

Olap4ld Specification

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Note: This specification has been adapted from the olap4j specification.

The LinkedDataEngine interface, and methods which return schema rowsets

Schema result sets are specified as in olap4j. Here is a table of the olap4j methods and the corresponding olap4ld method and element type.

Olap4ld method	Metadata element	Olap4j set method	XML
DatabaseMetaData.getCatalogs	Catalog	DatabaseMetaData.getCatalogs	DBSC
LinkedDataEngine.getSchemas	Schema	DatabaseMetaData.getSchemas	not su
not supported	not supported	not supported	DBSC
not supported	not supported	not supported	DBSC
not supported	not supported	not supported	DBSC
not supported	not supported	not supported	DBSC
LinkedDataEngine.getDatabases	Database	OlapDatabaseMetaData.getDatabases	DISC
not supported	not supported	not supported	DISC
LinkedDataEngine.getMdxKeywords	not supported	OlapDatabaseMetaData.getMdxKeywords	DISC
LinkedDataEngine.getLiterals	not supported	OlapDatabaseMetaData.getLiterals	DISC
LinkedDataEngine.getDatabaseProperties	not supported	OlapDatabaseMetaData.getDatabaseProperties	DISC
not supported	not supported	not supported	DISC
LinkedDataEngine.getActions	not supported	OlapDatabaseMetaData.getActions	MDS
LinkedDataEngine.getCubes	Cube	OlapDatabaseMetaData.getCubes	MDS
LinkedDataEngine.getDimensions	Dimension	OlapDatabaseMetaData.getDimensions	MDS
LinkedDataEngine.getFunctions	not supported	OlapDatabaseMetaData.getFunctions	MDS
LinkedDataEngine.getHierarchies	Hierarchy	OlapDatabaseMetaData.getHierarchies	MDS

not supported	not supported	not supported	MDSO
not supported	not supported	not supported	MDSO
LinkedDataEngine.getLevels	Level	OlapDatabaseMetaData.getLevels	MDSO
LinkedDataEngine.getMeasures	Measure	OlapDatabaseMetaData.getMeasures	MDSO
LinkedDataEngine.getMembers	Member	OlapDatabaseMetaData.getMembers	MDSO
LinkedDataEngine.getProperties	Property	OlapDatabaseMetaData.getProperties	MDSO
LinkedDataEngine.getSets	NamedSet	OlapDatabaseMetaData.getSets	MDSO

The following sections describe the columns in each rowset. Each section includes a table that provides the following information for each column.

Column heading	Contents
Column name	The name of the column in the output rowset. Note, in Linked Data variables are prefixed with ?
Type	A description of the data type for the column, and whether the column may be NULL.
Description	A brief description of the purpose of the column.
Linked Data	A brief description of how the elements are described in Linked Data

2.7.3.1. getDatabases

Column name	Type	Description	Linked Data
DATA_SOURCE_NAME	String	The name of the data source, such as FoodMart 2000 . Never null.	Database name from configuration URL.
DATA_SOURCE_DESCRIPTION	String	A description of the data source, as entered by the publisher.	“Catalog of Linked Data”
URL	String	The unique path that shows where to invoke the XML for Analysis methods for that data source.	Server URL from configuration URL.
DATA_SOURCE_INFO	String	A string containing any additional information required to connect to the data source. This can include the Initial Catalog property or other information for the provider. Example: "Provider=MSOLAP;Data Source=Local;"	“Data following the Linked Data principles.”
PROVIDER_NAME	String	The name of the provider behind the data source. Example: "MSDASQL"	“The community.”
PROVIDER_TYPE	String	Comma-separated list of the	-

		<p>types of data supported by the provider. May include one or more of the following types. Example follows this table.</p> <ul style="list-style-type: none"> • TDP: tabular data provider. • MDP: multidimensional data provider. • DMP: data mining provider. A DMP provider implements the OLE DB for Data Mining specification. 	
AUTHENTICATION_MODE	String	<p>Specification of what type of security mode the data source uses. Values can be one of the following, never null:</p> <ul style="list-style-type: none"> • Unauthenticated: no user ID or password needs to be sent. • Authenticated: User ID and Password must be included in the information required for the connection. • Integrated: the data source uses the underlying security to determine authorization, such as Integrated Security provided by Microsoft Internet Information Services (IIS). 	-

2.7.3.2. getDatabaseProperties

Column name	Type	Description	Linked Data
PROPERTY_NAME	String	The name of the property. Never null.	-
PROPERTY_DESCRIPTION	String	A localizable text description of the property.	-
PROPERTY_TYPE	String	The XML data type of the property.	-
PROPERTY_ACCESS_TYPE	String	Access for the property.	-

		The value can be Read, Write, or ReadWrite. Never null.	
IS_REQUIRED	boolean	True if a property is required, false if it is not required.	-
PROPERTY_VALUE	String	The current value of the property. This property is named VALUE in XMLA.	-

2.7.3.3 getLiterals

Column name	Type	Description	Linked Data
LITERAL_NAME	String	The name of the literal described in the row. Never null. Example: DBLITERAL_LIKE_PERCENT.	-
LITERAL_VALUE	String	Contains the actual literal value. Example, if LITERAL_NAME is DBLITERAL_LIKE_PERCENT and the percent character (%) is used to match zero or more characters in a LIKE clause, this column's value would be "%".	-
LITERAL_INVALID_CHARS	String	The characters, in the literal, that are not valid. For example, if table names can contain anything other than a numeric character, this string would be "0123456789".	-
LITERAL_INVALID_STARTING_CHARS	String	The characters that are not valid as the first character of the literal. If the literal can start with any valid character, this is null.	-
LITERAL_MAX_LENGTH	int	The maximum number of characters in the literal. If there is no maximum or the maximum is unknown, the value is -1.	-

2.7.3.4. getCubes

Column name	Type	Description	Linked Data
CATALOG_NAME	String	The name of the database.	Constant
SCHEMA_NAME	String	Not supported.	Constant

CUBE_NAME	String	The name of the cube or dimension. Dimension names are prefaced by a dollar sign (\$) symbol.	?CUBE_NAME a qb:DataStructureDefinition.
CUBE_TYPE	String	The type of the cube. Valid values are: <ul style="list-style-type: none"> CUBE DIMENSION 	“CUBE”
CUBE_GUID	String	Not supported.	-
CREATED_ON	Timestamp	Not supported.	-
LAST_SCHEMA_UPDATE	Timestamp	The time that the cube was last processed.	-
SCHEMA_UPDATED_BY	String	Not supported.	-
LAST_DATA_UPDATE	Timestamp	The time that the cube was last processed.	-
DATA_UPDATED_BY	String	Not supported.	-
DESCRIPTION	String	A user-friendly description of the cube.	OPTIONAL {?CUBE_NAME rdfs:comment ?CUBE_DESCRIPTION FILTER (lang(?CUBE_DESCRIPTION) = \"en\") }
IS_DRILLTHROUGH_ENABLED	boolean	A Boolean that always returns true.	-
IS_LINKABLE	boolean	A Boolean that indicates whether a cube can be used in a linked cube.	-
IS_WRITE_ENABLED	boolean	A Boolean that indicates whether a cube is write-enabled.	-
IS_SQL_ENABLED	boolean	A Boolean that indicates whether SQL can be used on the cube.	-
CUBE_CAPTION	String	The caption of the cube.	OPTIONAL {?CUBE_NAME rdfs:label ?CUBE_CAPTION FILTER (lang(?CUBE_CAPTION) = \"en\") }
BASE_CUBE_NAME	String	The name of the source cube if this cube is a perspective cube.	-
ANNOTATIONS	String	(Optional) A set of notes, in XML format.	-

The rowset is sorted on **CATALOG_NAME, SCHEMA_NAME, CUBE_NAME**.

2.7.3.5. getDimensions

Retrieves a result set describing the shared and private dimensions within a database.

Column name	Type	Description
CATALOG_NAME	String	The name of the database.
SCHEMA_NAME	String	Not supported.
CUBE_NAME	String	The name of the cube.
DIMENSION_NAME	String	The name of the dimension. If a dimension is part of more than one cube or measure group, then there is one row for each unique combination of dimension, measure group, and cube.
DIMENSION_UNIQUE_NAME	String	The unique name of the dimension.
DIMENSION_GUID	String	Not supported.
DIMENSION_CAPTION	String	The caption of the dimension. This should be used when displaying the name of the dimension to the user, such as in the user interface or reports.
DIMENSION_ORDINAL	int	The position of the dimension within the cube.
DIMENSION_TYPE	int	The type of the dimension. Valid values include the values of the <code>xmlaOrdinal</code> attribute of the <code>org.olap4j.Dimension.Type</code> enum.
DIMENSION_CARDINALITY	int	The number of members in the key attribute.
DEFAULT_HIERARCHY	String	A hierarchy from the dimension. Preserved for backwards compatibility.
DESCRIPTION	String	A user-friendly description of the dimension.
IS_VIRTUAL	boolean	Always <code>false</code> .
IS_READWRITE	boolean	A Boolean that indicates whether the dimension is write-enabled. <code>true</code> if the dimension is write-enabled.
DIMENSION_UNIQUE_SETTINGS	int	A bitmap that specifies which columns contain unique values if the dimension contains only members with unique names. The following bit value constants are defined for this bitmap: <ul style="list-style-type: none"> <code>MDDIMENSIONS_MEMBER_KEY_UNIQUE</code> (0x00000001)
DIMENSION_MASTER_UNIQUE_NAME	String	Always <code>null</code> .
DIMENSION_IS_VISIBLE	boolean	Always <code>true</code> .

The result set is sorted on **CATALOG_NAME**, **SCHEMA_NAME**, **CUBE_NAME**, **DIMENSION_NAME**.

2.7.3.6. getFunctions

Retrieves a result set describing the functions available to client applications connected to the database.

Specified by the **MDSHEMA_FUNCTIONS** XML for Analysis method.

The returned result set contains the following columns.

Column name	Type	Description	Linked Data
FUNCTION_NAME	String	The name of the function.	-
DESCRIPTION	String	A description of the function.	-
PARAMETER_LIST	String	A comma delimited list of parameters formatted as in Microsoft Visual Basic. For example, a parameter might be Name as String.	-
RETURN_TYPE	int	The VARTYPE of the return data type of the function.	-
ORIGIN	int	The origin of the function: <ul style="list-style-type: none">• 1 for MDX functions.• 2 for user-defined functions.	-
INTERFACE_NAME	String	The name of the interface for user-defined functions The group name for Multidimensional Expressions (MDX) functions.	-
LIBRARY_NAME	String	The name of the type library for user-defined functions. null for MDX functions.	-
DLL_NAME	String	(Optional) The name of the assembly that implements the user-defined function. Returns null for MDX functions.	-
HELP_FILE	String	(Optional) The name of the file that contains the help documentation for the user-defined function. Returns null for MDX functions.	-
HELP_CONTEXT	int	(Optional) Returns the Help context ID for this function.	-
OBJECT	String	(Optional) The generic name of the object class to which a property applies. For example, the rowset corresponding to the <level_name>.Members function returns " Level ".	-

		Returns null for user-defined functions, or non-property MDX functions.	
CAPTION	String	The display caption for the function.	-

The rowset is sorted on **ORIGIN, INTERFACE_NAME, FUNCTION_NAME**.

2.7.3.7. getHierarchies

Retrieves a result set describing each hierarchy within a particular dimension.

Specified by the **MDSHEMA_HIERARCHIES** XML for Analysis method.

The returned result set contains the following columns.

Column name	Type	Description
CATALOG_NAME	String	The name of the catalog to which this hierarchy belongs. null if the provider does not support catalogs.
SCHEMA_NAME	String	Not supported
CUBE_NAME	String	(Required) The name of the cube to which this hierarchy belongs.
DIMENSION_UNIQUE_NAME	String	The unique name of the dimension to which this hierarchy belongs. Providers that generate unique names by qualification, each of this name is delimited.
HIERARCHY_NAME	String	The name of the hierarchy. Blank if there is only a single hierarchy in the dimension. This will always have a value in Microsoft SQL Server 2005 Analysis Services (SSAS).
HIERARCHY_UNIQUE_NAME	String	The unique name of the hierarchy.
HIERARCHY_GUID	String	Not supported
HIERARCHY_CAPTION	String	A label or a caption associated with the hierarchy. Used primarily for display purposes. If a caption does not exist, HIERARCHY_NAME is returned. If the dimension either does not contain a hierarchy or has one hierarchy, this column will contain the name of the dimension.
DIMENSION_TYPE	int	The type of the dimension. Valid values include the values of the <code>xmla:Ordinal</code> attribute of <code>Dimension</code> .
HIERARCHY_CARDINALITY	int	The number of members in the hierarchy.
DEFAULT_MEMBER	String	The default member for this hierarchy. This is a unique name. Every hierarchy must have a default member.
ALL_MEMBER	String	The member at the highest level of the rollup.

DESCRIPTION	String	A human-readable description of the hierarchy. null if no description exists.
STRUCTURE	int	<p>The structure of the hierarchy. Valid values include the following values:</p> <ul style="list-style-type: none"> • MD_STRUCTURE_FULLYBALANCED (0) • MD_STRUCTURE_RAGGEDBALANCED (1) • MD_STRUCTURE_UNBALANCED (2) • MD_STRUCTURE_NETWORK (3)
IS_VIRTUAL	boolean	Always returns false .
IS_READWRITE	boolean	<p>A Boolean that indicates whether the Write Back to dimension is enabled.</p> <p>Returns true if the Write Back to dimension column that represents this hierarchy is enabled.</p>
DIMENSION_UNIQUE_SETTINGS	int	Always returns MDDIMENSIONS_MEMBER_KEY_UNIQUE_SETTINGS .
DIMENSION_MASTER_UNIQUE_NAME	String	Always returns null .
DIMENSION_IS_VISIBLE	boolean	Always returns true . If the dimension is not visible, it will return false in the schema rowset.
HIERARCHY_ORDINAL	int	The ordinal number of the hierarchy across all hierarchies of the dimension.
DIMENSION_IS_SHARED	boolean	Always returns true .
HIERARCHY_IS_VISIBLE	boolean	<p>A Boolean that indicates whether the hierarchy is visible.</p> <p>Returns true if the hierarchy is visible; otherwise, false.</p>
HIERARCHY_ORIGIN	int	<p>A bit mask that determines the source of the hierarchy:</p> <ul style="list-style-type: none"> • MD_USER_DEFINED identifies user defined hierarchies and has a value of 0x00000001. • MD_SYSTEM_ENABLED identifies attribute hierarchies and has a value of 0x00000002. • MD_SYSTEM_INTERNAL identifies attributes without hierarchies, attribute hierarchies, and has a value of 0x00000004. <p>A parent/child attribute hierarchy is both MD_USER_DEFINED and MD_SYSTEM_ENABLED.</p>
HIERARCHY_DISPLAY_FOLDER	String	The path to be used when displaying the hierarchy in the user interface. Folder names will be separated by a semicolon (;). Nested folders will be indicated by a backslash (\).
INSTANCE_SELECTION	int	<p>A hint to the client application on how to show the hierarchy. Valid values include the following values:</p> <ul style="list-style-type: none"> • MD_INSTANCE_SELECTION_NONE • MD_INSTANCE_SELECTION_DROPDOWN • MD_INSTANCE_SELECTION_LIST • MD_INSTANCE_SELECTION_FILTEREDLIST

		<ul style="list-style-type: none"> • MD_INSTANCE_SELECTION_MANDATORY
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The rowset is sorted on **CATALOG_NAME**, **SCHEMA_NAME**, **CUBE_NAME**, **DIMENSION_UNIQUE_NAME**, **HIERARCHY_NAME**.

2.7.3.8. getLevels

Retrieves a result set describing each level within a particular hierarchy.

Specified by the **MDSHEMA_LEVELS** XML for Analysis method.

The returned result set contains the following columns.

Column name	Type	Description
CATALOG_NAME	String	The name of the catalog to which this level belongs. null if the provider does not support catalogs.
SCHEMA_NAME	String	The name of the schema to which this level belongs. null if the provider does not support schemas.
CUBE_NAME	String	The name of the cube to which this level belongs.
DIMENSION_UNIQUE_NAME	String	The unique name of the dimension to which this level belongs. providers that generate unique names by qualification, each component of this name is delimited.
HIERARCHY_UNIQUE_NAME	String	The unique name of the hierarchy. If the level belongs to more than one hierarchy, there is one row for each hierarchy to which it belongs. For providers that generate unique names by qualification, each component of this name is delimited.
LEVEL_NAME	String	The name of the level.
LEVEL_UNIQUE_NAME	String	The properly escaped unique name of the level.
LEVEL_GUID	String	Not supported.
LEVEL_CAPTION	String	A label or caption associated with the hierarchy. Used primarily for display purposes. If a caption does not exist, LEVEL_NAME is returned.
LEVEL_NUMBER	int	The distance of the level from the root of the hierarchy. Root level is zero (0).
LEVEL_CARDINALITY	int	The number of members in the level.
LEVEL_TYPE	int	Type of the level. Values are as allowed by the xm1aOrdinal field of the org.olap4j.Level.Type enum.
DESCRIPTION	String	A human-readable description of the level. null if no description exists.
CUSTOM_ROLLUP_SETTINGS	int	A bitmap that specifies the custom rollup options: <ul style="list-style-type: none"> • MDLEVELS_CUSTOM_ROLLUP_EXPRESSION (0x01) indicates an expression exists for this level.

		<p>(Deprecated)</p> <ul style="list-style-type: none"> • MDLEVELS_CUSTOM_ROLLUP_COLUMN (0x01) indicates that there is a custom rollup column for this level. • MDLEVELS_SKIPPED_LEVELS (0x04) indicates that there is a skipped level associated with members of this level. • MDLEVELS_CUSTOM_MEMBER_PROPERTIES (0x08) indicates that members of the level have custom member properties. • MDLEVELS_UNARY_OPERATOR (0x10) indicates that members on the level have unary operators.
LEVEL_UNIQUE_SETTINGS	int	<p>A bitmap that specifies which columns contain unique values, the level only has members with unique names or keys. The Msmd.h file defines the following bit value constants for this bitmap:</p> <ul style="list-style-type: none"> • MDDIMENSIONS_MEMBER_KEY_UNIQUE (1) • MDDIMENSIONS_MEMBER_NAME_UNIQUE (2) <p>The key is always unique in Microsoft SQL Server 2005 Analysis Services (SSAS). The name will be unique if the setting on the attribute is UniqueInDimension or UniqueInAttribute.</p>
LEVEL_IS_VISIBLE	boolean	<p>A Boolean that indicates whether the level is visible.</p> <p>Always returns True. If the level is not visible, it will not be included in the schema rowset.</p>
LEVEL_ORDERING_PROPERTY	String	The ID of the attribute that the level is sorted on.
LEVEL_DBTYPE	int	<p>The DBTYPE enumeration of the member key column that is used for the level attribute.</p> <p>Null if concatenated keys are used as the member key column.</p>
LEVEL_MASTER_UNIQUE_NAME	String	Always returns null.
LEVEL_NAME_SQL_COLUMN_NAME	String	The SQL representation of the level member names.
LEVEL_KEY_SQL_COLUMN_NAME	String	The SQL representation of the level member key values.
LEVEL_UNIQUE_NAME_SQL_COLUMN_NAME	String	The SQL representation of the member unique names.
LEVEL_ATTRIBUTE_HIERARCHY_NAME	String	The name of the attribute hierarchy providing the source of the level.
LEVEL_KEY_CARDINALITY	int	The number of columns in the level key.
LEVEL_ORIGIN	int	<p>A bit map that defines how the level was sourced:</p> <ul style="list-style-type: none"> • MD_ORIGIN_USER_DEFINED identifies levels in a user defined hierarchy. • MD_ORIGIN_ATTRIBUTE identifies levels in an attribute hierarchy.

		<ul style="list-style-type: none"> • MD_ORIGIN_KEY_ATTRIBUTE identifies levels in key attribute hierarchy. • MD_ORIGIN_INTERNAL identifies levels in attribute hierarchies that are not enabled.
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The rowset is sorted on **CATALOG_NAME**, **SCHEMA_NAME**, **CUBE_NAME**, **DIMENSION_UNIQUE_NAME**, **HIERARCHY_UNIQUE_NAME**, **LEVEL_NUMBER**.

2.7.3.9. getMeasures

Retrieves a result set describing each measure within a cube.

Specified by the **MDSHEMA_MEASURES** XML for Analysis method.

The returned result set contains the following columns.

Column name	Type	Description	Linked Data
CATALOG_NAME	String	The name of the catalog to which this measure belongs. null if the provider does not support catalogs.	Constant
SCHEMA_NAME	String	The name of the schema to which this measure belongs. null if the provider does not support schemas.	Constant
CUBE_NAME	String	The name of the cube to which this measure belongs.	?CUBE_NAME a qb:DataStructureDefinition.
MEASURE_NAME	String	The name of the measure.	?MEASURE_UNIQUE_NAME
MEASURE_UNIQUE_NAME	String	The Unique name of the measure. For providers that generate unique names by qualification, each component of this name is delimited.	?CUBE_NAME qb:componentProperty ?dimensionProperty qb:measureProperty ?MEASURE_UNIQUE_NAME
MEASURE_CAPTION	String	A label or caption associated with the measure. Used primarily for display purposes. If a caption does not exist, MEASURE_NAME is returned.	?MEASURE_UNIQUE_NAME rdfs:label ?MEASURE_CAPTION.
MEASURE_GUID	String	Not supported.	-
MEASURE_AGGREGATOR	int	An enumeration that identifies how a measure was derived. Can be one of the values allowed by the xmlaOrdinal field of the org.olap4j.Measure.Aggregator enum.	5 (count)
DATA_TYPE	int	The data type of the measure.	5 (int)
NUMERIC_PRECISION	int	The maximum precision of the property if the measure object's	-

		data type is exact numeric. null for all other property types.	
NUMERIC_SCALE	int	The number of digits to the right of the decimal point if the measure object's type indicator is DBTYPE_NUMERIC or DBTYPE_DECIMAL . Otherwise, this value is null .	-
MEASURE_UNITS	String	Not supported	-
DESCRIPTION	String	A human-readable description of the measure. null if no description exists.	?DIMENSION_UNIQUE_1 rdfs:comment ?DESCRIPT
EXPRESSION	String	An expression for the member.	-
MEASURE_IS_VISIBLE	boolean	A Boolean that always returns True. If the measure is not visible, it will not be included in the schema rowset.	-
LEVELS_LIST	String	A string that always returns null .	-
MEASURE_NAME_ SQL_COLUMN_NAME	String	The name of the column in the SQL query that corresponds to the measure's name.	-
MEASURE_UNQUALIFIED_ CAPTION	String	The name of the measure, not qualified with the measure group name.	-
MEASUREGROUP_NAME	String	The name of the measure group to which the measure belongs.	-
MEASURE_DISPLAY_FOLDER	String	The path to be used when displaying the measure in the user interface. Folder names will be separated by a semicolon. Nested folders are indicated by a backslash (\).	-
DEFAULT_FORMAT_STRING	String	The default format string for the measure.	-

The rowset is sorted on **CATALOG_NAME**, **SCHEMA_NAME**, **CUBE_NAME**, **MEASURE_NAME**.

2.7.3.10. getMembers

Retrieves a result set describing the members within a database.

Specified by the **MDSHEMA_MEMBERS** XML for Analysis method.

The returned result set contains the following columns.

Column name	Type	Description	Linked Data
CATALOG_NAME	String	The name of the database to which this member belongs.	Constant

SCHEMA_NAME	String	The name of the schema to which this member belongs.	Constant
CUBE_NAME	String	The name of the cube to which this member belongs.	?CUBE_NAME a qb:DataStructureDefinition
DIMENSION_UNIQUE_NAME	String	The unique name of the dimension to which this member belongs.	?CUBE_NAME qb:componentProperty ?dimensionProperty. ?dimensionProperty qb:1 ?MEASURE_UNIQUE_NAME
HIERARCHY_UNIQUE_NAME	String	The unique name of the hierarchy to which this member belongs.	?DIMENSION_UNIQUE_NAME qb:codeList ?HIERARCHY_UNIQUE_NAME (or, if no codeList exists, simply the ?DIMENSION_UNIQUE_NAME)
LEVEL_UNIQUE_NAME	String	The unique name of the level to which this member belongs.	Root-Level
LEVEL_NUMBER	int	The distance of the member from the root of the hierarchy. The root level is zero (0).	0
MEMBER_ORDINAL	int	(Deprecated) Always returns 0 .	0
MEMBER_NAME	String	The name of the member.	?MEMBER_UNIQUE_NAME
MEMBER_UNIQUE_NAME	String	The unique name of the member.	?HIERARCHY_UNIQUE_NAME skos:hasTopConcept ?MEMBER_UNIQUE_NAME (if no codeList exists, then for all the values that were observations described by the cube ?obs qb:dataSet ?ds. ?ds qb:structure ?CUBE_NAME ?DIMENSION_UNIQUE_NAME ?MEMBER_UNIQUE_NAME)
MEMBER_TYPE	int	The type of the member, one of the values of the ordinal field of the org.olap4j.Member.Type enum. FORMULA takes precedence over MEASURE . For example, if there is a formula (calculated) member on the Measures dimension, it is listed as FORMULA .	1
MEMBER_GUID	String	The GUID of the member. null if no GUID exists.	-
MEMBER_CAPTION	String	A label or caption associated with the member. Used primarily for display purposes. If a caption does not exist, MEMBER_NAME is returned.	?MEMBER_UNIQUE_NAME skos:notation ?MEMBER_CAPTION literal, simply the value)
CHILDREN_CARDINALITY	int	The number of children that the	-

		member has. This can be an estimate, so consumers should not rely on this to be the exact count. Providers should return the best estimate possible.	
PARENT_LEVEL	int	The distance of the member's parent from the root level of the hierarchy. The root level is zero (0).	null
PARENT_UNIQUE_NAME	String	The unique name of the member's parent. null is returned for any members at the root level.	null
PARENT_COUNT	int	The number of parents that this member has.	-
DESCRIPTION	String	Always returns null .	-
EXPRESSION	String	The expression for calculations, if the member is of type MDMEMBER_TYPE_FORMULA .	-
MEMBER_KEY	String	The value of the member's key column. Returns null if the member has a composite key.	-
IS_PLACEHOLDERMEMBER	boolean	A Boolean that indicates whether a member is a placeholder member for an empty position in a dimension hierarchy. It is valid only if the MDX Compatibility property has been set to 1.	-
IS_DATAMEMBER	boolean	A Boolean that indicates whether the member is a data member. Returns True if the member is a data member.	-
Zero or more additional columns	int	No properties are returned if the members could be returned from multiple levels. For example, if the Tree operator is PARENT and SELF for a non-parent child hierarchy, no member properties are returned. This applies to ragged hierarchies where tree operators could return members from different levels (for example, if the prior level contains holes and parent on members is requested).	-

The rowset is sorted on **CATALOG_NAME**, **SCHEMA_NAME**, **CUBE_NAME**, **DIMENSION_UNIQUE_NAME**, **HIERARCHY_UNIQUE_NAME**, **LEVEL_UNIQUE_NAME**, **LEVEL_NUMBER**, **MEMBER_ORDINAL**.

2.7.3.11. getProperties

Retrieves a list of descriptions of member and cell Properties.

Specified by the **MDSHEMA_PROPERTIES** XML for Analysis method.

The returned result set contains the following columns.

Column name	Type	Description	Linked Data
CATALOG_NAME	String	The name of the database.	-
SCHEMA_NAME	String	The name of the schema to which this property belongs. null if the provider does not support schemas.	-
CUBE_NAME	String	The name of the cube.	-
DIMENSION_UNIQUE_NAME	String	The unique name of the dimension. For providers that generate unique names by qualification, each component of this name is delimited.	-
HIERARCHY_UNIQUE_NAME	String	The unique name of the hierarchy. For providers that generate unique names by qualification, each component of this name is delimited.	-
LEVEL_UNIQUE_NAME	String	The unique name of the level to which this property belongs. If the provider does not support named levels, it should return the DIMENSION_UNIQUE_NAME value for this field. For providers that generate unique names by qualification, each component of this name is delimited.	-
MEMBER_UNIQUE_NAME	String	The unique name of the member to which the property belongs. Used for data stores that do not support named levels or have properties on a member-by-member basis. If the property applies to all members in a level, this column is null . For providers that generate unique names by qualification, each component of this name is delimited.	-
PROPERTY_TYPE	int	A bitmap that specifies the type of the property: <ul style="list-style-type: none">• MDPROP_MEMBER (1) identifies a property of a member. This property can be used in the DIMENSION PROPERTIES clause of the SELECT statement.• MDPROP_CELL (2) identifies	-

		<p>a property of a cell. This property can be used in the CELL PROPERTIES clause that occurs at the end of the SELECT statement.</p> <ul style="list-style-type: none"> • MDPROP_SYSTEM (4) identifies an internal property. • MDPROP_BLOB (8) identifies a property which contains a binary large object (blob). 	
PROPERTY_NAME	String	The name of the property. If the key for the property is the same as the name for the property, PROPERTY_NAME will be blank.	-
PROPERTY_CAPTION	String	A label or caption associated with the property, used primarily for display purposes. Returns PROPERTY_NAME if a caption does not exist.	-
DATA_TYPE	int	The data type of the property.	-
CHARACTER_MAXIMUM_LENGTH	int	<p>The maximum possible length of the property, if it is a character, binary, or bit type.</p> <p>Zero indicates there is no defined maximum length.</p> <p>Returns null for all other data types.</p>	-
CHARACTER_OCTET_LENGTH	int	<p>The maximum possible length (in bytes) of the property, if it is a character or binary type.</p> <p>Zero indicates there is no defined maximum length.</p> <p>Returns null for all other data types.</p>	-
NUMERIC_PRECISION	int	<p>The maximum precision of the property, if it is a numeric data type.</p> <p>Returns null for all other data types.</p>	-
NUMERIC_SCALE	int	<p>The number of digits to the right of the decimal point, if it is a DBTYPE_NUMERIC or DBTYPE_DECIMAL type.</p> <p>Returns null for all other data types.</p>	-
DESCRIPTION	String	A human readable description of the property. null if no description exists.	-
PROPERTY_CONTENT_TYPE	int	The type of the property. Can be one of	-

		the values of the xmlaOrdinal field of the <u>org.olap4j.Property.ContentType</u> enum.	
SQL_COLUMN_NAME	String	The name of the property used in SQL queries from the cube dimension or database dimension.	-
LANGUAGE	int	The translation expressed as an LCID . Only valid for property translations.	-
PROPERTY_ORIGIN	int	Identifies the type of hierarchy that the property applies to: <ul style="list-style-type: none"> • MD_USER_DEFINED (1) indicates the property is on a user defined hierarchy • MD_SYSTEM_ENABLED (2) indicates the property is on an attribute hierarchy • MD_SYSTEM_DISABLED (4) indicates the property is on an attribute hierarchy that is not enabled. 	-
PROPERTY_ATTRIBUTE_HIERARCHY_NAME	String	The name of the attribute hierarchy sourcing this property.	-
PROPERTY_CARDINALITY	String	The cardinality of the property. Possible values include the following strings: <ul style="list-style-type: none"> • ONE • MANY 	-
MIME_TYPE	String	The mime type for binary large objects (BLOBs).	-
PROPERTY_IS_VISIBLE	boolean	A Boolean that indicates whether the property is visible. true if the property is visible; otherwise, false .	-

This schema rowset is not sorted.

2.7.3.12. getSets

Retrieves a result set describing any sets that are currently defined in a database, including session-scoped sets.

Specified by the **MDSHEMA_SETS** XML for Analysis method.

The returned result set contains the following columns.

Column name	Type	Description	Linked
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			Data
CATALOG_NAME	String	The name of the database.	-
SCHEMA_NAME	String	Not supported.	-
CUBE_NAME	String	The name of the cube.	-
SET_NAME	String	The name of the set, as specified in the CREATE SET statement.	-
SCOPE	int	The scope of the set: <ul style="list-style-type: none"> • MDSET_SCOPE_GLOBAL (1) • MDSET_SCOPE_SESSION (2) 	-
DESCRIPTION	String	Not supported.	-
EXPRESSION	String	The expression for the set.	-
DIMENSIONS	String	A comma delimited list of hierarchies included in the set.	-
SET_CAPTION	String	A label or caption associated with the set. The label or caption is used primarily for display purposes.	-
SET_DISPLAY_FOLDER	String	The path to be used by the user interface when displaying the set. Folder names are separated by a backslash (\), folders are separated by a semicolon (;).	-

The rowset is sorted on **CATALOG_NAME**, **SCHEMA_NAME**, **CUBE_NAME**.

2.7.4. Other methods

Method	Description
<u>getConnection()</u>	Returns the connection (overrides DatabaseMetaData method).
<u>getMdxKeywords()</u>	Returns the keywords of this dialect of MDX, as a comma-separated string.
<u>getSupportedCellSetListenerGranularities()</u>	Returns the granularity of changes to cell sets that the database is capable of providing.

Acknowledgements

In particular, we acknowledge the efforts of the olap4j community to create a standard OLAP model.

Appendix E. References

1. XMLA: [XML for Analysis Specification, version 1.1](#).

Appendix F. Change log

- Version 1.0.
