not be retrieved in Qlik Sense.

###### Representation of tables, broom points and connection points



The green circles represent the broom points.

The red circle represents a connection point.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qReturn | Information about the position of the tables. | [TableViewDlgSaveInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetViewDlgSaveInfo-method.htm#TableViewDlgSaveInfo) |

[Closed](javascript:void(0);)[TableViewDlgSaveInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPos | Information about the position of the dialog window.  Not used in Qlik Sense. | *Rect* |
| qCtlInfo | Set of data for internal and source view modes. | *TableViewCtlSaveInfo* |
| qMode | View mode to display when opening Qlik Sensedata model viewer.  One of:   * 0 for internal view mode * 1 for source view mode | Integer |

[[Closed](javascript:void(0);)Rect](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the first column. | Integer |
| qTop | Position from the top.  Corresponds to the first row. | Integer |
| qWidth | Number of columns in the page. The indexing of the columns may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |
| qHeight | Number of rows or elements in the page. The indexing of the rows may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |

[[Closed](javascript:void(0);)TableViewCtlSaveInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInternalView | Internal view mode. | *TableViewSaveInfo* |
| qSourceView | Source view mode. | *TableViewSaveInfo* |

[[Closed](javascript:void(0);)TableViewSaveInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTables | List of the tables in the database model viewer. | Array of*TableViewTableWinSaveInfo* |
| qBroomPoints | List of the broom points in the database model viewer.  Not used in Qlik Sense. | Array of*TableViewBroomPointSaveInfo* |
| qConnectionPoints | List of connection points in the database model viewer.  Not used in Qlik Sense. | Array of*TableViewConnectionPointSaveInfo* |
| qZoomFactor | Zoom factor in the database model viewer.  The default value is 1.0. | Double |

[[Closed](javascript:void(0);)TableViewTableWinGetSaveInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPos | Information about the position of the table. | *Rect* |
| qCaption | Table name. | String |

[[Closed](javascript:void(0);)TableViewBroomPointSaveInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPos | Information about the position of the broom point. | *Point* |
| qTable | Name of the table. | String |
| qFields | List of fields in the table. | Array of String |

[[Closed](javascript:void(0);)TableViewConnectionPointSaveInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPos | Information about the position of the connection point. | *Point* |
| qFields | List of the fields in the table. | Array of String |

[[Closed](javascript:void(0);)Point](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qx | x-coordinate in pixels.  The origin is the top left of the screen. | Integer |
| qy | y-coordinate in pixels.  The origin is the top left of the screen. | Integer |

#### GuessFileType method

##### Overview

Guesses the data format for a given file.

Recognized file formats are:

* *CSV*for Delimited
* *FIX* for Fixed Record
* *DIF*for Data Interchange Format
* *EXCEL\_BIFF* for Microsoft Excel (XLS)
* *EXCEL\_OOXML* for Microsoft Excel (XLSX)
* *HTML*for HTML
* *QVD* for QVD file
* *XML* for XML
* *QVX* for QVX file
* *JSON*for JSON format
* *KML*for KML file

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection file.  This parameter is mandatory. | String |
| qRelativePath | Path of the connection file.  This parameter is optional. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDataFormat | Information about the format of the data. | [FileDataFormat](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GuessFileType-method.htm#FileDataFormat) |

[ClosedFileDataFormat](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the file. | *FileType* |
| qLabel | One of:   * embedded labels (field names are present in the file) * no labels * explicit labels (for DIFfiles) | String |
| qQuote | One of:   * None (no quotes) * MSQ (Modern Style Quoting) * Standard (quotes " " or ' ' can be used, but only if they are the first and last non blank characters of a field value.)   This property is used for delimited files. | String |
| qComment | String that marks the beginning of the comment line.  Example: “#” or “//”  The engine ignores the commented lines during the data load.  This property is only used for delimited files. | String |
| qDelimiter | Information about the delimiter.  This property is used for delimited files. | *DelimiterInfo* |
| qCodePage | Character set used in the file. | Integer |
| qHeaderSize | Size of the header.  Example: If the header size is 2, the first two rows in the file are considered as header and not as data. The header can contain the field names. | Integer |
| qRecordSize | Record length.  Each record (row of data) contains a number of columns with a fixed field size.  This property is used for fixed record data files. | Integer |
| qTabSize | Number of spaces that one tab character represents in the table file.  This property is used for fixed record data files. | Integer |
| qIgnoreEOF | Is set to true, the end-of-file character is not taken into account during reload.  This property is used for delimited files and fixed record data files. | Boolean |
| qFixedWidthDelimiters | Positions of the field breaks in the table.  This property is used for fixed record data files. | String |

[[Closed](javascript:void(0);)FileType](javascript:void(0);)

Recognized file formats are:

* *CSV*for Delimited
* *FIX* for Fixed Record
* *DIF*for Data Interchange Format
* *EXCEL\_BIFF* for Microsoft Excel (XLS)
* *EXCEL\_OOXML* for Microsoft Excel (XLSX)
* *HTML*for HTML
* *QVD* for QVD file
* *XML* for XML
* *QVX* for QVX file
* *JSON*for JSON format
* *KML*for KML file

[[Closed](javascript:void(0);)DelimiterInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the delimiter.  Example:  "Tab\_DELIMITER" | String |
| qScriptCode | Representation of the delimiter value that is used in the script.  Example:  "'\t'" | String |
| qNumber | Delimiter character number used by the engine to determine how to separate the values. | Integer |
| qIsMultiple | Is set to true if multiple spaces are used to separate the values. | Boolean |

#### LockAll method

##### Overview

Locks all selections in all fields of the current app.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateName | Alternate state name.  If this parameter is set, the method locks all selections that are in the specified state name.  This parameter is optional.  The default value is an empty string. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### ModifyConnection method

##### Overview

Updates a connection.

The identifier of a connection cannot be updated.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectionId | Identifier of the connection.  This parameter is mandatory. | String |
| qConnection | Information about the connection.  Properties that can be updated.  This parameter is mandatory. | [Connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-ModifyConnection-method.htm#Connection) |
| qOverrideCredentials | Set this parameter to true to override the user name and password.  This parameter is optional. | Boolean |

[ClosedConnection](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the connection.  Is generated by the engine and is unique. | String |
| qName | Name of the connection.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qConnectionString | One of:   * ODBC CONNECT TO [<provider name>] * OLEDB CONNECT TO [<provider name>] * CUSTOM CONNECT TO [<provider name>] * "<local absolute or relative path,UNC path >" * "<URL>"   Connection string.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qType | One of:   * ODBC * OLEDB * <Name of the custom connection file> * folder * internet   Type of the connection.  This parameter is mandatory and must be set when creating or modifying a connection.  For ODBC, OLEDB and custom connections, the engine checks that the connection type matches the connection string.  The type is not case sensitive. | String |
| qUserName | Name of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the user name. | String |
| qPassword | Password of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the password. | String |
| qModifiedDate | Is generated by the engine.  Creation date of the connection or last modification date of the connection. | String |
| qMeta | Information about the connection. | *NxMeta* |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### Publish method

##### Overview

Publishes an app. The published app can have a different name than the original app.

All app objects are published. Generic objects, bookmarks, dimensions and measures inside the app are published.

This method applies only if running in server mode.

An app can only be published once and cannot be published to more than one stream.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStreamId | Identifier of the stream. | String |
| qName | Name of the published app.  This parameter is optional. If this parameter is not set, the engine automatically gives a new name to the published app. | String |

##### Outputs

The following is returned in the output:

"result": {}

##### Logs

When this method is called, audit activity logs are produced to track the user activity.

In the case of errors, both audit activity logs and system services logs are produced.

The log files are named as follows:

|  |  |
| --- | --- |
| **Audit activity log** | **System service log** |
| *<MachineName>\_AuditActivity\_Engine.txt* | *<MachineName>\_Service\_Engine.txt* |

The log files are located in:

*%ProgramData%/Qlik/Sense/Log/Engine*

For more information, see Qlik Sense troubleshooting guide.

#### Redo method

##### Overview

Redoes the previous operation.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### RemoveAlternateState method

##### Overview

Removes an alternate state in the app.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateName | Name of the alternate state.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### RemoveVariable method

##### Overview

Removes a variable.

This method is deprecated (not recommended to use). Use [DestroyVariableById method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroyVariableById-method.htm) or[DestroyVariableByName method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DestroyVariableByName-method.htm) instead.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the variable. Variable names are case sensitive.  This parameter is mandatory. | String. |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <true/false>

}

The operation is successful if qReturn is set to true.

#### Resume method

##### Overview

Resumes the app as the user left it.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### SaveObjects method

##### Overview

Saves all objects that were modified in the app.

Data from the data model are not saved.

This operation is only possible when working in server mode.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### SearchAssociations method

##### Overview

Returns the search matches for one or more search terms.

The search results depend on the search context.

**See:**[SearchCombinationOptions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchAssociations-method.htm#SearchCombinationOptions)

This method is deprecated (not recommended to use). Use [SearchResults method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchResults-method.htm) instead.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOptions | Information about the search fields and the search context. | [SearchCombinationOptions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchAssociations-method.htm#SearchCombinationOptions) |
| qTerms | List of terms to search for. | Array of String |
| qPage | Array of pages to retrieve.  This parameter is mandatory. | [SearchPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchAssociations-method.htm#SearchPage) |

[Closed](javascript:void(0);)[SearchCombinationOptions](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSearchFields | List of the search fields.  If empty, the search is performed in all fields of the app. | Array of String |
| qContext | Search context.  The default value is *LockedFieldsOnly*. | One of:   * *Cleared*: In this mode, the first step is to clear any current selections in the app. The second step is to search for one or more terms in the values of the app. * *LockedFieldsOnly*: In this mode, the search applies only to the values associated with the selections made in locked fields, ignoring selections in any unlocked field. If no locked fields, the behavior is identical to the *Cleared*context. You cannot make any new selections in a locked field. You can get search hits for the associated values of a locked field but you cannot get the search hits for the non associative values. * *CurrentSelections*: In this mode, the current selections are kept (if any). Search for one or more terms in the values of the app. New selections are made on top of the current selections. If no selections were made before the search, this mode is identical to the *Cleared*context. |

[Closed](javascript:void(0);)[SearchPage](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOffset | Position from the top, starting from 0.  If the offset is set to 0, the first search result to be returned is at position 0. | Integer |
| qCount | Number of search groups to return (in*qSearchGroupArray[ ]*). | Integer |
| qMaxNbrFieldMatches | Maximum number of matching values to return per search result.  The default value is -1; all values are returned.  This property is to be used with the[SearchAssociations method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchAssociations-method.htm). | Integer |
| qGroupOptions | Options of the search groups.  If this property is not set, all values are returned.  This property is to be used with the[SearchResults method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchResults-method.htm). | Array of*SearchGroupOptions* |
| qGroupItemOptions | Options of the search group items.  If this property is not set, all values are returned.  This property is to be used with the[SearchResults method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchResults-method.htm). | Array of*SearchGroupItemOptions* |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qResults | List of the association results. | [SearchAssociationResult](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchAssociations-method.htm#SearchAssociationResult) |

[Closed](javascript:void(0);)[SearchAssociationResult](javascript:void(0);)

[[Closed](javascript:void(0);)SearchFieldDictionary](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qField | Position of the field in the list of fields, starting from 0.  The list of fields is defined in*qResults/qFieldNames* and contains the search associations. | Integer |
| qResult | List of the matching values.  The maximum number of values in this list is set by *qMaxNbrFieldMatches*. | Array of *SearchTermResult* |

[[Closed](javascript:void(0);)SearchTermResult](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text of the associated value. | String |
| qElemNumber | Element number of the associated value. | Integer |
| qRanges | List of ranges.  For example, if the user searches the term*read*and the associative value is *Reading*, then the corresponding range would be *Read*in*Reading*. | Array of *SearchCharRange*. |

[[Closed](javascript:void(0);)SearchCharRange](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qCharPos | Starting position of the match in the search result, starting from 0. | Integer |
| qCharCount | Length of the match in the search result. | Integer |
| qTerm | Position of the term in the list of search terms, starting from 0. | Integer |

[[Closed](javascript:void(0);)SearchMatchCombinations](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSearchMatchCombinations | Array of search combinations. | Array of*SearchMatchCombination* |

[[Closed](javascript:void(0);)SearchMatchCombination](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Index of the search result, starting from 0. | Integer |
| qFieldMatches | Information about the search matches. | Array of *SearchFieldMatch*. |

[[Closed](javascript:void(0);)SearchFieldMatch](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qField | Position of the field in the list of fields, starting from 0.  The list of fields is defined in*qResults/qFieldNames* and contains the search associations. | Integer |
| qValues | Positions of the matching values in the search results.  The maximum number of values in this list is defined by *qMaxNbrFieldMatches*. | Array of Integer |
| qTerms | Positions of the search terms, starting from 0. | Array of Integer |
| qNoOfMatches | Number of search hits in the field.  The number of values in *qValues*and the value of *qNoOfMatches*are equal if*qMaxNbrFieldMatches*is -1. | Integer |

#### SearchResults method

##### Overview

Returns the search matches for one or more search terms.

Search results are organized in search groups. The type of search group indicates where the search matches come from (from data for example).

Each search group contains search results that correspond to a combination of search terms.

For example, if the search terms are *organic*, *pasta*, and *America*, the possible combination of search groups are:

* organic
* pasta
* America
* organic, pasta, America
* organic, pasta
* organic, America
* pasta, America

For every search group, there are one or more search group items. Each subgroup item contains results that correspond to an item type (for example a field).

For every search group item, there are one or several search matches. The position of the match in each search result is given.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOptions | Information about the search combinations. | [SearchCombinationOptions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchResults-method.htm#SearchCombinationOptions) |
| qTerms | Terms to search for. | Array of String |
| qPage | Array of pages to retrieve.  This parameter is mandatory. | [SearchPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchResults-method.htm#SearchPage) |

[ClosedSearchCombinationOptions](javascript:void(0);)

[ClosedSearchPage](javascript:void(0);)

[[Closed](javascript:void(0);)SearchGroupOptions](javascript:void(0);)

[[Closed](javascript:void(0);)SearchGroupItemOptions](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qGroupItemType | Type of the group item. | One of:  • 1 for *FIELD*: the type of the search group item is a field. |
| qOffset | Position starting from 0.  The default value is 0. | Integer |
| qCount | Maximum number of matches per item (in*qItemMatches[ ]*).  The default value is -1: all values are returned. | Integer |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qResult | List of search results. | [SearchResult](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchResults-method.htm#SearchResult) |

[Closed](javascript:void(0);)[SearchResult](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSearchTerms | List of the search terms. | Array of String |
| qTotalNumberOfGroups | Total number of groups. | Integer |
| qSearchGroupArray | List of search groups.  The groups are numbered from the value of*SearchPage.qOffset* to the value of*SearchPage.qOffset + SearchPage.qCount*. | Array of *SearchGroup*. |

[[Closed](javascript:void(0);)SearchGroup](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the search group. | Integer |
| qGroupType | Type of the search group. | One of:  • 1 for *DATASET\_GROUP*: the type of the group is a data set. This group contains search matches that are related to fields in the app. |
| qSearchTermsMatched | Indexes of the search terms that are included in the group. These search terms are related to the list of terms defined in*SearchResult.qSearchTerms*. | Array of Integer |
| qTotalNumberOfItems | Number of items in the group. | Integer |
| qItems | List of items in the search group, starting from 0.  The number of items is limited by what is defined in*SearchPage.qMaxNumberOfItemsPerGroup*. | Array of *SearchGroupItem* |

[[Closed](javascript:void(0);)SearchGroupItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItemType | Type of the group item. | One of:  •1 for *FIELD*: the type of the search group item is a field. |
| qTotalNumberOfMatches | Total number of distinct search matches in the search group item. | Integer |
| qIdentifier | Identifier of the item.  It corresponds to:  • the name of the field, if the type of the search group is a data set. | String |
| qItemMatches | List of search matches in the group item, starting from 0.  The number of matches is limited by what is defined in*SearchPage.qMaxNumberOfMatchesPerItem*. | Array of*SearchGroupItemMatch* |

[[Closed](javascript:void(0);)SearchGroupItemMatch](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Search match value.  Value of the search group item.  If the match is found in a field, it corresponds to the value of the field. | String |
| qRanges | List of ranges.  For example, if the search terms are *Price*andMake, and the search group item value is *Make by Price vs Mileage*, then there are two ranges: one for *Price*and one for *Make*. | Array of *SearchCharRange* |

[[Closed](javascript:void(0);)SearchCharRange](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qCharPos | Starting position of the match in the search result, starting from 0. | Integer |
| qCharCount | Length of the match in the search result. | Integer |
| qTerm | Position of the term in the list of search terms, starting from 0. | Integer |

#### SearchSuggest method

##### Overview

Returns search terms suggestions.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOptions | Information about the search combinations. | [SearchCombinationOptions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchSuggest-method.htm#SearchCombinationOptions) |
| qTerms | Terms to search for. | Array of String |

[ClosedSearchCombinationOptions](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSearchFields | List of the search fields.  If empty, the search is performed in all fields of the app. | Array of String |
| qContext | Search context.  The default value is *LockedFieldsOnly*. | One of:   * *Cleared*: In this mode, the first step is to clear any current selections in the app. The second step is to search for one or more terms in the values of the app. * *LockedFieldsOnly*: In this mode, the search applies only to the values associated with the selections made in locked fields, ignoring selections in any unlocked field. If no locked fields, the behavior is identical to the *Cleared*context. You cannot make any new selections in a locked field. You can get search hits for the associated values of a locked field but you cannot get the search hits for the non associative values. * *CurrentSelections*: In this mode, the current selections are kept (if any). Search for one or more terms in the values of the app. New selections are made on top of the current selections. If no selections were made before the search, this mode is identical to the *Cleared*context. |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qResult | List of search suggestions. | [SearchSuggestionResult](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchSuggest-method.htm#SearchSuggestionResult) |

[Closed](javascript:void(0);)[SearchSuggestionResult](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSuggestions | List of suggestions. | Array of *SearchSuggestItem* |
| qFieldNames | List of field names that contain search hits. | Array of String |

[[Closed](javascript:void(0);)SearchSuggestItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValue | Value of the suggestion. | String |
| qTerm | Index of the suggestion value.  The indexing starts from 0 and from the left. | Integer |

#### SelectAssociations method

##### Overview

Selects all search hits for a specified group.

The results depend on the search context.

**See:**[SearchCombinationOptions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SelectAssociations-method.htm#SearchCombinationOptions)

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOptions | Information about the search fields and the search context. | [SearchCombinationOptions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SelectAssociations-method.htm#SearchCombinationOptions) |
| qTerms | List of terms to search for. | Array of String |
| qMatchIx | Index (value of *qId*) of the search result to select.  The [SearchAssociations method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchAssociations-method.htm) returns the index of the search result in*qResults/qSearchTermsMatched*. | Integer |
| qSoftLock | This parameter is deprecated and should not be set. | Boolean |

[ClosedSearchCombinationOptions](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSearchFields | List of the search fields.  If empty, the search is performed in all fields of the app. | Array of String |
| qContext | Search context.  The default value is *LockedFieldsOnly*. | One of:   * *Cleared*: In this mode, the first step is to clear any current selections in the app. The second step is to search for one or more terms in the values of the app. * *LockedFieldsOnly*: In this mode, the search applies only to the values associated with the selections made in locked fields, ignoring selections in any unlocked field. If no locked fields, the behavior is identical to the *Cleared*context. You cannot make any new selections in a locked field. You can get search hits for the associated values of a locked field but you cannot get the search hits for the non associative values. * *CurrentSelections*: In this mode, the current selections are kept (if any). Search for one or more terms in the values of the app. New selections are made on top of the current selections. If no selections were made before the search, this mode is identical to the *Cleared*context. |

##### Outputs

The following is returned in the output:

"result": {}

#### SearchResults method

##### Overview

Returns the search matches for one or more search terms.

Search results are organized in search groups. The type of search group indicates where the search matches come from (from data for example).

Each search group contains search results that correspond to a combination of search terms.

For example, if the search terms are *organic*, *pasta*, and *America*, the possible combination of search groups are:

* organic
* pasta
* America
* organic, pasta, America
* organic, pasta
* organic, America
* pasta, America

For every search group, there are one or more search group items. Each subgroup item contains results that correspond to an item type (for example a field).

For every search group item, there are one or several search matches. The position of the match in each search result is given.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOptions | Information about the search combinations. | [SearchCombinationOptions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchResults-method.htm#SearchCombinationOptions) |
| qTerms | Terms to search for. | Array of String |
| qPage | Array of pages to retrieve.  This parameter is mandatory. | [SearchPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchResults-method.htm#SearchPage) |

[ClosedSearchCombinationOptions](javascript:void(0);)

[ClosedSearchPage](javascript:void(0);)

[[Closed](javascript:void(0);)SearchGroupOptions](javascript:void(0);)

[[Closed](javascript:void(0);)SearchGroupItemOptions](javascript:void(0);)

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qResult | List of search results. | [SearchResult](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchResults-method.htm#SearchResult) |

[ClosedSearchResult](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSearchTerms | List of the search terms. | Array of String |
| qTotalNumberOfGroups | Total number of groups. | Integer |
| qSearchGroupArray | List of search groups.  The groups are numbered from the value of*SearchPage.qOffset* to the value of*SearchPage.qOffset + SearchPage.qCount*. | Array of *SearchGroup*. |

[[Closed](javascript:void(0);)SearchGroup](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the search group. | Integer |
| qGroupType | Type of the search group. | One of:  • 1 for *DATASET\_GROUP*: the type of the group is a data set. This group contains search matches that are related to fields in the app. |
| qSearchTermsMatched | Indexes of the search terms that are included in the group. These search terms are related to the list of terms defined in*SearchResult.qSearchTerms*. | Array of Integer |
| qTotalNumberOfItems | Number of items in the group. | Integer |
| qItems | List of items in the search group, starting from 0.  The number of items is limited by what is defined in*SearchPage.qMaxNumberOfItemsPerGroup*. | Array of *SearchGroupItem* |

[[Closed](javascript:void(0);)SearchGroupItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItemType | Type of the group item. | One of:  •1 for *FIELD*: the type of the search group item is a field. |
| qTotalNumberOfMatches | Total number of distinct search matches in the search group item. | Integer |
| qIdentifier | Identifier of the item.  It corresponds to:  • the name of the field, if the type of the search group is a data set. | String |
| qItemMatches | List of search matches in the group item, starting from 0.  The number of matches is limited by what is defined in*SearchPage.qMaxNumberOfMatchesPerItem*. | Array of*SearchGroupItemMatch* |

[[Closed](javascript:void(0);)SearchGroupItemMatch](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Search match value.  Value of the search group item.  If the match is found in a field, it corresponds to the value of the field. | String |
| qRanges | List of ranges.  For example, if the search terms are *Price*andMake, and the search group item value is *Make by Price vs Mileage*, then there are two ranges: one for *Price*and one for *Make*. | Array of *SearchCharRange* |

[[Closed](javascript:void(0);)SearchCharRange](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qCharPos | Starting position of the match in the search result, starting from 0. | Integer |
| qCharCount | Length of the match in the search result. | Integer |
| qTerm | Position of the term in the list of search terms, starting from 0. | Integer |

#### SearchSuggest method

##### Overview

Returns search terms suggestions.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOptions | Information about the search combinations. | [SearchCombinationOptions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchSuggest-method.htm#SearchCombinationOptions) |
| qTerms | Terms to search for. | Array of String |

[ClosedSearchCombinationOptions](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSearchFields | List of the search fields.  If empty, the search is performed in all fields of the app. | Array of String |
| qContext | Search context.  The default value is *LockedFieldsOnly*. | One of:   * *Cleared*: In this mode, the first step is to clear any current selections in the app. The second step is to search for one or more terms in the values of the app. * *LockedFieldsOnly*: In this mode, the search applies only to the values associated with the selections made in locked fields, ignoring selections in any unlocked field. If no locked fields, the behavior is identical to the *Cleared*context. You cannot make any new selections in a locked field. You can get search hits for the associated values of a locked field but you cannot get the search hits for the non associative values. * *CurrentSelections*: In this mode, the current selections are kept (if any). Search for one or more terms in the values of the app. New selections are made on top of the current selections. If no selections were made before the search, this mode is identical to the *Cleared*context. |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qResult | List of search suggestions. | [SearchSuggestionResult](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchSuggest-method.htm#SearchSuggestionResult) |

[ClosedSearchSuggestionResult](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSuggestions | List of suggestions. | Array of *SearchSuggestItem* |
| qFieldNames | List of field names that contain search hits. | Array of String |

[[Closed](javascript:void(0);)SearchSuggestItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValue | Value of the suggestion. | String |
| qTerm | Index of the suggestion value.  The indexing starts from 0 and from the left. | Integer |

#### SelectAssociations method

##### Overview

Selects all search hits for a specified group.

The results depend on the search context.

**See:**[SearchCombinationOptions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SelectAssociations-method.htm#SearchCombinationOptions)

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOptions | Information about the search fields and the search context. | [SearchCombinationOptions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SelectAssociations-method.htm#SearchCombinationOptions) |
| qTerms | List of terms to search for. | Array of String |
| qMatchIx | Index (value of *qId*) of the search result to select.  The [SearchAssociations method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchAssociations-method.htm) returns the index of the search result in*qResults/qSearchTermsMatched*. | Integer |
| qSoftLock | This parameter is deprecated and should not be set. | Boolean |

[ClosedSearchCombinationOptions](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSearchFields | List of the search fields.  If empty, the search is performed in all fields of the app. | Array of String |
| qContext | Search context.  The default value is *LockedFieldsOnly*. | One of:   * *Cleared*: In this mode, the first step is to clear any current selections in the app. The second step is to search for one or more terms in the values of the app. * *LockedFieldsOnly*: In this mode, the search applies only to the values associated with the selections made in locked fields, ignoring selections in any unlocked field. If no locked fields, the behavior is identical to the *Cleared*context. You cannot make any new selections in a locked field. You can get search hits for the associated values of a locked field but you cannot get the search hits for the non associative values. * *CurrentSelections*: In this mode, the current selections are kept (if any). Search for one or more terms in the values of the app. New selections are made on top of the current selections. If no selections were made before the search, this mode is identical to the *Cleared*context. |

##### Outputs

The following is returned in the output:

"result": {}

#### SendGenericCommandToCustomConnector method

##### Overview

Sends a generic command to a custom connector.

For more information on the commands that can be sent to a custom connector, see the QVX SDK help.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProvider | Connector file name.  Command to be executed by the connector. | String |
| qCommand | One of:   * JsonRequest * GetCustomCaption * IsConnected * DisableQlikViewSelectButton * HaveStarField | String |
| qMethod | Method name to be used within the command.  The available methods depend on the chosen connector. | String |
| qParameters | Parameters of the command.  No parameters are required.  This parameter is optional. | Array of String |
| qAppendConnection | Name of the connection.  This parameter is optional. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qResult | Result of the command. | String |

#### SetAppProperties method

##### Overview

Sets properties to an app.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the properties of an app. | [NxAppProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SetAppProperties-method.htm#NxAppProperties) |

[ClosedNxAppProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTitle | App title. | String |
| qLastReloadTime | Last reload time of the app. | String |
| qThumbnail | App thumbnail. | *StaticContentUrlDef* |
| qMigrationHash | Internal property reserved for app migration.  Patch version of the app.  Do not update. | String |
| qSavedInProductVersion | Internal property reserved for app migration.  The app is saved in this version of the product.  Do not update. | String |

###### Desktop mode

In desktop mode, this structure can contain dynamic properties.

###### Server mode

In server mode, only a few dynamic properties at app level are persisted.

The persisted dynamic properties are the following:

* modifiedDate
* published
* publishTime
* privileges
* description
* dynamicColor

[[Closed](javascript:void(0);)StaticContentUrlDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUrl | Relative path of the thumbnail. | String |

In addition, this structure can contain dynamic properties.

##### Outputs

The following is returned in the output:

"result": {}

#### SetFavoriteVariables method

##### Overview

Set some variables as favorite.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qNames | Variables to set as favorite. | Array of String |

##### Outputs

The following is returned in the output:

"result": {}

#### SetFetchLimit method

##### Overview

Limits the number of rows of data to load from a data source.

This method works when reloading in debug mode.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLimit | Fetch limit.  Number of rows to load. | Integer |

##### Outputs

The following is returned in the output:

"result": {}

#### SetLooselyCoupledVector method

##### Overview

Sets a vector of loosely coupled state flags, one element for each table in the app.

The last three values in the vector are extra values. These values are for internal use.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qv | Vector of loosely coupled state flags, one element for each table in the app.  Set the flag to 1 to loose a table.  Set the flag to 0 to not loose a table. | Array of Byte |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <true/false>

}

The engine returns true if the vector has been updated.

#### SetScriptBreakpoints method

##### Overview

Set some breakpoints in the script of an app.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qBreakpoints | Information about the breakpoints. | Array of [EditorBreakpoint](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SetScriptBreakpoints-method.htm#EditorBreakpoint) |

[ClosedEditorBreakpoint](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qbufferName | Name of the breakpoint. | String |
| qlineIx | Line number in the script where the breakpoint is set. | Integer |
| qEnabled | If set to true then the breakpoint is enabled (in use). | Boolean |

##### Outputs

The following is returned in the output:

"result": {}

#### SetScript method

##### Overview

Sets values in script.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qScript | Script content | String |

##### Outputs

The following is returned in the output:

"result": {}

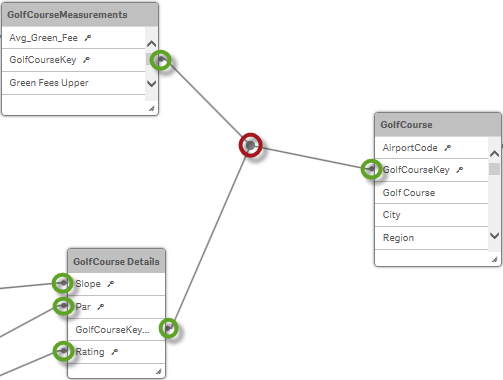
#### SetViewDlgSaveInfo method

##### Overview

Sets the positions of the tables in the data model viewer.

The position of the broom points and the position of the connection points can not be set in Qlik Sense.

##### Representation of tables, broom points and connection points



The green circles represent the broom points.

The red circle represents a connection point.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the table. | [TableViewDlgSaveInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SetViewDlgSaveInfo-method.htm#TableViewDlgSaveInfo) |

[ClosedTableViewDlgSaveInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPos | Information about the position of the dialog window.  Not used in Qlik Sense. | *Rect* |
| qCtlInfo | Set of data for internal and source view modes. | *TableViewCtlSaveInfo* |
| qMode | View mode to display when opening Qlik Sensedata model viewer.  One of:   * 0 for internal view mode * 1 for source view mode | Integer |

[[Closed](javascript:void(0);)Rect](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the first column. | Integer |
| qTop | Position from the top.  Corresponds to the first row. | Integer |
| qWidth | Number of columns in the page. The indexing of the columns may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |
| qHeight | Number of rows or elements in the page. The indexing of the rows may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |

[[Closed](javascript:void(0);)TableViewCtlSaveInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInternalView | Internal view mode. | *TableViewSaveInfo* |
| qSourceView | Source view mode. | *TableViewSaveInfo* |

[[Closed](javascript:void(0);)TableViewSaveInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTables | List of the tables in the database model viewer. | Array of*TableViewTableWinSaveInfo* |
| qBroomPoints | List of the broom points in the database model viewer.  Not used in Qlik Sense. | Array of*TableViewBroomPointSaveInfo* |
| qConnectionPoints | List of connection points in the database model viewer.  Not used in Qlik Sense. | Array of*TableViewConnectionPointSaveInfo* |
| qZoomFactor | Zoom factor in the database model viewer.  The default value is 1.0. | Double |

[[Closed](javascript:void(0);)TableViewTableWinSaveInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPos | Information about the position of the table. | *Rect* |
| qCaption | Table name. | String |

[[Closed](javascript:void(0);)TableViewBroomPointSaveInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPos | Information about the position of the broom point. | *Point* |
| qTable | Name of the table. | String |
| qFields | List of fields in the table. | Array of String |

[[Closed](javascript:void(0);)TableViewConnectionPointSaveInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPos | Information about the position of the connection point. | *Point* |
| qFields | List of the fields in the table. | Array of String |

[[Closed](javascript:void(0);)Point](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qx | x-coordinate in pixels.  The origin is the top left of the screen. | Integer |
| qy | y-coordinate in pixels.  The origin is the top left of the screen. | Integer |

##### Outputs

The following is returned in the output:

"result": {}

#### Undo method

##### Overview

Undoes the previous operation.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### UnlockAll method

##### Overview

Unlocks all selections in all fields of the current app.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateName | Alternate state name.  If this parameter is set, the method unlocks all selections that are in the specified state name.  This parameter is optional.  The default value is an empty string. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### UnPublish method

##### Overview

Unpublishes an app.

This method applies only if running in server mode.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

##### Logs

When this method is called, audit activity logs are produced to track the user activity.

In the case of errors, both audit activity logs and system services logs are produced.

The log files are named as follows:

|  |  |
| --- | --- |
| **Audit activity log** | **System service log** |
| *<MachineName>\_AuditActivity\_Engine.txt* | *<MachineName>\_Service\_Engine.txt* |

The log files are located in:

*%ProgramData%/Qlik/Sense/Log/Engine*

For more information, see Qlik Sense troubleshooting guide.

### Field class

This class describes all the methods that apply at field level.

The *handle* member in the JSON request for all methods listed in this section is the handle of the field.

[ClearAllButThis method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-ClearAllButThis-method.htm)

[Clear method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-Clear-method.htm)

[GetAndMode method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-GetAndMode-method.htm)

[GetCardinal method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-GetCardinal-method.htm)

[GetNxProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-GetNxProperties-method.htm)

[Lock method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-Lock-method.htm)

[LowLevelSelect method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-LowLevelSelect-method.htm)

[SelectAll method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-SelectAll-method.htm)

[SelectAlternative method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-SelectAlternative-method.htm)

[SelectExcluded method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-SelectExcluded-method.htm)

[Select method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-Select-method.htm)

[SelectPossible method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-SelectPossible-method.htm)

[SelectValues method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-SelectValues-method.htm)

[SetAndMode method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-SetAndMode-method.htm)

[SetNxProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-SetNxProperties-method.htm)

[ToggleSelect method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-ToggleSelect-method.htm)

[Unlock method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-Unlock-method.htm)

#### ClearAllButThis method

##### Overview

Maintains the selections in the current field while clearing the selections in the other fields.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": true/false

}

The operation is successful if qReturn is set to true.

#### Clear method

##### Overview

Clears the selections in a specific field.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <true/false>

}

The operation is successful if **qReturn** is set to true.

#### GetAndMode method

##### Overview

Returns the AND mode status of a field.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <true or false>

}

The field is in AND mode if **qReturn** is set to true.

#### GetCardinal method

##### Overview

Retrieves the number of distinct values in a field.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <cardinal value>

}

#### GetNxProperties method

##### Overview

Gets the properties of a field.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProperties | Information about the properties of the field. | [NxFieldProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-GetNxProperties-method.htm#NxFieldProperties) |

[Closed](javascript:void(0);)[NxFieldProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOneAndOnlyOne | This parameter is set to true, if the field has one and only one selection (not 0 and not more than 1).  If this property is set to true, the field cannot be cleared anymore and no more selections can be performed in that field. | Boolean |

The property *OneAndOnlyOne*is set to true if one and only value has been selected in the field prior setting the property.

#### Lock method

##### Overview

Locks all selected values of a specific field.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <true/false>

}

The operation is successful if **Return**is set to true.

#### LowLevelSelect method

##### Overview

Selects some values in a field, by entering the element numbers related to the values to select.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValues | Indexes (or element numbers) of the values to select. | Array of Integer |
| qToggleMode | Set to true to keep any selections present in the list object.  If this parameter is set to false, selections made before accepting the list object search become alternative.  This parameter is mandatory. | Boolean |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": true/false

}

The operation is successful if qReturn is set to true.

#### SelectAll method

##### Overview

Selects all values of a field. Excluded values are also selected.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": true/false

}

The operation is successful if qReturn is set to true.

#### SelectAlternative method

##### Overview

Selects all alternatives values in a specific field.

In a field that contains at least one selected value, the values that are neither selected nor excluded are alternatives values.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": true/false

}

The operation is successful if qReturn is set to true.

#### SelectExcluded method

##### Overview

Inverts the current selections.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": true/false

}

The operation is successful if qReturn is set to true.

#### Select method

##### Overview

Selects field values matching a search string.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMatch | String to search for.  Can contain wild cards or numeric search criteria. | String |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean |
| qExcludedValuesMode | Include excluded values in search.  This parameter is optional. | Integer |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": true/false

}

The operation is successful if qReturn is set to true.

#### SelectPossible method

##### Overview

Selects all possible values in a specific field.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": true/false

}

The operation is successful if qReturn is set to true.

#### Select method

##### Overview

Selects field values matching a search string.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMatch | String to search for.  Can contain wild cards or numeric search criteria. | String |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean |
| qExcludedValuesMode | Include excluded values in search.  This parameter is optional. | Integer |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": true/false

}

The operation is successful if qReturn is set to true.

#### Select method

##### Overview

Selects field values matching a search string.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMatch | String to search for.  Can contain wild cards or numeric search criteria. | String |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean |
| qExcludedValuesMode | Include excluded values in search.  This parameter is optional. | Integer |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": true/false

}

#### SelectPossible method

##### Overview

Selects all possible values in a specific field.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": true/false

}

The operation is successful if qReturn is set to true.

#### SelectValues method

##### Overview

Selects some values in a field, by entering the values to select.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFieldValues | List of the values to select. | Array of [FieldValue](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-SelectValues-method.htm#FieldValue) |
| qToggleMode | The default value is *false*.  This parameter is optional. | Boolean |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean |

[ClosedFieldValue](javascript:void(0);)

##### Outputs

The following is returned in the output:

"result": {

"qReturn": true/false

}

The operation is successful if qReturn is set to true.

#### SetAndMode method

##### Overview

Sets a field in the AND mode.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qAndMode | Specifies if the AND mode applies to the field.  Set this parameter to true to enter the AND mode.  This parameter is mandatory. | Boolean |

##### Outputs

The following is returned in the output:

"result": {}

#### SetNxProperties method

##### Overview

Sets some properties to a field.

##### Parameters

In addition to the properties described below, dynamic properties can be added.

The following properties can be filled:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProperties | Information about the properties of the field | [NxFieldProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/FieldClass/Field-class-SetNxProperties-method.htm#NxFieldProperties) |

[ClosedNxFieldProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOneAndOnlyOne | This parameter is set to true, if the field has one and only one selection (not 0 and not more than 1).  If this property is set to true, the field cannot be cleared anymore and no more selections can be performed in that field. | Boolean |

##### Outputs

The following is returned in the output:

"result": {}

#### ToggleSelect method

##### Overview

Toggle selects field values matching a search string.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMatch | String to search for.  Can contain wild cards or numeric search criteria. | String |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean |
| qExcludedValuesMode | Include excluded values in search.  This parameter is optional. | Integer |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": true/false

}

The operation is successful if qReturn is set to true.

#### Unlock method

##### Overview

Unlocks all selected values of a specific field if the target (or handle ) is a field.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <true/false>

}

The operation is successful if **Return**is set to true.

### GenericBookmark class

This class describes all the methods that apply at bookmark level.

The *handle* member in the JSON request for all methods listed in this section is the handle of the bookmark.

[Apply method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-Apply-method.htm)

[ApplyPatches method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-ApplyPatches-method.htm)

[GetInfo method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-GetInfo-method.htm)

[GetLayout method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-GetLayout-method.htm)

[GetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-GetProperties-method.htm)

[Publish method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-Publish-method.htm)

[SetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-SetProperties-method.htm)

[UnPublish method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-UnPublish-method.htm)

#### Apply method

##### Overview

Applies a bookmark.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### ApplyPatches method

##### Overview

Applies a patch to the properties of an object. Allows an update to some of the properties.

Applying a patch takes less time than resetting all the properties.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPatches | Array of patches. | Array of *NxPatch*  See [NxPatch](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-ApplyPatches-method.htm#NxPatch2). |

[ClosedNxPatch](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOp | Operation to perform. | One of:   * Add * Remove * Replace |
| qPath | Path to the property to add, remove or replace. | String |
| qValue | This parameter is not used in a remove operation.  Corresponds to the value of the property to add or to the new value of the property to update.  Examples:  "false", "2", "\"New title\"" | String |

##### Outputs

The following is returned in the output:

"result": {}

#### GetInfo method

##### Overview

Returns:

* the type of the object
* the identifier of the object

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qInfo": {

"qId": "<identifier>",

"qType": "<type>"

}

}

#### GetLayout method

##### Overview

Evaluates an object and displays its properties including the dynamic properties.

If the member *delta*is set to true in the request object, only the delta is evaluated.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLayout | Information on the object | *GenericBookmarkLayout*  See[GenericBookmarkLayout](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-GetLayout-method.htm#GenericBookmarkLayout). |

[Closed](javascript:void(0);)[GenericBookmarkLayout](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the object | *NxInfo* |
| qMeta | Information on publishing and permissions | *Null or NxMeta* |
| qBookmark | Information about the bookmark | *NxBookmark* |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

[[Closed](javascript:void(0);)NxBookmark](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateData | List of selections for each state. | Array of *AlternateStateData* |
| qUtcModifyTime | Time when the bookmark was created. | Double precision floating point |
| qVariableItems | List of the variables in the app at the time the bookmark was created. | Array of*BookmarkVariableItem* |

[[Closed](javascript:void(0);)AlternateStateData](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateName | Name of the alternate state.  Default is current selections: $ | String |
| qFieldItems | List of the selections | Array of *BookmarkFieldItem* |

[[Closed](javascript:void(0);)BookmarkFieldItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDef | Name and type of the field | *FieldDefEx* |
| qLocked | Indicates if the field is locked.  Default is false. | Boolean |
| qSelectInfo | Information on the selections criteria | *SelectInfo* |
| qValues | List of the selected values  Either the list of selected values or the list of excluded values is displayed. | Array of *FieldValue* |
| qExcludedValues | List of excluded values.  Either the list of selected values or the list of excluded values is displayed. | Array of *FieldValue* |
| qAndMode | If set to true, selections within a list object are made in AND mode; If you have a list object that lists all customers, by selecting Customer 1 and Customer 2 while in and-mode, all records that are associated with Customer 1**and**Customer 2 are selected.  The default value is false; selections within a list object are made in OR mode. If you have a list object that lists all customers, by selecting Customer 1 and Customer 2 while in or-mode, all records that are associated with either Customer 1 **or**Customer 2 are selected.  This parameter is not returned if set to false. | Boolean |
| qOneAndOnlyOne | If set to true, the field has always one selection (not 0 and not more than 1). If another value is selected, the previous one is unselected.  The default value is false. This parameter is not returned if set to false. | Boolean |

[[Closed](javascript:void(0);)FieldDefEx](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field | String |
| qType | Type of data entity | One of:  • 0 for *NOT\_PRESENT*: the field does not exist  • 1 for *PRESENT*: plain field  •2 for *IS\_EXPR*: calculated dimension |

[[Closed](javascript:void(0);)SelectInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTextSearch | Text search string.  Everything that matches the text is selected.  This parameter is optional. | String |
| qRangeLo | Lower value of the search range.  This parameter is used when performing range selections or text searches in dimensions.  Default is Null. | Double |
| qRangeHi | Highest value of the search range.  This parameter is used when performing range selections or text searches in dimensions.  Default is Null. | Double |
| qNumberFormat | Gives information about the formatting of the range.  This parameter is used when performing range selections or text searches in dimensions. | *FieldAttributes* |
| qRangeInfo | This parameter is used when performing range selections or text searches in measures.  Gives information about the range of selections. | Array of *RangeSelectInfo* |

[[Closed](javascript:void(0);)FieldValue](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text related to the field value  This parameter is optional. | String |
| qIsNumeric | Is set to true if the value is a numeric.  This parameter is optional. Default is false. | Boolean |
| qNumber | Numeric value of the field.  This parameter is displayed if *qIsNumeric*is set to true.  This parameter is optional. | Double |

[[Closed](javascript:void(0);)FieldAttributes](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the field.  Default is U. | One of:  • U for UNKNOWN type.  • A for ASCII; Numeric fields values contain only standard ASCII characters.  • I for INTEGER; Numeric fields values are shown as integer numbers.  • R for REAL; Numeric fields values are shown as real numbers.  • F for FIX; Numeric fields values are shown as numbers with a fix number of decimals.  • M for MONEY; Numeric fields values are shown as in the money format.  • D for DATE; Numeric fields values are shown as dates.  • T for TIME; Numeric fields values are shown as times.  • TS TIMESTAMP; Numeric fields values are shown as time stamps.  • IV for INTERVAL; Numeric fields values are shown as intervals. |
| qnDec | Number of decimals.  Default is 10. | Integer between 0 and 15. |
| qUseThou | Defines whether or not a thousands separator must be used.  Default is 0. | One of:   * 0 for false * 1 for true |
| qFmt | Defines the format pattern that applies to*qText*.  Is used in connection to the type of the field (parameter **qType**).  For more information, see Struct[FieldAttributes](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldAttributes.htm).  Example: *YYYY-MM-DD* for a date | String |
| qDec | Defines the decimal separator.  Example:**.** | String |
| qThou | Defines the thousand separator (if any).  Is used if **qUseThou**is set to 1.  Example:**,** | String |

[[Closed](javascript:void(0);)RangeSelectInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRangeLo | Lowest value in the range. | Double |
| qRangeHi | Highest value in the range. | Double |
| qMeasure | Label of the measure. | String |

[[Closed](javascript:void(0);)BookmarkVariableItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the variable. | String |
| qValue | Value of the variable. | *FieldValue* |

#### GetProperties method

##### Overview

Shows the properties of an object.

If the member delta is set to true in the request object, only the delta is retrieved.

##### Parameters

None

##### Output

The following is always returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the generic object  This parameter is mandatory. | [GenericBookmarkProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-GetProperties-method.htm#GenericBookmarkProperties) |

[ClosedGenericBookmarkProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the bookmark.  This parameter is mandatory. | *NxInfo* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

#### Publish method

##### Overview

Publishes a bookmark.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### SetProperties method

##### Overview

Sets some properties for a bookmark.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the bookmark  This parameter is mandatory. | GenericBookmarkProperties  See[GenericBookmarkProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-SetProperties-method.htm#GenericBookmarkProperties) |

[ClosedGenericBookmarkProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the bookmark.  This parameter is mandatory. | *NxInfo* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### UnPublish method

##### Overview

Unpublishes a bookmark.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

### GenericDimension class

This class describes all the methods that apply at dimension level.

The *handle* member in the JSON request for all methods listed in this section is the handle of the dimension.

[ApplyPatches method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-ApplyPatches-method.htm)

[GetDimension method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-GetDimension-method.htm)

[GetInfo method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-GetInfo-method.htm)

[GetLayout method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-GetLayout-method.htm)

[GetLinkedObjects method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-GetLinkedObjects-method.htm)

[GetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-GetProperties-method.htm)

[Publish method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-Publish-method.htm)

[SetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-SetProperties-method.htm)

[UnPublish method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-UnPublish-method.htm)

#### ApplyPatches method

##### Overview

Applies a patch to the properties of an object. Allows an update to some of the properties.

Applying a patch takes less time than resetting all the properties.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPatches | Array of patches. | Array of *NxPatch*  See [NxPatch](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-ApplyPatches-method.htm#NxPatch2). |

[ClosedNxPatch](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOp | Operation to perform. | One of:   * Add * Remove * Replace |
| qPath | Path to the property to add, remove or replace. | String |
| qValue | This parameter is not used in a remove operation.  Corresponds to the value of the property to add or to the new value of the property to update.  Examples:  "false", "2", "\"New title\"" | String |

##### Outputs

The following is returned in the output:

"result": {}

#### GetDimension method

##### Overview

Returns the definition of a dimension.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qDim": {

"qGrouping": "...",

"qFieldDefs": [

"..."

],

"qFieldLabels": [

"..."

]

}

}

 The definition of the dimension is returned.

#### GetInfo method

##### Overview

Returns the type and identifier of the object.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qInfo": {

"qId": "<identifier>",

"qType": "<type>"

}

}

#### GetLayout method

##### Overview

Evaluates a dimension and displays its properties, including the dynamic properties.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLayout | Information on the object. | [GenericDimensionLayout](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-GetLayout-method.htm#GenericDimensionLayout). |

[Closed](javascript:void(0);)[GenericDimensionLayout](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the dimension. | *NxInfo* |
| qMeta | Information about publishing and permissions. | *Null or NxMeta* |
| qDim | Name and label of the dimension, information about grouping. | *NxLibraryDimensionDef* |
| qDimInfos | Cardinal and tags related to the dimension.  Length of the longest value in the field. | Array of*GenericDimensionInfo* |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

[[Closed](javascript:void(0);)NxLibraryDimensionDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qGrouping | Information about the grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qFieldDefs | Array of dimension names. | Array of String |
| qFieldLabels | Array of dimension labels. | Array of String |

[[Closed](javascript:void(0);)GenericDimensionInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qApprMaxGlyphCount | Length of the longest value in the field. | Integer |
| qCardinal | Number of distinct field values | Integer |
| qTags | Gives information on a field. For example, it can return the type of the field.  Examples: key, text, ASCII | Array of String |
| qIsSemantic | If set to true, it means that the field is a semantic. | Boolean |
| qAndMode | If set to true a logical AND (instead of a logical OR) is used when making selections in a field.  The default value is false. | Boolean |

#### GetLinkedObjects method

##### Overview

Lists the linked objects to a generic object, a dimension or a measure.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | List of the linked objects. | Array of [NxLinkedObjectInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-GetLinkedObjects-method.htm#NxLinkedObjectInfo) |

[Closed](javascript:void(0);)[NxLinkedObjectInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRootId | Identifier of the root object.  If the linked object is a child, the root identifier is the identifier of the parent.  If the linked object is an app object, the root identifier is the same than the identifier of the linked object since the linked object is a root object. | String |
| qInfo | Information about the linked object. | *NxInfo* |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

#### GetProperties method

##### Overview

Shows the properties of an object.

Returns the identifier and the definition of the dimension.

If the member delta is set to true in the request object, only the delta is retrieved.

##### Parameters

None

##### Output

The following is always returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the generic object.  This parameter is mandatory. | [GenericDimensionProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-GetProperties-method.htm#GenericDimensionProperties) |

[ClosedGenericDimensionProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the dimension.  This parameter is mandatory. | *NxInfo* |
| qDim | Definition of the dimension.  This parameter is mandatory. | *NxLibraryDimensionDef* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)NxLibraryDimensionDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qGrouping | Information about the grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qFieldDefs | Array of dimension names. | Array of String |
| qFieldLabels | Array of dimension labels. | Array of String |

#### Publish method

##### Overview

Publishes a dimension.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### SetProperties method

##### Overview

Sets some properties for a dimension.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the dimension.  This parameter is mandatory. | [GenericDimensionProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericDimensionClass/GenericDimension-class-SetProperties-method.htm#GenericDimensionProperties) |

[ClosedGenericDimensionProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the dimension.  This parameter is mandatory. | *NxInfo* |
| qDim | Definition of the dimension.  This parameter is mandatory. | *NxLibraryDimensionDef* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)NxLibraryDimensionDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qGrouping | Information about the grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qFieldDefs | Array of dimension names. | Array of String |
| qFieldLabels | Array of dimension labels. | Array of String |

##### Outputs

The following is returned in the output:

"result": {}

#### UnPublish method

##### Overview

Unpublishes a dimension.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

### GenericObject class

This class describes all the methods that apply at generic object level.

The *handle* member in the JSON request for all methods listed in this section is the handle of the generic object.

[AbortListObjectSearch method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-AbortListObjectSearch-method.htm)

[AcceptListObjectSearch method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-AcceptListObjectSearch-method.htm)

[ApplyPatches method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-ApplyPatches-method.htm)

[BeginSelections method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-BeginSelections-method.htm)

[ClearSelections method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-ClearSelections-method.htm)

[ClearSoftPatches method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-ClearSoftPatches-method.htm)

[CollapseLeft method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-CollapseLeft-method.htm)

[CollapseTop method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-CollapseTop-method.htm)

[CopyFrom method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-CopyFrom-method.htm)

[CreateChild method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-CreateChild-method.htm)

[DestroyAllChildren method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-DestroyAllChildren-method.htm)

[DestroyChild method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-DestroyChild-method.htm)

[DrillUp method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-DrillUp-method.htm)

[EmbedSnapshotObject method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-EmbedSnapshotObject-method.htm)

[EndSelections method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-EndSelections-method.htm)

[ExpandLeft method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-ExpandLeft-method.htm)

[ExpandTop method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-ExpandTop-method.htm)

[ExportData method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-ExportData-method.htm)

[GetChildInfos method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetChildInfos-method.htm)

[GetChild method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetChild-method.htm)

[GetEffectiveProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetEffectiveProperties-method.htm)

[GetFullPropertyTree method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetFullPropertyTree-method.htm)

[GetHyperCubeBinnedData method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeBinnedData-method.htm)

[GetHyperCubeData method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeData-method.htm)

[GetHyperCubePivotData method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubePivotData-method.htm)

[GetHyperCubeReducedData method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeReducedData-method.htm)

[GetHyperCubeStackData method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeStackData-method.htm)

[GetInfo method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetInfo-method.htm)

[GetLayout method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetLayout-method.htm)

[GetLinkedObjects method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetLinkedObjects-method.htm)

[GetListObjectData method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetListObjectData-method.htm)

[GetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetProperties-method.htm)

[GetSnapshotObject method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetSnapshotObject-method.htm)

[Lock method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-Lock-method.htm)

[Publish method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-Publish-method.htm)

[RangeSelectHyperCubeValues method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-RangeSelectHyperCubeValues-method.htm)

[ResetMadeSelections method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-ResetMadeSelections-method.htm)

[SearchListObjectFor method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SearchListObjectFor-method.htm)

[SelectHyperCubeCells method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SelectHyperCubeCells-method.htm)

[SelectHyperCubeValues method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SelectHyperCubeValues-method.htm)

[SelectListObjectAll method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SelectListObjectAll-method.htm)

[SelectListObjectAlternative method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SelectListObjectAlternative-method.htm)

[SelectListObjectExcluded method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SelectListObjectExcluded-method.htm)

[SelectListObjectPossible method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SelectListObjectPossible-method.htm)

[SelectListObjectValues method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SelectListObjectValues-method.htm)

[SelectPivotCells method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SelectPivotCells-method.htm)

[SetChildArrayOrder method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SetChildArrayOrder-method.htm)

[SetFullPropertyTree method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SetFullPropertyTree-method.htm)

[SetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SetProperties-method.htm)

[Unlock method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-Unlock-method.htm)

[UnPublish method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-UnPublish-method.htm)

#### AbortListObjectSearch method

##### Overview

Aborts the results of a search in a list object.

This method applies to list objects (objects with one dimension).

After an abort on a list object search, the [GetLayout method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-GetLayout-method.htm) does not return any more search results but it does return the values in the field.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the list object.  For example,*/qListObjectDef*. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### AcceptListObjectSearch method

##### Overview

Accept the results of a search in a list object. The search results become selected in the field.

This method applies to list objects (objects with one dimension).

The search results are displayed using the [GetLayout method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-GetLayout-method.htm).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the list object.  For example,*/qListObjectDef*. | String |
| qToggleMode | Set to true to keep any selections present in the list object.  If this parameter is set to false, selections made before accepting the list object search become alternative.  This parameter is mandatory. | Boolean |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean |

##### Outputs

The following is returned in the output:

"result": {}

#### ApplyPatches method

##### Overview

Applies a patch to the properties of an object. Allows an update to some of the properties.

It is possible to apply a patch to the properties of a generic object, that is not persistent. Such a patch is called a soft patch.

In that case, the result of the operation on the properties (add, remove or delete) is not shown when doing*GetProperties* and only a *GetLayout*call shows the result of the operation.

Properties that are not persistent are called soft properties. Once the engine session is over, soft properties are cleared.

Soft properties apply only to generic objects.

Applying a patch takes less time than resetting all the properties.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPatches | Array of patches. | Array of *NxPatch*  See [NxPatch](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-ApplyPatches-method.htm#NxPatch). |
| qSoftPatch | If set to true, it means that the properties to be applied are not persistent. The patch is a soft patch.  This parameter is optional. Default is false. | Boolean |

[Closed](javascript:void(0);)[NxPatch](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOp | Operation to perform. | One of:   * Add * Remove * Replace |
| qPath | Path to the property to add, remove or replace. | String |
| qValue | This parameter is not used in a remove operation.  Corresponds to the value of the property to add or to the new value of the property to update.  Examples:  "false", "2", "\"New title\"" | String |

##### Outputs

The following is returned in the output:

"result": {}

#### BeginSelections method

##### Overview

Begins the selection mode. The app enters the modal state. The specified object enters the selection mode and a modal window is opened. The selection mode can apply to only one object in an app at a time.

When a visualization is in selection mode, selections can be made in this visualization. The visualization is not sorted until the selection mode is ended. Once the selection mode is ended and if the selections are accepted, the visualization is sorted according to the sort criteria. For more information about:

* Ending the selection mode, see [EndSelections method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-EndSelections-method.htm).
* The sort criteria, see [ListObjectDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/ListObjectDef.htm) or [HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm).

**Example:**

A sheet contains a list object and a chart. If the list object is in selection mode then the chart cannot be in selection mode. No selection on the chart can be made until the list object exits the selection mode.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPaths | List of the paths to the definition of the objects to enter selection mode.  For example,*/qListObjectDef*. | Array of String |

##### Outputs

The following is returned in the output:

"result": {}

#### ClearSelections method

##### Overview

Clears the selections in a dimension of a visualization.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the visualization.  For example,*/qListObjectDef*. | String |
| qColIndices | Array of dimension numbers or indexes. The selections are cleared in the specified dimensions.  Dimension numbers/indexes start from 0.  This parameter is optional. If this parameter is not set, all dimensions are cleared. | Array of Integer |

##### Outputs

The following is returned in the output:

"result": {}

#### ClearSoftPatches method

##### Overview

Clears the soft properties of a generic object.

For more information on how to add soft properties to a generic object, see [ApplyPatches method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-ApplyPatches-method.htm).

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### CollapseLeft method

##### Overview

Collapses the left dimensions of a pivot table. This method applies only to pivot tables that are not always fully expanded.

In the definition of the hypercube (in [HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)), the parameter *qAlwaysFullyExpanded*must be set to false.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be collapsed  For example,*/qHyperCubeDef*.  This parameter is mandatory. | String |
| qRow | Row index in the data matrix.  Indexing starts from 0. | Integer |
| qCol | Column index. The index is based on the left dimension indexes.  Indexing starts from 0. | Integer |
| qAll | If set to true, it collapses all cells.  Parameters *qRow*and *qCol*are not used if *qAll*is set to true, but they need to be set (for example to 0). | Boolean |

##### Outputs

The following is returned in the output:

"result": {}

#### CollapseTop method

##### Overview

Collapses the top dimensions of a pivot table. This method applies only to pivot tables that are not always fully expanded.

In the definition of the hypercube (in [HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)), the parameter *qAlwaysFullyExpanded*must be set to false.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be collapsed  For example,*/qHyperCubeDef*.  This parameter is mandatory. | String |
| qRow | Row index. The index is based on the top dimension indexes.  Indexing starts from 0. | Integer |
| qCol | Column index in the data matrix.  Indexing starts from 0. | Integer |
| qAll | If set to true, it collapses all cells.  Parameters *qRow*and *qCol*are not used if *qAll*is set to true, but they need to be set (for example to 0). | Boolean |

##### Outputs

The following is returned in the output:

"result": {}

#### CopyFrom method

##### Overview

Copies the properties of a generic object and its children.

The source object is specified by the parameter *qFromId*and the destination object is referenced by its handle.

The identifier of the destination object is the same as before the copy takes place.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFromId | Identifier of the object to copy. | [GenericObjectProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-CopyFrom-method.htm#GenericObjectProperties) |

[ClosedGenericObjectProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qExtendsId | Should be set to create an object that is linked to another object. Enter the identifier of the linking object (i.e the object you want to link to).  This parameter is mandatory.  If you do not want to link your object, set this parameter to an empty string. | String |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### CreateChild method

##### Overview

Creates a generic object that is a child of another generic object.

It is possible to update the properties of the child's parent at the same time that the child is created. Both operations are performed by the same call.

It is possible to create a child that is linked to another generic object. The two objects have the same properties.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the child  This parameter is mandatory.  It is possible to create a child that is linked to another object. | *GenericObjectProperties*  See [GenericObjectProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-CreateChild-method.htm#GenericObjectProperties) |
| qPropForThis | This parameter is optional.  Identifier of the parent's object.  Should be set to update the properties of the parent's object at the same time the child is created. | Null or*GenericObjectProperties*  See [GenericObjectProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-CreateChild-method.htm#GenericObjectProperties) |

[ClosedGenericObjectProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qExtendsId | Should be set to create an object that is linked to another object. Enter the identifier of the linking object (i.e the object you want to link to).  This parameter is mandatory.  If you do not want to link your object, set this parameter to an empty string. | String |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

In addition to the parameters specified above, the parameter qProp can get any properties defined in the [Generic object definition](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/overview-generic-object.htm) section.

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericObject",

"qHandle": <handle of the child>

},

"qInfo": {

"qId": "<identifier of the child>",

"qType": "<type of the child>"

}

}

#### DestroyAllChildren method

##### Overview

Removes all children and all children to the children on an object.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPropForThis | This parameter is optional.  Identifier of the parent's object and property to update.  Should be set to update the properties of the parent's object at the same time the child is created. | Null or[GenericObjectProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-DestroyAllChildren-method.htm#GenericObjectProperties) |

[ClosedGenericObjectProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qExtendsId | Should be set to create an object that is linked to another object. Enter the identifier of the linking object (i.e the object you want to link to).  This parameter is mandatory.  If you do not want to link your object, set this parameter to an empty string. | String |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### DestroyChild method

##### Overview

Removes a child object.

It is possible to update the properties of the child's parent at the same time that the child is removed. Both operations are performed by the same call.

Removing a linked object, invalidate the linking object.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qid | Identifier of the child to remove.  This parameter is mandatory. | String |
| qPropForThis | This parameter is optional.  Identifier of the parent's object and property to update.  Should be set to update the properties of the parent's object at the same time the child is created. | Null or*GenericObjectProperties*  See [GenericObjectProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-DestroyChild-method.htm#GenericObjectProperties) |

[ClosedGenericObjectProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qExtendsId | Should be set to create an object that is linked to another object. Enter the identifier of the linking object (i.e the object you want to link to).  This parameter is mandatory.  If you do not want to link your object, set this parameter to an empty string. | String |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

#### DrillUp method

##### Overview

You can use the *drillUp*method with any object that contains a drill-down group as a dimension.

This method allows you to move between different levels of information (from a detailed level to a less detailed level of information). You can go back to previous visualizations up to the highest level of the hierarchy.

If you try to drill up more steps than there are available levels, the first level of the hierarchy is displayed.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qHyperCubeDef*.  This parameter is mandatory. | String |
| qDimNo | Dimension number or index starting from 0  The default value is 0. | Integer |
| qNbrSteps | Number of steps you want to drill up.  The default value is 0. | Integer |

##### Outputs

The following is returned in the output:

"result": {}

#### EmbedSnapshotObject method

##### Overview

Adds a snapshot to a generic object.

Only one snapshot can be embedded in a generic object.

If you embed a snapshot in an object that already contains a snapshot, the new snapshot overwrites the previous one.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the bookmark.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### EndSelections method

##### Overview

Ends the selection mode on a visualization. The selections are accepted or aborted when exiting the selection mode, depending on the *qAccept*parameter value.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qAccept | Set this parameter to true to accept the selections before exiting the selection mode. | Boolean |

##### Outputs

The following is returned in the output:

"result": {}

#### ExpandLeft method

##### Overview

Expands the left dimensions of a pivot table. This method applies only to pivot tables that are not always fully expanded.

In the definition of the hypercube (in [HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)), the parameter *qAlwaysFullyExpanded*must be set to false.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be expanded.  For example,*/qHyperCubeDef*.  This parameter is mandatory. | String |
| qRow | Row index in the data matrix to expand.  Indexing starts from 0. | Integer |
| qCol | Column index. The index is based on the left dimension indexes.  Indexing starts from 0. | Integer |
| qAll | If set to true, it expands all cells.  Parameters *qRow*and *qCol*are not used if *qAll*is set to true, but they need to be set (for example to 0). | Boolean |

##### Outputs

The following is returned in the output:

"result": {}

#### ExpandTop method

##### Overview

Expands the top dimensions of a pivot table. This method applies only to pivot tables that are not always fully expanded.

In the definition of the hypercube (in [HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)), the parameter *qAlwaysFullyExpanded*must be set to false.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be expanded.  For example,*/qHyperCubeDef*.  This parameter is mandatory. | String |
| qRow | Row index. The index is based on the top dimension indexes.  Indexing starts from 0. | Integer |
| qCol | Column index in the data matrix.  Indexing starts from 0. | Integer |
| qAll | If set to true, it expands all cells.  Parameters *qRow*and *qCol*are not used if *qAll*is set to true, but they need to be set (for example to 0). | Boolean |

##### Outputs

The following is returned in the output:

"result": {}

#### ExportData method

##### Overview

Exports the data of any generic object to an Excel file or a open XML file.

If the object contains excluded values, those excluded values are not exported.

###### Default limitations in number of cells

The default maximum number of cells in the export file is:

* 1000000 to export to an Excel file
* 5000000 to export to a CSV file

The exported file is truncated if the number of cells exceeds the limit. A warning message with code 1000 is sent.

There is an option to export only the possible values (*qExportState*is P).

###### Change the maximum number of cells in the exported file

The maximum number of cells can be customized in the *settings.ini* file using the parameter:

* *ExportMaxCellsOoXmlSheet*to export to an Excel file
* *ExportMaxCellsCsv*to export to a CSV file

End the statement in the settings.in file with a carriage return, otherwise the change is not taken into account.

###### Default limitation in number of columns

The default maximum number of columns in the export file is:

* 1000 to export to a CSV file

The exported file is truncated if the number of cells exceeds the limit.A warning message with code 1000 is sent.

There is an option to export only the possible values (*qExportState*is P).

###### Change the maximum number of columns in the exported file

The maximum number of columns can be customized in the *settings.ini* file using the parameter*ExportMaxColumnsCsv*.

End the statement in the settings.in file with a carriage return, otherwise the change is not taken into account.

###### Default limitation in size

The default size limit of an export file is:

* 1024\*1024\*800 for an export to an Excel file.

If the exported file is larger than the maximum value, then an out of memory error with code 13000 is returned.

These default settings can be changed in the settings.ini file.

###### Change the maximum size of the exported file

The maximum size can be customized in the *settings.ini* file using the parameter *ExportMaxOoXmlPartSize*.

End the statement in the settings.in file with a carriage return, otherwise the change is not taken into account.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFileType | Type of the file to export.  This parameter is mandatory. | One of:   * *CSV\_C* for comma separated CSV file * *CSV\_T* for tab separated CSV file * *OOXML*for open XML |
| qPath | Path to the definition of the object to be exported.  For example,*/qHyperCubeDef*.  This parameter is mandatory if the file type is*CSV\_C* or *CSV\_T*. | String |
| qFileName | Name of the exported file after download from browser.  This parameter is optional. | String |
| qExportState | Defines the values to be exported.  This parameter is optional. The default value is A. | One of:   * P to export only the possible values * A to export all values |

##### Outputs

The following is returned in the output:

"result": {

"qUrl": "<url of the exported file>"

Exported files are temporary and are available only for a certain time span and only to the user who created them.

#### GetChildInfos method

##### Overview

Returns the identifier and the type for each child in an app object. If the child contains extra properties in*qInfos*,these properties are returned.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qInfos": [

{

"qId": "<identifier of the child 1>",

"qType": "<type of the child 1>"

},

{

"qId": "<identifier of the child 2>",

"qType": "<type of the child 2>",

"<FullDynamicProperty>": "<value>"

}

...

]

}

Full dynamic properties are optional and are returned if they exist in the definition of the object.

#### GetChild method

##### Overview

Returns the type of the object and the corresponding handle.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericObject",

"qHandle": <handle of the object>

}

#### GetEffectiveProperties method

##### Overview

Returns the identifier, the type and the properties of the object.

If the object contains some soft properties, the soft properties are returned.

If the object is linked to another object, the properties of the linking object are returned.

##### Parameters

None

##### Output

The following is always returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the generic object.  This parameter is mandatory. | [GenericObjectProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetEffectiveProperties-method.htm#GenericObjectProperties) |

[ClosedGenericObjectProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qExtendsId | Should be set to create an object that is linked to another object. Enter the identifier of the linking object (i.e the object you want to link to).  This parameter is mandatory.  If you do not want to link your object, set this parameter to an empty string. | String |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

#### GetFullPropertyTree method

##### Overview

Gets the properties of:

* a generic object
* the children of the generic object
* the bookmarks/embedded snapshots of the generic object

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPropEntry | Information about the properties.  This parameter is mandatory. | [GenericObjectEntry](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetFullPropertyTree-method.htm#GenericObjectEntry) |

[Closed](javascript:void(0);)[GenericObjectEntry](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProperty | Information about the generic object properties. | *GenericObjectProperties* |
| qChildren | Information about the children of the generic object. | Array of*GenericObjectEntry*. |
| qEmbeddedSnapshotRef | Reference to a bookmark/snapshot that is embedded in the generic object. | *Null*or*GenericBookmarkEntry*. |

[[Closed](javascript:void(0);)GenericObjectProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qExtendsId | Should be set to create an object that is linked to another object. Enter the identifier of the linking object (i.e the object you want to link to).  This parameter is mandatory.  If you do not want to link your object, set this parameter to an empty string. | String |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)GenericBookmarkEntry](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProperties | Information about the properties of the bookmark. | *GenericBookmarkProperties* |
| qBookmark | Information about the bookmark. | *NxBookmark* |

[[Closed](javascript:void(0);)GenericBookmarkProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the bookmark.  This parameter is mandatory. | *NxInfo* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxBookmark](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateData | List of selections for each state. | Array of *AlternateStateData* |
| qUtcModifyTime | Time when the bookmark was created. | Double precision floating point |
| qVariableItems | List of the variables in the app at the time the bookmark was created. | Array of*BookmarkVariableItem* |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)AlternateStateData](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateName | Name of the alternate state.  Default is current selections: $ | String |
| qFieldItems | List of the selections | Array of *BookmarkFieldItem* |

[[Closed](javascript:void(0);)BookmarkFieldItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDef | Name and type of the field | *FieldDefEx* |
| qLocked | Indicates if the field is locked.  Default is false. | Boolean |
| qSelectInfo | Information on the selections criteria | *SelectInfo* |
| qValues | List of the selected values  Either the list of selected values or the list of excluded values is displayed. | Array of *FieldValue* |
| qExcludedValues | List of excluded values.  Either the list of selected values or the list of excluded values is displayed. | Array of *FieldValue* |
| qAndMode | If set to true, selections within a list object are made in AND mode; If you have a list object that lists all customers, by selecting Customer 1 and Customer 2 while in and-mode, all records that are associated with Customer 1**and**Customer 2 are selected.  The default value is false; selections within a list object are made in OR mode. If you have a list object that lists all customers, by selecting Customer 1 and Customer 2 while in or-mode, all records that are associated with either Customer 1 **or**Customer 2 are selected.  This parameter is not returned if set to false. | Boolean |
| qOneAndOnlyOne | If set to true, the field has always one selection (not 0 and not more than 1). If another value is selected, the previous one is unselected.  The default value is false. This parameter is not returned if set to false. | Boolean |

[[Closed](javascript:void(0);)FieldDefEx](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field | String |
| qType | Type of data entity | One of:  • 0 for *NOT\_PRESENT*: the field does not exist  • 1 for *PRESENT*: plain field  •2 for *IS\_EXPR*: calculated dimension |

[[Closed](javascript:void(0);)SelectInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTextSearch | Text search string.  Everything that matches the text is selected.  This parameter is optional. | String |
| qRangeLo | Lower value of the search range.  This parameter is used when performing range selections or text searches in dimensions.  Default is Null. | Double |
| qRangeHi | Highest value of the search range.  This parameter is used when performing range selections or text searches in dimensions.  Default is Null. | Double |
| qNumberFormat | Gives information about the formatting of the range.  This parameter is used when performing range selections or text searches in dimensions. | *FieldAttributes* |
| qRangeInfo | This parameter is used when performing range selections or text searches in measures.  Gives information about the range of selections. | Array of *RangeSelectInfo* |

[[Closed](javascript:void(0);)FieldValue](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text related to the field value  This parameter is optional. | String |
| qIsNumeric | Is set to true if the value is a numeric.  This parameter is optional. Default is false. | Boolean |
| qNumber | Numeric value of the field.  This parameter is displayed if *qIsNumeric*is set to true.  This parameter is optional. | Double |

[[Closed](javascript:void(0);)FieldAttributes](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the field.  Default is U. | One of:  • U for UNKNOWN type.  • A for ASCII; Numeric fields values contain only standard ASCII characters.  • I for INTEGER; Numeric fields values are shown as integer numbers.  • R for REAL; Numeric fields values are shown as real numbers.  • F for FIX; Numeric fields values are shown as numbers with a fix number of decimals.  • M for MONEY; Numeric fields values are shown as in the money format.  • D for DATE; Numeric fields values are shown as dates.  • T for TIME; Numeric fields values are shown as times.  • TS TIMESTAMP; Numeric fields values are shown as time stamps.  • IV for INTERVAL; Numeric fields values are shown as intervals. |
| qnDec | Number of decimals.  Default is 10. | Integer between 0 and 15. |
| qUseThou | Defines whether or not a thousands separator must be used.  Default is 0. | One of:   * 0 for false * 1 for true |
| qFmt | Defines the format pattern that applies to*qText*.  Is used in connection to the type of the field (parameter **qType**).  For more information, see Struct[FieldAttributes](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldAttributes.htm).  Example: *YYYY-MM-DD* for a date | String |
| qDec | Defines the decimal separator.  Example:**.** | String |
| qThou | Defines the thousand separator (if any).  Is used if **qUseThou**is set to 1.  Example:**,** | String |

[[Closed](javascript:void(0);)RangeSelectInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRangeLo | Lowest value in the range. | Double |
| qRangeHi | Highest value in the range. | Double |
| qMeasure | Label of the measure. | String |

[[Closed](javascript:void(0);)BookmarkVariableItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the variable. | String |
| qValue | Value of the variable. | *FieldValue* |

#### GetHyperCubeBinnedData method

##### Overview

This method supports data binning.

When a generic object with two or three measures and one dimension contains a lot of data, groups of points (i.e cells) can be rendered instead of points.

A zone of interest can be refined (for zooming in) up to a maximum refinement level (set in the *qQueryLevel*parameter) or coarsened (for zoom out).

The grid of cells is adaptive (not static), meaning that it adapts to different length scales.

The *GetHyperCubeBinnedData* method gives information about the adaptive grid and the values of the generic object.

The number of points in a cell and the coordinates (expressed in the measure range) of each cell are returned.

Dimension values and measure values are rendered at point level (highest detailed level).

The generic object should contain two or three measures and one dimension. When the refinement is high, the first two measures are represented on the x-axis and on the y-axis, while the third measure is visualized as color or point size.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object.  For example,*/qHyperCubeDef*.  This parameter is mandatory. | String |
| qPages | Array of pages to retrieve.  Since the generic object contains two measures and one dimension, *qWidth*should be set to 3.  If the value of a measure is Null, the value cannot be rendered. Therefore, the number of elements rendered in a page can be less than the number defined in the property *qHeight*.  This parameter is mandatory. | Array of [NxPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeBinnedData-method.htm#NxPage) |
| qViewport | Defines the canvas and the zoom level.  This parameter is not yet used and is optional. | *NxViewPort* |
| qDataRanges | Range of the data to render.  This range applies to the measure values.  The lowest and highest values of a measure can be retrieved by using the [GetLayout method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetLayout-method.htm) ( in*/qHyperCube/qMeasureInfo*).  This parameter is mandatory. | Array of [NxDataAreaPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeBinnedData-method.htm#NxDataAreaPage) |
| qMaxNbrCells | Maximum number of cells in the grid.  This parameter is mandatory. | Integer |
| qQueryLevel | Level of details. The higher the level, the more detailed information you get (zoom-in).  When the number of points to render falls below a certain threshold, the values are no longer rendered as cells but a s points.  The query level should be no greater than 20.  This parameter is optional. | Integer |
| qBinningMethod | Selects the algorithm.  The default value is 0.  One of:   * 0: Adaptive grid | Integer |

[ClosedNxPage](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the first column. | Integer |
| qTop | Position from the top.  Corresponds to the first row. | Integer |
| qWidth | Number of columns in the page. The indexing of the columns may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |
| qHeight | Number of rows or elements in the page. The indexing of the rows may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |

[Closed](javascript:void(0);)[NxDataAreaPage](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the lowest possible value of the first measure (the measure on the x-axis). | Double |
| qTop | Position from the top.  Corresponds to the highest possible value of the second measure (the measure on the y-axis). | Double |
| qWidth | Width of the page.  Corresponds to the highest possible value of the first measure (the measure on the x-axis). | Double |
| qHeight | Height of the page.  The difference between *qTop*and *qHeight*gives the lowest possible value of the second measure (the measure on the y-axis). | Double |

##### Outputs

A data set is returned.

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDataPages | Information about the data set.  Depending on the refinement level, the information is about:  • The adaptive grid. Occurs when cells are rendered and not points.  or  • The dimension values and the measure values. Occurs when the level of details is high (points are rendered). | Array of [NxDataPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeBinnedData-method.htm#NxDataPage) |

[Closed](javascript:void(0);)[NxDataPage](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMatrix | Array of data. | Array of *NxCellRows* |
| qTails | Array of tails.  Is used for hypercube objects with multiple dimensions. It might happen that due to the window size some elements in a group cannot be displayed in the same page as the other elements of the group. Elements of a group of dimensions can be part of the previous or the next tail.  If there is no tail, the array is empty *[ ]*. | Array of *NxGroupTail* |
| qArea | Size and offset of the data in the matrix. | *Rect* |
| qIsReduced | Is set to true, if the data have been reduced.  The default value is false. | Boolean |

[[Closed](javascript:void(0);)NxCellRows](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| NxCellRows | Array of data. | Array of *NxCell* |

[[Closed](javascript:void(0);)NxCell](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Some text.  This parameter is optional. | String |
| qNum | A value.  This parameter is optional. | Double precision floating point |
| qElemNumber | Rank number of the value, starting from 0.  If the element number is a negative number, it means that the returned value is not an element number.  You can get the following negative values:   * -1: the cell is a *Total*cell. It shows a total. * -2: the cell is collapsed. Applies to pivot tables. * -3: the cell belongs to the group *Others*. * -4: the cell is empty. Applies to pivot tables. | Integer |
| qState | State of the value.  The default state for a measure is L. | One of:   * L for Locked * S for Selected * O for Optional * D for Deselected * A for Alternative * X for eXcluded * XS for eXcluded Selected * XL for eXcluded Locked |
| qIsEmpty | Is set to *true*, if **qText**and **qNum**are empty.  This parameter is optional. The default value is *false*. | Boolean |
| qIsTotalCell | Is set to *true* if a total is displayed in the cell.  This parameter is optional. The default value is *false*.  Not applicable to list objects. | Boolean |
| qIsOtherCell | Is set to *true* if the cell belongs to the group*Others*.  Dimension values can be set as *Others*depending on what has been defined in**OtherTotalSpecProp**.  This parameter is optional. The default value is *false*.  Not applicable to list objects. | Boolean |
| qFrequency | Frequency of the value.  This parameter is optional. | String |
| qHighlightRanges | Search hits.  The search hits are highlighted.  This parameter is optional. | Null or *NxHighlightRanges* |
| qAttrExps | Attribute expression values. | Null or*NxAttributeExpressionValues* |
| qIsNull | Is set to *true* if the value is Null. | Boolean |

[[Closed](javascript:void(0);)NxHighlightRanges](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRanges | Ranges of highlighted values | Array of *CharRange* |

[[Closed](javascript:void(0);)CharRange](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qCharPos | Position of the first search occurrence | Integer |
| qCharCount | Number of occurrences found | Integer |

[[Closed](javascript:void(0);)NxAttributeExpressionValues](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValues | List of attribute expressions values. | Array of *NxSimpleValue* |

[[Closed](javascript:void(0);)NxSimpleValue](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text related to the attribute expression value.  This property is optional. No text is returned if the attribute expression value is a numeric. | String |
| qNum | Numeric value of the attribute expression.  This property is set to *NaN*(Not a Number) if the attribute expression value is not a numeric.  Numerical values are not returned as text. | Double precision floating point |

[[Closed](javascript:void(0);)NxGroupTail](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUp | Number of elements that are part of the previous tail.  This number depends on the paging, more particularly it depends on the values defined in *qTop*and *qHeight*  This parameter is optional. Is not shown if the value is 0. | Integer |
| qDown | Number of elements that are part of the next tail.  This number depends on the paging, more particularly it depends on the values defined in *qTop*and *qHeight*  This parameter is optional. Is not shown if the value is 0. | Integer |

[[Closed](javascript:void(0);)Rect](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the first column. | Integer |
| qTop | Position from the top.  Corresponds to the first row. | Integer |
| qWidth | Number of columns in the page. The indexing of the columns may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |
| qHeight | Number of rows or elements in the page. The indexing of the rows may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |

##### Adaptive Grid

More details about the properties of the adaptive grid are given in this paragraph.

When the refinement is not the highest (cells are rendered), information about the adaptive grid is returned through several arrays.

The first array contains the following properties:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qNum | Maximum number of points that a cell can contain. | String |
| qElemNumber | Is set to 0. | Boolean |
| qState | The default value is L. | One of:   * L for Locked * S for Selected * O for Optional * D for Deselected * A for Alternative * X for eXcluded * XS for eXcluded Selected * XL for eXcluded Locked |

The next arrays give the coordinates of each cell in the page.

Each array contains the following properties:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Coordinates of a cell in the measure range.  “qText”: “[[<left>, <top>, <right>, <bottom>], [<left>, <top>, <right>, <bottom>], .... [<left>, <top>, <right>, <bottom>]]  Where:  <*left*>, *<top*>, <*right*> and <*bottom*> are the coordinates of the cell in the measure range. | String |
| qNum | Number of points in the cell. | Double precision floating point |
| qElemNumber | Unique identifier for each cell, calculated by the engine during the construction of the grid.  This element number is not stored in the database and can have a positive or a negative value. | Integer |
| qState | The default value is L. | One of:   * L for Locked * S for Selected * O for Optional * D for Deselected * A for Alternative * X for eXcluded * XS for eXcluded Selected * XL for eXcluded Locked |

Cells are represented as rectangles.

##### Dimension values and measures values

More details about the properties, when dimension and measure values are returned, are given in this paragraph.

When the refinement is high, points are rendered (not cells) and dimension and measure values for each cell are returned.

The first array is empty because no information on the adaptive grid is needed.

The next arrays bring information about the dimension and the measure values.

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text value of the dimension or the measure. | String |
| qNum | Numerical value of the dimension or the measure.  Is set to 0 if the value is only text. | Double precision floating point |
| qElemNumber | Unique identifier for each cell, calculated by the engine during the construction of the grid.  This element number is not stored in the database and can have a positive or a negative value. | Integer |
| qState | The default value is L. | One of:   * L for Locked * S for Selected * O for Optional * D for Deselected * A for Alternative * X for eXcluded * XS for eXcluded Selected * XL for eXcluded Locked |

#### GetHyperCubeData method

##### Overview

Retrieves the values of a chart, a table, or a scatter plot. It is possible to retrieve specific pages of data.

This method does not apply to stacked tables.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qHyperCubeDef*.  This parameter is mandatory. | String |
| qPages | Array of pages to retrieve.  This parameter is mandatory. | Array of *NxPage*  See [NxPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeData-method.htm#NxPage) |

[ClosedNxPage](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the first column. | Integer |
| qTop | Position from the top.  Corresponds to the first row. | Integer |
| qWidth | Number of columns in the page. The indexing of the columns may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |
| qHeight | Number of rows or elements in the page. The indexing of the rows may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |

##### Outputs

A data set is returned.

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDataPages | A data set | Array of *NxDataPage*  See [NxDataPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeData-method.htm#NxDataPage) |

[ClosedNxDataPage](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMatrix | Array of data. | Array of *NxCellRows* |
| qTails | Array of tails.  Is used for hypercube objects with multiple dimensions. It might happen that due to the window size some elements in a group cannot be displayed in the same page as the other elements of the group. Elements of a group of dimensions can be part of the previous or the next tail.  If there is no tail, the array is empty *[ ]*. | Array of *NxGroupTail* |
| qArea | Size and offset of the data in the matrix. | *Rect* |
| qIsReduced | Is set to true, if the data have been reduced.  The default value is false. | Boolean |

[[Closed](javascript:void(0);)NxCellRows](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| NxCellRows | Array of data. | Array of *NxCell* |

[[Closed](javascript:void(0);)Rect](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the first column. | Integer |
| qTop | Position from the top.  Corresponds to the first row. | Integer |
| qWidth | Number of columns in the page. The indexing of the columns may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |
| qHeight | Number of rows or elements in the page. The indexing of the rows may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |

[[Closed](javascript:void(0);)NxGroupTail](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUp | Number of elements that are part of the previous tail.  This number depends on the paging, more particularly it depends on the values defined in *qTop*and *qHeight*  This parameter is optional. Is not shown if the value is 0. | Integer |
| qDown | Number of elements that are part of the next tail.  This number depends on the paging, more particularly it depends on the values defined in *qTop*and *qHeight*  This parameter is optional. Is not shown if the value is 0. | Integer |

[[Closed](javascript:void(0);)NxCell](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Some text.  This parameter is optional. | String |
| qNum | A value.  This parameter is optional. | Double precision floating point |
| qElemNumber | Rank number of the value, starting from 0.  If the element number is a negative number, it means that the returned value is not an element number.  You can get the following negative values:   * -1: the cell is a *Total*cell. It shows a total. * -2: the cell is collapsed. Applies to pivot tables. * -3: the cell belongs to the group *Others*. * -4: the cell is empty. Applies to pivot tables. | Integer |
| qState | State of the value.  The default state for a measure is L. | One of:   * L for Locked * S for Selected * O for Optional * D for Deselected * A for Alternative * X for eXcluded * XS for eXcluded Selected * XL for eXcluded Locked |
| qIsEmpty | Is set to *true*, if **qText**and **qNum**are empty.  This parameter is optional. The default value is *false*. | Boolean |
| qIsTotalCell | Is set to *true* if a total is displayed in the cell.  This parameter is optional. The default value is *false*.  Not applicable to list objects. | Boolean |
| qIsOtherCell | Is set to *true* if the cell belongs to the group*Others*.  Dimension values can be set as *Others*depending on what has been defined in**OtherTotalSpecProp**.  This parameter is optional. The default value is *false*.  Not applicable to list objects. | Boolean |
| qFrequency | Frequency of the value.  This parameter is optional. | String |
| qHighlightRanges | Search hits.  The search hits are highlighted.  This parameter is optional. | Null or *NxHighlightRanges* |
| qAttrExps | Attribute expression values. | Null or*NxAttributeExpressionValues* |
| qIsNull | Is set to *true* if the value is Null. | Boolean |

[[Closed](javascript:void(0);)NxHighlightRanges](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRanges | Ranges of highlighted values | Array of *CharRange* |

[[Closed](javascript:void(0);)CharRange](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qCharPos | Position of the first search occurrence | Integer |
| qCharCount | Number of occurrences found | Integer |

[[Closed](javascript:void(0);)NxAttributeExpressionValues](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValues | List of attribute expressions values. | Array of *NxSimpleValue* |

[[Closed](javascript:void(0);)NxSimpleValue](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text related to the attribute expression value.  This property is optional. No text is returned if the attribute expression value is a numeric. | String |
| qNum | Numeric value of the attribute expression.  This property is set to *NaN*(Not a Number) if the attribute expression value is not a numeric.  Numerical values are not returned as text. | Double precision floating point |

#### GetHyperCubePivotData method

##### Overview

Retrieves the values of a pivot table. It is possible to retrieve specific pages of data.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qHyperCubeDef*.  This parameter is mandatory. | String |
| qPages | Array of pages to retrieve  This parameter is mandatory. | Array of [NxPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubePivotData-method.htm#NxPage) |

[ClosedNxPage](javascript:void(0);)

##### Outputs

A data set is returned.

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDataPages | A data set | Array of [NxPivotPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubePivotData-method.htm#NxPivotPage) |

[Closed](javascript:void(0);)[NxPivotPage](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Information about the left dimension values of a pivot table. | Array of*NxPivotDimensionCell* |
| qTop | Information about the top dimension values of a pivot table. If there is no top dimension in the pivot table, information about the measures are given. | Array of*NxPivotDimensionCell* |
| qData | Array of data. | Array of*ArrayOfNxValuePoint* |
| qArea | Size and offset of the data in the matrix. | *Rect* |

[[Closed](javascript:void(0);)NxPivotDimensionCell](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Some text | String |
| qElemNo | Rank number of the value  If set to -1, it means that the value is not an element number. | Integer |
| qValue | Value of the cell  Is set to *NaN*, if the value is not a number. | Double precision floating point |
| qCanExpand | If set to true, it means that the cell can be expanded.  This parameter is not returned if it is set to false. | Boolean |
| qCanCollapse | If set to true, it means that the cell can be collapsed.  This parameter is not returned if it is set to false. | Boolean |
| qType | Type of the cell | One of:   * V for NX\_DIM\_CELL\_VALUE. Applies to values in the data matrix. * E for NX\_DIM\_CELL\_EMPTY. Applies to empty cells in the top and left dimensions. * N for NX\_DIM\_CELL\_NORMAL. Applies to left and top dimensions cells. * T for NX\_DIM\_CELL\_TOTAL. Applies to cells marked with *Total* * P for NX\_DIM\_CELL\_PSEUDO. Applies to pseudo dimensions. * R for NX\_DIM\_CELL\_ROOT. Applies to root node. * U for NX\_DIM\_CELL\_NULL. Applies to Null values in the data matrix. |
| qUp | Number of elements that are part of the previous tail.  This number depends on the paging, more particularly it depends on the values defined in *qTop*and *qHeight*. | Integer |
| qDown | Number of elements that are part of the next tail.  This number depends on the paging, more particularly it depends on the values defined in *qTop*and *qHeight*. | Integer |
| qSubNodes | Information about sub nodes (or sub cells)  The array is empty *[ ]* when there is no sub nodes. | Array of *NxPivotDimensionCell* |

[[Closed](javascript:void(0);)ArrayOfNxValuePoint](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qArrayOfNxValuePoint | Array of data | Array of *NxPivotValuePoint* |

[[Closed](javascript:void(0);)NxPivotValuePoint](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLabel | Label of the cell.  This parameter is optional. | String |
| qText | Some text related to the cell. | String |
| qNum | Value of the cell. | Double precision floating point |
| qType | Type of the cell. | One of:   * V for NX\_DIM\_CELL\_VALUE. Applies to values in the data matrix. * E for NX\_DIM\_CELL\_EMPTY. Applies to empty cells in the top and left dimensions. * N for NX\_DIM\_CELL\_NORMAL. Applies to left and top dimensions cells. * T for NX\_DIM\_CELL\_TOTAL. Applies to cells marked with *Total* * P for NX\_DIM\_CELL\_PSEUDO. Applies to pseudo dimensions. * R for NX\_DIM\_CELL\_ROOT. Applies to root node. * U for NX\_DIM\_CELL\_NULL. Applies to Null values in the data matrix. |
| qAttrExps | Attribute expressions values. | Null or*NxAttributeExpressionValues* |

[[Closed](javascript:void(0);)NxAttributeExpressionValues](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValues | List of attribute expressions values. | Array of *NxSimpleValue* |

[[Closed](javascript:void(0);)NxSimpleValue](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text related to the attribute expression value.  This property is optional. No text is returned if the attribute expression value is a numeric. | String |
| qNum | Numeric value of the attribute expression.  This property is set to *NaN*(Not a Number) if the attribute expression value is not a numeric.  Numerical values are not returned as text. | Double precision floating point |

[[Closed](javascript:void(0);)Rect](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the first column. | Integer |
| qTop | Position from the top.  Corresponds to the first row. | Integer |
| qWidth | Number of columns in the page. The indexing of the columns may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |
| qHeight | Number of rows or elements in the page. The indexing of the rows may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |

#### GetHyperCubeReducedData method

##### Overview

Reduces the data of a bar chart, a line chart or a scatter plot chart and retrieves them.

The reduction is dependent on the zoom factor (parameter [qZoomFactor](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeReducedData-method.htm#qZoomFactor)) and on the reduction mode.

This method can be used to create mini charts.

###### Bar chart or line chart data reduction

For the data reduction to happen, the following conditions must be fulfilled:

* The values cannot fit in the defined page (parameter *qPages*).
* The zoom factor is not 0 (parameter *qZoomFactor*).
* The reduction mode must be set to D1.

The reduction algorithm keeps the shape of the visualizations and works whatever the number of dimensions in the chart. The global profile of the chart is reduced, and not only a specific dimension. A visualization that has been reduced contains fewer values but its shape is the same. Data of all types can be reduced. Therefore it is hard to relate the values before and after a reduction especially when reducing string values.

**Example:**

If you have a chart with 1 million data, and you have set the zoom factor to 5, the*GetHyperCubeReducedData*method reduces the chart and retrieves 200 000 data.

###### Scatter plot chart data reduction

The reduction mode must be set to C.

This reduction mechanism follows the 2D K-Means algorithm. Data are reduced into a number of clusters. Each data is assigned to a specific centroid.

The number of centroids can be defined in the parameter [qZoomFactor](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeReducedData-method.htm#qZoomFactor).

###### Scatter plot chart resolution reduction

The reduction mode must be set to S.

The resolution is reduced according to the zoom factor (parameter [qZoomFactor](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeReducedData-method.htm#qZoomFactor)).

**Example:**

If you have a scatter plot chart and the zoom factor is set to 2, the scatter plot chart resolution is reduced by 4.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qHyperCubeDef*. | String |
| qPages | Array of pages. | Array of *NxPage*  See [NxPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeReducedData-method.htm#NxPage) |
| qZoomFactor | Defines the zoom factor.  If set to -1, the engine decides of the zoom factor.  • If the reduction mode is *D1*or *S*, the zoom factor is 2ⁿ. If the zoom factor is 5, the data are reduced by a factor 32.  • If the reduction mode is *C*, the zoom factor defines the number of centroids. | Integer |
| qReductionMode | Defines the reduction mode. | One of:   * *N* for no data reduction. * *D1*to reduce a bar chart or line chart. The profile of the chart is reduced whatever the number of dimensions in the chart. * *S* to reduce the resolution of a scatter plot. * *C* to reduce the data of a scatter plot chart. * *ST* to reduce the data of a stacked pivot table. |

[ClosedNxPage](javascript:void(0);)

##### Outputs

A data set is returned.

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDataPages | A data set | Array of *NxDataPage*  See [NxDataPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeReducedData-method.htm#NxDataPage) |

[ClosedNxDataPage](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMatrix | Array of data. | Array of *NxCellRows* |
| qTails | Array of tails.  Is used for hypercube objects with multiple dimensions. It might happen that due to the window size some elements in a group cannot be displayed in the same page as the other elements of the group. Elements of a group of dimensions can be part of the previous or the next tail.  If there is no tail, the array is empty *[ ]*. | Array of *NxGroupTail* |
| qArea | Size and offset of the data in the matrix. | *Rect* |
| qIsReduced | Is set to true, if the data have been reduced.  The default value is false. | Boolean |

[[Closed](javascript:void(0);)NxCellRows](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| NxCellRows | Array of data. | Array of *NxCell* |

[[Closed](javascript:void(0);)NxCell](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Some text.  This parameter is optional. | String |
| qNum | A value.  This parameter is optional. | Double precision floating point |
| qElemNumber | Rank number of the value, starting from 0.  If the element number is a negative number, it means that the returned value is not an element number.  You can get the following negative values:   * -1: the cell is a *Total*cell. It shows a total. * -2: the cell is collapsed. Applies to pivot tables. * -3: the cell belongs to the group *Others*. * -4: the cell is empty. Applies to pivot tables. | Integer |
| qState | State of the value.  The default state for a measure is L. | One of:   * L for Locked * S for Selected * O for Optional * D for Deselected * A for Alternative * X for eXcluded * XS for eXcluded Selected * XL for eXcluded Locked |
| qIsEmpty | Is set to *true*, if **qText**and **qNum**are empty.  This parameter is optional. The default value is *false*. | Boolean |
| qIsTotalCell | Is set to *true* if a total is displayed in the cell.  This parameter is optional. The default value is *false*.  Not applicable to list objects. | Boolean |
| qIsOtherCell | Is set to *true* if the cell belongs to the group*Others*.  Dimension values can be set as *Others*depending on what has been defined in**OtherTotalSpecProp**.  This parameter is optional. The default value is *false*.  Not applicable to list objects. | Boolean |
| qFrequency | Frequency of the value.  This parameter is optional. | String |
| qHighlightRanges | Search hits.  The search hits are highlighted.  This parameter is optional. | Null or *NxHighlightRanges* |
| qAttrExps | Attribute expression values. | Null or*NxAttributeExpressionValues* |
| qIsNull | Is set to *true* if the value is Null. | Boolean |

[[Closed](javascript:void(0);)NxHighlightRanges](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRanges | Ranges of highlighted values | Array of *CharRange* |

[[Closed](javascript:void(0);)CharRange](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qCharPos | Position of the first search occurrence | Integer |
| qCharCount | Number of occurrences found | Integer |

[[Closed](javascript:void(0);)NxAttributeExpressionValues](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValues | List of attribute expressions values. | Array of *NxSimpleValue* |

[[Closed](javascript:void(0);)NxSimpleValue](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text related to the attribute expression value.  This property is optional. No text is returned if the attribute expression value is a numeric. | String |
| qNum | Numeric value of the attribute expression.  This property is set to *NaN*(Not a Number) if the attribute expression value is not a numeric.  Numerical values are not returned as text. | Double precision floating point |

[[Closed](javascript:void(0);)NxGroupTail](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUp | Number of elements that are part of the previous tail.  This number depends on the paging, more particularly it depends on the values defined in *qTop*and *qHeight*  This parameter is optional. Is not shown if the value is 0. | Integer |
| qDown | Number of elements that are part of the next tail.  This number depends on the paging, more particularly it depends on the values defined in *qTop*and *qHeight*  This parameter is optional. Is not shown if the value is 0. | Integer |

[[Closed](javascript:void(0);)Rect](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the first column. | Integer |
| qTop | Position from the top.  Corresponds to the first row. | Integer |
| qWidth | Number of columns in the page. The indexing of the columns may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |
| qHeight | Number of rows or elements in the page. The indexing of the rows may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |

#### GetHyperCubeStackData method

##### Overview

Retrieves the values of a stacked pivot table. It is possible to retrieve specific pages of data.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qHyperCubeDef*.  This parameter is mandatory. | String |
| qPages | Array of pages to retrieve.  This parameter is mandatory. | Array of [NxPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeStackData-method.htm#NxPage) |
| qMaxNbrCells | Maximum number of cells at outer level.  This parameter is optional. The default value is 10 000. | Integer |

[ClosedNxPage](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the first column. | Integer |
| qTop | Position from the top.  Corresponds to the first row. | Integer |
| qWidth | Number of columns in the page. The indexing of the columns may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |
| qHeight | Number of rows or elements in the page. The indexing of the rows may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |

##### Outputs

A data set is returned.

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDataPages | A data set. | Array of [NxStackPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetHyperCubeStackData-method.htm#NxStackPage) |

[Closed](javascript:void(0);)[NxStackPage](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qData | Array of data. | Array of *NxStackedPivotCell* |
| qArea | Size and offset of the data in the matrix. | *Rect* |

[[Closed](javascript:void(0);)NxStackedPivotCell](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Some text. | String |
| qElemNo | Rank number of the value.  If set to -1, it means that the value is not an element number. | Integer |
| qValue | Value of the cell.  Is set to *NaN*, if the value is not a number. | Double precision floating point |
| qCanExpand | If set to true, it means that the cell can be expanded.  This parameter is not returned if it is set to false. | Boolean |
| qCanCollapse | If set to true, it means that the cell can be collapsed.  This parameter is not returned if it is set to false. | Boolean |
| qType | Type of the cell. | One of:   * V for NX\_DIM\_CELL\_VALUE. Applies to values in the data matrix. * E for NX\_DIM\_CELL\_EMPTY. Applies to empty cells in the top and left dimensions. * N for NX\_DIM\_CELL\_NORMAL. Applies to left and top dimensions cells. * T for NX\_DIM\_CELL\_TOTAL. Applies to cells marked with *Total* * P for NX\_DIM\_CELL\_PSEUDO. Applies to pseudo dimensions. * R for NX\_DIM\_CELL\_ROOT. Applies to root node. * U for NX\_DIM\_CELL\_NULL. Applies to Null values in the data matrix. |
| qMaxPos | Total of the positive values in the current group of cells. | Double precision floating point |
| qMinNeg | Total of the negative values in the current group of cells. | Double precision floating point |
| qUp | Number of elements that are part of the previous tail. | Integer |
| qDown | Number of elements that are part of the next tail. | Integer |
| qRow | Row index in the data matrix.  The indexing starts from 0. | Integer |
| qSubNodes | Information about sub nodes (or sub cells).  The array is empty *[ ]* when there is no sub nodes. | Array of *NxStackedPivotCell* |
| qAttrExps | Attribute expressions values. | Null or*NxAttributeExpressionValues*. |

[[Closed](javascript:void(0);)NxAttributeExpressionValues](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValues | List of attribute expressions values. | Array of *NxSimpleValue* |

[[Closed](javascript:void(0);)NxSimpleValue](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text related to the attribute expression value.  This property is optional. No text is returned if the attribute expression value is a numeric. | String |
| qNum | Numeric value of the attribute expression.  This property is set to *NaN*(Not a Number) if the attribute expression value is not a numeric.  Numerical values are not returned as text. | Double precision floating point |

[[Closed](javascript:void(0);)Rect](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the first column. | Integer |
| qTop | Position from the top.  Corresponds to the first row. | Integer |
| qWidth | Number of columns in the page. The indexing of the columns may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |
| qHeight | Number of rows or elements in the page. The indexing of the rows may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |

#### GetInfo method

##### Overview

Returns the type and identifier of the object.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qInfo": {

"qId": "<identifier>",

"qType": "<type>"

}

}

#### GetLayout method

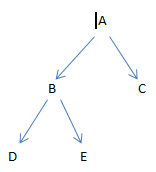
##### Overview

Evaluates an object and displays its properties including the dynamic properties.

If the member *delta*is set to true in the request object, only the delta is evaluated. A *GetLayout*call on a generic object, returns up to one level down in the hierarchy.

[[Closed](javascript:void(0);)Example:](javascript:void(0);)

*A* is a generic object and is the parent of the objects B and C.*B* is the parent of the objects D and E.



A *GetLayout*call on A returns information on the objects A, B and C.

A *GetLayout*call on B returns information on the objects B, D and E.

A *GetLayout*call on C returns information on the object C.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLayout | Information on the object. | *GenericObjectLayout*  See [GenericObjectLayout](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetLayout-method.htm#GenericObjectLayout). |

[Closed](javascript:void(0);)[GenericObjectLayout](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the generic object. | *NxInfo* |
| qMeta | Information about publishing and permissions.  This parameter is optional. | *Null or NxMeta* |
| qExtendsId | Should be set to create an object that is linked to another object. Enter the identifier of the object you want to link to.  If you do not want to link your object, set this parameter to an empty string. | String |
| qHasSoftPatches | Is set to true if the generic object contains some properties that are not persistent (a soft patch was applied). | Boolean |
| qError | This parameter is optional.  Gives information on the error. | *Null*or *NxLayoutErrors* |
| qSelectionInfo | Information about the selections. | *NxSelectionInfo* |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

[[Closed](javascript:void(0);)NxLayoutErrors](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| ErrorCode | Error code. | Integer |

[[Closed](javascript:void(0);)NxSelectionInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInSelections | Is set to true if the visualization is in selection mode.  For more information about the selection mode, see [BeginSelections method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-BeginSelections-method.htm). | Boolean |
| qMadeSelections | Is set to true if the visualization is in selection mode and if some selections have been made while in selection mode.  For more information about the selection mode, see [BeginSelections method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-BeginSelections-method.htm). | Boolean |

In addition to the parameters displayed above, the **GetLayout**method can return other properties according to what is defined in the generic object.

For example, if **qHyperCubeDef**is defined in the generic object, the **GetLayout**method returns the properties described in [HyperCube](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/LayoutLevel/HyperCube.htm).

#### GetLinkedObjects method

##### Overview

Lists the linked objects to a generic object, a dimension or a measure.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | List of the linked objects. | Array of [NxLinkedObjectInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetLinkedObjects-method.htm#NxLinkedObjectInfo) |

[ClosedNxLinkedObjectInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRootId | Identifier of the root object.  If the linked object is a child, the root identifier is the identifier of the parent.  If the linked object is an app object, the root identifier is the same than the identifier of the linked object since the linked object is a root object. | String |
| qInfo | Information about the linked object. | *NxInfo* |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

#### GetListObjectData method

##### Overview

Retrieves the values of a list object.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qListObjectDef*. | String |
| qPages | Array of pages you are interested in. | Array of *NxPage*  See [NxPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetListObjectData-method.htm#NxPage) |

[ClosedNxPage](javascript:void(0);)

##### Outputs

A data set is returned.

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDataPages | A data set. | Array of *NxDataPage*  See [NxDataPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetListObjectData-method.htm#NxDataPage) |

[ClosedNxDataPage](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMatrix | Array of data. | Array of *NxCellRows* |
| qTails | Array of tails.  Is used for hypercube objects with multiple dimensions. It might happen that due to the window size some elements in a group cannot be displayed in the same page as the other elements of the group. Elements of a group of dimensions can be part of the previous or the next tail.  If there is no tail, the array is empty *[ ]*. | Array of *NxGroupTail* |
| qArea | Size and offset of the data in the matrix. | *Rect* |
| qIsReduced | Is set to true, if the data have been reduced.  The default value is false. | Boolean |

[[Closed](javascript:void(0);)NxCellRows](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| NxCellRows | Array of data. | Array of *NxCell* |

[[Closed](javascript:void(0);)NxGroupTail](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUp | Number of elements that are part of the previous tail.  This number depends on the paging, more particularly it depends on the values defined in *qTop*and *qHeight*  This parameter is optional. Is not shown if the value is 0. | Integer |
| qDown | Number of elements that are part of the next tail.  This number depends on the paging, more particularly it depends on the values defined in *qTop*and *qHeight*  This parameter is optional. Is not shown if the value is 0. | Integer |

[[Closed](javascript:void(0);)Rect](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the first column. | Integer |
| qTop | Position from the top.  Corresponds to the first row. | Integer |
| qWidth | Number of columns in the page. The indexing of the columns may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |
| qHeight | Number of rows or elements in the page. The indexing of the rows may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |

[[Closed](javascript:void(0);)NxCell](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Some text.  This parameter is optional. | String |
| qNum | A value.  This parameter is optional. | Double precision floating point |
| qElemNumber | Rank number of the value, starting from 0.  If the element number is a negative number, it means that the returned value is not an element number.  You can get the following negative values:   * -1: the cell is a *Total*cell. It shows a total. * -2: the cell is collapsed. Applies to pivot tables. * -3: the cell belongs to the group *Others*. * -4: the cell is empty. Applies to pivot tables. | Integer |
| qState | State of the value.  The default state for a measure is L. | One of:   * L for Locked * S for Selected * O for Optional * D for Deselected * A for Alternative * X for eXcluded * XS for eXcluded Selected * XL for eXcluded Locked |
| qIsEmpty | Is set to *true*, if **qText**and **qNum**are empty.  This parameter is optional. The default value is *false*. | Boolean |
| qIsTotalCell | Is set to *true* if a total is displayed in the cell.  This parameter is optional. The default value is *false*.  Not applicable to list objects. | Boolean |
| qIsOtherCell | Is set to *true* if the cell belongs to the group*Others*.  Dimension values can be set as *Others*depending on what has been defined in**OtherTotalSpecProp**.  This parameter is optional. The default value is *false*.  Not applicable to list objects. | Boolean |
| qFrequency | Frequency of the value.  This parameter is optional. | String |
| qHighlightRanges | Search hits.  The search hits are highlighted.  This parameter is optional. | Null or *NxHighlightRanges* |
| qAttrExps | Attribute expression values. | Null or*NxAttributeExpressionValues* |
| qIsNull | Is set to *true* if the value is Null. | Boolean |

[[Closed](javascript:void(0);)NxHighlightRanges](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRanges | Ranges of highlighted values | Array of *CharRange* |

[[Closed](javascript:void(0);)CharRange](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qCharPos | Position of the first search occurrence | Integer |
| qCharCount | Number of occurrences found | Integer |

[[Closed](javascript:void(0);)NxAttributeExpressionValues](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValues | List of attribute expressions values. | Array of *NxSimpleValue* |

[[Closed](javascript:void(0);)NxSimpleValue](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text related to the attribute expression value.  This property is optional. No text is returned if the attribute expression value is a numeric. | String |
| qNum | Numeric value of the attribute expression.  This property is set to *NaN*(Not a Number) if the attribute expression value is not a numeric.  Numerical values are not returned as text. | Double precision floating point |

#### GetProperties method

##### Overview

Returns the identifier, the type and the properties of the object.

Because it is not mandatory to set all properties when you define an object, the *GetProperties* method may show properties that were not set. In that case, default values are given.

If the object contains some soft properties, the soft properties are not returned by the *GetProperties*method. Use the [GetEffectiveProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetEffectiveProperties-method.htm) instead.

If the object is linked to another object, the properties of the linking object are not returned by the*GetProperties* method. Use the [GetEffectiveProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetEffectiveProperties-method.htm) instead.

If the member delta is set to true in the request object, only the delta is retrieved.

##### Parameters

None

##### Output

The following is always returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the generic object.  This parameter is mandatory. | [GenericObjectProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-GetProperties-method.htm#GenericObjectProperties) |

[ClosedGenericObjectProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qExtendsId | Should be set to create an object that is linked to another object. Enter the identifier of the linking object (i.e the object you want to link to).  This parameter is mandatory.  If you do not want to link your object, set this parameter to an empty string. | String |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

#### GetSnapshotObject method

##### Overview

Returns the type of the object and the corresponding handle.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "GenericBookmark",

"qHandle": <Handle of the snapshot>

}

}

#### Lock method

##### Overview

Locks the selected values of a generic object.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object.  For example,*/qListObjectDef*. | String |
| qColIndices | Dimension numbers or dimension indexes where the lock should apply.  Dimension numbers/indexes start from 0.  This parameter is optional. If this parameter is not set, the selected values in all dimensions are locked. | Array of integer |

##### Outputs

The following is returned in the output:

"result": {}

#### Publish method

##### Overview

Publishes a generic object.

This method applies only if running in server mode.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### RangeSelectHyperCubeValues method

##### Overview

Make range selections in measures.

This method applies to hypercubes. For example, bar charts, tables and scatter plots.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qHyperCubeDef*.  This parameter is mandatory. | String |
| qRanges | Ranges of selection.  This parameter is mandatory. | Array of *NxRangeSelectInfo*  See [NxRangeSelectInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-RangeSelectHyperCubeValues-method.htm#NxRangeSelectInfo) |
| qColumnsToSelect | Indicates which dimensions to select.  The dimensions numbering starts at 0 (first dimension is 0).  If the array is empty, all dimensions are selected.  This parameter is optional. | Array of Integer |
| qOrMode | Applies to hypercubes with multiple measures.  If set to true, it means that at least one of the measures must be in the range of selections for the group of measures to be selected.  If set to false, it means that all measures must be in the range of selections for the group of measures to be selected.  This parameter is optional. The default value is false. | Boolean |
| qDeselectOnlyOneSelected | Set this parameter to true to unselect the last single selected value. There must be only one selected value in the field.  The default value is false. | Boolean |

[Closed](javascript:void(0);)[NxRangeSelectInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRange | Range of values. | *Range* |
| qMeasureIx | Number of the measure to select.  Numbering starts from 0. | Integer |

[[Closed](javascript:void(0);)Range](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMin | Lowest value in the range | Double |
| qMax | Highest value in the range | Double |
| qMinInclEq | If set to true, the range includes the lowest value in the range of selections (Equals to ).  Example:  The range is [1,10]. If *qMinInclEq*is set to true it means that 1 is included in the range of selections. | Boolean |
| qMaxInclEq | If set to true, the range includes the highest value in the range of selections (Equals to ).  Example:  The range is [1,10]. If *qMinInclEq*is set to true it means that 10 is included in the range of selections. | Boolean |

##### Outputs

The following is returned in the output:

{

"jsonrpc": "2.0",

"id": <identifier of the request>,

"result": {

"qSuccess": true/false

},

"change": [

<handle x>,

<handle y>

]

}

The member **Change**returns the handles of the objects that are updated following the selections.

*qSuccess*is set to *true*if the selections are successful and is set to *false*in the following cases:

* The object contains some invalid fields (fields that are not in the data model),
* The selection applies to a locked field,
* A range selection is performed and the parameter *OneAndOnlyOne*is set to true in the definition of the object.

#### ResetMadeSelections method

##### Overview

* Resets all selections made in selection mode.

##### Parameters

* None

##### Outputs

* The following is returned in the output:
* "result": {}

#### SearchListObjectFor method

##### Overview

Searches for a string in a list object.

This method applies to list objects (objects with one dimension).

The search results can be displayed using the [GetLayout method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-GetLayout-method.htm).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the list object.  For example,*/qListObjectDef*. | String |
| qMatch | Search string.  Wild card characters are allowed. The search is not case sensitive.  Examples:   * P\*U\*: retrieves only values that start with P and contain U * P U S: retrieves values that start with P, U or S | String |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": true

}

The operation is successful if **qSuccess**is set to true.

#### SelectHyperCubeCells method

##### Overview

Makes selections in multiple dimensions and measures.

This method applies to hypercubes, such as bar charts, tables and scatter plots.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qHyperCubeDef*.  This parameter is mandatory. | String |
| qRowIndices | Array of row indexes to select, starting from 0.  If the array is empty*[ ]*, all rows are selected.  This parameter is mandatory. | Array of Integer |
| qColIndices | Indexes of the columns to select, starting from 0.  A column corresponds to a dimension or a measure depending on the definition of the hypercube.  Example:  If the hypercube has two dimensions and one measure:   * [0] selects the first column (i.e the first dimension) * [1] selects the second column (i.e the second dimension) * [2] selects the third column (i.e the measure)   If the array is empty*[ ]*, all columns are selected.  This parameter is mandatory. | Array of Integer |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  This parameter is mandatory. | Boolean |
| qDeselectOnlyOneSelected | Set this parameter to true to unselect the last single selected value. There must be only one selected value in the field.  The default value is false. | Boolean |

##### Outputs

The following is returned in the output:

{

"jsonrpc": "2.0",

"id": <identifier of the request>,

"result": {

"qSuccess": true/false

},

"change": [

<handle x>,

<handle y>

]

}

The member **Change**returns the handles of the objects that are updated following the selections.

*qSuccess*is set to *true*if the selections are successful and is set to *false*in the following cases:

* The object contains some invalid fields (fields that are not in the data model),
* The selection applies to a locked field,
* A range selection is performed and the parameter *OneAndOnlyOne*is set to true in the definition of the object.

#### SelectHyperCubeValues method

##### Overview

Selects some values in one dimension.

The values are identified by their element numbers.

This method applies to charts, tables and scatter plots.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qHyperCubeDef*.  This parameter is mandatory. | String |
| qDimNo | Dimension number or index to select.  Dimension numbers/index start from 0.  This parameter is mandatory. | Integer |
| qValues | Element numbers of the field to select.  You can select multiple elements; the separator is the comma.  This parameter is mandatory. | Array of Integer |
| qToggleMode | Set to *true*to toggle.  This parameter is mandatory. | Boolean  True/False |

##### Outputs

The following is returned in the output:

{

"jsonrpc": "2.0",

"id": <identifier of the request>,

"result": {

"qSuccess": true/false

},

"change": [

<handle x>,

<handle y>

]

}

The member **Change**returns the handles of the objects that are updated following the selections.

*qSuccess*is set to *true*if the selections are successful and is set to *false*in the following cases:

* The object contains some invalid fields (fields that are not in the data model),
* The selection applies to a locked field,
* A range selection is performed and the parameter *OneAndOnlyOne*is set to true in the definition of the object.

#### SelectListObjectAll method

##### Overview

Selects all values of a field.

This method applies to list objects (objects with one dimension).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qListObjectDef*.  This parameter is mandatory. | String |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean  True/False |

##### Outputs

The following is returned in the output:

{

"jsonrpc": "2.0",

"id": <identifier of the request>,

"result": {

"qSuccess": true/false

},

"change": [

<handle x>,

<handle y>

]

}

The member **Change**returns the handles of the objects that are updated following the selections.

*qSuccess*is set to *true*if the selections are successful and is set to *false*in the following cases:

* The object contains some invalid fields (fields that are not in the data model),
* The selection applies to a locked field,
* A range selection is performed and the parameter *OneAndOnlyOne*is set to true in the definition of the object.

#### SelectListObjectAlternative method

##### Overview

Selects all alternative values in a specific field.

This method applies to list objects (objects with one dimension).

If a field contains at least one selected value, the values that are neither selected nor excluded are alternatives values.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qListObjectDef*.  This parameter is mandatory. | String |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean  True/False |

##### Outputs

The following is returned in the output:

{

"jsonrpc": "2.0",

"id": <identifier of the request>,

"result": {

"qSuccess": true/false

},

"change": [

<handle x>,

<handle y>

]

}

The member **Change**returns the handles of the objects that are updated following the selections.

*qSuccess*is set to *true*if the selections are successful and is set to *false*in the following cases:

* The object contains some invalid fields (fields that are not in the data model),
* The selection applies to a locked field,
* A range selection is performed and the parameter *OneAndOnlyOne*is set to true in the definition of the object.

#### SelectListObjectExcluded method

##### Overview

Inverts the current selections in a specific field.

This method applies to list objects (objects with one dimension).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qListObjectDef*.  This parameter is mandatory. | String |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean  True/False |

##### Outputs

{

"jsonrpc": "2.0",

"id": <identifier of the request>,

"result": {

"qSuccess": true/false

},

"change": [

<handle x>,

<handle y>

]

}

The member **Change**returns the handles of the objects that are updated following the selections.

*qSuccess*is set to *true*if the selections are successful and is set to *false*in the following cases:

* The object contains some invalid fields (fields that are not in the data model),
* The selection applies to a locked field,
* A range selection is performed and the parameter *OneAndOnlyOne*is set to true in the definition of the object.

#### SelectListObjectPossible method

##### Overview

Selects all possible values of a list object.

This method applies to list objects (objects with one dimension).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qListObjectDef*.  This parameter is mandatory. | String |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is *false*.  This parameter is optional. | Boolean  True/False |

##### Outputs

{

"jsonrpc": "2.0",

"id": <identifier of the request>,

"result": {

"qSuccess": true/false

},

"change": [

<handle x>,

<handle y>

]

}

The member **Change**returns the handles of the objects that are updated following the selections.

*qSuccess*is set to *true*if the selections are successful and is set to *false*in the following cases:

* The object contains some invalid fields (fields that are not in the data model),
* The selection applies to a locked field,
* A range selection is performed and the parameter *OneAndOnlyOne*is set to true in the definition of the object.

#### SelectListObjectValues method

##### Overview

Makes single selections in dimensions.

This method applies to list objects only.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object to be selected.  For example,*/qListObjectDef*.  This parameter is mandatory. | String |
| qValues | Element numbers to select.  You can select multiple values; the separator is the comma.  This parameter is mandatory. | Array of Integer |
| qToggleMode | Set to *true*to toggle.  This parameter is mandatory. | Boolean  True/False |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  This parameter is optional.  The default value is *false*. | Boolean  True/False |

##### Outputs

The following is returned in the output:

{

"jsonrpc": "2.0",

"id": <identifier of the request>,

"result": {

"qSuccess": true/false

},

"change": [

<handle x>,

<handle y>

]

}

The member **Change**returns the handles of the objects that are updated following the selections.

*qSuccess*is set to *true*if the selections are successful and is set to *false*in the following cases:

* The object contains some invalid fields (fields that are not in the data model),
* The selection applies to a locked field,
* A range selection is performed and the parameter *OneAndOnlyOne*is set to true in the definition of the object.

#### SelectPivotCells method

##### Overview

This method only applies to hypercubes that are not represented as straight tables. The parameter *qMode*in [HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm) must be set either to *P* or *K*.

###### Pivot table

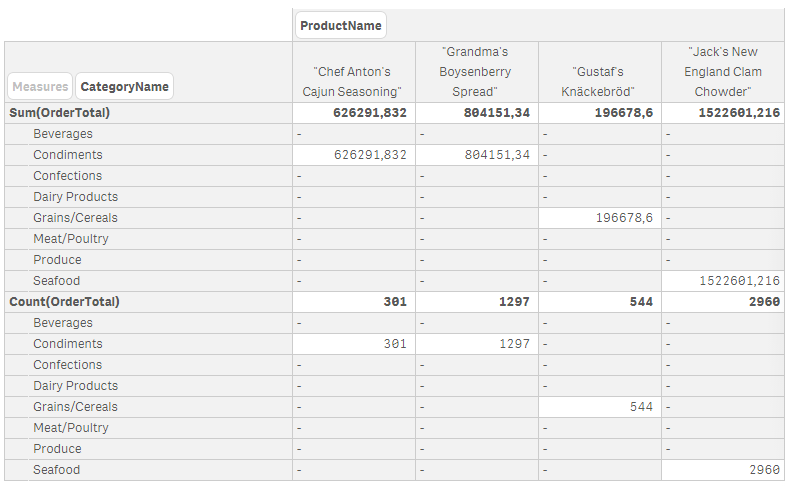
Makes selections in the top or left dimension cells of a pivot table or in the data matrix. Only expanded dimensions can be selected.

###### Stacked table

Makes selections in the left dimension cells of a stacked table or in the data matrix.

There is no top dimensions in a stacked table. A stacked table can only contain one measure.

###### Example of a pivot table



In the representation above:

|  |  |
| --- | --- |
| **Sum(OrderTotal)**  **Count(OrderTotal)** | Are pseudo dimensions. |
| **CategoryName** | Is a left dimension.  *Beverages*, *Condiments*... are left dimension values. |
| **ProductName** | Is a top dimension.  *Chef Anton's Cajun Seasoning* is a top dimension value. |
| **Numeric values** | Are calculated values in the data matrix.  *626291,832* is a calculated value. |

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object  For example,*/qHyperCubeDef*.  This parameter is mandatory. | String |
| qSelections | Information about the selections to perform | Array of [NxSelectionCell](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SelectPivotCells-method.htm#NxSelectionCell) |
| qSoftLock | Set to true to ignore locks; in that case, locked fields can be selected. This parameter is optional. | Boolean |
| qDeselectOnlyOneSelected | Set this parameter to true to unselect the last single selected value. There must be only one selected value in the field.  The default value is false. | Boolean |

[Closed](javascript:void(0);)[NxSelectionCell](javascript:void(0);)

##### Outputs

The following is returned in the output:

{

"jsonrpc": "2.0",

"id": <identifier of the request>,

"result": {

"qSuccess": true/false

},

"change": [

<handle x>,

<handle y>

]

}

The member **Change**returns the handles of the objects that are updated following the selections.

*qSuccess*is set to *true*if the selections are successful and is set to *false*in the following cases:

* The object contains some invalid fields (fields that are not in the data model),
* The selection applies to a locked field,
* A range selection is performed and the parameter *OneAndOnlyOne*is set to true in the definition of the object.

#### SetChildArrayOrder method

##### Overview

* Sets the order of the children in a generic object.
* To change the order of the children in a generic object, the identifiers of all the children must be included in the list of the identifiers (in *qIds*).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qIds | List of the children identifiers. | Array of String |

##### Outputs

* The following is returned in the output:
* "result": {}

#### SetFullPropertyTree method

##### Overview

Sets the properties of:

* a generic object
* the children of the generic object
* the bookmarks/embedded snapshots of the generic object

If the *SetFullPropertyTree method* is asked to set some properties to a child that does not exist, it creates the child.

The type of an object cannot be updated.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPropEntry | Information about the generic object entry.  This parameter is mandatory. | [GenericObjectEntry](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SetFullPropertyTree-method.htm#GenericObjectEntry) |

[ClosedGenericObjectEntry](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProperty | Information about the generic object properties. | *GenericObjectProperties* |
| qChildren | Information about the children of the generic object. | Array of*GenericObjectEntry*. |
| qEmbeddedSnapshotRef | Reference to a bookmark/snapshot that is embedded in the generic object. | *Null*or*GenericBookmarkEntry*. |

[[Closed](javascript:void(0);)GenericObjectProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qExtendsId | Should be set to create an object that is linked to another object. Enter the identifier of the linking object (i.e the object you want to link to).  This parameter is mandatory.  If you do not want to link your object, set this parameter to an empty string. | String |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)GenericBookmarkEntry](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProperties | Information about the properties of the bookmark. | *GenericBookmarkProperties* |
| qBookmark | Information about the bookmark. | *NxBookmark* |

[[Closed](javascript:void(0);)GenericBookmarkProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the bookmark.  This parameter is mandatory. | *NxInfo* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxBookmark](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateData | List of selections for each state. | Array of *AlternateStateData* |
| qUtcModifyTime | Time when the bookmark was created. | Double precision floating point |
| qVariableItems | List of the variables in the app at the time the bookmark was created. | Array of*BookmarkVariableItem* |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)AlternateStateData](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateName | Name of the alternate state.  Default is current selections: $ | String |
| qFieldItems | List of the selections | Array of *BookmarkFieldItem* |

[[Closed](javascript:void(0);)BookmarkFieldItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDef | Name and type of the field | *FieldDefEx* |
| qLocked | Indicates if the field is locked.  Default is false. | Boolean |
| qSelectInfo | Information on the selections criteria | *SelectInfo* |
| qValues | List of the selected values  Either the list of selected values or the list of excluded values is displayed. | Array of *FieldValue* |
| qExcludedValues | List of excluded values.  Either the list of selected values or the list of excluded values is displayed. | Array of *FieldValue* |
| qAndMode | If set to true, selections within a list object are made in AND mode; If you have a list object that lists all customers, by selecting Customer 1 and Customer 2 while in and-mode, all records that are associated with Customer 1**and**Customer 2 are selected.  The default value is false; selections within a list object are made in OR mode. If you have a list object that lists all customers, by selecting Customer 1 and Customer 2 while in or-mode, all records that are associated with either Customer 1 **or**Customer 2 are selected.  This parameter is not returned if set to false. | Boolean |
| qOneAndOnlyOne | If set to true, the field has always one selection (not 0 and not more than 1). If another value is selected, the previous one is unselected.  The default value is false. This parameter is not returned if set to false. | Boolean |

[[Closed](javascript:void(0);)FieldDefEx](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field | String |
| qType | Type of data entity | One of:  • 0 for *NOT\_PRESENT*: the field does not exist  • 1 for *PRESENT*: plain field  •2 for *IS\_EXPR*: calculated dimension |

[[Closed](javascript:void(0);)SelectInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTextSearch | Text search string.  Everything that matches the text is selected.  This parameter is optional. | String |
| qRangeLo | Lower value of the search range.  This parameter is used when performing range selections or text searches in dimensions.  Default is Null. | Double |
| qRangeHi | Highest value of the search range.  This parameter is used when performing range selections or text searches in dimensions.  Default is Null. | Double |
| qNumberFormat | Gives information about the formatting of the range.  This parameter is used when performing range selections or text searches in dimensions. | *FieldAttributes* |
| qRangeInfo | This parameter is used when performing range selections or text searches in measures.  Gives information about the range of selections. | Array of *RangeSelectInfo* |

[[Closed](javascript:void(0);)FieldValue](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text related to the field value  This parameter is optional. | String |
| qIsNumeric | Is set to true if the value is a numeric.  This parameter is optional. Default is false. | Boolean |
| qNumber | Numeric value of the field.  This parameter is displayed if *qIsNumeric*is set to true.  This parameter is optional. | Double |

[[Closed](javascript:void(0);)FieldAttributes](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the field.  Default is U. | One of:  • U for UNKNOWN type.  • A for ASCII; Numeric fields values contain only standard ASCII characters.  • I for INTEGER; Numeric fields values are shown as integer numbers.  • R for REAL; Numeric fields values are shown as real numbers.  • F for FIX; Numeric fields values are shown as numbers with a fix number of decimals.  • M for MONEY; Numeric fields values are shown as in the money format.  • D for DATE; Numeric fields values are shown as dates.  • T for TIME; Numeric fields values are shown as times.  • TS TIMESTAMP; Numeric fields values are shown as time stamps.  • IV for INTERVAL; Numeric fields values are shown as intervals. |
| qnDec | Number of decimals.  Default is 10. | Integer between 0 and 15. |
| qUseThou | Defines whether or not a thousands separator must be used.  Default is 0. | One of:   * 0 for false * 1 for true |
| qFmt | Defines the format pattern that applies to*qText*.  Is used in connection to the type of the field (parameter **qType**).  For more information, see Struct[FieldAttributes](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldAttributes.htm).  Example: *YYYY-MM-DD* for a date | String |
| qDec | Defines the decimal separator.  Example:**.** | String |
| qThou | Defines the thousand separator (if any).  Is used if **qUseThou**is set to 1.  Example:**,** | String |

[[Closed](javascript:void(0);)RangeSelectInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRangeLo | Lowest value in the range. | Double |
| qRangeHi | Highest value in the range. | Double |
| qMeasure | Label of the measure. | String |

[[Closed](javascript:void(0);)BookmarkVariableItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the variable. | String |
| qValue | Value of the variable. | *FieldValue* |

##### Outputs

The following is returned in the output:

"result": {}

#### SetProperties method

##### Overview

Sets some properties for a generic object.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the generic object.  This parameter is mandatory. | *GenericObjectProperties*  See [GenericObjectProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SetProperties-method.htm#GenericObjectProperties) |

[ClosedGenericObjectProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the object.  This parameter is mandatory. | *NxInfo*  See [NxInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-SetProperties-method.htm#NxInfo) |

[ClosedNxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

In addition to the parameters specified above, the object can get any properties defined in the[Generic object definition](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/overview-generic-object.htm) section.

##### Outputs

The following is returned in the output:

"result": {}

#### Unlock method

##### Overview

Unlocks the selected values of a generic object if the target (or handle ) is a generic object

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the object.  For example,*/qListObjectDef*. | String |
| qColIndices | Dimension numbers/indexes where the unlock should apply.  Dimension numbers/indexes start from 0.  This parameter is optional. If this parameter is not set, the locked values in all dimensions are unlocked. | Array of integer |

##### Outputs

The following is returned in the output:

"result": {}

#### UnPublish method

##### Overview

Unpublishes a generic object.

This method applies only if running in server mode.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

### GenericMeasure class

This class describes all the methods that apply at measure level.

The *handle* member in the JSON request for all methods listed in this section is the handle of the measure.

[ApplyPatches method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-ApplyPatches-method.htm)

[GetInfo method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-GetInfo-method.htm)

[GetLayout method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-GetLayout-method.htm)

[GetLinkedObjects method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-GetLinkedObjects-method.htm)

[GetMeasure method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-GetMeasure-method.htm)

[GetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-GetProperties-method.htm)

[Publish method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-Publish-method.htm)

[SetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-SetProperties-method.htm)

[UnPublish method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-UnPublish-method.htm)

#### ApplyPatches method

##### Overview

Applies a patch to the properties of an object. Allows an update to some of the properties.

Applying a patch takes less time than resetting all the properties.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPatches | Array of patches. | Array of *NxPatch*  See [NxPatch](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-ApplyPatches-method.htm#NxPatch). |

[ClosedNxPatch](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOp | Operation to perform. | One of:   * Add * Remove * Replace |
| qPath | Path to the property to add, remove or replace. | String |
| qValue | This parameter is not used in a remove operation.  Corresponds to the value of the property to add or to the new value of the property to update.  Examples:  "false", "2", "\"New title\"" | String |

##### Outputs

The following is returned in the output:

"result": {}

#### GetInfo method

##### Overview

Returns the type and identifier of the object.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qInfo": {

"qId": "<identifier>",

"qType": "<type>"

}

}

#### GetLayout method

##### Overview

Evaluates a measure and displays its properties, including the dynamic properties.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLayout | Information on the object. | [GenericMeasureLayout](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-GetLayout-method.htm#GenericMeasureLayout) |

[Closed](javascript:void(0);)[GenericMeasureLayout](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the object. | *NxInfo* |
| qMeasure | Information about the measure. | *NxLibraryMeasureDef* |
| qMeta | Information on publishing and permissions. | *Null or NxMeta* |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)NxLibraryMeasureDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLabel | Label of the measure. | String |
| qDef | Definition of the measure. | String |
| qGrouping | Used to define a cyclic group or drill-down group.  This parameter is optional.  Default value is no grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qExpressions | Array of expressions. | Array of String |
| qActiveExpression | Index to the active expression in a measure. | Integer |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

#### GetLinkedObjects method

##### Overview

Lists the linked objects to a generic object, a dimension or a measure.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | List of the linked objects. | Array of [NxLinkedObjectInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-GetLinkedObjects-method.htm#NxLinkedObjectInfo) |

[ClosedNxLinkedObjectInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRootId | Identifier of the root object.  If the linked object is a child, the root identifier is the identifier of the parent.  If the linked object is an app object, the root identifier is the same than the identifier of the linked object since the linked object is a root object. | String |
| qInfo | Information about the linked object. | *NxInfo* |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

#### GetMeasure method

##### Overview

Returns the definition of a measure.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMeasure | Information about the measure.  This parameter is mandatory. | [NxLibraryMeasureDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-GetMeasure-method.htm#NxLibraryMeasureDef) |

[Closed](javascript:void(0);)[NxLibraryMeasureDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLabel | Label of the measure. | String |
| qDef | Definition of the measure. | String |
| qGrouping | Used to define a cyclic group or drill-down group.  This parameter is optional.  Default value is no grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qExpressions | Array of expressions. | Array of String |
| qActiveExpression | Index to the active expression in a measure. | Integer |

#### GetProperties method

##### Overview

Shows the properties of an object.

Returns the identifier and the definition of the measure.

If the member delta is set to true in the request object, only the delta is retrieved.

##### Parameters

None

##### Output

The following is always returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the generic object.  This parameter is mandatory. | [GenericMeasureProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-GetProperties-method.htm#GenericMeasureProperties) |

[ClosedGenericMeasureProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the measure.  This parameter is mandatory. | *NxInfo* |
| qMeasure | Definition of the measure.  This parameter is mandatory. | *NxLibraryMeasureDef* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)NxLibraryMeasureDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLabel | Label of the measure. | String |
| qDef | Definition of the measure. | String |
| qGrouping | Used to define a cyclic group or drill-down group.  This parameter is optional.  Default value is no grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qExpressions | Array of expressions. | Array of String |
| qActiveExpression | Index to the active expression in a measure. | Integer |

#### Publish method

##### Overview

Publishes a measure.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### SetProperties method

##### Overview

Sets some properties for a measure.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the measure.  This parameter is mandatory. | *GenericMeasureProperties*  See[GenericMeasureProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericMeasureClass/GenericMeasure-class-SetProperties-method.htm#GenericMeasureProperties) |

[ClosedGenericMeasureProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the measure.  This parameter is mandatory. | *NxInfo* |
| qMeasure | Definition of the measure.  This parameter is mandatory. | *NxLibraryMeasureDef* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)NxLibraryMeasureDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLabel | Label of the measure. | String |
| qDef | Definition of the measure. | String |
| qGrouping | Used to define a cyclic group or drill-down group.  This parameter is optional.  Default value is no grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qExpressions | Array of expressions. | Array of String |
| qActiveExpression | Index to the active expression in a measure. | Integer |

##### Outputs

The following is returned in the output:

"result": {}

#### UnPublish method

##### Overview

Unpublishes a measure.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

### GenericVariable class

This class describes all the methods that apply at generic variable level.

The *handle* member in the JSON request for all methods listed in this section is the handle of the generic variable.

[ApplyPatches method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-ApplyPatches-method.htm)

[GetInfo method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-GetInfo-method.htm)

[GetLayout method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-GetLayout-method.htm)

[GetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-GetProperties-method.htm)

[Publish method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-Publish-method.htm)

[SetDualValue method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-SetDualValue-method.htm)

[SetNumValue method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-SetNumValue-method.htm)

[SetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-SetProperties-method.htm)

[SetStringValue method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-SetStringValue-method.htm)

[UnPublish method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-UnPublish-method.htm)

#### ApplyPatches method

##### Overview

Applies a patch to the properties of a variable. Allows an update to some of the properties.

Applying a patch takes less time than resetting all the properties.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPatches | Array of patches. | Array of *NxPatch*  See [NxPatch](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-ApplyPatches-method.htm#NxPatch). |

[ClosedNxPatch](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOp | Operation to perform. | One of:   * Add * Remove * Replace |
| qPath | Path to the property to add, remove or replace. | String |
| qValue | This parameter is not used in a remove operation.  Corresponds to the value of the property to add or to the new value of the property to update.  Examples:  "false", "2", "\"New title\"" | String |

##### Outputs

The following is returned in the output:

"result": {}

#### GetInfo method

##### Overview

Returns the type and identifier of the object.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qInfo": {

"qId": "<identifier>",

"qType": "<type>"

}

}

#### GetLayout method

##### Overview

Evaluates an object and displays its properties including the dynamic properties.

If the member *delta*is set to true in the request object, only the delta is evaluated.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLayout | Information on the object | [GenericVariableLayout](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-GetLayout-method.htm#GenericVariableLayout) |

[Closed](javascript:void(0);)[GenericVariableLayout](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qMeta | Information about publishing and permissions.  This parameter is optional. | Null or *NxMeta* |
| qText | Some text. | String |
| qNum | A value. | Double |
| qIsScriptCreated | If set to true, it means that the variable was defined via script. | Boolean |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

#### GetProperties method

##### Overview

Shows the properties of an object.

If the member delta is set to true in the [Request object syntax](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Syntax/request-object-syntax.htm), only the delta is retrieved.

##### Parameters

None

##### Output

The following is always returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the generic object  This parameter is mandatory. | [GenericVariableProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-GetProperties-method.htm#GenericVariableProperties) |

[ClosedGenericVariableProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qMetaDef | Meta data. | Dynamic properties |
| qName | Name of the variable.  The name must be unique.  This parameter is mandatory. | String |
| qComment | Comment related to the variable.  This parameter is optional. | String |
| qNumberPresentation | Defines the format of the value.  This parameter is optional. | *FieldAttributes* |
| qIncludeInBookmark | Set this property to true to update the variable when applying a bookmark. The variable value will be persisted in the bookmark.  The value of a variable can affect the state of the selections.  Script variables cannot be persisted in the bookmark.  The default value is false. | Boolean |
| qDefinition | Definition of the variable. | String |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)FieldAttributes](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the field.  Default is U. | One of:  • U for UNKNOWN type.  • A for ASCII; Numeric fields values contain only standard ASCII characters.  • I for INTEGER; Numeric fields values are shown as integer numbers.  • R for REAL; Numeric fields values are shown as real numbers.  • F for FIX; Numeric fields values are shown as numbers with a fix number of decimals.  • M for MONEY; Numeric fields values are shown as in the money format.  • D for DATE; Numeric fields values are shown as dates.  • T for TIME; Numeric fields values are shown as times.  • TS TIMESTAMP; Numeric fields values are shown as time stamps.  • IV for INTERVAL; Numeric fields values are shown as intervals. |
| qnDec | Number of decimals.  Default is 10. | Integer between 0 and 15. |
| qUseThou | Defines whether or not a thousands separator must be used.  Default is 0. | One of:   * 0 for false * 1 for true |
| qFmt | Defines the format pattern that applies to*qText*.  Is used in connection to the type of the field (parameter **qType**).  For more information, see Struct[FieldAttributes](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldAttributes.htm).  Example: *YYYY-MM-DD* for a date | String |
| qDec | Defines the decimal separator.  Example:**.** | String |
| qThou | Defines the thousand separator (if any).  Is used if **qUseThou**is set to 1.  Example:**,** | String |

#### Publish method

##### Overview

Publishes a variable.

This method applies only if running in server mode.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### SetDualValue method

##### Overview

Sets the value of a dual variable.

These changes are not persistent. They only last the duration of the engine session.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | String representation of a dual value. Set this parameter to "", if the string representation is to be Null. This parameter is mandatory. | String |
| qNum | Numeric representation of a dual value. This parameter is mandatory. | Double |

##### Outputs

The following is returned in the output:

"result": {}

#### SetNumValue method

##### Overview

Sets a numerical value to a variable.

These changes are not persistent. They only last the duration of the engine session.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qVal | Value of the variable. | Double |

##### Outputs

The following is returned in the output:

"result": {}

#### SetProperties method

##### Overview

Sets some properties for a variable.

The identifier of a variable cannot be modified.

You cannot update the properties of a script-defined variable using the [SetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-SetProperties-method.htm).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProp | Information about the variable.  This parameter is mandatory. | See[GenericVariableProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-SetProperties-method.htm#GenericVariableProperties) |

[ClosedGenericVariableProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qMetaDef | Meta data. | Dynamic properties |
| qName | Name of the variable.  The name must be unique.  This parameter is mandatory. | String |
| qComment | Comment related to the variable.  This parameter is optional. | String |
| qNumberPresentation | Defines the format of the value.  This parameter is optional. | *FieldAttributes* |
| qIncludeInBookmark | Set this property to true to update the variable when applying a bookmark. The variable value will be persisted in the bookmark.  The value of a variable can affect the state of the selections.  Script variables cannot be persisted in the bookmark.  The default value is false. | Boolean |
| qDefinition | Definition of the variable. | String |

[[Closed](javascript:void(0);)NxInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

[[Closed](javascript:void(0);)FieldAttributes](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the field.  Default is U. | One of:  • U for UNKNOWN type.  • A for ASCII; Numeric fields values contain only standard ASCII characters.  • I for INTEGER; Numeric fields values are shown as integer numbers.  • R for REAL; Numeric fields values are shown as real numbers.  • F for FIX; Numeric fields values are shown as numbers with a fix number of decimals.  • M for MONEY; Numeric fields values are shown as in the money format.  • D for DATE; Numeric fields values are shown as dates.  • T for TIME; Numeric fields values are shown as times.  • TS TIMESTAMP; Numeric fields values are shown as time stamps.  • IV for INTERVAL; Numeric fields values are shown as intervals. |
| qnDec | Number of decimals.  Default is 10. | Integer between 0 and 15. |
| qUseThou | Defines whether or not a thousands separator must be used.  Default is 0. | One of:   * 0 for false * 1 for true |
| qFmt | Defines the format pattern that applies to*qText*.  Is used in connection to the type of the field (parameter **qType**).  For more information, see Struct[FieldAttributes](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldAttributes.htm).  Example: *YYYY-MM-DD* for a date | String |
| qDec | Defines the decimal separator.  Example:**.** | String |
| qThou | Defines the thousand separator (if any).  Is used if **qUseThou**is set to 1.  Example:**,** | String |

##### Outputs

The following is returned in the output:

"result": {}

#### SetStringValue method

##### Overview

Sets a string value to a variable.

These changes are not persistent. They only last the duration of the engine session.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qVal | Value of the variable. The string can contain an expression. | String |

##### Outputs

The following is returned in the output:

"result": {}

#### UnPublish method

##### Overview

Unpublishes a variable.

This method applies only if running in server mode.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

### Global class

This class describes all the methods that apply at global level.

The *handle* member in the JSON request for all methods listed in this section is -1.

[AbortAll method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-AbortAll-method.htm)

[AllowCreateApp method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-AllowCreateApp-method.htm)

[CancelReload method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-CancelReload-method.htm)

[CancelRequest method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-CancelRequest-method.htm)

[ConfigureReload method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-ConfigureReload-method.htm)

[CopyApp method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-CopyApp-method.htm)

[CreateApp method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-CreateApp-method.htm)

[CreateDocEx method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-CreateDocEx-method.htm)

[CreateSessionApp method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-CreateSessionApp-method.htm)

[CreateSessionAppFromApp method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-CreateSessionAppFromApp-method.htm)

[DeleteApp method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-DeleteApp-method.htm)

[ExportApp method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-ExportApp-method.htm)

[GetActiveDoc method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetActiveDoc-method.htm)

[GetAppEntry method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetAppEntry-method.htm)

[GetAuthenticatedUser method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetAuthenticatedUser-method.htm)

[GetBNF method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetBNF-method.htm)

[GetCustomConnectors method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetCustomConnectors-method.htm)

[GetDatabasesFromConnectionString method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetDatabasesFromConnectionString-method.htm)

[GetDefaultAppFolder method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetDefaultAppFolder-method.htm)

[GetDocList method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetDocList-method.htm)

[GetFolderItemsForPath method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetFolderItemsForPath-method.htm)

[GetFunctions method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetFunctions-method.htm)

[GetInteract method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetInteract-method.htm)

[GetLogicalDriveStrings method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetLogicalDriveStrings-method.htm)

[GetOdbcDsns method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetOdbcDsns-method.htm)

[GetOleDbProviders method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetOleDbProviders-method.htm)

[GetProgress method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetProgress-method.htm)

[GetStreamList method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetStreamList-method.htm)

[GetSupportedCodePages method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetSupportedCodePages-method.htm)

[GetUniqueID method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetUniqueID-method.htm)

[ImportApp method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-ImportApp-method.htm)

[ImportAppEx method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-ImportAppEx-method.htm)

[InteractDone method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-InteractDone-method.htm)

[IsDesktopMode method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-IsDesktopMode-method.htm)

[IsPersonalMode method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-IsPersonalMode-method.htm)

[IsValidConnectionString method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-Class-IsValidConnectionString-method.htm)

[OpenDoc method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-OpenDoc-method.htm)

[OSName method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-OSName-method.htm)

[OSVersion method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-OSVersion-method.htm)

[ProductVersion method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-ProductVersion-method.htm)

[QTProduct method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-QTProduct-method.htm)

[QvVersion method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-QvVersion-method.htm)

[ReloadExtensionList method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-ReloadExtensionList-method.htm)

[ReplaceAppFromID method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-ReplaceAppFromID-method.htm)

[ShutdownProcess method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-ShutdownProcess-method.htm)

#### AbortAll method

##### Overview

Sets an abort flag on all pending and ongoing requests in the current engine session.

* If an abort flag is set on a pending request, the request is aborted.
* If an abort flag is set on an ongoing request, the engine checks to see if it is possible to abort the request.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### AllowCreateApp method

##### Overview

Indicates whether or not a user is able to create an app.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <true or false>

}

*False* means that the user cannot create an app.

#### CancelReload method

##### Overview

Cancels an ongoing reload. The reload of the app is stopped.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### CancelRequest method

##### Overview

Cancels an ongoing request. The request is stopped.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRequestId | Identifier of the request to stop. | Integer |

##### Outputs

The following is returned in the output:

"result": {}

#### ConfigureReload method

##### Overview

Configures the engine's behavior during a reload.

The *ConfigureReload method* should be run before the [DoReload method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DoReload-method.htm).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qCancelOnScriptError | If set to true, the script execution is halted on error.  Otherwise, the engine continues the script execution.  This parameter is relevant only if the variable*ErrorMode*is set to 1. | Boolean |
| qUseErrorData | If set to true, any script execution error is returned in *qErrorData*by the [GetProgress method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetProgress-method.htm). | Boolean |
| qInteractOnError | If set to true, the script execution is halted on error and the engine is waiting for an interaction to be performed. If the result from the interaction is 1 (*qDef.qResult* is 1), the engine continues the script execution otherwise the execution is halted.  This parameter is relevant only if the variable*ErrorMode*is set to 1 and the script is run in debug mode (*qDebug*is set to true when calling the [DoReload method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DoReload-method.htm)). | Boolean |

##### Outputs

The following is returned in the output:

"result": {}

#### CopyApp method

##### Overview

Copies an app that is in the Qlik Sense repository.

The engine copies the app into an app entity that was previously created by the repository. See the QRS API (REST API) help for more information.

This method applies only if running in server mode.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTargetAppId | Identifier (GUID) of the app entity in the Qlik Sense repository.  The app entity must have been previously created by the repository (via the REST API).  This parameter is mandatory. | String |
| qSrcAppId | Identifier (GUID) of the source app in the Qlik Sense repository.  This parameter is mandatory. | String |
| qIds | Array of QRS identifiers.  The list of all the objects in the app to be copied must be given. This list must contain the GUIDs of all these objects.  If the list of the QRS identifiers is empty, the method *CopyApp*copies only the data and the objects necessary to open the app. The objects that were created inside the app are not copied.  Script-defined variables are automatically copied when copying an app. To be able to copy variables not created via script, the GUID of each variable must be provided in the list of QRS identifiers.  To get the QRS identifiers of the objects in an app, you can use the QRS API. The GET method (from the QRS API) returns the identifiers of the objects in the app.  The following example returns the QRS identifiers of all the objects in a specified app:  GET /qrs/app/9c3f8634-6191-4a34-a114-a39102058d13  Where  *9c3f8634-6191-4a34-a114-a39102058d13*is the identifier of the app. | Array of string |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

The operation is successful if **qSuccess**is set to true.

###### Logs

When this method is called, audit activity logs are produced to track the user activity.

In the case of errors, both audit activity logs and system services logs are produced.

The log files are named as follows:

|  |  |
| --- | --- |
| **Audit activity log** | **System service log** |
| *<MachineName>\_AuditActivity\_Engine.txt* | *<MachineName>\_Service\_Engine.txt* |

The log files are located in:

*%ProgramData%/Qlik/Sense/Log/Engine*

For more information, see Qlik Sense troubleshooting guide.

#### CreateApp method

##### Overview

Creates an app.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qAppName | Name of the app.  This parameter is mandatory. | String |
| qLocalizedScriptMainSection | Name of the first section in the script editor.  This parameter is optional.  The default value is *Main*. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSuccess | True or false | Boolean |
| qAppId | One of:  • Path and name of the app if using Qlik Sensedesktop.  • GUID if using Qlik Sense server.  This parameter is mandatory. | String |

The operation is successful if **qSuccess**is set to true.

###### Logs

When this method is called, audit activity logs are produced to track the user activity.

In the case of errors, both audit activity logs and system services logs are produced.

The log files are named as follows:

|  |  |
| --- | --- |
| **Audit activity log** | **System service log** |
| *<MachineName>\_AuditActivity\_Engine.txt in server mode*  *<MachineName>\_AuditActivity\_Engine.log in desktop mode* | *<MachineName>\_Service\_Engine.txt* in server mode  *<MachineName>\_Service\_Engine.log* in desktop mode |

Where to find the log files

The location of the log files depends on if you are running Qlik Sense Desktop or Qlik Sense.

|  |  |
| --- | --- |
| **Qlik Sense** | **Qlik Sense Desktop** |
| *%ProgramData%/Qlik/Sense/Log/Engine* | *%UserProfile%/Documents/Qlik/Sense/Log* |

For more information, see Qlik Sense troubleshooting guide.

#### CreateDocEx method

##### Overview

Creates an app and opens an engine session.

This method applies only if running a local installation of Qlik Sense.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDocName | Name of the app.  This parameter is mandatory. | String |
| qUserName | Name of the user.  This parameter is optional. | String |
| qPassword | Password of the user.  This parameter is optional. | String |
| qSerial | Current Qlik Sense serial number  This parameter is optional. | String |
| qLocalizedScriptMainSection | Name of the first section in the script editor.  This parameter is optional.  The default value is *Main*. | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "Doc",

"qHandle": <handle of the app>

},

"qDocId": "< path and name of the app>"

}

#### CreateSessionApp method

##### Overview

Creates an empty session app.

The following applies:

* The name of a session app cannot be chosen. The engine automatically assigns a unique identifier to the session app.
* A session app is not persisted and cannot be saved. Everything created during a session app is non-persisted; for example: objects, data connections.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "Doc",

"qHandle": <Handle of the session app>

},

"qSessionAppId": "<Identifier of the session app>"

}

The identifier of the session app is composed of the prefix *SessionApp\_* and of a GUID.

#### CreateSessionAppFromApp method

##### Overview

Creates a session app from a source app.

The following applies:

* The objects in the source app are copied into the session app but contain no data.
* The script of the session app can be edited and reloaded.
* The name of a session app cannot be chosen. The engine automatically assigns a unique identifier to the session app.
* A session app is not persisted and cannot be saved. Everything created during a session app is non-persisted; for example: objects, data connections.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSrcAppId | App identifier of the source app.  It corresponds to *qAppId*returned by the[CreateApp method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-CreateApp-method.htm) when creating the source app.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "Doc",

"qHandle": <Handle of the session app>

},

"qSessionAppId": "<Identifier of the session app>"

}

The identifier of the session app is composed of the prefix *SessionApp\_* and of a GUID.

#### DeleteApp method

##### Overview

Deletes an app from the Qlik Sense repository or from the file system.

###### Using Qlik Sense server

In addition to being removed from the repository, the app is removed from the directory as well:

*<installation\_directory>\Qlik\Sense\Repository\Apps*

The default installation directory is *ProgramData*.

###### Using Qlik Sense desktop

The app is deleted from the directory *%userprofile%\Documents\Qlik\Sense\Apps*.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qAppId | Identifier of the app to delete.  In server mode, the identifier of the app is a GUID in the Qlik Sense repository.  In desktop mode, the identifier of the app is the name of the app, as defined in the apps folder*%userprofile%\Documents\Qlik\Sense\Apps*.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": true

}

The operation is successful if **qSuccess**is set to true.

###### Logs

When this method is called, audit activity logs are produced to track the user activity.

In the case of errors, both audit activity logs and system services logs are produced.

The log files are named as follows:

|  |  |
| --- | --- |
| **Audit activity log** | **System service log** |
| *<MachineName>\_AuditActivity\_Engine.txt in server mode*  *<MachineName>\_AuditActivity\_Engine.log in desktop mode* | *<MachineName>\_Service\_Engine.txt* in server mode  *<MachineName>\_Service\_Engine.log* in desktop mode |

###### Where to find the log files

The location of the log files depends on if you are running Qlik Sense Desktop or Qlik Sense.

|  |  |
| --- | --- |
| **Qlik Sense** | **Qlik Sense Desktop** |
| *%ProgramData%/Qlik/Sense/Log/Engine* | *%UserProfile%/Documents/Qlik/Sense/Log* |

For more information, see Qlik Sense troubleshooting guide.

#### ExportApp method

##### Overview

Exports an app from the Qlik Sense repository to the file system.

This method applies only if running in server mode.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTargetPath | Path and name of the target app.  This parameter is mandatory. | String |
| qSrcAppId | Identifier of the source app. The identifier is a GUID from the Qlik Sense repository.  This parameter is mandatory. | String |
| qIds | Array of identifiers.  The list of all the objects in the app to be exported must be given. This list must contain the GUIDs of all these objects. | Array of string |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": true

}

The operation is successful if **qSuccess**is set to true.

###### Logs

When this method is called, audit activity logs are produced to track the user activity.

In the case of errors, both audit activity logs and system services logs are produced.

The log files are named as follows:

|  |  |
| --- | --- |
| **Audit activity log** | **System service log** |
| *<MachineName>\_AuditActivity\_Engine.txt* | *<MachineName>\_Service\_Engine.txt* |

The log files are located in:

*%ProgramData%/Qlik/Sense/Log/Engine*

For more information, see Qlik Sense troubleshooting guide.

#### GetActiveDoc method

##### Overview

Returns the handle of the current app.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": {

"qType": "Doc",

"qHandle": <handle of the app>

}

}

If no app is opened, an error message is returned:

{

"jsonrpc": "2.0",

"id": 2,

"error": {

"code": 1007,

"parameter": "No active document",

"message": "App invalid"

}

}

#### GetAppEntry method

##### Overview

Retrieves the meta data of an app.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qAppID | Identifier of the app, as returned by the[CreateApp method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-CreateApp-method.htm).  One of:  • Path and name of the app if using Qlik Sensedesktop.  • GUID if using Qlik Sense server.  This parameter is mandatory. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qEntry | Information about the app. | [AppEntry](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetAppEntry-method.htm#AppEntry) |

[Closed](javascript:void(0);)[AppEntry](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qID | Identifier of the app. | String |
| qTitle | Title of the app. | String |
| qPath | Path of the app. | String |
| qLastReloadTime | Last reload time of the app. | String |
| qReadOnly | Is set to true if the app is read-only. | Boolean |
| qMeta | Meta data. | *NxMeta* |
| qThumbnail | App thumbnail. | *StaticContentUrl* |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

#### GetAuthenticatedUser method

##### Overview

Retrieves information about the authenticated user.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": "UserDirectory=<directory>; UserId=<identifier>"

}

#### GetBNF method

##### Overview

Returns a set of rules defining the Qlik Sense scripting language grammar. These rules define the syntax for the script statements and the script or chart functions.

A way to retrieve the list of script statements, script functions or chart functions is to call the*GetBNF method*.

###### Terminology

* BNF stands for Backus-Naur Form.
* A token is a string of one or more characters that is significant as a group. For example, a token can be a function name, a parenthesis '('.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qBnfType | Returns a set of rules defining the syntax for:   * the script statements and the script functions if *qBnfType*is set to S. * the chart functions if *qBnfType*is set to E. | One of:   * S for SCRIPT\_TEXT\_SCRIPT * E for SCRIPT\_TEXT\_EXPRESSION |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qBnfDefs | Description of the scripting language grammar. | Array of [BNFDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetBNF-method.htm#BNFDef) |

[Closed](javascript:void(0);)[BNFDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qBnf | Array of token references that all together build up the definition of the current token.  If the array is not empty, it means that the definition is a BNF rule (*qIsBnfRule*is set to true).  There are a few exceptions where some BNF rules have an empty array (*qBnf*is empty). | Array of Integer |
| qNbr | Number of the current token definition. | Integer |
| qPNbr | Number of the parent rule definition. | Integer |
| qHelpId | Reference identifier to a function described in the documentation.The identifier is stored in the definition of the token containing the function name.  Is not used in Qlik Sense. | Integer |
| qName | Token name.  One of:   * a rule name * an identifier * a literal value | String |
| qStr | Literal string of the token.  Examples: 'Round' and '('. | String |
| qIsBnfRule | If set to true, it means that a list of related rule tokens is assigned to *qBnf*.  This parameter is optional. The default value is false. | Boolean |
| qScriptStatement | If set to true, it means that the definition specifies a script statement.  This parameter is optional. The default value is false. | Boolean |
| qControlStatement | If set to true, it means that the definition specifies a control statement.  This parameter is optional. The default value is false. | Boolean |
| qBnfLiteral | If set to true, it means that the definition specifies a literal token.  This parameter is optional. The default value is false. | Boolean |
| qQvFunc | If set to true, it means that the definition is related to a Qlik Sensefunction. It cannot be an aggregation function.  This parameter is optional. The default value is false. | Boolean |
| qAggrFunc | If set to true, it means that the definition is related to an aggregation function.  This parameter is optional. The default value is false. | Boolean |
| qFG | Group of the function. | One of:   * ALL for FUNC\_GROUP\_ALL, * U for FUNC\_GROUP\_UNKNOWN, * NONE for FUNC\_GROUP\_NONE, * AGGR for FUNC\_GROUP\_AGGR, * NUM for FUNC\_GROUP\_NUMERIC, * RNG for FUNC\_GROUP\_RANGE, * EXP for FUNC\_GROUP\_EXPONENTIAL\_AND\_LOGARITHMIC, * TRIG for FUNC\_GROUP\_TRIGONOMETRIC\_AND\_HYPERBOLIC, * FIN for FUNC\_GROUP\_FINANCIAL, * MATH for FUNC\_GROUP\_MATH\_CONSTANT\_AND\_PARAM\_FREE, * COUNT for FUNC\_GROUP\_COUNTER, * STR for FUNC\_GROUP\_STRING, * MAPP for FUNC\_GROUP\_MAPPING, * RCRD for FUNC\_GROUP\_INTER\_RECORD, * CND for FUNC\_GROUP\_CONDITIONAL, * LOG for FUNC\_GROUP\_LOGICAL, * NULL for FUNC\_GROUP\_NULL, * SYS for FUNC\_GROUP\_SYSTEM, * FILE for FUNC\_GROUP\_FILE, * TBL for FUNC\_GROUP\_TABLE, * DATE for FUNC\_GROUP\_DATE\_AND\_TIME, * NUMI for FUNC\_GROUP\_NUMBER\_INTERPRET, * FRMT for FUNC\_GROUP\_FORMATTING, * CLR for FUNC\_GROUP\_COLOR, * RNK for FUNC\_GROUP\_RANKING |
| qFieldFlag | If set to true, it means that the definition is related to a field.  This parameter is optional. The default value is false. | Boolean |
| qMT | Type of the data. | One of:   * N for NOT\_META * D for META\_DOC\_NAME * R for META\_RET\_TYPE |
| qDepr | Indicates if a script statement, a chart or a script function is deprecated (not recommended to use).  If set to true, it means that the script statement or the function is not recommended for use in Qlik Sense.  This parameter is optional. The default value is false. | Boolean |

#### GetCustomConnectors method

##### Overview

List the custom connectors available in the system.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qReloadList | Sets if the list of custom connectors should be reloaded or not.  This parameter is optional and the default value is false.  If set to false, only the connectors that were returned the previous time are returned. If new connectors have been added since the last call to the *GetCustomConnectors*method was made, the new connectors are not returned.  If set to true, the *GetCustomConnectors* method looks for new connectors in the file system. | Boolean |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnectors | List of the custom connectors. | Array of [CustomConnector](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetCustomConnectors-method.htm#CustomConnector) |

[[Closed](javascript:void(0);)CustomConnector](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProvider | Name of the custom connector file. | String |
| qParent | Name of the parent folder that contains the custom connector file. | String |
| qDisplayName | Name of the custom connector as displayed in the Qlik interface. | String |
| qMachineMode | Mode of the machine (64 or 32 bits). | One of:   * CONNECT\_DEFAULT: used internally * CONNECT\_64 * CONNECT\_32 |

#### GetDatabasesFromConnectionString method

##### Overview

Lists the databases in a ODBC, OLEDB or CUSTOM data source.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnection | Information about the connection. | [Connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetDatabasesFromConnectionString-method.htm#Connection) |

[ClosedConnection](javascript:void(0);)

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDatabases | List of the databases in the connection. | Array of [Database](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetDatabasesFromConnectionString-method.htm#Database) |

[ClosedDatabase](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the database. | String |
| qIsDefault | Is set to true if the database is set by default. | Boolean |

#### GetDefaultAppFolder method

##### Overview

Returns the folder where the apps are stored.

This method applies only if running Qlik Sense Desktop.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path of the folder where the apps are stored. | String |

#### GetDocList method

##### Overview

Returns the list of apps.

**When running Qlik Sense (i.e in server mode):**

The apps are located in *C:\ProgramData\Qlik\Sense\Apps*.

If Qlik Sense has not been installed under ProgramData when in server mode, the app files are located under <installation\_directory>\Qlik\Sense\Apps.

**When running Qlik Sense Desktop:**

The apps are located in *C:\Users\<user name>\Documents\Qlik\Sense\Apps*.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDocList | List of app identifiers.   * If running in server mode, the app identifier is a GUID. * If running in local installation mode, the app identifier corresponds to the app path and name. | Array of [DocListEntry](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetDocList-method.htm#DocListEntry) |

[Closed](javascript:void(0);)[DocListEntry](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDocName | Name of the app. | String |
| qConnectedUsers | Not used. | Integer |
| qFileTime | Last modified time stamp of the app.  This property is only used with Qlik Sensedesktop.  Is set to 0 for Qlik Sense server. | Double |
| qFileSize | Size of remote app.  This property is only used with Qlik Sensedesktop.  Is set to 0 for Qlik Sense server. | Double |
| qDocId | Identifier of the app.   * In local installation mode, the identifier is the path and name of the app * In server mode, the identifier is the app's GUID. | String |
| qMeta | Meta data related to the app. | *NxMeta* |
| qLastReloadTime | Last reload time of the app. | String |
| qReadOnly | If set to true, it means that the app is read-only. | Boolean |
| qTitle | Title of the app. | String |
| qThumbnail | Thumbnail of the app. | *StaticContentUrl* |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

[[Closed](javascript:void(0);)StaticContentUrl](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUrl | Relative path of the thumbnail. | String |

In addition, this structure can return dynamic properties.

#### GetFolderItemsForPath method

##### Overview

Returns the files and folders located at a specified path.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Absolute or relative path.  Relative paths are relative to the default *Apps*folder.  **When running Qlik Sense (i.e in server mode):**  The apps are located in*C:\ProgramData\Qlik\Sense\Apps*.  If Qlik Sense has not been installed under ProgramData when in server mode, the app files are located under <installation\_directory>\Qlik\Sense\Apps.  **When running Qlik Sense Desktop:**  The apps are located in *C:\Users\<user name>\Documents\Qlik\Sense\Apps*. | String |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFolderItems | Path of the folder where the apps are stored. | [FolderItem](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetFolderItemsForPath-method.htm#FolderItem) |

[ClosedFolderItem](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the folder item. | String |
| qType | Type of the folder item. | One of:   * FOLDER * FILE * OTHER |

#### GetFunctions method

##### Overview

Gets the list of all the script functions.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qGroup | Name of the group  This parameter is optional.  Default is all groups. | One of:   * ALL for FUNC\_GROUP\_ALL, * U for FUNC\_GROUP\_UNKNOWN, * NONE for FUNC\_GROUP\_NONE, * AGGR for FUNC\_GROUP\_AGGR, * NUM for FUNC\_GROUP\_NUMERIC, * RNG for FUNC\_GROUP\_RANGE, * EXP for FUNC\_GROUP\_EXPONENTIAL\_AND\_LOGARITHMIC, * TRIG for FUNC\_GROUP\_TRIGONOMETRIC\_AND\_HYPERBOLIC, * FIN for FUNC\_GROUP\_FINANCIAL, * MATH for FUNC\_GROUP\_MATH\_CONSTANT\_AND\_PARAM\_FREE, * COUNT for FUNC\_GROUP\_COUNTER, * STR for FUNC\_GROUP\_STRING, * MAPP for FUNC\_GROUP\_MAPPING, * RCRD for FUNC\_GROUP\_INTER\_RECORD, * CND for FUNC\_GROUP\_CONDITIONAL, * LOG for FUNC\_GROUP\_LOGICAL, * NULL for FUNC\_GROUP\_NULL, * SYS for FUNC\_GROUP\_SYSTEM, * FILE for FUNC\_GROUP\_FILE, * TBL for FUNC\_GROUP\_TABLE, * DATE for FUNC\_GROUP\_DATE\_AND\_TIME, * NUMI for FUNC\_GROUP\_NUMBER\_INTERPRET, * FRMT for FUNC\_GROUP\_FORMATTING, * CLR for FUNC\_GROUP\_COLOR, * RNK for FUNC\_GROUP\_RANKING |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFunctions | Name of the group  This parameter is optional.  Default is all groups. | [Function](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetFunctions-method.htm#Function) |

[Closed](javascript:void(0);)[Function](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the script function. | String |
| qGroup | Group of the script function. | *FunctionGroup* |
| qSignature | Signature of the script function.  Gives general information about the function. | String |

[[Closed](javascript:void(0);)FunctionGroup](javascript:void(0);)

One of:

* ALL for FUNC\_GROUP\_ALL,
* U for FUNC\_GROUP\_UNKNOWN,
* NONE for FUNC\_GROUP\_NONE,
* AGGR for FUNC\_GROUP\_AGGR,
* NUM for FUNC\_GROUP\_NUMERIC,
* RNG for FUNC\_GROUP\_RANGE,
* EXP for FUNC\_GROUP\_EXPONENTIAL\_AND\_LOGARITHMIC,
* TRIG for FUNC\_GROUP\_TRIGONOMETRIC\_AND\_HYPERBOLIC,
* FIN for FUNC\_GROUP\_FINANCIAL,
* MATH for FUNC\_GROUP\_MATH\_CONSTANT\_AND\_PARAM\_FREE,
* COUNT for FUNC\_GROUP\_COUNTER,
* STR for FUNC\_GROUP\_STRING,
* MAPP for FUNC\_GROUP\_MAPPING,
* RCRD for FUNC\_GROUP\_INTER\_RECORD,
* CND for FUNC\_GROUP\_CONDITIONAL,
* LOG for FUNC\_GROUP\_LOGICAL,
* NULL for FUNC\_GROUP\_NULL,
* SYS for FUNC\_GROUP\_SYSTEM,
* FILE for FUNC\_GROUP\_FILE,
* TBL for FUNC\_GROUP\_TABLE,
* DATE for FUNC\_GROUP\_DATE\_AND\_TIME,
* NUMI for FUNC\_GROUP\_NUMBER\_INTERPRET,
* FRMT for FUNC\_GROUP\_FORMATTING,
* CLR for FUNC\_GROUP\_COLOR,
* RNK for FUNC\_GROUP\_RANKING

#### GetInteract method

##### Overview

Retrieves information on the user interaction that is requested by the engine.

Engine can request user interactions only during script reload and when the reload is performed in debug mode (*qDebug*is set to true when using the [DoReload method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DoReload-method.htm)).

When running reload in debug mode, the engine pauses the script execution to receive data about user interaction. The engine can pause:

- before executing a new script statement

- when an error occurs while executing the script

- when the script execution is finished.

To know if the engine is paused and waits for a response to an interaction request, the [GetProgress method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetProgress-method.htm) should be used. The engine waits for a response if the property *qUserInteractionWanted*is set to true in the response of the *GetProgress* request.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRequestId | Identifier of the request.  Corresponds to the identifier of the *DoReload*request. | Integer |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDef | Information to set up the user interaction.  Indicates which kind of interaction is wanted. | [InteractDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetInteract-method.htm#InteractDef) |

[Closed](javascript:void(0);)[InteractDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Interaction type. | One of:   * IT\_SCRIPTLINE; the engine returns the statement that will be executed next. * IT\_MSGBOX; the engine returns a script execution error message. This type can only be returned if the parameter*qInteractOnError*was set to true when calling the[ConfigureReload method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-ConfigureReload-method.htm). * IT\_BREAK; the engine breaks and waits for a response on what to do next. * IT\_END; the engine has finished to execute all statements in the script. |
| qTitle | Title used in the message box dialog.  This property is relevant if *qType*is *IT\_MSGBOX*. | String |
| qMsg | Message used in the message box dialog.  This property is relevant if *qType*is *IT\_MSGBOX*. | String |
| qButtons | Buttons displayed in the message box dialog.  This property is relevant if *qType*is *IT\_MSGBOX*.  One of:   * 0 means that the *qButtons*property is not relevant. * 17 means that the message box contains the **OK**and **Cancel**buttons or the **stop**-sign icon. | Integer |
| qLine | Next script statement to be executed.  This property is used if the type of interaction is *IT\_SCRIPTLINE*. | String |
| qOldLineNr | First line number of the previously executed statement.  This property is used if the type of interaction is *IT\_SCRIPTLINE*. | Integer |
| qNewLineNr | First line number of the next statement to be executed.  This property is used if the type of interaction is *IT\_SCRIPTLINE*. | Integer |
| qPath | Path specified by the **Include**script variable.  This property is used if the type of interaction is *IT\_SCRIPTLINE*.  Example of an **Include**variable:  *$(Include=lib:\\MyDataFiles\abc.txt);* | String |
| qHidden | This property is set to true if the returned statement is an hidden script statement. | Boolean |
| qResult | Not relevant for describing the requested user interaction. | Integer |
| qInput | Is not used in Qlik Sense. | String |

#### GetInteract method

##### Overview

Retrieves information on the user interaction that is requested by the engine.

Engine can request user interactions only during script reload and when the reload is performed in debug mode (*qDebug*is set to true when using the [DoReload method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DoReload-method.htm)).

When running reload in debug mode, the engine pauses the script execution to receive data about user interaction. The engine can pause:

- before executing a new script statement

- when an error occurs while executing the script

- when the script execution is finished.

To know if the engine is paused and waits for a response to an interaction request, the [GetProgress method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetProgress-method.htm) should be used. The engine waits for a response if the property *qUserInteractionWanted*is set to true in the response of the *GetProgress* request.

#### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRequestId | Identifier of the request.  Corresponds to the identifier of the *DoReload*request. | Integer |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDef | Information to set up the user interaction.  Indicates which kind of interaction is wanted. | [InteractDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetInteract-method.htm#InteractDef) |

[ClosedInteractDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Interaction type. | One of:   * IT\_SCRIPTLINE; the engine returns the statement that will be executed next. * IT\_MSGBOX; the engine returns a script execution error message. This type can only be returned if the parameter*qInteractOnError*was set to true when calling the[ConfigureReload method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-ConfigureReload-method.htm). * IT\_BREAK; the engine breaks and waits for a response on what to do next. * IT\_END; the engine has finished to execute all statements in the script. |
| qTitle | Title used in the message box dialog.  This property is relevant if *qType*is *IT\_MSGBOX*. | String |
| qMsg | Message used in the message box dialog.  This property is relevant if *qType*is *IT\_MSGBOX*. | String |
| qButtons | Buttons displayed in the message box dialog.  This property is relevant if *qType*is *IT\_MSGBOX*.  One of:   * 0 means that the *qButtons*property is not relevant. * 17 means that the message box contains the **OK**and **Cancel**buttons or the **stop**-sign icon. | Integer |
| qLine | Next script statement to be executed.  This property is used if the type of interaction is *IT\_SCRIPTLINE*. | String |
| qOldLineNr | First line number of the previously executed statement.  This property is used if the type of interaction is *IT\_SCRIPTLINE*. | Integer |
| qNewLineNr | First line number of the next statement to be executed.  This property is used if the type of interaction is *IT\_SCRIPTLINE*. | Integer |
| qPath | Path specified by the **Include**script variable.  This property is used if the type of interaction is *IT\_SCRIPTLINE*.  Example of an **Include**variable:  *$(Include=lib:\\MyDataFiles\abc.txt);* | String |
| qHidden | This property is set to true if the returned statement is an hidden script statement. | Boolean |
| qResult | Not relevant for describing the requested user interaction. | Integer |
| qInput | Is not used in Qlik Sense. | String |

#### GetLogicalDriveStrings method

##### Overview

Lists the logical drives in the system.

This method applies only if running Qlik Sense Desktop.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDrives | List of drives. | Array of [DriveInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetLogicalDriveStrings-method.htm#DriveInfo) |

[Closed](javascript:void(0);)[DriveInfo](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDrive | Value of the drive  Examples:  C:\\, E:\\ | String |
| qType | Type of the drive.  *Fixed*means physical drive. | String |
| qName | Name of the drive. | String |

#### GetOdbcDsns method

##### Overview

Returns the list of the ODBC connectors that are installed in the system.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOdbcDsns | List of the ODBC connectors. | Array of [OdbcDsn](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetOdbcDsns-method.htm#OdbcDsn) |

[Closed](javascript:void(0);)[OdbcDsn](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the ODBC connection. | String |
| qDescription | Description of the ODBC connection. | String |
| qBit32 | This parameter is optional. Default is false.  Is set to true if the version of ODBC is 32-bit. | Boolean |
| qUserOnly | This parameter is optional. Default is false.  Is set to true if the connection is User DSN. The connection works only for a specific user. | Boolean |

#### GetOleDbProviders method

##### Overview

Returns the list of the OLEDB providers installed on the system.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOleDbProviders | List of the OLEDB providers. | Array of [OleDbProvider](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetOleDbProviders-method.htm#OleDbProvider) |

[Closed](javascript:void(0);)[OleDbProvider](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the OLEDB provider. | String |
| qDescription | Description of the OLEDB provider. | String |
| qBit32 | This parameter is optional. Default is false.  Is set to true if the version of the OLEDB provider is 32-bit. | Boolean |

#### GetProgress method

##### Overview

Gives information about the progress of the *DoReload*and *DoSave*calls.

For more information on DoReload and DoSave, see the [DoReload method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DoReload-method.htm) and [DoSave method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-DoSave-method.htm).

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRequestId | Identifier of the *DoReload*or *DoSave*request or 0.  Complete information is returned if the identifier of the request is given.  If the identifier is 0, less information is given. Progress messages and error messages are returned but information like when the request started and finished is not returned. | Integer |

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProgressData | Information about the progress of the request. | [ProgressData](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetProgress-method.htm#ProgressData) |

[Closed](javascript:void(0);)[ProgressData](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStarted | This property is st to true if the request is started. | Boolean |
| qFinished | This property is st to true if the request is finished. | Boolean |
| qCompleted | This property is not used. | Integer |
| qTotal | This property is not used. | Integer |
| qKB | This property is not used. | Integer |
| qMillisecs | Request duration in milliseconds. | Integer |
| qUserInteractionWanted | This property is set to true when the engine pauses the script execution and waits for a user interaction. | Boolean |
| qPersistentProgress | A progress message is persistent when it informs about the start or end of a statement. For example, it can inform about the total number of lines fetched from a data source, tells that the app was saved.  All persistent progress messages between two *GetProgress*calls are summarized in this string. Contrarily to*qPersistentProgressMessages*, the content of the localized message string is displayed (not its message code). | String |
| qTransientProgress | A progress message is transient when it informs about the progress of an ongoing statement. For example, it can tell how many lines are currently fetched from a data source.  All transient progress messages between two *GetProgress*calls are summarized in this string.  Contrarily to *qTransientProgressMessage*, the content of the localized message string is displayed (not its message code). | String |
| qErrorData | Information about the error messages that occur during the script execution. | Array of [ErrorData](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetProgress-method.htm#ErrorData) |
| qPersistentProgressMessages | List of persistent progress messages. | Array of [ProgressMessage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetProgress-method.htm#ProgressMessage) |
| qTransientProgressMessage | Transient progress message. | [ProgressMessage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetProgress-method.htm#ProgressMessage) |

[Closed](javascript:void(0);)[ErrorData](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qErrorString | Detailed information about the error message. | String |
| qLineEnd | Line termination characters. | String |
| qLine | Script statement where the error occurs. | String |
| qErrorDataCode | Type of the error messages. | One of:   * 0 for EDC\_ERROR * 1 for EDC\_WARNING * 2 for EDC\_CIRCULAR\_REFERENCE (Warning related to circular references) |

[Closed](javascript:void(0);)[ProgressMessage](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMessageCode | Code number to the corresponding localized message string. | Integer |
| qMessageParameters | Parameters to be inserted in the localized message string. | Array of String |

#### GetStreamList method

##### Overview

Lists the streams.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStreamList | List of the streams. | Array of [NxStreamListEntry](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetStreamList-method.htm#NxStreamListEntry) |

[Closed](javascript:void(0);)[NxStreamListEntry](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the stream | String |
| qId | Identifier of the stream | String |

#### GetSupportedCodePages method

##### Overview

Lists the supported code pages.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qCodePages | List of the code pages | Array of [CodePage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-GetSupportedCodePages-method.htm#CodePage) |

[Closed](javascript:void(0);)[CodePage](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qNumber | Number of the code page | Integer |
| qName | Name of the code page | String |
| qDescription | Description of the code page | String |

#### GetUniqueID method

##### Overview

Returns the unique identifier of the endpoint for the current user in the current app.

This unique identifier can be used for logging purposes.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUniqueID | Identifier of the endpoint.  This identifier is unique. | String |

#### ImportApp method

##### Overview

Imports an app to the Qlik Sense repository.

This method applies only if running in server mode.

It is not recommended to use this method to import an app. Use the Qlik Sense Repository Service API instead. In addition to importing the app, the Qlik Sense Repository Service API migrates the app if needed.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qAppId | Identifier (GUID) of the app entity in the Qlik Sense repository.  The app entity must have been previously created by the repository (via the REST API).  This parameter is mandatory. | String |
| qSrcPath | Path and name of the source app.  This parameter is mandatory. | String |
| qIds | Array of identifiers.  The list of all the objects in the app to be imported must be given. This list must contain the names of all these objects. | Array of string |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": true

}

The operation is successful if **qSuccess**is set to true.

###### Logs

When this method is called, audit activity logs are produced to track the user activity.

In the case of errors, both audit activity logs and system services logs are produced.

The log files are named as follows:

|  |  |
| --- | --- |
| **Audit activity log** | **System service log** |
| *<MachineName>\_AuditActivity\_Engine.txt* | *<MachineName>\_Service\_Engine.txt* |

The log files are located in:

*%ProgramData%/Qlik/Sense/Log/Engine*

For more information, see Qlik Sense troubleshooting guide

#### ImportAppEx method

##### Overview

Imports an app to the Qlik Sense repository. The connections in the app can be excluded from the import.

This method applies only if running in server mode.

It is not recommended to use this method to import an app. Use the Qlik Sense Repository Service API instead. In addition to importing the app, the Qlik Sense Repository Service API migrates the app if needed.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qAppId | Identifier (GUID) of the app entity in the Qlik Sense repository.  The app entity must have been previously created by the repository (via the REST API).  This parameter is mandatory. | String |
| qSrcPath | Path and name of the source app.  This parameter is mandatory. | String |
| qIds | Array of identifiers.  The list of all the objects in the app to be imported must be given. This list must contain the names of all these objects. | Array of string |
| qExcludeConnections | If this parameter is set to true, the connections in the app are not imported. | Boolean |

##### Outputs

The following is returned in the output:

"result": {}

###### Logs

When this method is called, audit activity logs are produced to track the user activity.

In the case of errors, both audit activity logs and system services logs are produced.

The log files are named as follows:

|  |  |
| --- | --- |
| **Audit activity log** | **System service log** |
| *<MachineName>\_AuditActivity\_Engine.txt* | *<MachineName>\_Service\_Engine.txt* |

The log files are located in:

*%ProgramData%/Qlik/Sense/Log/Engine*

For more information, see Qlik Sense troubleshooting guide.

#### InteractDone method

##### Overview

Informs the engine that a user interaction (which was earlier requested by the engine) was performed and indicates the engine what to do next.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRequestId | Identifier of the request.  Corresponds to the identifier of the *DoReload*request. | Integer |
| qDef | User response to the current interaction. | [InteractDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-InteractDone-method.htm#InteractDef) |

[ClosedInteractDef](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Is ignored by the engine.  Optional property. | Integer |
| qTitle | Is ignored by the engine.  Optional property. | String |
| qMsg | Is ignored by the engine.  Optional property. | String |
| qButtons | Is ignored by the engine.  Optional property. | Integer |
| qLine | Is ignored by the engine.  Optional parameter. | String |
| qOldLineNr | Is ignored by the engine.  Optional property. | Integer |
| qNewLineNr | Is ignored by the engine.  Optional property. | Integer |
| qPath | Is ignored by the engine.  Optional property. | String |
| qHidden | Is ignored by the engine.  Optional property. | Boolean |
| qResult | **Interactions of type IT\_SCRIPTLINE, IT\_BREAK and IT\_END**  One of:  • 0: to continue the reload  • 1: to perform a *IT\_BREAK* interaction.  • 2: to end the script execution and keep the data loaded up till now. The resulting data model contains the data that were loaded up to the last line of code that was executed in the reload script.  • -1: to abort the script execution and discard all loaded data. The previous data model is restored.  **Interaction of type IT\_MSGBOX**  One of:  • 1: to continue the reload  • Other values: to stop the script execution. | Integer |
| qInput | Is not used in Qlik Sense.  Optional property. | String |

##### Outputs

None

#### IsDesktopMode method

##### Overview

Indicates whether or not the user works in standalone mode.

##### Parameters

No parameters.

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <true or false>

}

*True*means that the user works in standalone mode.

#### IsPersonalMode method

##### Overview

Indicates whether or not the user works in personal mode.

This method is deprecated.

##### Parameters

No parameters.

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <true or false>

}

*True*means that the user works in personal mode.

#### IsValidConnectionString method

##### Overview

Checks if a connection string is valid.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qConnection | Information about the connection. | [Connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-Class-IsValidConnectionString-method.htm#Connection) |

[ClosedConnection](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the connection.  Is generated by the engine and is unique. | String |
| qName | Name of the connection.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qConnectionString | One of:   * ODBC CONNECT TO [<provider name>] * OLEDB CONNECT TO [<provider name>] * CUSTOM CONNECT TO [<provider name>] * "<local absolute or relative path,UNC path >" * "<URL>"   Connection string.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qType | One of:   * ODBC * OLEDB * <Name of the custom connection file> * folder * internet   Type of the connection.  This parameter is mandatory and must be set when creating or modifying a connection.  For ODBC, OLEDB and custom connections, the engine checks that the connection type matches the connection string.  The type is not case sensitive. | String |
| qUserName | Name of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the user name. | String |
| qPassword | Password of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the password. | String |
| qModifiedDate | Is generated by the engine.  Creation date of the connection or last modification date of the connection. | String |
| qMeta | Information about the connection. | *NxMeta* |

[[Closed](javascript:void(0);)NxMeta](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": <true or false>

}

*True*means that the connection string is correct.

#### OpenDoc method

##### Overview

Opens an app and checks if the app needs to be migrated (if the app is deprecated).

The [OpenDoc method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-OpenDoc-method.htm) compares the version of the app with the version of Qlik Sense and migrates the app to the current version of Qlik Sense if necessary. Once the migration is done, the app is opened.

If no migration is needed, the app is opened immediately.

The following applies:

* The app version is lower than 0.95: no migration is done. Apps older than the version 0.95 are not supported.
* The app version is at least 0.95 and less than the Qlik Sense version: the app is migrated and then opened.
* Qlik Sense and the app have the same version: the app is opened, no migration is needed.

If the app is read-only, the app migration cannot occur. An error message is sent.

###### Backups

Apps are automatically backed up before a migration, if using Qlik Sense desktop.

###### Qlik Sense

When using Qlik Sense server, no automatic back up is run. The back up should be done manually.

###### Qlik Sense Desktop

The backup files are located in *%userprofile%\Documents\Qlik\Sense\AppsBackup\<Qlik Sense Desktopversion*>.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDocName | • In server mode:  GUID of the app.  • In desktop mode:  Name of the app to retrieve.  This parameter is mandatory. | String |
| qUserName | Name of the user that opens the app.  This parameter is optional. | String |
| qPassword | Password of the user.  This parameter is optional. | String |
| qSerial | Current Qlik Sense serial number.  This parameter is optional. | String |
| qNoData | Set this parameter to true to be able to open an app without loading its data.  When this parameter is set to true, the objects in the app are present but contain no data. The script can be edited and reloaded.  This parameter is optional and the default value is false. | Boolean |

###### Logs

When this method is called, audit activity logs are produced to track the user activity.

In the case of errors, both audit activity logs and system services logs are produced.

The log files are named as follows:

|  |  |
| --- | --- |
| **Audit activity log** | **System service log** |
| *<MachineName>\_AuditActivity\_Engine.txt in server mode*  *<MachineName>\_AuditActivity\_Engine.log in desktop mode* | *<MachineName>\_Service\_Engine.txt* in server mode  *<MachineName>\_Service\_Engine.log* in desktop mode |

###### Where to find the log files

The location of the log files depends on if you are running Qlik Sense Desktop or Qlik Sense.

|  |  |
| --- | --- |
| **Qlik Sense** | **Qlik Sense Desktop** |
| *%ProgramData%/Qlik/Sense/Log/Engine* | *%UserProfile%/Documents/Qlik/Sense/Log* |

For more information, see Qlik Sense troubleshooting guide.

#### OSName method

##### Overview

Returns the name of the operating system.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": "<operating system name>"

}

#### OSVersion method

##### Overview

Returns the version number of the operating system.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": "<operating system version>"

}

#### ProductVersion method

##### Overview

Returns the Qlik Sense version number.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": "<Qlik Sense version>"

}

#### ReloadExtensionList method

##### Overview

Reloads the list of extensions.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

#### ReplaceAppFromID method

##### Overview

Replaces an app with the objects from a source app.

The list of objects in the app to be replaced must be defined in *qIds*.

The data model of the app cannot be updated.

This method applies only if running in server mode.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTargetAppId | Identifier (GUID) of the target app.  The target app is the app to be replaced.  This parameter is mandatory. | String |
| qSrcAppID | Identifier (GUID) of the source app.  The objects in the source app will replace the objects in the target app.  This parameter is mandatory. | String |
| qIds | QRS identifiers (GUID) of the objects in the target app to be replaced. Only QRS-approved GUIDs are applicable.  An object that is QRS-approved, is for example an object that has been published (i.e not private anymore).  If an object is private, it should not be included in this list.  If *qIds* is empty, the engine automatically creates a list that contains all QRS-approved objects.  If the array of identifiers contains objects that are not present in the source app, the objects related to these identifiers are removed from the target app. | Array of string |

##### Outputs

The following is returned in the output:

"result": {

"qSuccess": <true or false>

}

#### ShutdownProcess method

##### Overview

Shutdowns the Qlik engine.

This method applies only if running a local installation of Qlik Sense.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {}

### Variable class

This class describes all the methods that apply at variable level.

Methods in this class are deprecated. Use methods in the [GenericVariable class](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class.htm) instead.

The *handle* member in the JSON request for all methods listed in this section is the handle of the variable.

[ForceContent method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/VariableClass/Variable-class-ForceContent-method.htm)

[GetContent method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/VariableClass/Variable-class-GetContent-method.htm)

[GetNxProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/VariableClass/Variable-class-GetNxProperties-method.htm)

[GetRawContent method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/VariableClass/Variable-class-GetRawContent-method.htm)

[SetContent method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/VariableClass/Variable-class-SetContent-method.htm)

[SetNxProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/VariableClass/Variable-class-SetNxProperties-method.htm)

#### ForceContent method

##### Overview

Sets the value of a dual variable overriding any input constraints.

This method is deprecated (not recommended to use). Use [SetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-SetProperties-method.htm) instead.

The *ForceContent method* does not evaluate any expression.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qs | String representation of a dual value.  Set this parameter to "", if the string representation is to be Null.  This parameter is mandatory. | String |
| qd | Numeric representation of a dual value.  This parameter is mandatory. | Double |

##### Outputs

The following is returned in the output:

"result": {}

#### GetContent method

##### Overview

Returns the calculated value of a variable.

This method is deprecated (not recommended to use). Use [GetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-GetProperties-method.htm) instead.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qContent | Information about the calculated value. | [AlfaNumString](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/VariableClass/Variable-class-GetContent-method.htm#AlfaNumString) |

[Closed](javascript:void(0);)[AlfaNumString](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qString | Calculated value. | String |
| qIsNum | Is set to true if the value is a numeric. | Boolean |

#### GetNxProperties method

##### Overview

Gets the properties of a variable.

This method is deprecated (not recommended to use). Use [GetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-GetProperties-method.htm) instead.

##### Parameters

None

##### Outputs

The following is returned in the output:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProperties | Information about the properties of the variable. | [NxVariableProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/VariableClass/Variable-class-GetNxProperties-method.htm#NxVariableProperties) |

[Closed](javascript:void(0);)[NxVariableProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the variable. | String |
| qNumberPresentation | Defines the format of the value of a variable. | *FieldAttributes* |
| qIncludeInBookmark | Set this property to true to update the variable when applying a bookmark.  The value of a variable can affect the state of the selections.  The default value is false. | Boolean |
| qUsePredefListedValues | The value of a variable can be an enumeration.  Set this property to true to reflect the predefined values in an enumeration. | Boolean |
| qPreDefinedList | List of enumerations.  This property is used if*qUsePredefListedValues*is set to true. | Array of String |

[[Closed](javascript:void(0);)FieldAttributes](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the field.  Default is U. | One of:  • U for UNKNOWN type.  • A for ASCII; Numeric fields values contain only standard ASCII characters.  • I for INTEGER; Numeric fields values are shown as integer numbers.  • R for REAL; Numeric fields values are shown as real numbers.  • F for FIX; Numeric fields values are shown as numbers with a fix number of decimals.  • M for MONEY; Numeric fields values are shown as in the money format.  • D for DATE; Numeric fields values are shown as dates.  • T for TIME; Numeric fields values are shown as times.  • TS TIMESTAMP; Numeric fields values are shown as time stamps.  • IV for INTERVAL; Numeric fields values are shown as intervals. |
| qnDec | Number of decimals.  Default is 10. | Integer between 0 and 15. |
| qUseThou | Defines whether or not a thousands separator must be used.  Default is 0. | One of:   * 0 for false * 1 for true |
| qFmt | Defines the format pattern that applies to*qText*.  Is used in connection to the type of the field (parameter **qType**).  For more information, see Struct[FieldAttributes](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldAttributes.htm).  Example: *YYYY-MM-DD* for a date | String |
| qDec | Defines the decimal separator.  Example:**.** | String |
| qThou | Defines the thousand separator (if any).  Is used if **qUseThou**is set to 1.  Example:**,** | String |

#### GetRawContent method

##### Overview

Returns the raw value of a variable.

This method is deprecated (not recommended to use). Use [GetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-GetProperties-method.htm) instead.

##### Parameters

None

##### Outputs

The following is returned in the output:

"result": {

"qReturn": "<Definition of the variable>"

}

#### SetContent method

##### Overview

Sets a value to a variable.

This method is deprecated (not recommended to use). Use [SetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-SetProperties-method.htm) instead.

##### Parameters

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qContent | Value of the variable.  This parameter is mandatory. | String |
| qUpdateMRU | If set to true, the value is added to the Most Recently Used (MRU) list.  This parameter is mandatory. | Boolean |

##### Outputs

The following is returned in the output:

"result": {

"qReturn": true/false

}

The operation is successful if qReturn is set to true.

#### SetNxProperties method

##### Overview

Sets some properties to a variable.

This method is deprecated (not recommended to use). Use [SetProperties method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericVariableClass/GenericVariable-class-SetProperties-method.htm) instead.

##### Parameters

In addition to the properties described below, dynamic properties can be added.

The following properties can be filled:

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProperties | Information about the properties of the variable | [NxVariableProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/VariableClass/Variable-class-SetNxProperties-method.htm#NxVariableProperties) |

[ClosedNxVariableProperties](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the variable. | String |
| qNumberPresentation | Defines the format of the value of a variable. | *FieldAttributes* |
| qIncludeInBookmark | Set this property to true to update the variable when applying a bookmark.  The value of a variable can affect the state of the selections.  The default value is false. | Boolean |
| qUsePredefListedValues | The value of a variable can be an enumeration.  Set this property to true to reflect the predefined values in an enumeration. | Boolean |
| qPreDefinedList | List of enumerations.  This property is used if*qUsePredefListedValues*is set to true. | Array of String |

[[Closed](javascript:void(0);)FieldAttributes](javascript:void(0);)

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the field.  Default is U. | One of:  • U for UNKNOWN type.  • A for ASCII; Numeric fields values contain only standard ASCII characters.  • I for INTEGER; Numeric fields values are shown as integer numbers.  • R for REAL; Numeric fields values are shown as real numbers.  • F for FIX; Numeric fields values are shown as numbers with a fix number of decimals.  • M for MONEY; Numeric fields values are shown as in the money format.  • D for DATE; Numeric fields values are shown as dates.  • T for TIME; Numeric fields values are shown as times.  • TS TIMESTAMP; Numeric fields values are shown as time stamps.  • IV for INTERVAL; Numeric fields values are shown as intervals. |
| qnDec | Number of decimals.  Default is 10. | Integer between 0 and 15. |
| qUseThou | Defines whether or not a thousands separator must be used.  Default is 0. | One of:   * 0 for false * 1 for true |
| qFmt | Defines the format pattern that applies to*qText*.  Is used in connection to the type of the field (parameter **qType**).  For more information, see Struct[FieldAttributes](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldAttributes.htm).  Example: *YYYY-MM-DD* for a date | String |
| qDec | Defines the decimal separator.  Example:**.** | String |
| qThou | Defines the thousand separator (if any).  Is used if **qUseThou**is set to 1.  Example:**,** | String |

##### Outputs

The following is returned in the output:

"result": {}

## Structs

Overview

A *struct* is a value type that is used to encapsulate small groups of related data.

This section describes all the structs in the Qlik Engine API.

[AlfaNumString](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/AlfaNumString.htm)

[AlternateStateData](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/AlternateStateData.htm)

[AppEntry](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/AppEntry.htm)

[AppObjectList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/AppObjectList.htm)

[AppObjectListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/AppObjectListDef.htm)

[AppScriptObject](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/AppScriptObject.htm)

[AssociationScore](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/AssociationScore.htm)

[BNFDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/BNFDef.htm)

[BookmarkFieldItem](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/BookmarkFieldItem.htm)

[BookmarkList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/BookmarkList.htm)

[BookmarkListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/BookmarkListDef.htm)

[BookmarkVariableItem](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/BookmarkVariableItem.htm)

[CalendarStrings](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/CalendarStrings.htm)

[CharRange](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/CharRange.htm)

[ChildList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/ChildList.htm)

[ChildListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/ChildListDef.htm)

[CodePage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/CodePage.htm)

[Connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/Connection.htm)

[ContentLibraryList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/ContentLibraryList.htm)

[ContentLibraryListItem](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/ContentLibraryListItem.htm)

[CustomConnector](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/CustomConnector.htm)

[Database](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/Database.htm)

[DatabaseInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/DatabaseInfo.htm)

[DatabaseOwner](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/DatabaseOwner.htm)

[DataField](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/DataField.htm)

[DataRecord](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/DataRecord.htm)

[DataTable](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/DataTable.htm)

[DataTableEx](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/DataTableEx.htm)

[DelimiterInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/DelimiterInfo.htm)

[DerivedFieldsInTableData](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/DerivedFieldsInTableData.htm)

[DimensionList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/DimensionList.htm)

[DimensionListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/DimensionListDef.htm)

[DocListEntry](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/DocListEntry.htm)

[DriveInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/DriveInfo.htm)

[EditorBreakpoint](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/EditorBreakpoint.htm)

[EmbeddedSnapshot](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/EmbeddedSnapshot.htm)

[EmbeddedSnapshotDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/EmbeddedSnapshotDef.htm)

[ErrorData](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/ErrorData.htm)

[FieldAttributes](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldAttributes.htm)

[FieldDefEx](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldDefEx.htm)

[FieldDescription](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldDescription.htm)

[FieldInTableData](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldInTableData.htm)

[FieldList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldList.htm)

[FieldListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldListDef.htm)

[FieldScores](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldScores.htm)

[FieldValue](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldValue.htm)

[FileDataFormat](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FileDataFormat.htm)

[FolderItem](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FolderItem.htm)

[Function](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/Function.htm)

[GenericAppObjectEntry](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericAppObjectEntry.htm)

[GenericAppObjectMetaData](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericAppObjectMetaData.htm)

[GenericBookmarkEntry](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericBookmarkEntry.htm)

[GenericBookmarkLayout](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericBookmarkLayout.htm)

[GenericBookmarkProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericBookmarkProperties.htm)

[GenericDimensionInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericDimensionInfo.htm)

[GenericDimensionLayout](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericDimensionLayout.htm)

[GenericDimensionProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericDimensionProperties.htm)

[GenericMeasureLayout](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericMeasureLayout.htm)

[GenericMeasureProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericMeasureProperties.htm)

[GenericObjectEntry](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericObjectEntry.htm)

[GenericObjectLayout](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericObjectLayout.htm)

[GenericObjectProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericObjectProperties.htm)

[GenericVariableLayout](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericVariableLayout.htm)

[GenericVariableProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericVariableProperties.htm)

[HyperCube](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/HyperCube.htm)

[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/HyperCubeDef.htm)

[InteractDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/InteractDef.htm)

[ListObject](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/ListObject.htm)

[ListObjectDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/ListObjectDef.htm)

[LocaleInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/LocaleInfo.htm)

[MeasureList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/MeasureList.htm)

[MeasureListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/MeasureListDef.htm)

[MediaList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/MediaList.htm)

[MediaListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/MediaListDef.htm)

[MediaListItem](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/MediaListItem.htm)

[NxAppLayout](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxAppLayout.htm)

[NxAppProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxAppProperties.htm)

[NxAttrExprDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxAttrExprDef.htm)

[NxAttrExprInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxAttrExprInfo.htm)

[NxAttributeExpressionValues](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxAttributeExpressionValues.htm)

[NxAutoSortByStateDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxAutoSortByStateDef.htm)

[NxBookmark](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxBookmark.htm)

[NxCell](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxCell.htm)

[NxCellPosition](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxCellPosition.htm)

[NxCellRows](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxCellRows.htm)

[NxContainerEntry](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxContainerEntry.htm)

[NxCurrentSelectionItem](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxCurrentSelectionItem.htm)

[NxDataAreaPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxDataAreaPage.htm)

[NxDataPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxDataPage.htm)

[NxDerivedField](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxDerivedField.htm)

[NxDerivedFieldDescriptionList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxDerivedFieldDescriptionList.htm)

[NxDerivedFieldsData](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxDerivedFieldsData.htm)

[NxDerivedGroup](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxDerivedGroup.htm)

[NxDimension](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxDimension.htm)

[NxDimensionInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxDimensionInfo.htm)

[NxFieldDescription](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxFieldDescription.htm)

[NxFieldProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxFieldProperties.htm)

[NxFieldSelectionInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxFieldSelectionInfo.htm)

[NxFieldSelectionMode](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxFieldSelectionMode.htm)

[NxGroupTail](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxGroupTail.htm)

[NxHighlightRanges](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxHighlightRanges.htm)

[NxInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxInfo.htm)

[NxInlineDimensionDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxInlineDimensionDef.htm)

[NxInlineMeasureDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxInlineMeasureDef.htm)

[NxLayoutErrors](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxLayoutErrors.htm)

[NxLibraryDimensionDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxLibraryDimensionDef.htm)

[NxLibraryMeasureDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxLibraryMeasureDef.htm)

[NxLinkedObjectInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxLinkedObjectInfo.htm)

[NxListObjectExpression](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxListObjectExpression.htm)

[NxListObjectExpressionDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxListObjectExpressionDef.htm)

[NxListObjectSelect](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxListObjectSelect.htm)

[NxLocatedExpression](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxLocatedExpression.htm)

[NxMatchingFieldInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxMatchingFieldInfo.htm)

[NxMeasure](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxMeasure.htm)

[NxMeasureInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxMeasureInfo.htm)

[NxMeta](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxMeta.htm)

[NxMetaDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxMetaDef.htm)

[NxPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxPage.htm)

[NxPatch](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxPatch.htm)

[NxPivotDimensionCell](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxPivotDimensionCell.htm)

[NxPivotPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxPivotPage.htm)

[NxPivotValuePoint](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxPivotValuePoint.htm)

[NxRange](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxRange.htm)

[NxRangeSelectInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxRangeSelectInfo.htm)

[NxSelectionCell](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxSelectionCell.htm)

[NxSelectionInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxSelectionInfo.htm)

[NxSimpleValue](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxSimpleValue.htm)

[NxStackedPivotCell](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxStackedPivotCell.htm)

[NxStackPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxStackPage.htm)

[NxStateCounts](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxStateCounts.htm)

[NxStreamListEntry](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxStreamListEntry.htm)

[NxValidationError](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxValidationError.htm)

[NxVariableListItem](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxVariableListItem.htm)

[NxVariableProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxVariableProperties.htm)

[NxViewPort](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxViewPort.htm)

[OdbcDsn](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/OdbcDsn.htm)

[OleDbProvider](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/OleDbProvider.htm)

[OtherTotalSpecProp](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/OtherTotalSpecProp.htm)

[Point](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/Point.htm)

[ProgressMessage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/ProgressMessage.htm)

[Range](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/Range.htm)

[RangeSelectInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/RangeSelectInfo.htm)

[Rect](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/Rect.htm)

[ScriptSyntaxError](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/ScriptSyntaxError.htm)

[SearchAssociationResult](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchAssociationResult.htm)

[SearchCharRange](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchCharRange.htm)

[SearchCombinationOptions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchCombinationOptions.htm)

[SearchFieldDictionary](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchFieldDictionary.htm)

[SearchFieldMatch](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchFieldMatch.htm)

[SearchGroup](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchGroup.htm)

[SearchGroupItem](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchGroupItem.htm)

[SearchGroupItemMatch](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchGroupItemMatch.htm)

[SearchGroupItemOptions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchGroupItemOptions.htm)

[SearchGroupOptions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchGroupOptions.htm)

[SearchMatchCombination](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchMatchCombination.htm)

[SearchPage](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchPage.htm)

[SearchResult](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchResult.htm)

[SearchSuggestionResult](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchSuggestionResult.htm)

[SearchSuggestItem](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchSuggestItem.htm)

[SearchTermResult](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SearchTermResult.htm)

[SelectInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SelectInfo.htm)

[SelectionObject](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SelectionObject.htm)

[SelectionObjectDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SelectionObjectDef.htm)

[Size](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/Size.htm)

[SortCriteria](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SortCriteria.htm)

[SourceKeyRecord](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/SourceKeyRecord.htm)

[StaticContentList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/StaticContentList.htm)

[StaticContentListItem](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/StaticContentListItem.htm)

[StaticContentUrl](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/StaticContentUrl.htm)

[StaticContentUrlDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/StaticContentUrlDef.htm)

[StringExpression](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/StringExpression.htm)

[TableRecord](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/TableRecord.htm)

[TableViewBroomPointSaveInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/TableViewBroomPointSaveInfo.htm)

[TableViewConnectionPointSaveInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/TableViewConnectionPointSaveInfo.htm)

[TableViewCtlSaveInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/TableViewCtlSaveInfo.htm)

[TableViewDlgSaveInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/TableViewDlgSaveInfo.htm)

[TableViewSaveInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/TableViewSaveInfo.htm)

[TableViewTableWinSaveInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/TableViewTableWinSaveInfo.htm)

[TextMacro](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/TextMacro.htm)

[UndoInfo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/UndoInfo.htm)

[UndoInfoDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/UndoInfoDef.htm)

[ValueExpr](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/ValueExpr.htm)

[ValueExpression](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/ValueExpression.htm)

[VariableList](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/VariableList.htm)

[VariableListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/VariableListDef.htm)

### AlfaNumString

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qString | Calculated value. | String |
| qIsNum | Is set to true if the value is a numeric. | Boolean |

### AlternateStateData

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateName | Name of the alternate state.  Default is current selections: $ | String |
| qFieldItems | List of the selections | Array of *BookmarkFieldItem* |

### AppEntry

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qID | Identifier of the app. | String |
| qTitle | Title of the app. | String |
| qPath | Path of the app. | String |
| qLastReloadTime | Last reload time of the app. | String |
| qReadOnly | Is set to true if the app is read-only. | Boolean |
| qMeta | Meta data. | *NxMeta* |
| qThumbnail | App thumbnail. | *StaticContentUrl* |

### AppObjectList

#### Overview

Lists the app objects. Is the layout for [AppObjectListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/AppObjectListDef.htm).

An app object is a generic object created at app level.

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | Information about the list of dimensions | Array of *NxContainerEntry* |

### AppObjectListDef

#### Overview

Defines the list of objects in an app.

An app object is a generic object created at app level.

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the app list. | String |
| qData | Data that you want to include in the app list definition.  You need to enter the paths to the information you want to retrieve. | JSON |

### AppScriptObject

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qScript | Name of the script. | String |
| qBreakpointList | Lists the breakpoints in the script of an app. | Array of *EditorBreakpoint* |
| qFavoriteVariables | Lists the favorite variables. | Array of String |

### AssociationScore

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFieldPairName | Pair of fields.  *<FieldName1>*/ *<FieldName2>*  Where:  <*FieldName1*> is a field in the table 1 (defined in *qTable1*)  <*FieldName2*> is a field in the table 2 (defined in *qTable2*)  If the field is a synthetic key, the name of the field is preceded by*[Synthetic key]:*. | String |
| qScoreSummary | Flag used to interpret calculated scores.  One of the following values or sum of values that apply:   * 0: The cardinal ratio cannot be zero but the symbol score and the row score can be zero. * -1: The fields do not have the same type. * -2: The number of rows of the field*FieldName1*is zero. * -4: The number of distinct values of the field *FieldName1*is zero. * -8: The number of rows of the field*FieldName2*is zero. * -16: The number of distinct values of the field *FieldName2*is zero.   Example:  The number of rows of the field *FieldName1*is zero, and the number of distinct values of the field *FieldName2*is zero, then *qScoreSummary*is -18. | Integer |
| qField1Scores | Association information about the field*FieldName1*defined in *qFieldPairName*. | *FieldScores* |
| qField2Scores | Association information about the field*FieldName2*defined in *qFieldPairName*. | *FieldScores* |

### BNFDef

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qBnf | Array of token references that all together build up the definition of the current token.  If the array is not empty, it means that the definition is a BNF rule (*qIsBnfRule*is set to true).  There are a few exceptions where some BNF rules have an empty array (*qBnf*is empty). | Array of Integer |
| qNbr | Number of the current token definition. | Integer |
| qPNbr | Number of the parent rule definition. | Integer |
| qHelpId | Reference identifier to a function described in the documentation.The identifier is stored in the definition of the token containing the function name.  Is not used in Qlik Sense. | Integer |
| qName | Token name.  One of:   * a rule name * an identifier * a literal value | String |
| qStr | Literal string of the token.  Examples: 'Round' and '('. | String |
| qIsBnfRule | If set to true, it means that a list of related rule tokens is assigned to *qBnf*.  This parameter is optional. The default value is false. | Boolean |
| qScriptStatement | If set to true, it means that the definition specifies a script statement.  This parameter is optional. The default value is false. | Boolean |
| qControlStatement | If set to true, it means that the definition specifies a control statement.  This parameter is optional. The default value is false. | Boolean |
| qBnfLiteral | If set to true, it means that the definition specifies a literal token.  This parameter is optional. The default value is false. | Boolean |
| qQvFunc | If set to true, it means that the definition is related to a Qlik Sensefunction. It cannot be an aggregation function.  This parameter is optional. The default value is false. | Boolean |
| qAggrFunc | If set to true, it means that the definition is related to an aggregation function.  This parameter is optional. The default value is false. | Boolean |
| qFG | Group of the function. | One of:   * ALL for FUNC\_GROUP\_ALL, * U for FUNC\_GROUP\_UNKNOWN, * NONE for FUNC\_GROUP\_NONE, * AGGR for FUNC\_GROUP\_AGGR, * NUM for FUNC\_GROUP\_NUMERIC, * RNG for FUNC\_GROUP\_RANGE, * EXP for FUNC\_GROUP\_EXPONENTIAL\_AND\_LOGARITHMIC, * TRIG for FUNC\_GROUP\_TRIGONOMETRIC\_AND\_HYPERBOLIC, * FIN for FUNC\_GROUP\_FINANCIAL, * MATH for FUNC\_GROUP\_MATH\_CONSTANT\_AND\_PARAM\_FREE, * COUNT for FUNC\_GROUP\_COUNTER, * STR for FUNC\_GROUP\_STRING, * MAPP for FUNC\_GROUP\_MAPPING, * RCRD for FUNC\_GROUP\_INTER\_RECORD, * CND for FUNC\_GROUP\_CONDITIONAL, * LOG for FUNC\_GROUP\_LOGICAL, * NULL for FUNC\_GROUP\_NULL, * SYS for FUNC\_GROUP\_SYSTEM, * FILE for FUNC\_GROUP\_FILE, * TBL for FUNC\_GROUP\_TABLE, * DATE for FUNC\_GROUP\_DATE\_AND\_TIME, * NUMI for FUNC\_GROUP\_NUMBER\_INTERPRET, * FRMT for FUNC\_GROUP\_FORMATTING, * CLR for FUNC\_GROUP\_COLOR, * RNK for FUNC\_GROUP\_RANKING |
| qFieldFlag | If set to true, it means that the definition is related to a field.  This parameter is optional. The default value is false. | Boolean |
| qMT | Type of the data. | One of:   * N for NOT\_META * D for META\_DOC\_NAME * R for META\_RET\_TYPE |
| qDepr | Indicates if a script statement, a chart or a script function is deprecated (not recommended to use).  If set to true, it means that the script statement or the function is not recommended for use in Qlik Sense.  This parameter is optional. The default value is false. | Boolean |

### BookmarkFieldItem

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDef | Name and type of the field | *FieldDefEx* |
| qLocked | Indicates if the field is locked.  Default is false. | Boolean |
| qSelectInfo | Information on the selections criteria | *SelectInfo* |
| qValues | List of the selected values  Either the list of selected values or the list of excluded values is displayed. | Array of *FieldValue* |
| qExcludedValues | List of excluded values.  Either the list of selected values or the list of excluded values is displayed. | Array of *FieldValue* |
| qAndMode | If set to true, selections within a list object are made in AND mode; If you have a list object that lists all customers, by selecting Customer 1 and Customer 2 while in and-mode, all records that are associated with Customer 1 **and**Customer 2 are selected.  The default value is false; selections within a list object are made in OR mode. If you have a list object that lists all customers, by selecting Customer 1 and Customer 2 while in or-mode, all records that are associated with either Customer 1 **or**Customer 2 are selected.  This parameter is not returned if set to false. | Boolean |
| qOneAndOnlyOne | If set to true, the field has always one selection (not 0 and not more than 1). If another value is selected, the previous one is unselected.  The default value is false. This parameter is not returned if set to false. | Boolean |

### BookmarkList

#### Overview

Lists the bookmarks. Is the layout for [BookmarkListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/BookmarkListDef.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | Information about the list of bookmarks | Array of *NxContainerEntry* |

### BookmarkListDef

#### Overview

Defines the list of bookmarks.

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the list | String |
| qData | Data | JSON |

### BookmarkVariableItem

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the variable. | String |
| qValue | Value of the variable. | *FieldValue* |

### CalendarStrings

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDayNames | List of short day names. | Array of String |
| qMonthNames | List of short month names. | Array of String |
| qLongDayNames | List of long day names. | Array of String |
| qLongMonthNames | List of long month names. | Array of String |

### CharRange

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qCharPos | Position of the first search occurrence | Integer |
| qCharCount | Number of occurrences found | Integer |

### ChildList

#### Overview

Lists the children of a generic object. Is the layout for [ChildListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/ChildListDef.htm).

ChildList is used by the [GetLayout method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-GetLayout-method.htm) to list the children of a generic object.

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | Information about the items in the app object | Array of *NxContainerEntry* |

### ChildListDef

#### Overview

Defines the list of children of a generic object.

What is defined in *ChildListDef*has an impact on what the *GetLayout*method returns. See [ChildListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/ChildListDef.htm#Example) for more information.

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qData | Data that you want to include in the child list definition.  You need to enter the paths to the information you want to retrieve. | JSON |

### CodePage

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qNumber | Number of the code page | Integer |
| qName | Name of the code page | String |
| qDescription | Description of the code page | String |

### Connection

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the connection.  Is generated by the engine and is unique. | String |
| qName | Name of the connection.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qConnectionString | One of:   * ODBC CONNECT TO [<provider name>] * OLEDB CONNECT TO [<provider name>] * CUSTOM CONNECT TO [<provider name>] * "<local absolute or relative path,UNC path >" * "<URL>"   Connection string.  This parameter is mandatory and must be set when creating or modifying a connection. | String |
| qType | One of:   * ODBC * OLEDB * <Name of the custom connection file> * folder * internet   Type of the connection.  This parameter is mandatory and must be set when creating or modifying a connection.  For ODBC, OLEDB and custom connections, the engine checks that the connection type matches the connection string.  The type is not case sensitive. | String |
| qUserName | Name of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the user name. | String |
| qPassword | Password of the user who creates the connection.  This parameter is optional; it is only used for OLEDB, ODBC and CUSTOM connections.  A call to [GetConnection method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-GetConnection-method.htm) does not return the password. | String |
| qModifiedDate | Is generated by the engine.  Creation date of the connection or last modification date of the connection. | String |
| qMeta | Information about the connection. | *NxMeta* |

### ContentLibraryList

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | Information about the content library. | *ContentLibraryListItem* |

### ContentLibraryListItem

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the library. | String |
| qAppSpecific | Is set to true if the library is specific to the app (not a global content library). | Boolean |
| qMeta | Information about publishing and permissions. | Null or *NxMeta* |

### CustomConnector

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProvider | Name of the custom connector file. | String |
| qParent | Name of the parent folder that contains the custom connector file. | String |
| qDisplayName | Name of the custom connector as displayed in the Qlik interface. | String |
| qMachineMode | Mode of the machine (64 or 32 bits). | One of:   * CONNECT\_DEFAULT: used internally * CONNECT\_64 * CONNECT\_32 |

### Database

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the database. | String |
| qIsDefault | Is set to true if the database is set by default. | Boolean |

### DatabaseInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDBMSName | Name of the product accessed by the provider | String |
| qDBUsage | If set to true, it means that the data source contains some databases. | Boolean |
| qOwnerUsage | If set to true, it means that the data source contains some owners. | Boolean |
| qDBSeparator | Character string used after the database name  Example with separator "**.**":  **FROM LinkedTablesData.dbo.Months**  Where:   * LinkedTablesData is the database name * dbo is the owner name * Months is the table name | String |
| qOwnerSeparator | Character string used after the owner name  Example with separator "**.**":  **FROM LinkedTablesData.dbo.Months**  Where:   * LinkedTablesData is the database name * dbo is the owner name * Months is the table name | String |
| qDBFirst | If set to true, it means that the database is displayed first, before the owners and tables. | Boolean |
| qQuotePreffix | Prefix used with field, database or owner names that contain special characters or keywords. | String |
| qQuoteSuffix | Suffix used with field, database or owner names that contain special characters or keywords. | String |
| qSpecialChars | List of the special characters | String |
| qDefaultDatabase | Name of the default database | String |
| qKeywords | List of the script keywords | Array of String |

### DatabaseOwner

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the owner | String |

### DataField

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field. | String |
| qIsKey | Is set to true if the field is a primary key. | Boolean |
| qOriginalFieldName | Is shown for fixed records.  *qOriginalFieldName*and *qName*are identical if no field names are used in the file.  *qOriginalFieldName*differs from *qName*if embedded file names are used in the file. | String |

### DataRecord

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValues | List of values inside the table.  The first values (in *result/qPreview/0/qValues*) correspond to the field names in the table.  The following values (from*result/qPreview/1/qValues*) are the values of the fields in the table. | Array of String |

### DataTable

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the table. | String |
| qType | Type of the table.  For examples: Table, View | String |

### DataTableEx

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the table. | String |
| qFields | List of the fields in the table. | Array of *DataField* |
| qFormatSpec | List of format specification items, within brackets.  Examples of specification items:   * file type * embedded labels, no labels * table is <table name> | String |

### DelimiterInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the delimiter.  Example:  "Tab\_DELIMITER" | String |
| qScriptCode | Representation of the delimiter value that is used in the script.  Example:  "'\t'" | String |
| qNumber | Delimiter character number used by the engine to determine how to separate the values. | Integer |
| qIsMultiple | Is set to true if multiple spaces are used to separate the values. | Boolean |

### DerivedFieldsInTableData

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDefinitionName | Name of the derived definition. | String |
| qTags | List of tags. | Array of String |
| qActive | Is set to true is the derived field is in use. | Boolean |

### DimensionList

#### Overview

Lists the dimensions. Is the layout for [DimensionListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/DimensionListDef.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | Information about the list of dimensions | Array of *NxContainerEntry* |

### DimensionListDef

#### Overview

Defines the lists of dimensions.

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the list | String |
| qData | Data | JSON |

### DocListEntry

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDocName | Name of the app. | String |
| qConnectedUsers | Not used. | Integer |
| qFileTime | Last modified time stamp of the app.  This property is only used with Qlik Sensedesktop.  Is set to 0 for Qlik Sense server. | Double |
| qFileSize | Size of remote app.  This property is only used with Qlik Sensedesktop.  Is set to 0 for Qlik Sense server. | Double |
| qDocId | Identifier of the app.   * In local installation mode, the identifier is the path and name of the app * In server mode, the identifier is the app's GUID. | String |
| qMeta | Meta data related to the app. | *NxMeta* |
| qLastReloadTime | Last reload time of the app. | String |
| qReadOnly | If set to true, it means that the app is read-only. | Boolean |
| qTitle | Title of the app. | String |
| qThumbnail | Thumbnail of the app. | *StaticContentUrl* |

### DriveInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDrive | Value of the drive  Examples:  C:\\, E:\\ | String |
| qType | Type of the drive.  *Fixed*means physical drive. | String |
| qName | Name of the drive. | String |

### EditorBreakpoint

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qbufferName | Name of the breakpoint. | String |
| qlineIx | Line number in the script where the breakpoint is set. | Integer |
| qEnabled | If set to true then the breakpoint is enabled (in use). | Boolean |

### EmbeddedSnapshot

#### Overview

Renders the embedded snapshot in an object.

The following is returned:

* Any dynamic properties defined in the bookmark
* Any properties defined in *qEmbeddedSnapshot*

#### Properties

*"qEmbeddedSnapshot": {}*

### EmbeddedSnapshotDef

#### Overview

Defines the embedded snapshot in a generic object.

#### Properties

*"EmbeddedSnapshotDef": {}*

### ErrorData

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qErrorString | Detailed information about the error message. | String |
| qLineEnd | Line termination characters. | String |
| qLine | Script statement where the error occurs. | String |
| qErrorDataCode | Type of the error messages. | One of:   * 0 for EDC\_ERROR * 1 for EDC\_WARNING * 2 for EDC\_CIRCULAR\_REFERENCE (Warning related to circular references) |

### FieldAttributes

#### Overview

Sets the formatting of a field.

The properties of *qFieldAttributes*and the formatting mechanism are described below.

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the field.  Default is U. | One of:  • U for UNKNOWN type.  • A for ASCII; Numeric fields values contain only standard ASCII characters.  • I for INTEGER; Numeric fields values are shown as integer numbers.  • R for REAL; Numeric fields values are shown as real numbers.  • F for FIX; Numeric fields values are shown as numbers with a fix number of decimals.  • M for MONEY; Numeric fields values are shown as in the money format.  • D for DATE; Numeric fields values are shown as dates.  • T for TIME; Numeric fields values are shown as times.  • TS TIMESTAMP; Numeric fields values are shown as time stamps.  • IV for INTERVAL; Numeric fields values are shown as intervals. |
| qnDec | Number of decimals.  Default is 10. | Integer between 0 and 15. |
| qUseThou | Defines whether or not a thousands separator must be used.  Default is 0. | One of:   * 0 for false * 1 for true |
| qFmt | Defines the format pattern that applies to*qText*.  Is used in connection to the type of the field (parameter **qType**).  For more information, see Struct[FieldAttributes](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/FieldAttributes.htm).  Example: *YYYY-MM-DD* for a date | String |
| qDec | Defines the decimal separator.  Example:**.** | String |
| qThou | Defines the thousand separator (if any).  Is used if **qUseThou**is set to 1.  Example:**,** | String |

Formatting mechanism

The formatting mechanism depends on the type set in *qType,* as shown below:

In case of inconsistencies between the type and the format pattern, the format pattern takes precedence over the type.

[[Closed](javascript:void(0);)Type is DATE, TIME, TIMESTAMP or INTERVAL](javascript:void(0);)

The following applies:

* If a format pattern is defined in *qFmt*, the formatting is as defined in *qFmt*.
* If *qFmt*is empty, the formatting is defined by the number interpretation variables included at the top of the script (*TimeFormat*, *DateFormat*, *TimeStampFormat*).
* The properties *qDec*, *qThou*, *qnDec*, *qUseThou*are not used.

[[Closed](javascript:void(0);)Type is INTEGER](javascript:void(0);)

The following applies:

* If a format pattern is defined in *qFmt*, the engine looks at the values set in *qDec*and *qThou*. If these properties are not defined, the formatting mechanism uses the number interpretation variables included at the top of the script (*DecimalSep*and *ThousandSep*).
* If no format pattern is defined in *qFmt*, no formatting is applied. The properties *qDec*, *qThou*,*qnDec*, *qUseThou*and the number interpretation variables defined in the script are not used .

[[Closed](javascript:void(0);)Type is REAL](javascript:void(0);)

The following applies:

* If a format pattern is defined in *qFmt*, the engine looks at the values set in *qDec*and *qThou*. If these properties are not defined, the engine uses the number interpretation variables included at the top of the script (*DecimalSep*and *ThousandSep*).
* If no format pattern is defined in *qFmt*, and if the value is almost an integer value (for example, 14,000012), the value is formatted as an integer. The properties *qDec*, *qThou*, *qnDec*, *qUseThou*are not used.
* If no format pattern is defined in *qFmt*, and if *qnDec*is defined and not 0, the property *qDec*is used. If *qDec*is not defined, the variable *DecimalSep*defined at the top of the script is used.
* If no format pattern is defined in *qFmt*, and if *qnDec*is 0, the number of decimals is 14 and the property *qDec*is used. If *qDec*is not defined, the variable *DecimalSep*defined at the top of the script is used.

[[Closed](javascript:void(0);)Type is FIX](javascript:void(0);)

The following applies:

* If a format pattern is defined in *qFmt*, the engine looks at the values set in *qDec*and *qThou*. If these properties are not defined, the engine uses the number interpretation variables included at the top of the script (*DecimalSep*and *ThousandSep*).
* If no format pattern is defined in *qFmt*, the properties *qDec*and *qnDec*are used. If *qDec*is not defined, the variable *DecimalSep*defined at the top of the script is used.

[[Closed](javascript:void(0);)Type is MONEY](javascript:void(0);)

The following applies:

* If a format pattern is defined in *qFmt*, the engine looks at the values set in *qDec*and *qThou*. If these properties are not defined, the engine uses the number interpretation variables included at the top of any script (*MoneyDecimalSep*and *MoneyThousandSep*).
* If no format pattern is defined in *qFmt*, the engine uses the number interpretation variables included at the top of the script (*MoneyDecimalSep*and *MoneyThousandSep*).

[[Closed](javascript:void(0);)Type is ASCII](javascript:void(0);)

No formatting, *qFmt*is ignored.

### FieldDefEx

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field | String |
| qType | Type of data entity | One of:  • 0 for *NOT\_PRESENT*: the field does not exist  • 1 for *PRESENT*: plain field  •2 for *IS\_EXPR*: calculated dimension |

### FieldDescription

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInternalNumber | Internal number of the field. | Integer |
| qName | Name of the field. | String |
| qSrcTables | List of table names. | Array of String |
| qIsSystem | If set to true, it means that the field is a system field.  The default value is false. | Boolean |
| qIsHidden | If set to true, it means that the field is hidden.  The default value is false. | Boolean |
| qIsSemantic | If set to true, it means that the field is a semantic.  The default value is false. | Boolean |
| qDistinctOnly | If set to true, only distinct field values are shown.  The default value is false. | Boolean |
| qCardinal | Number of distinct field values. | Integer |
| qTotalCount | Total number of field values. | Integer |
| qIsLocked | If set to true, it means that the field is locked.  The default value is false. | Boolean |
| qAlwaysOneSelected | If set to true, it means that the field has one and only one selection (not 0 and not more than 1).  If this property is set to true, the field cannot be cleared anymore and no more selections can be performed in that field.  The default value is false. | Boolean |
| qAndMode | If set to true a logical AND (instead of a logical OR) is used when making selections in a field.  The default value is false. | Boolean |
| qIsNumeric | Is set to true if the value is a numeric.  The default value is false. | Boolean |
| qComment | Field comment. | String |
| qTags | Gives information on a field. For example, it can return the type of the field.  Examples: key, text, ASCII | Array of String |
| qIsDefinitionOnly | If set to true, it means that the field is a field on the fly.  The default value is false. | Boolean |

### FieldInTableData

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field. | String |
| qOriginalFields | Is shown for fixed records.  *qOriginalFieldName*and *qName*are identical if no field names are used in the file.  *qOriginalFieldName*differs from *qName*if embedded file names are used in the file. | Array of String |
| qPresent |  | Boolean |
| qHasNull | This property is set to true if the field contains some Null values. | Boolean |
| qHasWild |  | Boolean |
| qHasDuplicates | This property is set to true if the field contains some duplicate values. | Boolean |
| qIsSynthetic | This property is set to true if the field contains a synthetic key. | Boolean |
| qInformationDensity | Number of records that have values (i.e. not NULL) in the field as compared to the total number of records in the table. | Double |
| qnNonNulls | Number of values that are non Null. | Integer |
| qnRows | Number of rows in the field | Integer |
| qSubsetRatio | Number of distinct values in the field (in the current table) as compared to the total number of distinct values of this field (in all tables). | Double |
| qnTotalDistinctValues | Number of distinct values in the field. | Integer |
| qnPresentDistinctValues |  | Integer |
| qKeyType | Tells if the field is a key field. | One of:   * NOT\_KEY * ANY\_KEY * PRIMARY\_KEY * PERFECT\_KEY |
| qComment | Comment related to the field. | String |
| qTags | List of tags related to the field. | Array of String |
| qDerivedFields | List of the derived fields. | Array of*DerivedFieldsInTableData*. |

### FieldList

#### Overview

Lists the fields present in the data model viewer. Is the layout for [FieldListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/FieldListDef.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | Array of items | Array of *NxFieldDescription* |

### FieldListDef

#### Overview

Defines the fields to show.

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qShowSystem | Shows the system tables if set to true. | Boolean  Default is false |
| qShowHidden | Shows the hidden fields if set to true. | Boolean  Default is false |
| qShowSemantic | Show the semantic fields if set to true. | Boolean  Default is false |
| qShowSrcTables | Shows the tables and fields present in the data model viewer if set to true. | Boolean  Default is false |
| qShowDefinitionOnly | Shows the fields defined on the fly if set to true. | Boolean  Default is false |
| qShowDerivedFields | Shows the fields and derived fields if set to true. | Boolean  Default is false |
| qShowImplicit | Shows the Direct Discovery measure fields if set to true. | Boolean  Default is false |

### FieldScores

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFieldName | Field name.  One of the field names defined in*qFieldPairName.* | String |
| qCardinalRatio | Cardinality of a column/field divided by the number of rows in the table.  If the cardinal ratio is 1, it means that the column is a candidate/primary key. | double |
| qSymbolScore | Number of distinct matches between the two fields defined in *qFieldPairName*divided by the number of distinct values in the field*qFieldName*.  If 0, it means that there are no common values between the two fields defined in*qFieldPairName*. | double |
| qRowScore | Number of matches between the two fields defined in *qFieldPairName*divided by the number of values in the field *qFieldName*.  If 0, it means that there are no common values between the two fields defined in*qFieldPairName*. | double |

### FieldValue

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text related to the field value  This parameter is optional. | String |
| qIsNumeric | Is set to true if the value is a numeric.  This parameter is optional. Default is false. | Boolean |
| qNumber | Numeric value of the field.  This parameter is displayed if *qIsNumeric*is set to true.  This parameter is optional. | Double |

### FileDataFormat

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the file. | *FileType* |
| qLabel | One of:   * embedded labels (field names are present in the file) * no labels * explicit labels (for DIFfiles) | String |
| qQuote | One of:   * None (no quotes) * MSQ (Modern Style Quoting) * Standard (quotes " " or ' ' can be used, but only if they are the first and last non blank characters of a field value.)   This property is used for delimited files. | String |
| qComment | String that marks the beginning of the comment line.  Example: “#” or “//”  The engine ignores the commented lines during the data load.  This property is only used for delimited files. | String |
| qDelimiter | Information about the delimiter.  This property is used for delimited files. | *DelimiterInfo* |
| qCodePage | Character set used in the file. | Integer |
| qHeaderSize | Size of the header.  Example: If the header size is 2, the first two rows in the file are considered as header and not as data. The header can contain the field names. | Integer |
| qRecordSize | Record length.  Each record (row of data) contains a number of columns with a fixed field size.  This property is used for fixed record data files. | Integer |
| qTabSize | Number of spaces that one tab character represents in the table file.  This property is used for fixed record data files. | Integer |
| qIgnoreEOF | Is set to true, the end-of-file character is not taken into account during reload.  This property is used for delimited files and fixed record data files. | Boolean |
| qFixedWidthDelimiters | Positions of the field breaks in the table.  This property is used for fixed record data files. | String |

### FolderItem

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the folder item. | String |
| qType | Type of the folder item. | One of:   * FOLDER * FILE * OTHER |

### Function

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the script function. | String |
| qGroup | Group of the script function. | *FunctionGroup* |
| qSignature | Signature of the script function.  Gives general information about the function. | String |

### GenericAppObjectEntry

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMetaData | Information about meta data | *GenericAppObjectMetaData* |
| qRoot | Information about the generic object | *GenericObjectEntry* |

### GenericAppObjectMetaData

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the app object | String |
| qId | Identifier of the app object | String |

### GenericBookmarkEntry

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProperties | Information about the properties of the bookmark. | *GenericBookmarkProperties* |
| qBookmark | Information about the bookmark. | *NxBookmark* |

### GenericBookmarkLayout

#### Overview

Is the layout for [GenericBookmarkProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericBookmarkProperties.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the object | *NxInfo* |
| qMeta | Information on publishing and permissions | *Null or NxMeta* |
| qBookmark | Information about the bookmark | *NxBookmark* |

### GenericBookmarkProperties

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the bookmark.  This parameter is mandatory. | *NxInfo* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

### GenericDimensionInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qApprMaxGlyphCount | Length of the longest value in the field. | Integer |
| qCardinal | Number of distinct field values | Integer |
| qTags | Gives information on a field. For example, it can return the type of the field.  Examples: key, text, ASCII | Array of String |
| qIsSemantic | If set to true, it means that the field is a semantic. | Boolean |
| qAndMode | If set to true a logical AND (instead of a logical OR) is used when making selections in a field.  The default value is false. | Boolean |

### GenericDimensionLayout

#### Overview

Is the layout for [GenericDimensionProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericDimensionProperties.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the dimension. | *NxInfo* |
| qMeta | Information about publishing and permissions. | *Null or NxMeta* |
| qDim | Name and label of the dimension, information about grouping. | *NxLibraryDimensionDef* |
| qDimInfos | Cardinal and tags related to the dimension.  Length of the longest value in the field. | Array of*GenericDimensionInfo* |

### GenericDimensionProperties

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the dimension.  This parameter is mandatory. | *NxInfo* |
| qDim | Definition of the dimension.  This parameter is mandatory. | *NxLibraryDimensionDef* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

### GenericMeasureLayout

#### Overview

Is the layout for [GenericMeasureProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericMeasureProperties.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the object. | *NxInfo* |
| qMeasure | Information about the measure. | *NxLibraryMeasureDef* |
| qMeta | Information on publishing and permissions. | *Null or NxMeta* |

### GenericMeasureProperties

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the measure.  This parameter is mandatory. | *NxInfo* |
| qMeasure | Definition of the measure.  This parameter is mandatory. | *NxLibraryMeasureDef* |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

### GenericObjectEntry

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qProperty | Information about the generic object properties. | *GenericObjectProperties* |
| qChildren | Information about the children of the generic object. | Array of *GenericObjectEntry*. |
| qEmbeddedSnapshotRef | Reference to a bookmark/snapshot that is embedded in the generic object. | *Null*or*GenericBookmarkEntry*. |

### GenericObjectLayout

#### Overview

Is the layout for [GenericObjectProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericObjectProperties.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the generic object. | *NxInfo* |
| qMeta | Information about publishing and permissions.  This parameter is optional. | *Null or NxMeta* |
| qExtendsId | Should be set to create an object that is linked to another object. Enter the identifier of the object you want to link to.  If you do not want to link your object, set this parameter to an empty string. | String |
| qHasSoftPatches | Is set to true if the generic object contains some properties that are not persistent (a soft patch was applied). | Boolean |
| qError | This parameter is optional.  Gives information on the error. | *Null*or *NxLayoutErrors* |
| qSelectionInfo | Information about the selections. | *NxSelectionInfo* |

### GenericObjectProperties

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qExtendsId | Should be set to create an object that is linked to another object. Enter the identifier of the linking object (i.e the object you want to link to).  This parameter is mandatory.  If you do not want to link your object, set this parameter to an empty string. | String |
| qMetaDef | Definition of the dynamic properties. | Dynamic properties |

### GenericVariableLayout

#### Overview

Is the layout for [GenericVariableProperties](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/GenericVariableProperties.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qMeta | Information about publishing and permissions.  This parameter is optional. | Null or *NxMeta* |
| qText | Some text. | String |
| qNum | A value. | Double |
| qIsScriptCreated | If set to true, it means that the variable was defined via script. | Boolean |

### GenericVariableProperties

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qMetaDef | Meta data. | Dynamic properties |
| qName | Name of the variable.  The name must be unique.  This parameter is mandatory. | String |
| qComment | Comment related to the variable.  This parameter is optional. | String |
| qNumberPresentation | Defines the format of the value.  This parameter is optional. | *FieldAttributes* |
| qIncludeInBookmark | Set this property to true to update the variable when applying a bookmark. The variable value will be persisted in the bookmark.  The value of a variable can affect the state of the selections.  Script variables cannot be persisted in the bookmark.  The default value is false. | Boolean |
| qDefinition | Definition of the variable. | String |

### HyperCube

#### Overview

Renders the properties of a hypercube. Is the layout for [HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm).

For more information about the definition of a hypercube, see [Generic object definition](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/overview-generic-object.htm).

What is returned in HyperCube depends on the type of the hypercube (straight, pivot or stacked table) and on the method called (GetLayout, GetHyperCubeData, GetHyperCubePivotData, GetHyperCubeStackData).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateName | Name of the alternate state.  Default is current selections *$*. | String |
| qSize | Defines the size of the hypercube. | *Size* |
| qError | This parameter is optional and is displayed in case of error. | Null or *NxValidationError*. |
| qDimensionInfo | Information on the dimension. | Array of *NxDimensionInfo*. |
| qMeasureInfo | Information on the measure. | Array of *NxMeasureInfo*. |
| qEffectiveInterColumnSortOrder | Sort order of the columns in the hypercube.  Column numbers are separated by a comma.  Example: [1,0,2] means that the first column to be sorted was the column 1, followed by the column 0 and the column 2. | Array of Integer |
| qGrandTotalRow | Aggregate for measures of all values in the field.  The result value depends on the*qAggrFunc* defined in [HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm). | Array of *NxCell* |
| qDataPages | Set of data.  Is empty if nothing has been defined in**qInitialDataFetch**in [HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm). | Array of *NxDataPage* |
| qPivotDataPages | Set of data for pivot tables.  Is empty if nothing has been defined in**qInitialDataFetch**in [HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm). | Array of *NxPivotPage* |
| qStackedDataPages | Set of data for stacked tables.  Is empty if nothing has been defined in**qInitialDataFetch**in [HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm). | Array of *NxStackPage* |
| qMode | Information about the mode of the visualization. | One of:   * S for DATA\_MODE\_STRAIGHT; straight table representation * P for DATA\_MODE\_PIVOT; pivot table representation * K for DATA\_MODE\_PIVOT\_STACK; stacked table representation |
| qNoOfLeftDims | Number of left dimensions  Default value is -1.  The index related to each left dimension depends on the position of the pseudo dimension (if any).  For example, a pivot table with:   * 4 dimensions in the following order: Country, City, Product and Category * one pseudo dimension in position 1 * 3 left dimensions.   implies that:   * The index 0 corresponds to the left dimension Country * The index 1 corresponds to the pseudo dimension * The index 2 corresponds to the left dimension City * Product and Category are top dimensions.   Another example:   * 4 dimensions in the following order: Country, City, Product and Category * one pseudo dimension in position -1 * 3 left dimensions.   implies that:   * The index -1 corresponds to the pseudo dimension; the pseudo dimension is the most to the right * The index 0 corresponds to the left dimension Country * The index 1 corresponds to the left dimension City * The index 2 corresponds to the left dimension Product * Category is a top dimension. | Integer |
| qIndentMode | Is used for pivot tables only.  If set to true, the formatting of the results is slightly different.  This property is optional. | Boolean |
| qLastExpandedPos | Is used for pivot tables only.  Position of the last expended cell.  This property is optional. | Null or *NxCellPosition* |

### HyperCubeDef

#### Overview

Defines the properties of a hypercube.

For more information about the definition of a hypercube, see [Generic object definition](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/overview-generic-object.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateName | Name of the alternate state.  Default is current selections *$*. | String |
| qDimensions | Array of dimensions. | Array of *NxDimension* |
| qMeasures | Array of measures. | Array of *NxMeasure* |
| qInterColumnSortOrder | Order the columns of the hypercube should be sorted.  Column numbers are separated by a comma.  Example: [1,0,2] means that the first column to be sorted should be the column 1, followed by the column 0 and the column 2.  The default sort order is the order in which the dimensions and measures have been defined in the hypercube. By default, the pseudo-dimension (if any) is the most to the right in the array.  The index of the pseudo-dimension (if any) is -1.  Pseudo dimensions only apply for pivot tables with more than one measure.  A pseudo dimension groups together the measures defined in a pivot table. You can neither collapse/expand a pseudo dimension nor make any selections in it.  Stacked pivot tables can only contain one measure. | Array of Integer |
| qSuppressZero | Removes zero values. | Boolean.  Default is false. |
| qSuppressMissing | Removes missing values. | Boolean.  Default is false. |
| qInitialDataFetch | Initial data set. | Array of *NxPage* |
| qMode | Defines the way the data are handled internally by the engine.  Default value is *DATA\_MODE\_STRAIGHT*.  A pivot table can contains several dimensions and measures whereas a stacked pivot table can contain several dimensions but only one measure. | One of:   * S for DATA\_MODE\_STRAIGHT; straight table representation * P for DATA\_MODE\_PIVOT; pivot table representation * K for DATA\_MODE\_PIVOT\_STACK; stacked table representation |
| qNoOfLeftDims | Number of left dimensions.  Default value is -1. In that case, all dimensions are left dimensions.  The index related to each left dimension depends on the position of the pseudo dimension (if any).  For example, a pivot table with:   * 4 dimensions in the following order: Country, City, Product and Category * one pseudo dimension in position 1 (the position is defined in*qInterColumnSortOrder*)   *qInterColumnSortOrder* is (0,-1,1,2,3)   * 3 left dimensions (*qNoOfLeftDims* is set to 3).   implies that:   * The index 0 corresponds to the left dimension Country * The index 1 corresponds to the pseudo dimension * The index 2 corresponds to the left dimension City * Product and Category are top dimensions.   Another example:   * 4 dimensions in the following order: Country, City, Product and Category * 3 left dimensions (*qNoOfLeftDims* is set to 3). * one pseudo dimension * the property *qInterColumnSortOrder*is left empty.   implies that:   * The index 0 corresponds to the left dimension Country * The index 1 corresponds to the left dimension City * The index 2 corresponds to the left dimension Product * Category is a top dimension. * The pseudo dimension is a top dimension | Integer |
| qAlwaysFullyExpanded | If this property is set to true, the cells are always expanded. It implies that it is not possible to collapse any cells.  The default value is false. | Boolean |
| qMaxStackedCells | Maximum number of cells for an initial data fetch (set in *qInitialDataFetch*) when in stacked mode (*qMode*is K).  The default value is 5000. | Integer |
| qPopulateMissing | If this property is set to true, the missing symbols (if any) are replaced by 0 if the value is a numeric and by an empty string if the value is a string.  The default value is false. | Boolean |
| qShowTotalsAbove | If set to true, the total (if any) is shown on the first row.  The default value is false. | Boolean |
| qIndentMode | This property applies for pivot tables and allows to change the layout of the table. An indentation is added to the beginning of each row.  The default value is false. | Boolean |
| qCalcCond | Specifies a calculation condition, which must be fulfilled for the hypercube to be (re)calculated.  As long as the condition is not met, the engine does not perform a new calculation.  This property is optional. By default, there is no calculation condition. | *ValueExpr* |
| qSortbyYValue | To enable the sorting by ascending or descending order in the values of a measure.  This property applies to pivot tables and stacked pivot tables.  In the case of a pivot table, the measure or pseudo dimension should be defined as a top dimension. The sorting is restricted to the values of the first measure in a pivot table. | One of:  • *-1* for sorting descending  • *0* for no sorting  • *1* for sorting ascending |

### InteractDef

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Interaction type. | One of:   * IT\_SCRIPTLINE; the engine returns the statement that will be executed next. * IT\_MSGBOX; the engine returns a script execution error message. This type can only be returned if the parameter*qInteractOnError*was set to true when calling the[ConfigureReload method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GlobalClass/Global-class-ConfigureReload-method.htm). * IT\_BREAK; the engine breaks and waits for a response on what to do next. * IT\_END; the engine has finished to execute all statements in the script. |
| qTitle | Title used in the message box dialog.  This property is relevant if *qType*is *IT\_MSGBOX*. | String |
| qMsg | Message used in the message box dialog.  This property is relevant if *qType*is *IT\_MSGBOX*. | String |
| qButtons | Buttons displayed in the message box dialog.  This property is relevant if *qType*is *IT\_MSGBOX*.  One of:   * 0 means that the *qButtons*property is not relevant. * 17 means that the message box contains the **OK**and **Cancel**buttons or the **stop**-sign icon. | Integer |
| qLine | Next script statement to be executed.  This property is used if the type of interaction is*IT\_SCRIPTLINE*. | String |
| qOldLineNr | First line number of the previously executed statement.  This property is used if the type of interaction is*IT\_SCRIPTLINE*. | Integer |
| qNewLineNr | First line number of the next statement to be executed.  This property is used if the type of interaction is*IT\_SCRIPTLINE*. | Integer |
| qPath | Path specified by the **Include**script variable.  This property is used if the type of interaction is*IT\_SCRIPTLINE*.  Example of an **Include**variable:  *$(Include=lib:\\MyDataFiles\abc.txt);* | String |
| qHidden | This property is set to true if the returned statement is an hidden script statement. | Boolean |
| qResult | Not relevant for describing the requested user interaction. | Integer |
| qInput | Is not used in Qlik Sense. | String |

### ListObject

#### Overview

Renders the properties of a list object. Is the layout for [ListObjectDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/ListObjectDef.htm).

For more information about the definition of a list object, see [Generic object definition](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/overview-generic-object.htm).

ListObject is used by the [GetLayout method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericBookmarkClass/GenericBookmark-class-GetLayout-method.htm) to display the properties of a list object.

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateName | Name of the alternate state.  Default is current selections *$*. | String |
| qSize | Defines the size of a list object. | *Size* |
| qError | This parameter is optional and is displayed in case of error. | Null or *NxValidationError* |
| qDimensionInfo | Information about the dimension. | *NxDimensionInfo* |
| qExpressions | Lists the expressions in the list object. | Array of*NxListObjectExpression* |
| qDataPages | Set of data.  Is empty if nothing has been defined in**qInitialDataFetch** in [ListObjectDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/ListObjectDef.htm). | Array of *NxDataPage*. |

### ListObjectDef

#### Overview

Defines the properties of a list object.

For more information about the definition of a list object, see [Generic object definition](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/overview-generic-object.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateName | Name of the alternate state.  Default is current selections *$*. | String |
| qLibraryId | Refers to a dimension stored in the library. | String |
| qDef | Refers to a dimension stored in the list object. | Null or *NxInlineDimensionDef* |
| qAutoSortByState | Defines the sorting by state. | Null or *NxAutoSortByStateDef* |
| qFrequencyMode | Defines the frequency mode. The frequency mode is used to calculate the frequency of a value in a list object.  This parameter is optional.  Default is *NX\_FREQUENCY\_NONE*. | One of:  • NX\_FREQUENCY\_NONE  • NX\_FREQUENCY\_VALUE  • NX\_FREQUENCY\_PERCENT. The percentage is between 0 and 100.  • NX\_FREQUENCY\_RELATIVE. Same as percent except that the relative value is between 0 and 1. |
| qShowAlternatives | If set to true, alternative values are allowed in*qData*.  This parameter is optional. The default value is true.  If set to false, no alternative values are displayed in *qData*. Values are excluded instead.  Note that on the contrary, the *qStateCounts*parameter counts the excluded values as alternative values. | Boolean |
| qInitialDataFetch | Fetches an initial data set. | Array of *NxPage* |
| qExpressions | Lists the expressions in the list object.  This parameter is optional. | Array of*NxListObjectExpressionDef* |

### LocaleInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDecimalSep | Decimal separator. | String |
| qThousandSep | Thousand separator. | String |
| qListSep | List separator. | String |
| qMoneyDecimalSep | Money decimal separator. | String |
| qMoneyThousandSep | Money thousand separator. | String |
| qCurrentYear | Current year. | Integer |
| qMoneyFmt | Money format.  Example: *#.##0,00 kr;-#.##0,00 kr* | String |
| qTimeFmt | Time format.  Example: *hh:mm:ss* | String |
| qDateFmt | Date format.  Example: *YYYY-MM-DD* | String |
| qTimestampFmt | Time stamp format.  Example: *YYYY-MM-DD hh:mm:ss[.fff]* | String |
| qCalendarStrings | Information about the calendar. | *CalendarStrings* |
| qFirstWeekDay | First day of the week, starting from 0.  According to ISO 8601, *Monday*is the first day of the week.   * 0 = Monday * 1 = Tuesday * .. * 6 = Sunday   If this property has not been set in a script, the returned value comes from the Windows operating system. | Integer |
| qBrokenWeeks | Is set to true if broken weeks are allowed in a year.  According to ISO 8601, no broken weeks should be allowed.  This property is not shown if set to false.  If *qBrokenWeeks*is set to true, *qReferenceDay*is irrelevant.  If this property has not been set in a script, the returned value comes from the Windows operating system. | Boolean |
| qReferenceDay | Day in the year that is always in week 1.  According to ISO 8601, January 4th should always be part of the first week of the year (*qReferenceDay*=4).  Recommended values are in the range 1 and 7.  If this property has not been set in a script, the returned value comes from the Windows operating system.  This property is not relevant if there are broken weeks in the year. | Integer |
| qFirstMonthOfYear | First month of the year, starting from 1.  According to ISO 8601, *January*is the first month of the year.   * 1 = January * 2 = February * 12 = January   If this property has not been set in a script, the returned value comes from the Windows operating system. | Integer |
| qCollation | Locale name (following language tagging convention RFC 4646):  *<language>-<REGION>*  Where   * *language*is a lowercase ISO 639 language code * *REGION*specifies an uppercase ISO 3166 country code.   If this property has not been set in a script, the returned value comes from the Windows operating system. | String |

### MeasureList

#### Overview

Lists the measures. Is the layout for [MeasureListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/MeasureListDef.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | Information about the list of measures | Array of *NxContainerEntry* |

### MeasureListDef

#### Overview

Defines the list of measures.

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the list | String |
| qData | Data | JSON |

### MediaList

#### Overview

Lists the media files. Is the layout for [MediaListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/MediaListDef.htm).

This struct is deprecated.

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | Information about the list of media files.  In local installation mode, the media files are retrieved from:  *%userprofile%\Documents\Qlik\Sense\Content\Default*  In server mode, the media files are retrieved from:  *<installation\_directory>\Qlik\Sense\Repository\Content\Default*  The default installation directory is *ProgramData*. | Array of *MediaListItem* |

### MediaListDef

#### Overview

Defines the list of media files.

This struct is deprecated.

#### Properties

*"qMediaListDef": {}*

*qMediaListDef* has an empty structure. No properties need to be set.

### MediaListItem

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUrlDef | Relative path to the media file. The URL is static.  Media files located:  • in the */content/default/* folder are outside the qvf file.  • in the */media/ folder*are embedded in the qvf file. | String |
| qUrl | Relative path to the media file.  Media files located:  • in the */content/default/* folder are outside the qvf file.  • in the */media/ folder* are embedded in the qvf file. | String |

In addition, this structure can return dynamic properties.

### NxAppLayout

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTitle | Title of the app. | String |
| qFileName | In server mode, this property corresponds to the app identifier (GUID).  In desktop mode, this property corresponds to the full path of the app. | String |
| qLastReloadTime | Date and time of the last reload of the app in ISO format. | String |
| qModified | Is set to true if the app has been updated since the last save. | Boolean |
| qHasScript | Is set to true if a script is defined in the app. | Boolean |
| qStateNames | Array of alternate states. | Array of String |
| qMeta | Information on publishing and permissions. | *NxMeta* |
| qLocaleInfo | Information about the locale. | *LocaleInfo* |
| qHasData | Is set to true if the app contains data following a script reload. | Boolean |
| qReadOnly | If set to true, it means that the app is read-only. | Boolean |
| qIsOpenedWithoutData | If set to true, it means that the app was opened without loading its data. | Boolean |
| qThumbnail | App thumbnail. | *StaticContentUrl* |

#### Desktop mode

In desktop mode, this structure can contain dynamic properties.

#### Server mode

In server mode, only a few dynamic properties at app level are persisted.

The persisted dynamic properties are the following:

* modifiedDate
* published
* publishTime
* privileges
* description
* dynamicColor

### NxAppProperties

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTitle | App title. | String |
| qLastReloadTime | Last reload time of the app. | String |
| qThumbnail | App thumbnail. | *StaticContentUrlDef* |
| qMigrationHash | Internal property reserved for app migration.  Patch version of the app.  Do not update. | String |
| qSavedInProductVersion | Internal property reserved for app migration.  The app is saved in this version of the product.  Do not update. | String |

#### Desktop mode

In desktop mode, this structure can contain dynamic properties.

#### Server mode

In server mode, only a few dynamic properties at app level are persisted.

The persisted dynamic properties are the following:

* modifiedDate
* published
* publishTime
* privileges
* description
* dynamicColor

### NxAttrExprDef

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qExpression | Definition of the attribute expression.  Example: *"Max(OrderID)"* | String |

### NxAttrExprInfo

#### Overview

Layout for [NxAttrExprDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxAttrExprDef.htm).

#### Properties

Semantic type with an empty structure.

Container for the dynamic properties of an attribute expression.

### NxAttributeExpressionValues

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValues | List of attribute expressions values. | Array of *NxSimpleValue* |

### NxAutoSortByStateDef

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDisplayNumberOfRows | This parameter applies to list objects.  If the number of selected values in the list object is greater than the value set in*qDisplayNumberOfRows*, the selected lines are promoted at the top of the list object.  If *qDisplayNumberOfRows*is set to a negative value or to 0, the sort by state is disabled. | Integer |

### NxBookmark

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qStateData | List of selections for each state. | Array of *AlternateStateData* |
| qUtcModifyTime | Time when the bookmark was created. | Double precision floating point |
| qVariableItems | List of the variables in the app at the time the bookmark was created. | Array of*BookmarkVariableItem* |

### NxCell

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Some text.  This parameter is optional. | String |
| qNum | A value.  This parameter is optional. | Double precision floating point |
| qElemNumber | Rank number of the value, starting from 0.  If the element number is a negative number, it means that the returned value is not an element number.  You can get the following negative values:   * -1: the cell is a *Total*cell. It shows a total. * -2: the cell is collapsed. Applies to pivot tables. * -3: the cell belongs to the group *Others*. * -4: the cell is empty. Applies to pivot tables. | Integer |
| qState | State of the value.  The default state for a measure is L. | One of:   * L for Locked * S for Selected * O for Optional * D for Deselected * A for Alternative * X for eXcluded * XS for eXcluded Selected * XL for eXcluded Locked |
| qIsEmpty | Is set to *true*, if **qText**and **qNum**are empty.  This parameter is optional. The default value is*false*. | Boolean |
| qIsTotalCell | Is set to *true* if a total is displayed in the cell.  This parameter is optional. The default value is*false*.  Not applicable to list objects. | Boolean |
| qIsOtherCell | Is set to *true* if the cell belongs to the group*Others*.  Dimension values can be set as *Others*depending on what has been defined in**OtherTotalSpecProp**.  This parameter is optional. The default value is*false*.  Not applicable to list objects. | Boolean |
| qFrequency | Frequency of the value.  This parameter is optional. | String |
| qHighlightRanges | Search hits.  The search hits are highlighted.  This parameter is optional. | Null or *NxHighlightRanges* |
| qAttrExps | Attribute expression values. | Null or*NxAttributeExpressionValues* |
| qIsNull | Is set to *true* if the value is Null. | Boolean |

### NxCellPosition

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qx | Position of the cell on the x-axis. | Integer |
| qy | Position of the cell on the y-axis. | Integer |

### NxCellRows

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| NxCellRows | Array of data. | Array of *NxCell* |

### NxContainerEntry

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Information about the object | *NxInfo* |
| qMeta | Information on publishing and permissions | Null or *NxMeta* |
| qData | Set of data | JSON |

### NxCurrentSelectionItem

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTotal | Number of values in the field. | Integer |
| qIsNum | Optional parameter. This parameter is displayed if its value is true.  Is set to true if the field is a numeric. | Boolean |
| qField | Name of the field that is selected. | String |
| qLocked | Optional parameter. This parameter is displayed if its value is true.  Is set to true if the field is locked. | Boolean |

### NxDataAreaPage

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the lowest possible value of the first measure (the measure on the x-axis). | Double |
| qTop | Position from the top.  Corresponds to the highest possible value of the second measure (the measure on the y-axis). | Double |
| qWidth | Width of the page.  Corresponds to the highest possible value of the first measure (the measure on the x-axis). | Double |
| qHeight | Height of the page.  The difference between *qTop*and *qHeight*gives the lowest possible value of the second measure (the measure on the y-axis). | Double |

### NxDataPage

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMatrix | Array of data. | Array of *NxCellRows* |
| qTails | Array of tails.  Is used for hypercube objects with multiple dimensions. It might happen that due to the window size some elements in a group cannot be displayed in the same page as the other elements of the group. Elements of a group of dimensions can be part of the previous or the next tail.  If there is no tail, the array is empty *[ ]*. | Array of *NxGroupTail* |
| qArea | Size and offset of the data in the matrix. | *Rect* |
| qIsReduced | Is set to true, if the data have been reduced.  The default value is false. | Boolean |

### NxDerivedField

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the derived field.  The identifier is unique. | String |
| qName | Combination of field name, definition and method.  Example:  *OrderDate.MyDefinition.Year* | String |
| qMethod | Method name associated to the derived field. | String |
| qExpr | Expression of the derived field.  Example:  If *qName*is *OrderDate.MyDefinition.Year*, the expression is as follows:  *=${Mydefinition(OrderDate).Year}* | String |
| qTags | List of tags. | Array of String |

### NxDerivedFieldDescriptionList

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDerivedFieldLists | Information about the derived fields. | Array of *NxDerivedFieldsData*. |

### NxDerivedFieldsData

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qDerivedDefinitionName | Name of the derived definition. | String |
| qFieldDefs | List of the derived fields. | Array of *NxDerivedField*. |
| qGroupDefs | List of the derived groups. | Array of *NxDerivedGroup*. |

### NxDerivedGroup

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the group. | String |
| qName | Name of the derived group. | String |
| qGrouping | Grouping type.  The grouping should be either H or C (Grouping is mandatory for derived definitions).  Is mandatory. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qFieldDefs | List of the derived fields in the group. | Array of String |

### NxDimension

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLibraryId | Refers to a dimension stored in the library. | String |
| qDef | Refers to a dimension stored in the hypercube. | Null or *NxInlineDimensionDef* |
| qNullSuppression | If set to true, no null values are returned. | Boolean |
| qOtherTotalSpec | Sets the dimension limits. Each dimension of a hypercube is configured separately.  Defines if some values (grouped as *Others*) should be grouped together in the visualization.  For example in a pie chart all values lower than 200 could be grouped together. | *OtherTotalSpecProp* |
| qShowAll | If set to true, all dimension values are shown. | Boolean |
| qOtherLabel | This property is used when some dimension limits are set.  Label of the *Others*group. The default label is*Others*.  Example:  *"qOtherLabel":"=<label>"*  or  *"qOtherLabel":{"qExpr":"=<label>"}*  Where   * <*label*> is the label of the *Others*group. | String |
| qTotalLabel | If this property is set, the total of the calculated values is returned.  The default label is *Total*.  Example:  *"qTotalLabel":"=<label>"*  or  *"qTotalLabel":{"qExpr":"=<label>"}*  Where   * <*label*> is the label of the *Total*group. | String |
| qCalcCond | Specifies a calculation condition, which must be fulfilled for the dimension to be calculated.  If the calculation condition is not met, the dimension is excluded from the calculation.  This property is optional. By default, there is no calculation condition. | *ValueExpr* |

Either **qDef**or **qLibraryId**must be set, but not both.

If the dimension is set in the hypercube and not in the library, this dimension cannot be shared with other objects.

A dimension that is set in the library can be used by many objects.

### NxDimensionInfo

#### Overview

Layout for [NxInlineDimensionDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxInlineDimensionDef.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFallbackTitle | Corresponds to the label of the dimension that is selected.  If the label is not defined then the field name is used. | String |
| qApprMaxGlyphCount | Length of the longest value in the field. | Integer |
| qCardinal | Number of distinct field values. | Integer |
| qLocked | Is set to true if the field is locked. | Boolean |
| qSortIndicator | Sort indicator.  This parameter is optional.  The default value is no sorting. | One of:   * *N* for no sorting * *A* for sorting ascending * *D* for sorting descending |
| qGroupFallbackTitles | Array of dimension labels.  Contains the labels of all dimensions in a hierarchy group (for example the labels of all dimensions in a drill down group). | Array of String |
| qGroupPos | Index of the dimension that is currently in use.  *qGroupPos*is set to 0 if there are no hierarchical groups (drill-down groups) or cycle groups. | Integer |
| qStateCounts | Number of values in a particular state. | *NxStateCounts* |
| qTags | Gives information on a field. For example, it can return the type of the field.  Examples: key, text, ASCII | Array of String |
| qError | This parameter is optional.  Gives information on the error. | Null or *NxValidationError* |
| qDimensionType | Binary format of the field. | One of:   * D for discrete (String) * N for numeric (Double) * T for Time (Timestamp) |
| qReverseSort | If set to true, it inverts the sort criteria in the field. | Boolean |
| qGrouping | Defines the grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qIsSemantic | If set to true, it means that the field is a semantic. | Boolean |
| qNumFormat | Format of the field.  This parameter is optional. | *FieldAttributes* |
| qIsAutoFormat | This parameter is set to true if *qNumFormat*is set to *U* (unknown). The engine guesses the type of the field based on the field's definition. | Boolean |
| qGroupFieldDefs | Array of field names. | Array of String |

### NxFieldDescription

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qIsSemantic | If set to true, it means that the field is a semantic. | Boolean |
| qIsHidden | If set to true, it means that the field is hidden. | Boolean |
| q IsSystem | If set to true, it means that the field is a system field. | Boolean |
| qAndMode | If set to true a logical AND (instead of a logical OR) is used when making selections in a field.  The default value is false. | Boolean |
| qName | Name of the field | String |
| qCardinal | Number of distinct field values | Integer |
| qTags | Gives information on a field. For example, it can return the type of the field.  Examples: key, text, ASCII | Array of String |
| qIsDefinitionOnly | If set to true, it means that the field is a field on the fly. | Boolean |
| qDerivedFieldData | Lists the derived fields if any. | Null or*NxDerivedFieldDescriptionList* |
| qIsDetail | Is used for Direct Discovery.  If set to true, it means that the type of the field is detail. | Boolean |
| qIsImplicit | Is used for Direct Discovery.  If set to true, it means that the type of the field is measure. | Boolean |

### NxFieldProperties

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOneAndOnlyOne | This parameter is set to true, if the field has one and only one selection (not 0 and not more than 1).  If this property is set to true, the field cannot be cleared anymore and no more selections can be performed in that field. | Boolean |

### NxFieldSelectionInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field. | String |
| qFieldSelectionMode | Selection mode. | One of:   * NORMAL for a selection in normal mode. * AND for a selection in AND mode. * NOT for a selection NOT in AND mode. |

### NxFieldSelectionMode

#### Properties

One of:

* NORMAL for a selection in normal mode.
* AND for a selection in AND mode.
* NOT for a selection NOT in AND mode.

### NxGroupTail

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUp | Number of elements that are part of the previous tail.  This number depends on the paging, more particularly it depends on the values defined in*qTop*and *qHeight*  This parameter is optional. Is not shown if the value is 0. | Integer |
| qDown | Number of elements that are part of the next tail.  This number depends on the paging, more particularly it depends on the values defined in*qTop*and *qHeight*  This parameter is optional. Is not shown if the value is 0. | Integer |

### NxHighlightRanges

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRanges | Ranges of highlighted values | Array of *CharRange* |

### NxInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the object.  If the chosen identifier is already in use, the engine automatically sets another one.  This parameter is optional. If an identifier is not set, the engine automatically sets one. | String |
| qType | Type of the object.  This parameter is mandatory. | String |

### NxInlineDimensionDef

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qGrouping | Used to define a cyclic group or drill-down group.  This parameter is optional.  Default value is no grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qFieldDefs | Array of field names.  When creating a grouped dimension, more than one field name is defined.  This parameter is optional. | Array of String |
| qFieldLabels | Array of field labels.  This parameter is optional. | Array of String |
| qSortCriterias | Defines the sorting criteria in the field.  This parameter is optional.  Default is to sort by alphabetical order, ascending. | Array of *SortCriteria* |
| qNumberPresentations | Defines the format of the value.  This parameter is optional. | Array of *FieldAttributes* |
| qReverseSort | If set to true, it inverts the sort criteria in the field. | Boolean |
| qActiveField | Index of the active field in a cyclic dimension.  This parameter is optional. The default value is 0.  This parameter is used in case of cyclic dimensions (*qGrouping*is C). | Integer |

### NxInlineMeasureDef

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLabel | Name of the measure.  This parameter is optional.  An empty string is returned as a default value. | String |
| qDescription | Description of the measure.  This parameter is optional.  An empty string is returned as a default value. | String |
| qTags | Name connected to the measure that is used for search purposes.  This parameter is optional.  A measure can have several tags. | Array of String |
| qGrouping | Default value is no grouping.  This parameter is optional. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qDef | Definition of the expression in the measure.  Example: *Sum (OrderTotal)*  This parameter is mandatory. | String |
| qNumFormat | Format of the field.  This parameter is optional. | *FieldAttributes* |
| qRelative | If set to true, percentage values are returned instead of absolute numbers.  This parameter is optional. Default is false. | Boolean |
| qBrutalSum | If set to true, the sum of rows total should be used rather than real expression total.  This parameter is optional and applies to straight tables.  Default is false. If using the Qlik Sense interface, it means that the total mode is set to **Expression Total**. | Boolean |
| qAggrFunc | Aggregate function.  For more information on the aggregate function syntax, see the section Working with Qlik Senseon the online help portal.  The default value is 0 (Sum of rows)  This parameter is optional. | String |
| qAccumulate | • 0 means no accumulation  • 1 means full accumulation (each y-value accumulates all previous y-values of the expression)  • ≥ 2 means accumulate as many steps as the*qAccumulate*value  This parameter is optional.  Default is 0. | Integer |
| qReverseSort | If set to true, it inverts the sort criteria in the field. | Boolean |
| qActiveExpression | Index of the active expression in a cyclic measure. The indexing starts from 0.  This parameter is optional. The default value is 0. | Integer |
| qExpressions | Array of expressions. This parameter is used in case of cyclic measures (*qGrouping*is C). List of the expressions in the cyclic group. | Array of String |

### NxLayoutErrors

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| ErrorCode | Error code. | Integer |

### NxLibraryDimensionDef

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qGrouping | Information about the grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qFieldDefs | Array of dimension names. | Array of String |
| qFieldLabels | Array of dimension labels. | Array of String |

### NxLibraryMeasureDef

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLabel | Label of the measure. | String |
| qDef | Definition of the measure. | String |
| qGrouping | Used to define a cyclic group or drill-down group.  This parameter is optional.  Default value is no grouping. | One of:   * *N* for no grouping * *H* for drill-down * *C* for cyclic |
| qExpressions | Array of expressions. | Array of String |
| qActiveExpression | Index to the active expression in a measure. | Integer |

### NxLinkedObjectInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRootId | Identifier of the root object.  If the linked object is a child, the root identifier is the identifier of the parent.  If the linked object is an app object, the root identifier is the same than the identifier of the linked object since the linked object is a root object. | String |
| qInfo | Information about the linked object. | *NxInfo* |

### NxListObjectExpression

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qExpr | Value of the expression. | String |
| qError | This parameter is optional.  Gives information on the error. | Null or *NxLayoutErrors* |

### NxListObjectExpressionDef

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qExpr | Value of the expression | String |
| qLibraryId | Refers to an expression stored in the library. | String |

### NxListObjectSelect

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPath | Path to the definition of the list object.  For example,*/qListObjectDef*. | String |
| qToggleMode | Set to true to keep any selections present in the list object.  If this parameter is set to false, selections made before accepting the object search become alternative.  The default value is false. | Boolean |
| qSoftLock | Set to *true*to ignore locks; in that case, locked fields can be selected.  The default value is false. | Boolean |
| qValues | Indexes (or element numbers) of the values to select. | Array of Integer |

### NxLocatedExpression

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInfo | Identifier and type of the object that contains the expression | *NxInfo* |
| qTags | Gives information on a field. For example, it can return the type of the field.  Examples: key, text, ASCII | Array of String |
| qLocation | Location of the expression within the object | String |
| qExpression | Value of the expression | String |
| qParentPath | This parameter is displayed if the expression is located in a child object. The path of the parent of the child is given.  The format of the parent path is:  */<type of the parent>:<identifier of the parent>* | String |

### NxMatchingFieldInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the field | String |
| qTags | List of tags | Array of String |

### NxMeasure

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLibraryId | Refers to a measure stored in the library. | String |
| qDef | Refers to a measure stored in the hypercube. | Null or *NxInlineMeasureDef* |
| qSortBy | Defines the sort criteria.  This property is optional. The default value is sort by ascending alphabetic order. | *SortCriteria* |
| qAttributeExpressions | List of attribute expressions. | Array of *NxAttrExprDef*. |
| qCalcCond | Specifies a calculation condition, which must be fulfilled for the measure to be calculated.  If the calculation condition is not met, the measure is excluded from the calculation.  This property is optional. By default, there is no calculation condition. | *ValueExpr* |

Either **qDef**or **qLibraryId**must be set, but not both.

If the measure is set in the hypercube and not in the library, this measure cannot be shared with other objects.

A measure that is set in the library can be used by many objects.

expressions are complementary expressions associated to a measure. For example, you can decide to change the background color of a visualization depending on the values of the measure.

Attribute expressions do not affect the layout of an object. The sorting order is unchanged.

### NxMeasureInfo

#### Overview

Layout for [NxInlineMeasureDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxInlineMeasureDef.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFallbackTitle | Corresponds to the label of the measure.  If the label is not defined then the measure name is used. | String |
| qApprMaxGlyphCount | Length of the longest value in the field. | Integer |
| qCardinal | Number of distinct field values. | Integer |
| qSortIndicator | Sort indicator.  This parameter is optional. The default value is no sorting. | One of:   * *N* for no sorting * *A* for sorting ascending * *D* for sorting descending |
| qNumFormat | Format of the field.  This parameter is optional. | *FieldAttributes* |
| qIsAutoFormat | This parameter is set to true if *qNumFormat*is set to *U* (unknown). The engine guesses the type of the field based on the field's expression. | Boolean |
| qMin | Lowest value in the range. | Double precision floating point |
| qMax | Highest value in the range. | Double precision floating point |
| qError | This parameter is optional.  Gives information on the error. | Null or *NxValidationError* |
| qReverseSort | If set to true, it inverts the sort criteria in the field. | Boolean |
| qAttrExprInfo | List of attribute expressions. | Array of *NxAttrExprInfo* |

### NxMeta

#### Overview

Layout for [NxMetaDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/NxMetaDef.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name.  This property is optional. | String |

### NxMetaDef

#### Overview

Used to collect meta data.

#### Properties

Semantic type with an empty structure.

### NxPage

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the first column. | Integer |
| qTop | Position from the top.  Corresponds to the first row. | Integer |
| qWidth | Number of columns in the page. The indexing of the columns may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |
| qHeight | Number of rows or elements in the page. The indexing of the rows may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |

### NxPatch

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOp | Operation to perform. | One of:   * Add * Remove * Replace |
| qPath | Path to the property to add, remove or replace. | String |
| qValue | This parameter is not used in a remove operation.  Corresponds to the value of the property to add or to the new value of the property to update.  Examples:  "false", "2", "\"New title\"" | String |

### NxPivotDimensionCell

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Some text | String |
| qElemNo | Rank number of the value  If set to -1, it means that the value is not an element number. | Integer |
| qValue | Value of the cell  Is set to *NaN*, if the value is not a number. | Double precision floating point |
| qCanExpand | If set to true, it means that the cell can be expanded.  This parameter is not returned if it is set to false. | Boolean |
| qCanCollapse | If set to true, it means that the cell can be collapsed.  This parameter is not returned if it is set to false. | Boolean |
| qType | Type of the cell | One of:   * V for NX\_DIM\_CELL\_VALUE. Applies to values in the data matrix. * E for NX\_DIM\_CELL\_EMPTY. Applies to empty cells in the top and left dimensions. * N for NX\_DIM\_CELL\_NORMAL. Applies to left and top dimensions cells. * T for NX\_DIM\_CELL\_TOTAL. Applies to cells marked with *Total* * P for NX\_DIM\_CELL\_PSEUDO. Applies to pseudo dimensions. * R for NX\_DIM\_CELL\_ROOT. Applies to root node. * U for NX\_DIM\_CELL\_NULL. Applies to Null values in the data matrix. |
| qUp | Number of elements that are part of the previous tail.  This number depends on the paging, more particularly it depends on the values defined in *qTop*and *qHeight*. | Integer |
| qDown | Number of elements that are part of the next tail.  This number depends on the paging, more particularly it depends on the values defined in *qTop*and *qHeight*. | Integer |
| qSubNodes | Information about sub nodes (or sub cells)  The array is empty *[ ]* when there is no sub nodes. | Array of *NxPivotDimensionCell* |

### NxPivotPage

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Information about the left dimension values of a pivot table. | Array of*NxPivotDimensionCell* |
| qTop | Information about the top dimension values of a pivot table. If there is no top dimension in the pivot table, information about the measures are given. | Array of*NxPivotDimensionCell* |
| qData | Array of data. | Array of *ArrayOfNxValuePoint* |
| qArea | Size and offset of the data in the matrix. | *Rect* |

### NxPivotValuePoint

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLabel | Label of the cell.  This parameter is optional. | String |
| qText | Some text related to the cell. | String |
| qNum | Value of the cell. | Double precision floating point |
| qType | Type of the cell. | One of:   * V for NX\_DIM\_CELL\_VALUE. Applies to values in the data matrix. * E for NX\_DIM\_CELL\_EMPTY. Applies to empty cells in the top and left dimensions. * N for NX\_DIM\_CELL\_NORMAL. Applies to left and top dimensions cells. * T for NX\_DIM\_CELL\_TOTAL. Applies to cells marked with *Total* * P for NX\_DIM\_CELL\_PSEUDO. Applies to pseudo dimensions. * R for NX\_DIM\_CELL\_ROOT. Applies to root node. * U for NX\_DIM\_CELL\_NULL. Applies to Null values in the data matrix. |
| qAttrExps | Attribute expressions values. | Null or*NxAttributeExpressionValues* |

### NxRange

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFrom | Position in the expression of the first character of the field name. | Integer |
| qCount | Number of characters in the field name. | Integer |

### NxRangeSelectInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRange | Range of values. | *Range* |
| qMeasureIx | Number of the measure to select.  Numbering starts from 0. | Integer |

### NxSelectionCell

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of cells to select | One of:   * D for data * T for top dimension cells * L for left dimension cells |
| qCol | Column index to select  Indexing starts from 0.  If the cell's type is:   * D, the index is based on the data matrix. * T, the index is based on the data matrix * L, the index is based on the left dimensions indexes | Integer |
| qRow | Row index to select  Indexing starts from 0.  If the cell's type is:   * D, the index is based on the data matrix. * T, the index is based on the top dimensions indexes * L, the index is based on the data matrix | Integer |

### NxSelectionInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInSelections | Is set to true if the visualization is in selection mode.  For more information about the selection mode, see [BeginSelections method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-BeginSelections-method.htm). | Boolean |
| qMadeSelections | Is set to true if the visualization is in selection mode and if some selections have been made while in selection mode.  For more information about the selection mode, see [BeginSelections method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/GenericObjectClass/GenericObject-class-BeginSelections-method.htm). | Boolean |

### NxSimpleValue

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text related to the attribute expression value.  This property is optional. No text is returned if the attribute expression value is a numeric. | String |
| qNum | Numeric value of the attribute expression.  This property is set to *NaN*(Not a Number) if the attribute expression value is not a numeric.  Numerical values are not returned as text. | Double precision floating point |

### NxStackedPivotCell

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Some text. | String |
| qElemNo | Rank number of the value.  If set to -1, it means that the value is not an element number. | Integer |
| qValue | Value of the cell.  Is set to *NaN*, if the value is not a number. | Double precision floating point |
| qCanExpand | If set to true, it means that the cell can be expanded.  This parameter is not returned if it is set to false. | Boolean |
| qCanCollapse | If set to true, it means that the cell can be collapsed.  This parameter is not returned if it is set to false. | Boolean |
| qType | Type of the cell. | One of:   * V for NX\_DIM\_CELL\_VALUE. Applies to values in the data matrix. * E for NX\_DIM\_CELL\_EMPTY. Applies to empty cells in the top and left dimensions. * N for NX\_DIM\_CELL\_NORMAL. Applies to left and top dimensions cells. * T for NX\_DIM\_CELL\_TOTAL. Applies to cells marked with *Total* * P for NX\_DIM\_CELL\_PSEUDO. Applies to pseudo dimensions. * R for NX\_DIM\_CELL\_ROOT. Applies to root node. * U for NX\_DIM\_CELL\_NULL. Applies to Null values in the data matrix. |
| qMaxPos | Total of the positive values in the current group of cells. | Double precision floating point |
| qMinNeg | Total of the negative values in the current group of cells. | Double precision floating point |
| qUp | Number of elements that are part of the previous tail. | Integer |
| qDown | Number of elements that are part of the next tail. | Integer |
| qRow | Row index in the data matrix.  The indexing starts from 0. | Integer |
| qSubNodes | Information about sub nodes (or sub cells).  The array is empty *[ ]* when there is no sub nodes. | Array of *NxStackedPivotCell* |
| qAttrExps | Attribute expressions values. | Null or*NxAttributeExpressionValues*. |

### NxStackPage

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qData | Array of data. | Array of *NxStackedPivotCell* |
| qArea | Size and offset of the data in the matrix. | *Rect* |

### NxStateCounts

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLocked | Number of values in locked state | Integer |
| qSelected | Number of values in selected state | Integer |
| qOption | Number of values in optional state | Integer |
| qDeselected | Number of values in deselected state | Integer |
| qAlternative | Number of values in alternative state | Integer |
| qExcluded | Number of values in excluded state | Integer |
| qSelectedExcluded | Number of values in selected excluded state | Integer |
| qLockedExcluded | Number of values in locked excluded state | Integer |

### NxStreamListEntry

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the stream | String |
| qId | Identifier of the stream | String |

### NxValidationError

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qErrorCode | Error code.  This parameter is always displayed in case of error. | Integer |
| qContext | Context related to the error, from the user app domain.  It can be the identifier of an object, a field name, a table name.  This parameter is optional. | String |
| qExtendedMessage | Internal information from the server.  This parameter is optional. | String |

### NxVariableListItem

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the variable. | String |
| qDescription | Description of the variable. | String |
| qDefinition | Definition of the variable. It can be a value or an expression. | String |
| qIsConfig | If set to true, it means that the variable is a system variable.  A system variable provides information about the system and is set by the engine. The content cannot be changed by the user.  This parameter is optional.  The default value is false. | Boolean |
| qIsReserved | If set to true, it means that the variable is reserved.  This parameter is optional.  The default value is false.  Examples:  • *ScriptError*is a reserved variable, set by the engine.  • *DayNames*is a reserved variable, set by the user. | Boolean |
| qMeta | Information about publishing and permissions.  This parameter is optional. | Null or *NxMeta* |
| qInfo | Identifier and type of the object.  This parameter is mandatory. | *NxInfo* |
| qData | Data. | JSON |
| qIsScriptCreated | If set to true, it means that the variable was defined via script. | Boolean |

### NxVariableProperties

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the variable. | String |
| qNumberPresentation | Defines the format of the value of a variable. | *FieldAttributes* |
| qIncludeInBookmark | Set this property to true to update the variable when applying a bookmark.  The value of a variable can affect the state of the selections.  The default value is false. | Boolean |
| qUsePredefListedValues | The value of a variable can be an enumeration.  Set this property to true to reflect the predefined values in an enumeration. | Boolean |
| qPreDefinedList | List of enumerations.  This property is used if *qUsePredefListedValues*is set to true. | Array of String |

### NxViewPort

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qWidth | Width of the canvas in pixels. | Integer |
| qHeight | Height of the canvas in pixels. | Integer |
| qZoomLevel | Zoom level. | Integer |

### OdbcDsn

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the ODBC connection. | String |
| qDescription | Description of the ODBC connection. | String |
| qBit32 | This parameter is optional. Default is false.  Is set to true if the version of ODBC is 32-bit. | Boolean |
| qUserOnly | This parameter is optional. Default is false.  Is set to true if the connection is User DSN. The connection works only for a specific user. | Boolean |

### OleDbProvider

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the OLEDB provider. | String |
| qDescription | Description of the OLEDB provider. | String |
| qBit32 | This parameter is optional. Default is false.  Is set to true if the version of the OLEDB provider is 32-bit. | Boolean |

### OtherTotalSpecProp

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOtherMode | Determines how many dimension values are displayed.  The default value is *OTHER\_OFF*. | One of:   * OTHER\_OFF; do not limit the number of dimension values * OTHER\_COUNTED; limit the dimension values to a specified number defined in[OtherTotalSpecProp](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/OtherTotalSpecProp.htm#qOtherCounted). * OTHER\_ABS\_LIMITED; limit the dimension values to an absolute value defined in[OtherTotalSpecProp](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/OtherTotalSpecProp.htm#qOtherLimit). * OTHER\_ABS\_ACC\_TARGET; return the dimension values that accumulate to an absolute value. All rows up to the current row are accumulated and the result is compared to the specified absolute value. The absolute value is defined in[OtherTotalSpecProp](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/OtherTotalSpecProp.htm#qOtherLimit). * OTHER\_REL\_LIMITED; limit the dimension values based on a percentage of the total. The total is the sum of all the dimension values. The percentage is defined in[OtherTotalSpecProp](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/OtherTotalSpecProp.htm#qOtherLimit). * OTHER\_REL\_ACC\_TARGET; return the dimension values that accumulate to a percentage of the total. All rows up to the current row are accumulated and the result is compared to the total of the dimension values. A percentage is calculated. This percentage is compared to the specified percentage, defined in[OtherTotalSpecProp](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Structs/OtherTotalSpecProp.htm#qOtherLimit). |
| qOtherCounted | Number of values to display. The number of values can be entered as a calculated formula.  This parameter is used when*qOtherMode*is set to*OTHER\_COUNTED*. | **"qv": "<expression>"**  Where  <expression> is a string. |
| qOtherLimit | Value used to limit the dimension values. The limit can be entered as a calculated formula.  This parameter is used when*qOtherMode*is set to:   * OTHER\_ABS\_LIMITED * OTHER\_REL\_LIMITED * OTHER\_ABS\_ACC\_TARGET   OTHER\_REL\_ACC\_TARGET | **"qv": "<expression>"**  Where  <expression> is a string. |
| qOtherLimitMode | Sets the limit for the *Others*mode.  This parameter is used when*qOtherMode*is set to:   * OTHER\_ABS\_LIMITED * OTHER\_REL\_LIMITED * OTHER\_ABS\_ACC\_TARGET   OTHER\_REL\_ACC\_TARGET | One of:   * OTHER\_GE\_LIMIT; include the values greater or equal * OTHER\_LE\_LIMIT; include the values lower or equal * OTHER\_GT\_LIMIT; include the values strictly greater than * OTHER\_LT\_LIMIT; include the values strictly lower than   Default: OTHER\_GT\_LIMIT |
| qSuppressOther | If set to true, the group *Others*is not displayed as a dimension value.  The default value is false. | Boolean |
| qForceBadValueKeeping | This parameter is used when*qOtherMode*is set to:   * OTHER\_ABS\_LIMITED * OTHER\_REL\_LIMITED * OTHER\_ABS\_ACC\_TARGET   OTHER\_REL\_ACC\_TARGET  and when the dimension values include not numeric values.  Set this parameter to true to include text values in the returned values.  The default value is true. | Boolean |
| qApplyEvenWhenPossiblyWrongResult | Set this parameter to true to allow the calculation of *Others*even if the engine detects some potential mistakes.  For example the country Russia is part of the continent Europe and Asia. If you have an hypercube with two dimensions Country and Continent and one measure Population, the engine can detect that the population of Russia is included in both the continent Asia and Europe.  The default value is true. | Boolean |
| qGlobalOtherGrouping | This parameter applies to inner dimensions.  If this parameter is set to true, the restrictions are calculated on the selected dimension only. All previous dimensions are ignored.  The default value is false. | Boolean |
| qOtherCollapseInnerDimensions | If set to true, it collapses the inner dimensions (if any) in the group *Others*.  The default value is false. | Boolean |
| qOtherSortMode | Defines the sort order of the dimension values.  The default value is*OTHER\_SORT\_DESCENDING*. | One of:   * OTHER\_SORT\_DEFAULT; sort by load order * OTHER\_SORT\_DESCENDING; sort by descending values * OTHER\_SORT\_ASCENDING; sort by ascending values |
| qTotalMode | If set to *TOTAL\_EXPR*, the total of the dimension values is returned.  The default value is *TOTAL\_OFF*. | One of:   * TOTAL\_OFF * TOTAL\_EXPR |
| qReferencedExpression | This parameter applies when there are several measures.  Name of the measure to use for the calculation of *Others*for a specific dimension. | String |

### Point

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qx | x-coordinate in pixels.  The origin is the top left of the screen. | Integer |
| qy | y-coordinate in pixels.  The origin is the top left of the screen. | Integer |

### ProgressMessage

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMessageCode | Code number to the corresponding localized message string. | Integer |
| qMessageParameters | Parameters to be inserted in the localized message string. | Array of String |

### Range

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qMin | Lowest value in the range | Double |
| qMax | Highest value in the range | Double |
| qMinInclEq | If set to true, the range includes the lowest value in the range of selections (Equals to ).  Example:  The range is [1,10]. If *qMinInclEq*is set to true it means that 1 is included in the range of selections. | Boolean |
| qMaxInclEq | If set to true, the range includes the highest value in the range of selections (Equals to ).  Example:  The range is [1,10]. If *qMinInclEq*is set to true it means that 10 is included in the range of selections. | Boolean |

### RangeSelectInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qRangeLo | Lowest value in the range. | Double |
| qRangeHi | Highest value in the range. | Double |
| qMeasure | Label of the measure. | String |

### Rect

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qLeft | Position from the left.  Corresponds to the first column. | Integer |
| qTop | Position from the top.  Corresponds to the first row. | Integer |
| qWidth | Number of columns in the page. The indexing of the columns may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |
| qHeight | Number of rows or elements in the page. The indexing of the rows may vary depending on whether the cells are expanded or not (parameter *qAlwaysFullyExpanded*in[HyperCubeDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/HyperCubeDef.htm)). | Integer |

### ScriptSyntaxError

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qErrLen | Length of the word where the error is located | Integer |
| qTabIx | Number of the faulty section | Integer |
| qLineInTab | Line number in the section where the error is located | Integer |
| qColInLine | Position of the erroneous text from the beginning of the line | Integer |
| qTextPos | Position of the erroneous text from the beginning of the script | Integer |
| qSecondaryFailure | The default value is false. | Boolean |

### SearchAssociationResult

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qFieldNames | List of the fields that contains search associations. | Array of String. |
| qSearchTerms | List of the search terms. | Array of String. |
| qFieldDictionaries | Information about the fields containing search hits. | Array of*SearchFieldDictionary*. |
| qSearchTermsMatched | List of search results.  The maximum number of search results in this list is set by *qPage/qCount*. | Array of*SearchMatchCombinations* |
| qTotalSearchResults | Total number of search results.  This number is not limited by *qPage/qCount*. | Integer |

### SearchCharRange

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qCharPos | Starting position of the match in the search result, starting from 0. | Integer |
| qCharCount | Length of the match in the search result. | Integer |
| qTerm | Position of the term in the list of search terms, starting from 0. | Integer |

### SearchCombinationOptions

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSearchFields | List of the search fields.  If empty, the search is performed in all fields of the app. | Array of String |
| qContext | Search context.  The default value is *LockedFieldsOnly*. | One of:   * *Cleared*: In this mode, the first step is to clear any current selections in the app. The second step is to search for one or more terms in the values of the app. * *LockedFieldsOnly*: In this mode, the search applies only to the values associated with the selections made in locked fields, ignoring selections in any unlocked field. If no locked fields, the behavior is identical to the *Cleared*context. You cannot make any new selections in a locked field. You can get search hits for the associated values of a locked field but you cannot get the search hits for the non associative values. * *CurrentSelections*: In this mode, the current selections are kept (if any). Search for one or more terms in the values of the app. New selections are made on top of the current selections. If no selections were made before the search, this mode is identical to the *Cleared*context. |

### SearchFieldDictionary

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qField | Position of the field in the list of fields, starting from 0.  The list of fields is defined in*qResults/qFieldNames* and contains the search associations. | Integer |
| qResult | List of the matching values.  The maximum number of values in this list is set by *qMaxNbrFieldMatches*. | Array of *SearchTermResult* |

### SearchFieldMatch

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qField | Position of the field in the list of fields, starting from 0.  The list of fields is defined in*qResults/qFieldNames* and contains the search associations. | Integer |
| qValues | Positions of the matching values in the search results.  The maximum number of values in this list is defined by *qMaxNbrFieldMatches*. | Array of Integer |
| qTerms | Positions of the search terms, starting from 0. | Array of Integer |
| qNoOfMatches | Number of search hits in the field.  The number of values in *qValues*and the value of *qNoOfMatches*are equal if*qMaxNbrFieldMatches*is -1. | Integer |

### SearchGroup

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Identifier of the search group. | Integer |
| qGroupType | Type of the search group. | One of:  • 1 for *DATASET\_GROUP*: the type of the group is a data set. This group contains search matches that are related to fields in the app. |
| qSearchTermsMatched | Indexes of the search terms that are included in the group. These search terms are related to the list of terms defined in*SearchResult.qSearchTerms*. | Array of Integer |
| qTotalNumberOfItems | Number of items in the group. | Integer |
| qItems | List of items in the search group, starting from 0.  The number of items is limited by what is defined in*SearchPage.qMaxNumberOfItemsPerGroup*. | Array of *SearchGroupItem* |

### SearchGroupItem

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItemType | Type of the group item. | One of:  •1 for *FIELD*: the type of the search group item is a field. |
| qTotalNumberOfMatches | Total number of distinct search matches in the search group item. | Integer |
| qIdentifier | Identifier of the item.  It corresponds to:  • the name of the field, if the type of the search group is a data set. | String |
| qItemMatches | List of search matches in the group item, starting from 0.  The number of matches is limited by what is defined in*SearchPage.qMaxNumberOfMatchesPerItem*. | Array of*SearchGroupItemMatch* |

### SearchGroupItemMatch

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Search match value.  Value of the search group item.  If the match is found in a field, it corresponds to the value of the field. | String |
| qRanges | List of ranges.  For example, if the search terms are *Price*andMake, and the search group item value is *Make by Price vs Mileage*, then there are two ranges: one for *Price*and one for *Make*. | Array of *SearchCharRange* |

### SearchGroupItemOptions

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qGroupItemType | Type of the group item. | One of:  • 1 for *FIELD*: the type of the search group item is a field. |
| qOffset | Position starting from 0.  The default value is 0. | Integer |
| qCount | Maximum number of matches per item (in*qItemMatches[ ]*).  The default value is -1: all values are returned. | Integer |

### SearchGroupOptions

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qGroupType | Type of the group. | One of:  • 1 for *DATASET\_GROUP*: the type of the group is a data set. This group contains search matches that are related to fields in the app. |
| qOffset | Position starting from 0.  The default value is 0. | Integer |
| qCount | Maximum number of items per group (in*qItems[ ]*).  The default value is -1; all values are returned. | Integer |

### SearchMatchCombination

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qId | Index of the search result, starting from 0. | Integer |
| qFieldMatches | Information about the search matches. | Array of *SearchFieldMatch*. |

### SearchPage

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qOffset | Position from the top, starting from 0.  If the offset is set to 0, the first search result to be returned is at position 0. | Integer |
| qCount | Number of search groups to return (in*qSearchGroupArray[ ]*). | Integer |
| qMaxNbrFieldMatches | Maximum number of matching values to return per search result.  The default value is -1; all values are returned.  This property is to be used with the[SearchAssociations method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchAssociations-method.htm). | Integer |
| qGroupOptions | Options of the search groups.  If this property is not set, all values are returned.  This property is to be used with the[SearchResults method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchResults-method.htm). | Array of *SearchGroupOptions* |
| qGroupItemOptions | Options of the search group items.  If this property is not set, all values are returned.  This property is to be used with the[SearchResults method](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/Classes/AppClass/App-class-SearchResults-method.htm). | Array of*SearchGroupItemOptions* |

### SearchResult

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSearchTerms | List of the search terms. | Array of String |
| qTotalNumberOfGroups | Total number of groups. | Integer |
| qSearchGroupArray | List of search groups.  The groups are numbered from the value of*SearchPage.qOffset* to the value of*SearchPage.qOffset + SearchPage.qCount*. | Array of *SearchGroup*. |

### SearchSuggestionResult

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSuggestions | List of suggestions. | Array of *SearchSuggestItem* |
| qFieldNames | List of field names that contain search hits. | Array of String |

### SearchSuggestItem

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qValue | Value of the suggestion. | String |
| qTerm | Index of the suggestion value.  The indexing starts from 0 and from the left. | Integer |

### SearchTermResult

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qText | Text of the associated value. | String |
| qElemNumber | Element number of the associated value. | Integer |
| qRanges | List of ranges.  For example, if the user searches the term *read*and the associative value is *Reading*, then the corresponding range would be *Read*in *Reading*. | Array of *SearchCharRange*. |

### SelectInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTextSearch | Text search string.  Everything that matches the text is selected.  This parameter is optional. | String |
| qRangeLo | Lower value of the search range.  This parameter is used when performing range selections or text searches in dimensions.  Default is Null. | Double |
| qRangeHi | Highest value of the search range.  This parameter is used when performing range selections or text searches in dimensions.  Default is Null. | Double |
| qNumberFormat | Gives information about the formatting of the range.  This parameter is used when performing range selections or text searches in dimensions. | *FieldAttributes* |
| qRangeInfo | This parameter is used when performing range selections or text searches in measures.  Gives information about the range of selections. | Array of *RangeSelectInfo* |

### SelectionObject

#### Overview

Indicates which selections are currently applied. It gives the current selections. Is the layout for[SelectionObjectDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/SelectionObjectDef.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| BackCount | Number of steps back | Integer |
| ForwardCount | Number of steps forward | Integer |
| Selections | Lists the fields that are selected | Array of*NxCurrentSelectionItem* |

### SelectionObjectDef

#### Overview

To display the current selections.

Can be added to any generic object but is particularly meaningful when using session objects to monitor an app.

#### Properties

*"qSelectionObjectDef": {}*

### Size

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qcx | Number of pixels on the *x* axis. | Integer |
| qcy | Number of pixels on the *y* axis. | Integer |

### SortCriteria

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qSortByState | Sorts the field values according to their logical state (selected, optional, alternative or excluded). | One of:  • *-1* for sorting descending  • *0* for no sorting  • *1* for sorting ascending |
| qSortByFrequency | Sorts the field values by frequency (number of occurrences in the field). | One of:  • *-1* for sorting ascending  • *0* for no sorting  • *1* for sorting descending |
| qSortByNumeric | Sorts the field values by numeric value. | One of:  • *-1* for sorting descending  • *0* for no sorting  • *1* for sorting ascending |
| qSortByAscii | Sorts the field by alphabetical order. | One of:  • *-1* for sorting descending  • *0* for no sorting  • *1* for sorting ascending |
| qSortByLoadOrder | Sorts the field values by the initial load order. | One of:  • *-1* for sorting descending  • *0* for no sorting  • *1* for sorting ascending |
| qSortByExpression | Sorts the field by expression. | One of:  • *-1* for sorting descending  • *0* for no sorting  • *1* for sorting ascending |
| qExpression | Sort by expression. | **"qv": "<expression>"**  Where  <expression> is a string. |

### SourceKeyRecord

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qKeyFields | Name of the key field. | Array of String |
| qTables | Table the key belongs to. | Array of String |

### StaticContentList

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | Information about the list of content files. | *StaticContentListItem* |

### StaticContentListItem

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUrlDef | Relative path to the content file. The URL is static.  In server mode, content files located:  • in the */content/<content library name>/* folder are part of a global content library.  • in the */appcontent/* folder are part of the app specific library.  The content files are never embedded in the*qvf*file.  In desktop mode, content files located:  • in the */content/default/* folder are outside the qvf file.  • in the */media/ folder*are embedded in the qvf file. | String |
| qUrl | Relative path to the content file. The URL is static.  In server mode, content files located:  • in the */content/<content library name>/* folder are part of a global content library.  • in the */appcontent/* folder are part of the app specific library.  The content files are never embedded in the*qvf*file.  In desktop mode, content files located:  • in the */content/default/* folder are outside the qvf file.  • in the */media/ folder*are embedded in the qvf file. | String |

In addition, this structure can return dynamic properties.

### StaticContentUrl

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUrl | Relative path of the thumbnail. | String |

In addition, this structure can return dynamic properties.

### StaticContentUrlDef

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUrl | Relative path of the thumbnail. | String |

In addition, this structure can contain dynamic properties.

### StringExpression

#### Properties

Abbreviated syntax:

**"qStringExpression":"=<expression>"**

Extended object syntax:

**"qStringExpression":{"qExpr":"=<expression>"}**

Where

* <expression> is a string

The "=" sign in the string expression is not mandatory. Even if the "=" sign is not given, the expression is evaluated.

A string expression is not evaluated, if the expression is surrounded by simple quotes.

The result of the evaluation of the expression can be of any type, as it is returned as a JSON (quoted) string.

### TableRecord

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qName | Name of the table. | String |
| qLoose | This property is set to true if the table is loose. | Boolean |
| qNoOfRows | Number of rows in the table. | Integer |
| qFields | Information about the fields in the table. | Array of *FieldInTableData*. |
| qPos | Information about the position of the table. | *Point* |
| qComment | Comment related to the table. | String |
| qIsDirectDiscovery | If set to true, Direct Discovery is used.  Direct Discovery fields are not loaded into memory and remain in the external database. | Boolean |
| qIsSynthetic | This property is set to true if the table contains a synthetic key. | Boolean |

### TableViewBroomPointSaveInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPos | Information about the position of the broom point. | *Point* |
| qTable | Name of the table. | String |
| qFields | List of fields in the table. | Array of String |

### TableViewConnectionPointSaveInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPos | Information about the position of the connection point. | *Point* |
| qFields | List of the fields in the table. | Array of String |

### TableViewCtlSaveInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qInternalView | Internal view mode. | *TableViewSaveInfo* |
| qSourceView | Source view mode. | *TableViewSaveInfo* |

### TableViewDlgSaveInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPos | Information about the position of the dialog window.  Not used in Qlik Sense. | *Rect* |
| qCtlInfo | Set of data for internal and source view modes. | *TableViewCtlSaveInfo* |
| qMode | View mode to display when opening Qlik Sensedata model viewer.  One of:   * 0 for internal view mode * 1 for source view mode | Integer |

### TableViewSaveInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTables | List of the tables in the database model viewer. | Array of*TableViewTableWinSaveInfo* |
| qBroomPoints | List of the broom points in the database model viewer.  Not used in Qlik Sense. | Array of*TableViewBroomPointSaveInfo* |
| qConnectionPoints | List of connection points in the database model viewer.  Not used in Qlik Sense. | Array of*TableViewConnectionPointSaveInfo* |
| qZoomFactor | Zoom factor in the database model viewer.  The default value is 1.0. | Double |

### TableViewTableWinSaveInfo

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qPos | Information about the position of the table. | *Rect* |
| qCaption | Table name. | String |

### TextMacro

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qTag | Name of the variable. | String |
| qRefSeqNo | Order in which the variable was referenced during the script execution.  The same number sequence is used for both*qRefSeqNo*and *qSetSeqNo*. | Integer |
| qSetSeqNo | Order in which the variable was updated during the script execution.  The same number sequence is used for both*qRefSeqNo*and *qSetSeqNo*. | Integer |
| qDisplayString | Variable value. | String |
| qIsSystem | Is set to true if the variable is a system variable. | Boolean |
| qIsReserved | Is set to true if the variable is a reserved variable. | Boolean |

### UndoInfo

#### Overview

Displays information about the number of possible undos and redos. Is the layout for [UndoInfoDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/UndoInfoDef.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qUndoCount | Number of possible undos | Integer |
| qRedoCount | Number of possible redos | Integer |

### UndoInfoDef

#### Overview

Defines if an object should contain information on the number of possible undo and redo.

#### Properties

**"qUndoInfoDef": {}**

The numbers of undos and redos are empty when an object is created. The number of possible undos is increased every time an action (for example, create a child, set some properties) on the object is performed. The number of possible redos is increased every time an undo action is performed.

### ValueExpr

#### Properties

**"qv": "<expression>"**

Where

<expression> is a string.

### ValueExpression

#### Properties

Abbreviated syntax:

**"qValueExpression":"=<expression>"**

Extended object syntax:

**"qValueExpression":{"qExpr":"=<expression>"}**

Where

* <expression> is a string

The "=" sign in the value expression is not mandatory. Even if the "=" sign is not given, the expression is evaluated.

The expression is evaluated as a numeric.

### VariableList

#### Overview

Lists the variables in an app. Is the layout for [VariableListDef](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GenericObject/PropertyLevel/VariableListDef.htm).

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qItems | List of the variables. | Array *NxVariableListItem* |

### VariableListDef

#### Overview

Defines the list of variables in an app.

#### Properties

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Type** |
| qType | Type of the list. | String |
| qShowReserved | Shows the reserved variables if set to true. | Boolean |
| qShowConfig | Shows the system variables if set to true. | Boolean |
| qData | Data | JSON |

## Examples of use

This section contains examples of what you can perform using the Qlik Engine API.

Parameters in the following examples are provided by position through an array. An alternative is to provide the parameters by name through an object. See<http://www.jsonrpc.org/specification>for more information.

### Creating an app and loading data

The data load script connects an app to a data source and loads data from the data source into the app.

In this section, you can find examples on how to create apps, connect to data sources, create your data load script, and load your data in the app.

**See:**[Creating an app and loading data](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/overview-load-data.htm)

### Working with apps and visualizations

Sheets provide a way of structuring your ideas and purposes for your app. When you create an empty app, it is good practice to first build a structure of empty sheets, where each sheet represents an idea or a goal.

This section provides you with examples of how to create sheets, variables and visualizations, how to update their properties, render their layout, publish them to a stream, unpublish them, and export their data. Examples on how to remove sheets, variables and visualizations are also provided.

See [Working with apps and visualizations](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/WorkingWithAppsAndVisualizations/overview-work-with-visualizations.htm).

### Discovering and analyzing

When you have created your app and loaded data into it you can start using it for data discovery and analysis.

To make discoveries in your data you make selections in the visualizations, and you can go into detail in your data and gain new insights as you filter out data for certain areas. You can use the global search to find specific data and filter your visualizations. In addition, to keep track and be able to go back to previous selections you can bookmark your selection states.

In this section, you can find examples on how to make selections, create some bookmarks, and search in data.

**See:**[Discovering and analyzing](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/overview-discover-and-analyse.htm).

### Building a story

The purpose of a story is to gather insight throughout your analysis and build clear narratives around your data. You structure the story in a way that makes it come out as convincing as possible to your audience.

Using slides, you can structure your story and put time-based snapshots of your data visualizations into these slides.

In this section, you can find examples on how to create a story, add some slides, and take some snapshots.

**See:**[Building a story](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/BuildingAStory/overview-build-story.htm).

### Undo and redo

You can undo or redo your actions. This section provides you with examples on how to undo and redo.

**See:**[Undo and redo](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/UndoAndRedo/overview-undo-redo.htm).

### Getting System Information

You can get system information like the version of the operating system, the logs.

This section provides you with examples of system information that you can retrieve.

**See:**[Getting system information](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GettingSystemInformation/overview-system-information.htm).

### Creating an app and loading data

#### Overview

The data load script connects an app to a data source and loads data from the data source into the app.

This section gives you examples on how to create apps, connect to data sources, create your data load script, and load your data in the app.

#### Create apps

Apps can be created from an empty structure, by copying an existing app or by importing an app.

This section provides you with examples of how you can create apps, migrate apps, delete apps, and list the apps.

Objects in an app can be replaced by other ones. An example on how to replace an app is also given.

**See:**[Create apps](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/CreateApps/overview-create-apps.htm).

### Connect to data sources

Data connections provide a way to save shortcuts to the data sources you commonly use: databases, local files or remote files.

The following types of connections exist:

* ODBC database connections.
* OLEDB database connections.
* Folder connections that define a path for local or network file folders.
* Internet connections used to select data from files located on a web URL.
* Custom connections.

Custom developed connectors for data sources are not directly supported by Qlik Sense. Custom connectors are developed using the QVX SDK or supplied by Qlik or third-party developers.

This section provides you with examples on how to create a connection, update a connection, and list the connections.

**See:**[Connect to data sources](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ConnectToDataSources/overview-connect-to-data-sources.htm).

### View the data to load

This section provides you with examples on how to view the data from your data sources before loading them.

**See:**[View the data to load](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/overview-view-data-to-load.htm)

### Edit the data load script

The script must be written using the Qlik Sense script syntax. There are a number of script functions that are available.

This section provides you with examples on how to create a script, and add some breakpoints in the script. Examples on how to list the Qlik Sense script functions and the breakpoints are also provided.

**See:**[Edit the data load script](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/EditDataLoadScript/overview-edit-data-load-script.htm).

### Load data

You can run the script in order to load data in your app. You can get the progress of the load process and cancel the loading if necessary.

This section provides you with examples on how to run the data load script, get the progress of the script or cancel the loading (if for example, it takes too much time).

**See:**[Load the data into the app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/LoadData/overview-run-script-load-data.htm).

### Create apps

Apps can be created from an empty structure, by copying an existing app or by importing an app.

This section provides you with examples of how you can create apps, migrate apps, delete apps, and list the apps.

Objects in an app can be replaced by other ones. An example on how to replace an app is also given.

[Copy an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/CreateApps/copy-app.htm)

[Create and open an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/CreateApps/create-and-open-app.htm)

[Create an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/CreateApps/create-app.htm)

[Delete an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/CreateApps/delete-app.htm)

[Embed a thumbnail in a qvf file](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/CreateApps/embed-thumbnail-in-app.htm)

[Get the identifier and the type of all objects in an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/CreateApps/get-id-type-objects-in-app.htm)

[List available apps](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/CreateApps/list-apps.htm)

[Migrate an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/CreateApps/migrate-app.htm)

[Open an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/CreateApps/open-app.htm)

[Save an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/CreateApps/save-app.htm)

### Connect to data sources

This section provides you with examples on how to create a connection, update a connection, and list the connections.

[Check if a connection string is valid](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ConnectToDataSources/check-connection-string-is-valid.htm)

[Create a connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ConnectToDataSources/create-connection.htm)

[Get information about a specific connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ConnectToDataSources/get-information-one-connection.htm)

[Get information about an ODBC, OLEDB or CUSTOM connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ConnectToDataSources/get-information-ODBC-connection.htm)

[List the connections in an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ConnectToDataSources/list-connections.htm)

[List the custom connectors](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ConnectToDataSources/list-custom-connectors.htm)

[List the ODBC connections](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ConnectToDataSources/list-ODBC-connections.htm)

[List the OLEDB providers](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ConnectToDataSources/list-OLEDB-providers.htm)

[Remove a connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ConnectToDataSources/remove-connection.htm)

[Send a command to a custom connector](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ConnectToDataSources/send-command-to-custom-connector.htm)

[Update a connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ConnectToDataSources/update-connection.htm)

### View the data to load

This section provides you with examples on how to view the data from your data sources before loading them.

[Check if there are loosely coupled tables in the app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/check-if-loosely-coupled-tables-in-app.htm)

[Get the associations between the fields of two tables](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/get-associations-between-fields-two-tables.htm)

[Get the data format of a file](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/get-data-format-file.htm)

[Get the position of the tables in the database model viewer](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/get-positions-tables-in-DMV.htm)

[List the databases of a ODBC, OLEDB or CUSTOM connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/list-databases-Odbc-Oledb-custom-connection.htm)

[List the fields in a table for a folder connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/list-fields-in-table-for-folder.htm)

[List the fields in a table for a ODBC, OLEDB or CUSTOM connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/list-fields-in-table-for-ODBC.htm)

[List the files and folders in a specified path](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/list-files-and-folders-in-a-path.htm)

[List the items of a folder connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/list-items-in-directory.htm)

[List the owners of a database](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/list-owners-database.htm)

[List the tables and fields in a XML or JSON file for a folder connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/list-tables-and-fields-from-XMLJSON-file-for-folder.htm)

[List the tables, fields and keys from an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/list-tables-and-key-fields-in-app.htm)

[List the tables for a folder connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/list-tables-for-folder.htm)

[List the tables for a ODBC, OLEDB or CUSTOM connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/list-tables-for-ODBC.htm)

[List the values of a table for a folder connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/list-table-values-for-folder.htm)

[List the values of a table for a ODBC, OLEDB or CUSTOM connection](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/list-table-values-for-ODBC.htm)

[Set a table as loosely coupled table](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/ViewDataToLoad/set-table-as-loosely-coupled-table.htm)

### Edit the data load script

The script must be written using the Qlik Sense script syntax. There are a number of script functions that are available.

This section provides you with examples on how to create a script, and add some breakpoints in the script. Examples on how to list the Qlik Sense script functions and the breakpoints are also provided.

You need to have knowledge of scripting in order to write a script. For more information, refer to the help for Qlik Sense.

[Check the syntax of a script](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/EditDataLoadScript/check-script-syntax.htm)

[Configure the reload of a script](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/EditDataLoadScript/configure-reload-script.htm)

[Create a script with regional settings](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/EditDataLoadScript/create-script-with-regional-settings.htm)

[Get the content of a file and create a QVD file](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/EditDataLoadScript/get-content-file-and-create-QVD-file.htm)

[Get the Qlik Sense script syntax grammar](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/EditDataLoadScript/get-script-syntax-grammar.htm)

[List the breakpoints in a script](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/EditDataLoadScript/list-breakpoints-in-script.htm)

[List the functions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/EditDataLoadScript/list-functions.htm)

[List the supported code pages](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/EditDataLoadScript/list-supported-code-pages.htm)

[Set some breakpoints in a script](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/EditDataLoadScript/set-breakpoints-in-script.htm)

[Set and get some values in a script](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/EditDataLoadScript/set-get-script.htm)

### Load the data into the app

You can run the script in order to load data in your app. You can get the progress of the load process and cancel the loading if necessary.

This section provides you with examples on how to run the data load script, get the progress of the script or cancel the loading (if for example, it takes too much time).

[Cancel the reload of an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/LoadData/cancel-reload.htm)

[Get the progress of a reload request](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/LoadData/get-progress.htm)

[Reload an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/CreatingAppLoadingData/LoadData/reload-app.htm)

### Discovering and analyzing

When you have created your app and loaded data into it you can start using it for data discovery and analysis.

### Make selections

To make discoveries in your data you make selections in the visualizations, and you can go into detail in your data and gain new insights as you filter out data from certain areas.

**See:**[Make selections](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/overview-make-selections.htm).

### Search in the data

Data search makes it easier for you to find or filter data in the visualizations. It helps you to narrow down the data so you can make selections in the resulting list.

You use the search to find items in all of the data that is loaded into the app.

**See:**[Search in the data](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/SearchInData/overview-search-in-data.htm).

### Bookmark selections

To keep track and be able to go back to previous selections you can bookmark your selection states.

**See:**[Keep track of data using bookmarks](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/Bookmarks/overview_bookmarks.htm).

### Make selections

To make discoveries in your data you make selections in the visualizations, and you can go into detail in your data and gain new insights as you filter out data for certain areas.

This topic provides you with examples of how to make selections and clear selections.

[Clear all selections](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/clear-all-selections.htm)

[Clear the selections in all fields except the current field](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/clear-selections-in-all-fields-except-current-field.htm)

[Clear the selections in a visualization](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/clear-selections-in-visualization.htm)

[Clear the selections of a specific field](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/clear-selections-specific-field.htm)

[Enter and exit the selection mode](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/enter-and-exit-selection-mode.htm)

[Get the current selections](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/get-current-selections.htm)

[Invert the current selections](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/invert-current-selections.htm)

[Select all possible values of a field](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-all-possible-values-field.htm)

[Select all possible values of a list object](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-all-possible-values-list-object.htm)

[Select all values of a field](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-all-values-field.htm)

[Select all values of a list object](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-all-values-in-list-object.htm)

[Select all alternative values of a field](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-alternative-values-field.htm)

[Select all alternative values of a list object](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-alternative-values-list-object.htm)

[Select some dimension cells in a pivot table](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-dimension-cells-in-pivot-table.htm)

[Select some dimension cells in a stacked table](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-dimension-cells-in-stacked-table.htm)

[Select all excluded values of a list object](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-excluded-values-list-object.htm)

[Select a range of values in a hypercube](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-range-measures-in-hypercube.htm)

[Select a set of cells in a hypercube](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-set-of-cells-in-hypercube.htm)

[Select some values in a list object](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-some-values-in-list-object.htm)

[Select some values in a field](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-values-in-field.htm)

[Select some values in a pivot table](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-values-in-pivot-table.htm)

[Select values from the global associative search](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/select-values-of-global-associative-search.htm)

[Toggle select some values of a field](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/MakeSelections/toggle-select-values-of-a-field.htm)

### Search in the data

You can use the search to find items in all of the data that is loaded into the app.

This topic provides you with examples of how to filter your data by searching for specific strings.

[Abort the results of a search in a list object](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/SearchInData/abort-results-search-list-object.htm) [Drill up a hierarchy](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/SearchInData/drill-up-hierarchy.htm)

[Accept the results of a search in a list object](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/SearchInData/accept-results-search-list-object.htm) [Get search suggestions](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/SearchInData/get-search-suggestions.htm)

[Collapse or expand the left dimensions of a pivot table](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/SearchInData/collapse-expand-left-dimensions-pivot-table.htm) [Search for a string in a list object](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/SearchInData/search-string-in-list-object.htm)

[Collapse or expand the top dimensions of a pivot table](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/SearchInData/collapse-expand-top-dimensions-pivot-table.htm) [Search for one or more terms in the values of an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/SearchInData/search-terms-in-values-of-app.htm)

### Keep track of data using bookmarks

This topic provides you with examples on how to create, apply, update, clone and remove bookmarks. An example of how to get the handle of a bookmark is also given.

[Apply a bookmark](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/Bookmarks/apply-bookmark.htm) [List the bookmarks in an app](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/Bookmarks/list-bookmarks-in-app.htm)

[Clone a bookmark](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/Bookmarks/clone-bookmark.htm) [Publish a bookmark](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/DiscoveringAndAnalysing/Bookmarks/publish-bookmark.htm)

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### Building a story

The purpose of a story is to gather insight throughout your analysis and build clear narratives around your data. You structure the story in a way that makes it come out as convincing as possible to your audience.

Using slides, you can structure your story and put time-based snapshots of your data visualizations into these slides.

In this section, you can find examples on how to create a story, add some slides, take some snapshots, and remove some stories or slides.

### Creating a story

You can create a story by creating a new object or by cloning an existing story.

**See:**[Create a story](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/BuildingAStory/create-story.htm).

**See:**[Clone a story](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/BuildingAStory/clone-story.htm).

### Adding a slide to a story

You can create a slide by creating a child of a story.

**See:**[Add a slide to a story](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/BuildingAStory/add-slide.htm).

### Adding a snapshot to a slide

You can take a snapshot of an object and add it to a slide.

**See:**[Add a snapshot to a generic object](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/BuildingAStory/add-snapshot.htm).

### Reordering slides

You can reorder the slides in a story.

**See:**[Invert the order of the slides in a story](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/BuildingAStory/invert-slides-order.htm).

### Removing a story or a slide

You can remove a slide from a story or you can remove a complete story. The slides inside a story are removed at the same time as the story is removed.

**See:**[Remove a slide](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/BuildingAStory/remove-slide.htm).

**See:**[Remove a story](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/BuildingAStory/remove-story.htm).

### Undo and redo

You can undo or redo your actions. This section provides you with examples on how to undo and redo.

[Clear the undo buffer](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/UndoAndRedo/clear-undo-buffer.htm)

[Get the number of entries in the back or forward stack](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/UndoAndRedo/get-number-entries-in-back-forward-stacks.htm)

[Undo or redo an action](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/UndoAndRedo/undo-redo.htm)

### Getting system information

You can get system information like the version of the operating system, the logs.

This section provides you with examples of system information that you can retrieve.

[Get the engine logs](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GettingSystemInformation/get-engine-logs.htm) [Get the version of the operating system](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GettingSystemInformation/get-OS-version.htm)

[Get information about the authenticated user](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GettingSystemInformation/get-information-about-authenticated-user.htm) [Get the version of Qlik Sense](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GettingSystemInformation/get-product-version.htm)

[Get locale information](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GettingSystemInformation/get-locale-information.htm) [Is the user working in personal mode?](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GettingSystemInformation/is-user-working-in-Personal-mode.htm)

[Get the identifier of the endpoint](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GettingSystemInformation/get-unique-ID.htm) [Is the user working in standalone mode?](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GettingSystemInformation/is-user-working-in-Desktop-mode.htm)

[Get the name of the operating system](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GettingSystemInformation/get-OS-name.htm) [List the content libraries](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GettingSystemInformation/list-content-libraries.htm)

[Get the name of the Qlik product](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GettingSystemInformation/get-QT-product.htm) [List the drives in the system](https://help.qlik.com/en-US/sense-developer/2.2/Subsystems/EngineAPI/Content/GettingSystemInformation/list-drives-in-system.htm)

## Using the engine API explorer

### Overview

The engine API explorer is a tool that allows you to send messages to the Qlik engine and get answers from the engine.

### URL

The engine API explorer is accessible at:

* *http://localhost:4848/dev-hub/engine-api-explorer* while running in local installation mode
* *https://[server]/dev-hub/engine-api-explorer* while running in server mode.

If the Qlik Sense hub is accessible at the address *https://[myserver]/hub*, the engine API explorer is accessible at *https://[myserver]/dev-hub/engine-api-explorer*.

### Connect to the Qlik engine and open an app

To connect to the Qlik engine and open an app, do the following:

1. Click **Connect to engine**.
2. Open an app by selecting an app in the **Select an app** drop-down menu.

You are connected to the engine and the app is opened. You can now start using the methods available in the Qlik Engine API.

### Handles

The protocol uses handles to reference the objects/methods available.

When connecting to the engine you always get the handle -1, which is global and refers to the engine itself.

Handles are listed in the **Select API calls** section. As you create and get objects, more and more handles become available.

### Methods

Methods available for a particular handle are listed in the **Select API calls** section.

To send a call to the engine, do the following:

1. Select a method in the **Select method** drop-down list.
2. Define the parameters of the method (if any) in the **Request**section.
3. Click **Execute**.

The call is sent to the engine and both the request and the response messages are displayed in the**Execution logs** section.

### Macros

A number of macros are supplied. Each macro contains a set of commands/methods.

To use a macro, do the following:

1. Select a macro in the **Select macro** drop-down list.
2. Click **Execute**.