

# Database Manager

## Return Types

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## Property Summary

[#nullColumnValidatorEnabled](#)

**Boolean** Enable/disable the default null validator for non null columns, makes it possible to do the checks later on when saving, when for example autosave is disabled.

## Method Summary

**Boolean** [#acquireLock](#)(foundset, record\_index, [lock\_name])  
Request lock(s) for a foundset, can be a normal or related foundset.

**Boolean** [#addTableFilterParam](#)(server\_name, table\_name, dataprovider, operator, value, [filter\_name])  
Adds a filter to all the foundsets based on a table.

**void** [#addTrackingInfo](#)(columnName, value)  
Add tracking info used in the log table.

**Boolean** [#commitTransaction](#)()  
Returns true if a transaction is committed; rollback if commit fails.

**Boolean** [#commitTransaction](#)(saveFirst)  
Returns true if a transaction is committed; rollback if commit fails.

**JSFoundset** [#convertFoundSet](#)(foundset, related)  
Creates a foundset that combines all the records of the specified one-to-many relation seen from the given parent/primary foundset.

**JSDataSet** [#convertToDataSet](#)(array/ids\_string/foundset, [array\_with\_dataprovider\_names])  
Converts the argument to a JSDataSet, possible use in controller.

**Boolean** [#copyMatchingColumns](#)(src\_record, dest\_record, [overwrite/array\_of\_names\_not\_overwritten])  
Copies all matching non empty columns (if overwrite boolean is given all columns except pk/ident, if array then all columns except pk and array names).

**String** [#createDataSourceByQuery](#)(name, server\_name, sql\_query, arguments, max\_returned\_rows)  
Performs a sql query on the specified server, saves the the result in a datasource.

**JSDataSet** [#createEmptyDataSet](#)(row\_count, columnCount/array\_with\_column\_names)  
Returns an empty dataset object.

**Boolean** [#dataSourceExists](#)(datasource)  
Check whether a data source exists.

**Boolean** [#getAutoSave](#)()  
Returns true or false if autosave is enabled or disabled.

**JSDataSet** [#getDataSetByQuery](#)(server\_name, sql\_query, arguments, max\_returned\_rows)  
Performs a sql query on the specified server, returns the result in a dataset.

**String** [#getDataSourceServerName](#)(dataSource)  
Returns the server name from the datasource, or null if not a database datasource.

**String** [#getDataSourceTableName](#)(dataSource)  
Returns the table name from the datasource, or null if not a database datasource.

**String** [#getDatabaseProductName](#)(serverName)  
Returns the database product name as supplied by the driver for a server.

**JSRecord[]** [#getEditedRecords](#)()  
Returns an array of edited records with outstanding (unsaved) data.

**JSRecord[]** [#getEditedRecords](#)(foundset)  
Returns an array of edited records with outstanding (unsaved) data.

**JSRecord[]** [#getFailedRecords](#)()  
Returns an array of records that fail after a save.

**JSRecord[]** [#getFailedRecords](#)(foundset)  
Returns an array of records that fail after a save.

**JSFoundset** [#getFoundSet](#)(dataSource)  
Returns a foundset object for a specified datasource or server and tablename.

**JSFoundset** [#getFoundSet](#)(serverName, tableName)  
Returns a foundset object for a specified datasource or server and tablename.

**Number** [#getFoundSetCount](#)(foundset)  
Returns the total number of records in a foundset.

**JSFoundsetUpdater** [#getFoundSetUpdater](#)(foundset)  
Returns a JSFoundsetUpdater object that can be used to update all or a specific number of rows in the specified foundset.

**Object** [#getNextSequence](#)(dataSource|serverName, [tableName], columnName)  
Gets the next sequence for a column which has a sequence defined in its column dataprovider properties.

**String** [#getSQL](#)(foundset)  
Returns the internal SQL which defines the specified (related)foundset.

String	<a href="#">#getSQL</a> (foundset, includeFilters) Returns the internal SQL which defines the specified (related)foundset.
Object[]	<a href="#">#getSQLParameters</a> (foundset) Returns the internal SQL parameters, as an array, that are used to define the specified (related)foundset.
Object[]	<a href="#">#getSQLParameters</a> (foundset, includeFilters) Returns the internal SQL parameters, as an array, that are used to define the specified (related)foundset.
String[]	<a href="#">#getServerNames</a> () Returns an array with all the server names used in the solution.
JSTable	<a href="#">#getTable</a> (foundset/record/datasource, [table_name]) Returns the JSTable object from which more info can be obtained (like columns).
Number	<a href="#">#getTableCount</a> (dataSource) Returns the total number of records(rows) in a table.
Object[][]	<a href="#">#getTableFilterParams</a> (server_name, [filter_name]) Returns a two dimensional array object containing the table filter information currently applied to the servers tables.
String[]	<a href="#">#getTableNames</a> (serverName) Returns an array of all table names for a specified server.
String[]	<a href="#">#getViewNames</a> (serverName) Returns an array of all view names for a specified server.
Boolean	<a href="#">#hasLocks</a> ([lock_name]) Returns true if the current client has any or the specified lock(s) acquired.
Boolean	<a href="#">#hasNewRecords</a> (foundset/record, [foundset_index]) Returns true if the argument (foundSet / record) has at least one row that was not yet saved in the database.
Boolean	<a href="#">#hasRecordChanges</a> (foundset/record, [foundset_index]) Returns true if the specified foundset, on a specific index or in any of its records, or the specified record has changes.
Boolean	<a href="#">#hasRecords</a> (foundset/record, [qualifiedRelationString]) Returns true if the (related)foundset exists and has records.
Boolean	<a href="#">#hasTransaction</a> () Returns true if there is an transaction active for this client.
Boolean	<a href="#">#mergeRecords</a> (source_record, combined_destination_record, [columnnamesarray_to_copy]) Merge records from the same foundset, updates entire datamodel (via foreign type on columns) with destination record pk, deletes source record.
void	<a href="#">#recalculate</a> (foundsetOrRecord) Can be used to recalculate a specified record or all rows in the specified foundset.
Boolean	<a href="#">#refreshRecordFromDatabase</a> (foundset, index) Flushes the client data cache and requeries the data for a record (based on the record index) in a foundset or all records in the foundset.
Boolean	<a href="#">#releaseAllLocks</a> ([lock_name]) Release all current locks the client has (optionally limited to named locks).
Boolean	<a href="#">#removeTableFilterParam</a> (serverName, filterName) Removes a previously defined table filter.
void	<a href="#">#rollbackEditedRecords</a> ([foundset/record]) Rolls back in memory edited records that are outstanding (not saved).
void	<a href="#">#rollbackTransaction</a> () Rollback a transaction started by databaseManager.
void	<a href="#">#rollbackTransaction</a> (rollbackEdited) Rollback a transaction started by databaseManager.
Boolean	<a href="#">#saveData</a> ([record/foundset]) Saves all outstanding (unsaved) data and exits the current record.
Boolean	<a href="#">#setAutoSave</a> (autoSave) Set autosave, if false then no saves will happen by the ui (not including deletes!).
void	<a href="#">#setCreateEmptyFormFoundsets</a> () Turnoff the initial form foundset record loading, set this in the solution open method.
void	<a href="#">#startTransaction</a> () Start a database transaction.
Boolean	<a href="#">#switchServer</a> (sourceName, destinationName) Switches a named server to another named server with the same datamodel (recommended to be used in an onOpen method for a solution).

## Property Details

### nullColumnValidatorEnabled

Enable/disable the default null validator for non null columns, makes it possible to do the checks later on when saving, when for example autosave is disabled.

### Returns

Boolean

### Sample

```
databaseManager.nullColumnValidatorEnabled = false;//disable

//test if enabled
if(databaseManager.nullColumnValidatorEnabled) application.output('null validation enabled')
```

## Method Details

### acquireLock

Boolean **acquireLock**(foundset, record\_index, [lock\_name])

Request lock(s) for a foundset, can be a normal or related foundset.

The record\_index can be -1 to lock all rows, 0 to lock the current row, or a specific row of > 0

Optionally name the lock(s) so that it can be referenced in releaseAllLocks()

returns true if the lock could be acquired.

### Parameters

foundset – The JSFoundset to get the lock for

record\_index – The record index which should be locked.

[lock\_name] – The name of the lock.

### Returns

Boolean – true if the lock could be acquired.

### Sample

```
//locks the complete foundset
databaseManager.acquireLock(foundset,-1);

//locks the current row
databaseManager.acquireLock(foundset,0);

//locks all related orders for the current Customer
var success = databaseManager.acquireLock(Cust_to_Orders,-1);
if(!success)
{
    plugins.dialogs.showWarningDialog('Alert','Failed to get a lock','OK');
}
```

### addTableFilterParam

Boolean **addTableFilterParam**(server\_name, table\_name, dataprovider, operator, value, [filter\_name])

Adds a filter to all the foundsets based on a table.

Note: if null is provided as the tablename the filter will be applied on all tables with the dataprovider name.

A dataprovider can have multiple filters defined, they will all be applied.

returns true if the tablefilter could be applied.

### Parameters

server\_name – The name of the database server connection for the specified table name.

table\_name – The name of the specified table.

dataprovider – A specified dataprovider column name.

operator – One of "=", "<", ">", ">=", "<=", "!", "LIKE", or "IN" optionally augmented with modifiers "#" (ignore case) or "||=" (or-is-null).

value – The specified filter value.

[filter\_name] – The specified name of the database table filter.

### Returns

Boolean – true if the tablefilter could be applied.

## Sample

```
// Best way to call this in a global solution startup method, but filters may be added/removed at any time.
// Note that multiple filters can be added to the same dataprovider, they will all be applied.

// filter on messages table where messagesid>10, the filter has a name so it can be removed using
databaseManager.removeTableFilterParam()
var success = databaseManager.addTableFilterParam('admin', 'messages', 'messagesid', '>', 10,
'higNumberedMessagesRule')

// all tables that have the companyid column should be filtered
var success = databaseManager.addTableFilterParam('crm', null, 'companyidid', '=', currentcompanyid)

// some filters with in-conditions
var success = databaseManager.addTableFilterParam('crm', 'products', 'productcode', 'in', [120, 144, 200])
var success = databaseManager.addTableFilterParam('crm', 'orders', 'countrycode', 'in', 'select country code
from countries where region = "Europe"')

// you can use modifiers in the operator as well, filter on companies where companyname is null or equals-
ignore-case 'servoy'
var success = databaseManager.addTableFilterParam('crm', 'companies', 'companyname', '#^|=|', 'servoy')
```

## addTrackingInfo

void **addTrackingInfo**(columnName, value)

Add tracking info used in the log table.

When tracking is enabled and a new row is inserted in the log table, if it has a column named 'columnName', its value will be set with 'value'

### Parameters

{String} columnName – The name of the column in the log table, used for tracking info

{Object} value – The value to be set when inserting a new row in the log table, for the 'columnName' column

### Returns

void

### Sample

```
databaseManager.addTrackingInfo('log_column_name', 'trackingInfo')
```

## commitTransaction

Boolean **commitTransaction**()

Returns true if a transaction is committed; rollback if commit fails.

Saves all edited records and commits the data.

### Returns

Boolean – if the transaction could be committed.

### Sample

```
// starts a database transaction
databaseManager.startTransaction()
//Now let users input data

//when data has been entered do a commit or rollback if the data entry is canceled or the the commit did fail.
if (cancel || !databaseManager.commitTransaction())
{
    databaseManager.rollbackTransaction();
}
```

## commitTransaction

Boolean **commitTransaction**(saveFirst)

Returns true if a transaction is committed; rollback if commit fails.

### Parameters

{Boolean} saveFirst – save edited records to the database first (default true)

### Returns

Boolean – if the transaction could be committed.

## Sample

```
// starts a database transaction
databaseManager.startTransaction()
//Now let users input data

//when data has been entered do a commit or rollback if the data entry is canceled or the the commit did fail.
if (cancel || !databaseManager.commitTransaction())
{
    databaseManager.rollbackTransaction();
}
```

## convertFoundSet

**JSFoundset** **convertFoundSet**(foundset, related)

Creates a foundset that combines all the records of the specified one-to-many relation seen from the given parent/primary foundset.

### Parameters

{Object} foundset – The JSFoundset to convert.

{Object} related – can be a one-to-many relation object or the name of a one-to-many relation

### Returns

**JSFoundset** – The converted JSFoundset.

## Sample

```
// Convert in the order form a orders foundset into a orderdetails foundset,
// that has all the orderdetails from all the orders in the foundset.
var convertedFoundSet = databaseManager.convertFoundSet(foundset,order_to_orderdetails);
// or var convertedFoundSet = databaseManager.convertFoundSet(foundset,"order_to_orderdetails");
forms.orderdetails.controller.showRecords(convertedFoundSet);
```

## convertToDataSet

**JSDataSet** **convertToDataSet**(array/ids\_string/foundset, [array\_with\_dataprovider\_names])

Converts the argument to a JSDataSet, possible use in controller.loadRecords(dataset)

### Parameters

array/ids\_string/foundset – The data that should go into the JSDataSet.

[array\_with\_dataprovider\_names] – Array with column names.

### Returns

**JSDataSet** – JSDataSet with the data.

## Sample

```
// converts a foundset pks to a dataset
var dataset = databaseManager.convertToDataSet(foundset);
// converts a foundset to a dataset
//var dataset = databaseManager.convertToDataSet(foundset,['product_id','product_name']);
// converts an object array to a dataset
//var dataset = databaseManager.convertToDataSet(files,['name','path']);
// converts an array to a dataset
//var dataset = databaseManager.convertToDataSet(new Array(1,2,3,4,5,6));
// converts an string list to a dataset
//var dataset = databaseManager.convertToDataSet('4,5,6');
```

## copyMatchingColumns

**Boolean** **copyMatchingColumns**(src\_record, dest\_record, [overwrite/array\_of\_names\_not\_overwritten])

Copies all matching non empty columns (if overwrite boolean is given all columns except pk/ident, if array then all columns except pk and array names). returns true if no error did happen.

NOTE: This function could be used to store a copy of records in an archive table. Use the getRecord() function to get the record as an object.

### Parameters

src\_record – The source record to be copied.

dest\_record – The destination record to copy to.

[overwrite/array\_of\_names\_not\_overwritten] – true (default false) if everything can be overwritten or an array of names that shouldnt be overwritten.

### Returns

**Boolean** – true if no errors happend.

## Sample

```
for( var i = 1 ; i <= foundset.getSize() ; i++ )
{
    var srcRecord = foundset.getRecord(i);
    var destRecord = otherfoundset.getRecord(i);
    if (srcRecord == null || destRecord == null) break;
    databaseManager.copyMatchingColumns(srcRecord,destRecord,true)
}
//saves any outstanding changes to the dest foundset
controller.saveData();
```

## createDataSourceByQuery

**String createDataSourceByQuery**(name, server\_name, sql\_query, arguments, max\_returned\_rows)

Performs a sql query on the specified server, saves the the result in a datasource.

Will throw an exception if anything went wrong when executing the query.

Column types in the datasource are inferred from the query result.

### Parameters

{String} name – data source name

{String} server\_name – The name of the server where the query should be executed.

{String} sql\_query – The custom sql.

{Object[]} arguments – Specified arguments or null if there are no arguments.

{Number} max\_returned\_rows – The maximum number of rows returned by the query.

### Returns

String – datasource containing the results of the query or null if the parameters are wrong.

## Sample

```
var query = 'select address, city, country from customers';
var uri = databaseManager.createDataSourceByQuery('mydata', 'example_data', query, null, 999);

// the uri can be used to create a form using solution model
var myForm = solutionModel.newForm('newForm', uri, 'myStyleName', false, 800, 600)
myForm.newTextField('city', 140, 20, 140,20)

// the uri can be used to acces a foundset directly
var fs = databaseManager.getFoundSet(uri)
fs.loadAllRecords();
```

## createEmptyDataSet

**JSDataset createEmptyDataSet**(row\_count, columnCount/array\_with\_column\_names)

Returns an empty dataset object.

### Parameters

row\_count – The number of rows in the DataSet object.

columnCount/array\_with\_column\_names – Number of columns or the column names.

### Returns

JSDataset – An empty JSDataset with the initial sizes.

## Sample

```
// gets an empty dataset with a specifed row and column count
var dataset = databaseManager.createEmptyDataSet(10,10)
// gets an empty dataset with a specifed row count and column array
var dataset2 = databaseManager.createEmptyDataSet(10,new Array ('a','b','c','d'))
```

## dataSourceExists

**Boolean dataSourceExists**(datasource)

Check wether a data source exists. This function can be used for any type of data source (db-based, in-memory).

### Parameters

datasource

### Returns

Boolean – boolean exists

## Sample

```
if (!databaseManager.dataSourceExists(dataSource))
{
    // does not exist
}
```

getAutoSave

**Boolean** **getAutoSave()**

Returns true or false if autosave is enabled or disabled.

**Returns**

**Boolean** – true if autosave if enabled.

## Sample

```
//Set autosave, if false then no saves will happen by the ui (not including deletes!). Until you call saveData
or setAutoSave(true)
//Rollbacks in mem the records that were edited and not yet saved. Best used in combination with autosave false.
databaseManager.setAutoSave(false)
//Now let users input data

//On save or cancel, when data has been entered:
if (cancel) databaseManager.rollbackEditedRecords()
databaseManager.setAutoSave(true)
```

getDataSetByQuery

**JSDataSet** **getDataSetByQuery**(server\_name, sql\_query, arguments, max\_returned\_rows)

Performs a sql query on the specified server, returns the result in a dataset.

Will throw an exception if anything did go wrong when executing the query.

**Parameters**

{**String**} server\_name – The name of the server where the query should be executed.

{**String**} sql\_query – The custom sql.

{**Object[]**} arguments – Specified arguments or null if there are no arguments.

{**Number**} max\_returned\_rows – The maximum number of rows returned by the query.

**Returns**

**JSDataSet** – The JSDataSet containing the results of the query.

## Sample

```
//finds duplicate records in a specified foundset
var vQuery = " SELECT companiesid from companies where company_name IN (SELECT company_name from companies group
bycompany_name having count(company_name)>1 )";
var vDataset = databaseManager.getDataSetByQuery(databaseManager.getDataSourceServerName(controller.
getDataSource()), vQuery, null, 1000);
controller.loadRecords(vDataset);

var maxReturnedRows = 10;//useful to limit number of rows
var query = 'select c1,c2,c3 from test_table where start_date = ?';//do not use '.' or special chars in names
or aliases if you want to access data by name
var args = new Array();
args[0] = order_date //or new Date()
var dataset = databaseManager.getDataSetByQuery(databaseManager.getDataSourceServerName(controller.
getDataSource()), query, args, maxReturnedRows);

// place in label:
// elements.myLabel.text = '<html>'+dataset.getAsHTML()+'</html>';

//example to calc a strange total
global_total = 0;
for( var i = 1 ; i <= dataset.getMaxRowIndex() ; i++ )
{
    dataset.rowIndex = i;
    global_total = global_total + dataset.c1 + dataset.getValue(i,3);
}
//example to assign to dataprovider
//employee_salary = dataset.getValue(row,column)
```

getDataSourceServerName

**String** `getDataSourceServerName(dataSource)`

Returns the server name from the datasource, or null if not a database datasource.

**Parameters**

{String} dataSource – The datasource string to get the server name from.

**Returns**

String – The servername of the datasource.

**Sample**

```
var servername = databaseManager.getDataSourceServerName(datasource);
```

`getDataSourceTableName`

**String** `getDataSourceTableName(dataSource)`

Returns the table name from the datasource, or null if not a database datasource.

**Parameters**

{String} dataSource – The datasource string to get the tablename from.

**Returns**

String – The tablename of the datasource.

**Sample**

```
var tablename = databaseManager.getDataSourceTableName(datasource);
```

`getDatabaseProductName`

**String** `getDatabaseProductName(serverName)`

Returns the database product name as supplied by the driver for a server.

NOTE: For more detail on named server connections, see the chapter on Database Connections, beginning with the Introduction to database connections in the Servoy Developer User's Guide.

**Parameters**

{String} serverName – The specified name of the database server connection.

**Returns**

String – A database product name.

**Sample**

```
var databaseProductName = databaseManager.getDatabaseProductName(servername)
```

`getEditedRecords`

**JSRecord[]** `getEditedRecords()`

Returns an array of edited records with outstanding (unsaved) data.

NOTE: To return a dataset of outstanding (unsaved) edited data for each record, see JSRecord.getChangedData();

NOTE2: The fields focus may be lost in user interface in order to determine the edits.

**Returns**

JSRecord[] – Array of outstanding/unsaved JSRecords.



## Sample

```
//This method can be used to loop through all outstanding changes,
//the application.output line contains all the changed data, their tablename and primary key
var editr = databaseManager.getEditedRecords()
for (x=0;x<editr.length;x++)
{
    var ds = editr[x].getChangedData();
    var jstable = databaseManager.getTable(editr[x]);
    var tableSQLName = jstable.getSQLName();
    var pkrec = jstable.getRowIdentifierColumnNames().join(',');
    var pkvals = new Array();
    for (var j = 0; j < jstable.getRowIdentifierColumnNames().length; j++)
    {
        pkvals[j] = editr[x][jstable.getRowIdentifierColumnNames()[j]];
    }
    application.output('Table: '+tableSQLName +', PKs: '+ pkvals.join(',') + ' ('+pkrec +)');
    // Get a dataset with outstanding changes on a record
    for( var i = 1 ; i <= ds.getMaxRowIndex() ; i++ )
    {
        application.output('Column: '+ ds.getValue(i,1) +', oldValue: '+ ds.getValue(i,2) +', newValue:
'+ ds.getValue(i,3));
    }
}
//in most cases you will want to set autoSave back on now
databaseManager.setAutoSave(true);
```

[getEditedRecords](#)

[JSRecord\[\]](#) **getEditedRecords**(foundset)

Returns an array of edited records with outstanding (unsaved) data.

NOTE: To return a dataset of outstanding (unsaved) edited data for each record, see [JSRecord.getChangedData\(\)](#);

NOTE2: The fields focus may be lost in user interface in order to determine the edits.

### Parameters

{[JSFoundset](#)} foundset – return edited records in the foundset only.

### Returns

[JSRecord\[\]](#) – Array of outstanding/unsaved JSRecords.

## Sample

```
//This method can be used to loop through all outstanding changes in a foundset,
//the application.output line contains all the changed data, their tablename and primary key
var editr = databaseManager.getEditedRecords(foundset)
for (x=0;x<editr.length;x++)
{
    var ds = editr[x].getChangedData();
    var jstable = databaseManager.getTable(editr[x]);
    var tableSQLName = jstable.getSQLName();
    var pkrec = jstable.getRowIdentifierColumnNames().join(',');
    var pkvals = new Array();
    for (var j = 0; j < jstable.getRowIdentifierColumnNames().length; j++)
    {
        pkvals[j] = editr[x][jstable.getRowIdentifierColumnNames()[j]];
    }
    application.output('Table: '+tableSQLName +', PKs: '+ pkvals.join(',') + ' ('+pkrec +)');
    // Get a dataset with outstanding changes on a record
    for( var i = 1 ; i <= ds.getMaxRowIndex() ; i++ )
    {
        application.output('Column: '+ ds.getValue(i,1) +', oldValue: '+ ds.getValue(i,2) +', newValue:
'+ ds.getValue(i,3));
    }
}
databaseManager.saveData(foundset);//save all records from foundset
```

[getFailedRecords](#)

[JSRecord\[\]](#) **getFailedRecords**()

Returns an array of records that fail after a save.

## Returns

[JSRecord\[\]](#) – Array of failed JSRecords

## Sample

```
var array = databaseManager.getFailedRecords()
for( var i = 0 ; i < array.length ; i++ )
{
    var record = array[i];
    application.output(record.exception);
    if (record.exception.getErrorCode() == ServoyException.RECORD_VALIDATION_FAILED)
    {
        // exception thrown in pre-insert/update/delete event method
        var thrown = record.exception.getValue()
        application.output("Record validation failed: "+thrown)
    }
    // find out the table of the record (similar to getEditedRecords)
    var jstable = databaseManager.getTable(record);
    var tableSQLName = jstable.getSQLName();
    application.output('Table:'+tableSQLName+' in server:'+jstable.getServerName()+ ' failed to save.')
}
```

## getFailedRecords

[JSRecord\[\]](#) **getFailedRecords**(foundset)

Returns an array of records that fail after a save.

## Parameters

{[JSFoundset](#)} foundset – return failed records in the foundset only.

## Returns

[JSRecord\[\]](#) – Array of failed JSRecords

## Sample

```
var array = databaseManager.getFailedRecords(foundset)
for( var i = 0 ; i < array.length ; i++ )
{
    var record = array[i];
    application.output(record.exception);
    if (record.exception.getErrorCode() == ServoyException.RECORD_VALIDATION_FAILED)
    {
        // exception thrown in pre-insert/update/delete event method
        var thrown = record.exception.getValue()
        application.output("Record validation failed: "+thrown)
    }
    // find out the table of the record (similar to getEditedRecords)
    var jstable = databaseManager.getTable(record);
    var tableSQLName = jstable.getSQLName();
    application.output('Table:'+tableSQLName+' in server:'+jstable.getServerName()+ ' failed to save.')
}
```

## getFoundSet

[JSFoundset](#) **getFoundSet**(dataSource)

Returns a foundset object for a specified datasource or server and tablename.

## Parameters

{[String](#)} dataSource – The datasource to get a JSFoundset for.

## Returns

[JSFoundset](#) – A new JSFoundset for that datasource.

## Sample

```
// type the foundset returned from the call with JSDoc, fill in the right server/tablename
/** @type {JSFoundset<db:/servername/tablename>} */
var fs = databaseManager.getFoundSet(controller.getDataSource())
var ridx = fs.newRecord()
var record = fs.getRecord(ridx)
record.emp_name = 'John'
databaseManager.saveData()
```

## getFoundSet

**JSFoundset** **getFoundSet**(serverName, tableName)

Returns a foundset object for a specified datasource or server and tablename.

**Parameters**

{String} serverName – The servername to get a JSFoundset for.

{String} tableName – The tablename for that server

**Returns**

**JSFoundset** – A new JSFoundset for that datasource.

**Sample**

```
// type the foundset returned from the call with JSDoc, fill in the right server/tablename
/** @type {JSFoundset<db:/servername/tablename>} */
var fs = databaseManager.getFoundSet(controller.getDataSource())
var ridx = fs.newRecord()
var record = fs.getRecord(ridx)
record.emp_name = 'John'
databaseManager.saveData()
```

**getFoundSetCount**

**Number** **getFoundSetCount**(foundset)

Returns the total number of records in a foundset.

NOTE: This can be an expensive operation (time-wise) if your resultset is large.

**Parameters**

{Object} foundset – The JSFoundset to get the count for.

**Returns**

**Number** – the foundset count

**Sample**

```
//return the total number of records in a foundset.
databaseManager.getFoundSetCount(foundset);
```

**getFoundSetUpdater**

**JSFoundSetUpdater** **getFoundSetUpdater**(foundset)

Returns a JSFoundSetUpdater object that can be used to update all or a specific number of rows in the specified foundset.

**Parameters**

{Object} foundset – The foundset to update.

**Returns**

**JSFoundSetUpdater** – The JSFoundSetUpdater for the specified JSFoundset.

**Sample**

```
//1) update entire foundset
var fsUpdater = databaseManager.getFoundSetUpdater(foundset)
fsUpdater.setColumn('customer_type',1)
fsUpdater.setColumn('my_flag',0)
fsUpdater.performUpdate()

//2) update part of foundset, for example the first 4 row (starts with selected row)
var fsUpdater = databaseManager.getFoundSetUpdater(foundset)
fsUpdater.setColumn('customer_type',new Array(1,2,3,4))
fsUpdater.setColumn('my_flag',new Array(1,0,1,0))
fsUpdater.performUpdate()

//3) safely loop through foundset (starts with selected row)
controller.setSelectedIndex(1)
var count = 0
var fsUpdater = databaseManager.getFoundSetUpdater(foundset)
while(fsUpdater.next())
{
    fsUpdater.setColumn('my_flag',count++)
}
```

**getNextSequence**

**Object** **getNextSequence**(dataSource|serverName, [tableName], columnName)

Gets the next sequence for a column which has a sequence defined in its column dataprovider properties.

NOTE: For more information on configuring the sequence for a column, see the section Auto enter options for a column from the Dataproviders chapter in the Servoy Developer User's Guide.

#### Parameters

`dataSource|serverName` – The datasource that points to the table which has the column with the sequence, or the name of the server where the table can be found. If the name of the server is specified, then a second optional parameter specifying the name of the table must be used. If the datasource is specified, then the name of the table is not needed as the second argument.

`[tableName]` – The name of the table that has the column with the sequence. Use this parameter only if you specified the name of the server as the first parameter.

`{String} columnName` – The name of the column that has a sequence defined in its properties.

#### Returns

`Object` – The next sequence for the column, null if there was no sequence for that column or if there is no column with the given name.

#### Sample

```
var seqDataSource = forms.seq_table.controller.getDataSource();
var nextValue = databaseManager.getNextSequence(seqDataSource, 'seq_table_value');
application.output(nextValue);

nextValue = databaseManager.getNextSequence(databaseManager.getDataSourceServerName(seqDataSource),
databaseManager.getDataSourceTableName(seqDataSource), 'seq_table_value')
application.output(nextValue);
```

#### getSQL

`String getSQL(foundset)`

Returns the internal SQL which defines the specified (related)foundset.

Table filters are on by default.

Make sure to set the applicable filters when the sql is used in a `loadRecords()` call.

#### Parameters

`{Object} foundset` – The JSFoundset to get the sql for.

#### Returns

`String` – String representing the sql of the JSFoundset.

#### Sample

```
var sql = databaseManager.getSQL(foundset)
```

#### getSQL

`String getSQL(foundset, includeFilters)`

Returns the internal SQL which defines the specified (related)foundset.

Optionally, the foundset and table filter params can be excluded in the sql (`includeFilters=false`).

Make sure to set the applicable filters when the sql is used in a `loadRecords()` call.

#### Parameters

`{Object} foundset` – The JSFoundset to get the sql for.

`{Boolean} includeFilters` – include the foundset and table filters.

#### Returns

`String` – String representing the sql of the JSFoundset.

#### Sample

```
var sql = databaseManager.getSQL(foundset)
```

#### getSQLParameters

`Object[] getSQLParameters(foundset)`

Returns the internal SQL parameters, as an array, that are used to define the specified (related)foundset.

Parameters for the filters are included.

#### Parameters

`{Object} foundset` – The JSFoundset to get the sql parameters for.

#### Returns

`Object[]` – An Array with the sql parameter values.

#### Sample

```
var sqlParameterArray = databaseManager.getSQLParameters(foundset, false)
```

getSQLParameters

**Object[]** **getSQLParameters**(foundset, includeFilters)

Returns the internal SQL parameters, as an array, that are used to define the specified (related)foundset.

**Parameters**

{**Object**} foundset – The JSFoundset to get the sql parameters for.

{**Boolean**} includeFilters – include the parameters for the filters.

**Returns**

**Object[]** – An Array with the sql parameter values.

**Sample**

```
var sqlParameterArray = databaseManager.getSQLParameters(foundset, false)
```

getServerNames

**String[]** **getServerNames**()

Returns an array with all the server names used in the solution.

NOTE: For more detail on named server connections, see the chapter on Database Connections, beginning with the Introduction to database connections in the Servoy Developer User's Guide.

**Returns**

**String[]** – An Array of servernames.

**Sample**

```
var array = databaseManager.getServerNames()
```

getTable

**JSTable** **getTable**(foundset/record/datasource, [table\_name])

Returns the JSTable object from which more info can be obtained (like columns).

The parameter can be a JSFoundset,JSRecord,datasource string or server/tablename combination.

**Parameters**

foundset/record/datasource – (only db-defined)/server\_name The data where the JSTable can be get from.

[table\_name] – The tablename of the first param is a servername string.

**Returns**

**JSTable** – the JSTable get from the input.

**Sample**

```
var jstable = databaseManager.getTable(controller.getDataSource());
//var jstable = databaseManager.getTable(foundset);
//var jstable = databaseManager.getTable(record);
//var jstable = databaseManager.getTable(datasource);
var tableSQLName = jstable.getSQLName();
var columnNamesArray = jstable.getColumnNames();
var firstColumnName = columnNamesArray[0];
var jscolumn = jstable.getColumn(firstColumnName);
var columnLength = jscolumn.getLength();
var columnType = jscolumn.getTypeAsString();
var columnSQLName = jscolumn.getSQLName();
var isPrimaryKey = jscolumn.isRowIdentifier();
```

getTableCount

**Number** **getTableCount**(dataSource)

Returns the total number of records(rows) in a table.

NOTE: This can be an expensive operation (time-wise) if your resultset is large

**Parameters**

{**Object**} dataSource – Data where a server table can be get from. Can be a foundset, a datasource name or a JSTable.

**Returns**

**Number** – the total table count.

**Sample**

```
//return the total number of rows in a table.
var count = databaseManager.getTableCount(foundset);
```

getTableFilterParams

**Object[][]** **getTableFilterParams**(server\_name, [filter\_name])

Returns a two dimensional array object containing the table filter information currently applied to the servers tables. The "columns" of a row from this array are: tablename,dataprowider,operator,value,tablefilename

**Parameters**

server\_name – The name of the database server connection.

[filter\_name] – The filter name for which to get the array.

**Returns**

Object[][] – Two dimensional array.

**Sample**

```
var params = databaseManager.getTableFilterParams(databaseManager.getDataSourceServerName(controller.
getDataSource()))
for (var i = 0; params != null && i < params.length; i++)
{
    application.output('Table filter on table ' + params[i][0]+ ': '+ params[i][1]+ ' '+params[i][2]+ '
'+params[i][3] +(params[i][4] == null ? ' [no name]' : ' ['+params[i][4]+'']))
}
```

getTableNames

String[] **getTableNames**(serverName)

Returns an array of all table names for a specified server.

**Parameters**

{String} serverName – The server name to get the table names from.

**Returns**

String[] – An Array with the tables names of that server.

**Sample**

```
//return all the table names as array
var tableNamesArray = databaseManager.getTableNames('user_data');
var firstTableName = tableNamesArray[0];
```

getViewNames

String[] **getViewNames**(serverName)

Returns an array of all view names for a specified server.

**Parameters**

{String} serverName – The server name to get the view names from.

**Returns**

String[] – An Array with the view names of that server.

**Sample**

```
//return all the view names as array
var viewNamesArray = databaseManager.getViewNames('user_data');
var firstViewName = viewNamesArray[0];
```

hasLocks

Boolean **hasLocks**([lock\_name])

Returns true if the current client has any or the specified lock(s) acquired.

**Parameters**

[lock\_name] – The lock name to check.

**Returns**

Boolean – true if the current client has locks or the lock.

**Sample**

```
var hasLocks = databaseManager.hasLocks('mylock')
```

hasNewRecords

Boolean **hasNewRecords**(foundset/record, [foundset\_index])

Returns true if the argument (foundSet / record) has at least one row that was not yet saved in the database.

**Parameters**

foundset/record – The JSFoundset or JSRecord to test.

[foundset\_index] – The record index in the foundset to test (not specified means has the foundset any new records)

**Returns**

Boolean – true if the JSFoundset has new records or JSRecord is a new record.

## Sample

```
var fs = databaseManager.getFoundSet(databaseManager.getDataSourceServerName(controller.getDataSource()),
'employees');
    databaseManager.startTransaction();
    var ridx = fs.newRecord();
    var record = fs.getRecord(ridx);
    record.emp_name = 'John';
    if (databaseManager.hasNewRecords(fs)) {
        application.output("new records");
    } else {
        application.output("no new records");
    }
    databaseManager.saveData();
    databaseManager.commitTransaction();
```

## hasRecordChanges

**Boolean hasRecordChanges**(foundset/record, [foundset\_index])

Returns true if the specified foundset, on a specific index or in any of its records, or the specified record has changes.

NOTE: The fields focus may be lost in user interface in order to determine the edits.

### Parameters

foundset/record – The JSFoundset or JSRecord to test if it has changes.

[foundset\_index] – The record index in the foundset to test (not specified means has the foundset any changed records)

### Returns

**Boolean** – true if there are changes in the JSFoundset or JSRecord.

### Sample

```
if (databaseManager.hasRecordChanges(foundset,2))
{
    //do save or something else
}
```

## hasRecords

**Boolean hasRecords**(foundset/record, [qualifiedRelationString])

Returns true if the (related)foundset exists and has records.

### Parameters

foundset/record – A JSFoundset to test or a JSRecord for which to test a relation

[qualifiedRelationString] – The relationname if the first param is a JSRecord.

### Returns

**Boolean** – true if the foundset/relation has records.

### Sample

```
if (elements.customer_id.hasRecords(orders_to_orderitems))
{
    //do work on relatedFoundSet
}
//if (elements.customer_id.hasRecords(foundset.getSelectedRecord(),'orders_to_orderitems.
orderitems_to_products'))
//{
//    //do work on deeper relatedFoundSet
//}
```

## hasTransaction

**Boolean hasTransaction**()

Returns true if there is an transaction active for this client.

### Returns

**Boolean** – true if the client has a transaction.

### Sample

```
var hasTransaction = databaseManager.hasTransaction()
```

## mergeRecords

**Boolean mergeRecords**(source\_record, combined\_destination\_record, [columnnamesarray\_to\_copy])

Merge records from the same foundset, updates entire datamodel (via foreign type on columns) with destination record pk, deletes source record. Do use a transaction!

This function is very handy in situations where duplicate data exists. It allows you to merge the two records and move all related records in one go. Say the source\_record is "Ikea" and the combined\_destination\_record is "IKEA", the "Ikea" record is deleted and all records related to it (think of contacts and orders, for instance) will be related to the "IKEA" record.

The function takes an optional array of column names. If provided, the data in the named columns will be copied from source\_record to combined\_destination\_record.

Note that it is essential for both records to originate from the same foundset, as shown in the sample code.

#### Parameters

source\_record – The source JSRecord to copy from.

combined\_destination\_record – The target/destination JSRecord to copy into.

[columnnamesarray\_to\_copy] – The column names Array that should be copied.

#### Returns

Boolean – true if the records could be merged.

#### Sample

```
databaseManager.mergeRecords(foundset.getRecord(1), foundset.getRecord(2));
```

#### recalculate

void **recalculate**(foundsetOrRecord)

Can be used to recalculate a specified record or all rows in the specified foundset.

May be necessary when data is changed from outside of servoy, or when there is data changed inside servoy but records with calculations depending on that data were not loaded so not updated and you need to update the stored calculation values because you are depending on that with queries or aggregates.

#### Parameters

{Object} foundsetOrRecord – JSFoundset or JSRecord to recalculate.

#### Returns

void

#### Sample

```
// recalculate one record from a foundset.
databaseManager.recalculate(foundset.getRecord(1));
// recalculate all records from the foundset.
// please use with care, this can be expensive!
//databaseManager.recalculate(foundset);
```

#### refreshRecordFromDatabase

Boolean **refreshRecordFromDatabase**(foundset, index)

Flushes the client data cache and requeries the data for a record (based on the record index) in a foundset or all records in the foundset.

Used where a program external to Servoy has modified the database record.

Record index of -1 will refresh all records in the foundset and 0 the selected record.

#### Parameters

{Object} foundset – The JSFoundset to refresh

{Number} index – The index of the JSRecord that must be refreshed (or -1 for all).

#### Returns

Boolean – true if the refresh was done.

#### Sample

```
//refresh the second record from the foundset.
databaseManager.refreshRecordFromDatabase(foundset,2)
//flushes all records in the related foundset (-1 is or can be an expensive operation)
databaseManager.refreshRecordFromDatabase(order_to_orderdetails,-1);
```

#### releaseAllLocks

Boolean **releaseAllLocks**([lock\_name])

Release all current locks the client has (optionally limited to named locks).

return true if the locks are released.

#### Parameters

[lock\_name] – The lock name to release.

#### Returns

Boolean – true if all locks or the lock is released.



## Sample

```
databaseManager.releaseAllLocks('mylock')
```

removeTableFilterParam

**Boolean** **removeTableFilterParam**(serverName, filterName)

Removes a previously defined table filter.

### Parameters

{String} serverName – The name of the database server connection.

{String} filterName – The name of the filter that should be removed.

### Returns

**Boolean** – true if the filter could be removed.

### Sample

```
var success = databaseManager.removeTableFilterParam('admin', 'higNumberedMessagesRule')
```

rollbackEditedRecords

void **rollbackEditedRecords**([foundset/record])

Rolls back in memory edited records that are outstanding (not saved).

Can specify a record or foundset as parameter to rollback.

Best used in combination with the function `databaseManager.setAutoSave()`

This does not include deletes, they do not honor the autosave false flag so they cant be rolled back by this call.

### Parameters

[foundset/record] – A JSFoundset or a JSRecord to rollback

### Returns

void

### Sample

```
//Set autosave, if false then no saves will happen by the ui (not including deletes!). Until you call saveData
or setAutoSave(true)
//Rollbacks in mem the records that were edited and not yet saved. Best used in combination with autosave false.
databaseManager.setAutoSave(false)
//Now let users input data

//On save or cancel, when data has been entered:
if (cancel) databaseManager.rollbackEditedRecords()
//databaseManager.rollbackEditedRecords(foundset); // rollback all records from foundset
//databaseManager.rollbackEditedRecords(foundset.getSelectedRecord()); // rollback only one record
databaseManager.setAutoSave(true)
```

rollbackTransaction

void **rollbackTransaction**()

Rollback a transaction started by `databaseManager.startTransaction()`.

Note that when autosave is false, `rollbackEditedRecords()` will not handle deleted records, while `rollbackTransaction()` does.

Also, `rollbackEditedRecords()` is called before rolling back the transaction.

### Returns

void

### Sample

```
// starts a database transaction
databaseManager.startTransaction()
//Now let users input data

//when data has been entered do a commit or rollback if the data entry is canceled or the the commit did fail.
if (cancel || !databaseManager.commitTransaction())
{
  databaseManager.rollbackTransaction();
}
```

rollbackTransaction

void **rollbackTransaction**(rollbackEdited)

Rollback a transaction started by `databaseManager.startTransaction()`.

Note that when autosave is false, `rollbackEditedRecords()` will not handle deleted records, while `rollbackTransaction()` does.

### Parameters

{Boolean} rollbackEdited – call rollbackEditedRecords() before rolling back the transaction

### Returns

void

### Sample

```
// starts a database transaction
databaseManager.startTransaction()
//Now let users input data

//when data has been entered do a commit or rollback if the data entry is canceled or the the commit did fail.
if (cancel || !databaseManager.commitTransaction())
{
    databaseManager.rollbackTransaction();
}
```

### saveData

Boolean saveData([record/foundset])

Saves all outstanding (unsaved) data and exits the current record.

Optionally, by specifying a record or foundset, can save a single record or all records from foundset instead of all the data.

NOTE: The fields focus may be lost in user interface in order to determine the edits.

### Parameters

[record/foundset] – The JSRecord to save.

### Returns

Boolean – true if the save was done without an error.

### Sample

```
databaseManager.saveData();
//databaseManager.saveData(foundset.getRecord(1)); //save specific record
//databaseManager.saveData(foundset); //save all records from foundset
```

### setAutoSave

Boolean setAutoSave(autoSave)

Set autosave, if false then no saves will happen by the ui (not including deletes!).

Until you call databaseManager.saveData() or setAutoSave(true)

If you also want to be able to rollback deletes then you have to use databaseManager.startTransaction().

Because even if autosave is false deletes of records will be done.

### Parameters

{Boolean} autoSave – Boolean to enable or disable autosave.

### Returns

Boolean – false if the current edited record could not be saved.

### Sample

```
//Rollbacks in mem the records that were edited and not yet saved. Best used in combination with autosave false.
databaseManager.setAutoSave(false)
//Now let users input data

//On save or cancel, when data has been entered:
if (cancel) databaseManager.rollbackEditedRecords()
databaseManager.setAutoSave(true)
```

### setCreateEmptyFormFoundsets

void setCreateEmptyFormFoundsets()

Turnoff the initial form foundset record loading, set this in the solution open method.

Similar to calling foundset.clear() in the form's onload event.

NOTE: When the foundset record loading is turned off, controller.find or controller.loadAllRecords must be called to display the records

### Returns

void

### Sample

```
//this has to be called in the solution open method
databaseManager.setCreateEmptyFormFoundsets()
```

### startTransaction

void **startTransaction()**

Start a database transaction.

If you want to avoid round trips to the server or avoid the possibility of blocking other clients because of your pending changes, you can use `databaseManager.setAutoSave(false/true)` and `databaseManager.rollbackEditedRecords()`.

`startTransaction`, `commit/rollbackTransaction()` does support rolling back of record deletes which `autoSave = false` doesn't support.

### Returns

void

### Sample

```
// starts a database transaction
databaseManager.startTransaction()
//Now let users input data

//when data has been entered do a commit or rollback if the data entry is canceled or the the commit did fail.
if (cancel || !databaseManager.commitTransaction())
{
    databaseManager.rollbackTransaction();
}
```

### switchServer

Boolean **switchServer**(sourceName, destinationName)

Switches a named server to another named server with the same datamodel (recommended to be used in an `onOpen` method for a solution).  
return true if successful.

### Parameters

{String} sourceName – The name of the source database server connection

{String} destinationName – The name of the destination database server connection.

### Returns

Boolean – true if the switch could be done.

### Sample

```
//dynamically changes a server for the entire solution, destination database server must contain the same tables
/columns!
//will fail if there is a lock, transaction, if repository_server is used or if destination server is invalid
//in the solution keep using the sourceName every where to reference the server!
var success = databaseManager.switchServer('crm', 'crml')
```