

Niagara 4 Driver for SQL

User Guide

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Change log

4.4

- Build for 4.4.73
- Initial release

4.7

- Build for 4.7.109.20

4.8

- Build for 4.8.0.110

Driver Overview

The SAFECONTROL Driver for SQL is written using Tridium's BFramework, for use in Niagara 4 or later.

The driver provides support for communication with SQL database using corresponding JDBC connector through LAN network. The driver's main purpose is to serve as gateway to SQL database for Tridium Supervisor 4 or JACE8000 stations (and OEM variations i.e. Centra Line, Trend, ...).

The driver allows you to execute queries on SQL table, insert data into table and subsequently read data from database.

This help is also connected to the objects in Workbench / Coach NX and you can use the "Guide on target" function in the help or right menu to get more information.

Prerequisites for integration

1. Correctly installed modules with the driver and corresponding JDBC connector, see chapter "Installation" for more details.
2. Active license and certificate for the driver on the target platform, see chapter "Licensing" for more details.
3. Physical connection between systems. SQL database must be connected to same LAN as JACE 8000 or PC with Tridium Supervisor 4.

Installation

Source files are available for download from SAFECONTROL license web (<https://license.safecontrol.cz>). Extract the **safeSql.zip** archive and copy all included *.jar files to your Niagara modules directory, which is typically **C:\Niagara\Niagara-4.x.xx.xx\modules**.

For correct behaviour it is necessary to install *.jar files on the client platform (Workbench PC) as well as on the target platform (JACE8000 or Supervisor).

Install corresponding JDBC connector jar file to your database into your station JRE ext folder. On PC with Tridium Supervisor it is usually **C:\Niagara\Niagara-4.x.xx.xx\jre\lib\ext**.

Note: Close the Niagara Workbench after inserting all the modules in the folder. Next time you start the Niagara Workbench the driver will be loaded in Niagara Workbench and will be immediately available for use.

Licensing

Demo license is limited up to 90 days and purchased licenses are not time limited.

You can ask for license via SAFECONTROL license web (<https://license.safecontrol.cz>) or by sending e-mail to sales@safecontrol.cz. Purchased license will be generated via Niagara-Central license web where it will be available for download together with safecontrol.certificate file. You can also download license online in Niagara Workbench from license manager view, see picture below:

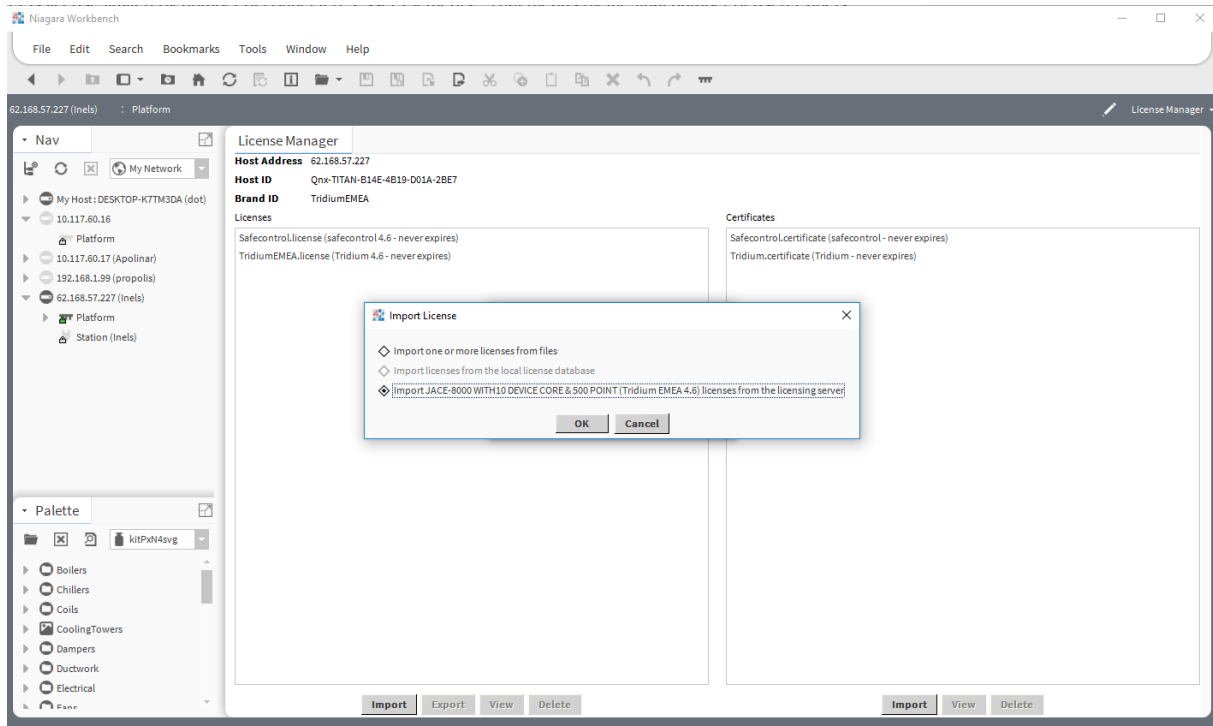


Figure 1: License import via License manager

Order codes

- DR-SC-SQL – Driver for SQL

Basic config guide

1. Connect SQL database to same LAN as JACE 8000 or PC with Tridium Supervisor 4.
2. Put JDBC connector to JRE ext folder.
3. Add new Sql Service to your Services node.
4. Correctly configure newly added Sql Service.
5. Add new Sql Proxy Ext under points.
6. Correctly configure newly added Sql Proxy Exts.

For more in-depth help read following chapters.

Setup guide

Connection

Connect your JACE 8000 or PC with Tridium Supervisor 4 to same LAN to which is SQL database connected. Add new Sql Service under Services node from safe Sql palette. Correctly configure Sql Service.

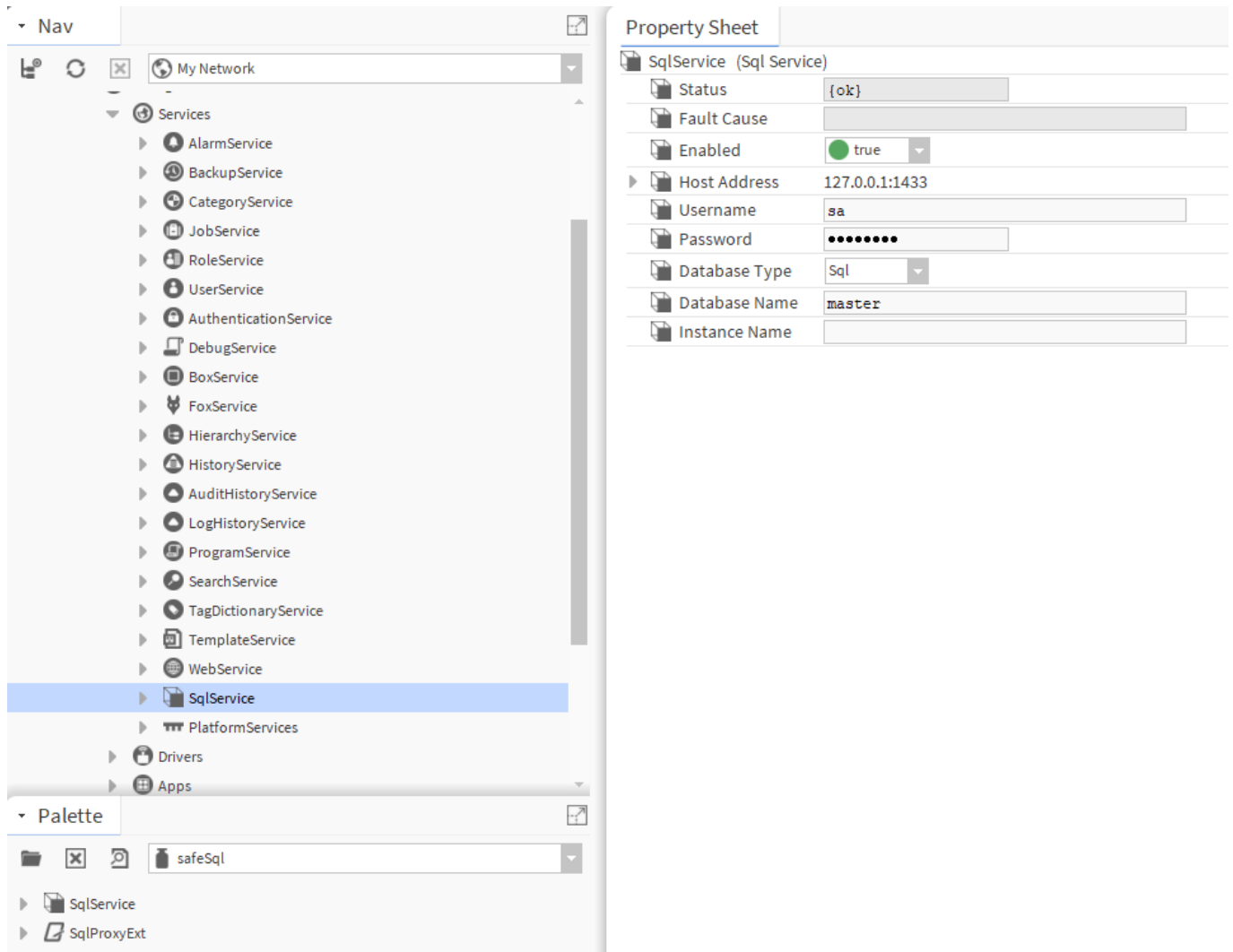


Figure 2: Sql Service under Services node

Fill required connection info, Address and Port – default is 1443, username and password. Choose database type, there are three options MySQL, Oracle and SQL for other databases (MSSQL for example). Database name and Instance name are optional based on your database configuration. Right click on the service and select Reconnect action (menu can be called by right-clicking on the service in the station tree on the left or by right-clicking on the top row of the Property Sheet of the Sql Service details page).

Status of device should change to Enabled/OK (check the connection parameters if not).

Adding new Sql Proxy Ext

Drag SqlProxyExt under control point

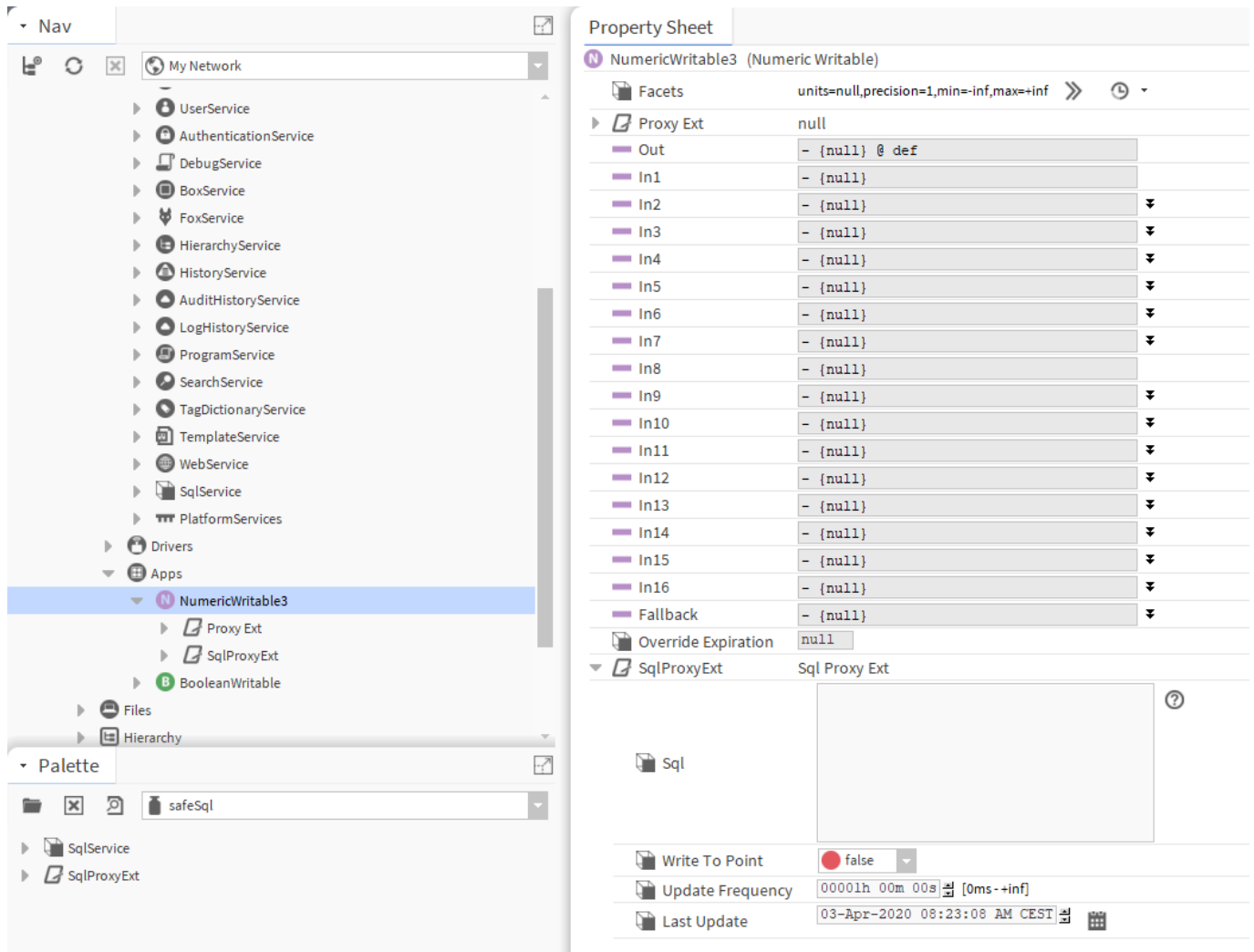


Figure 3: SqlProxyExt under Control point

- **Sql** – BFormat property where you put your query. BFormat is then executed respective to parent Control point. For more information see Sql queries examples chapter and BFormat documentation.
- **Write To Point** – If set to true, on every execution SqlProxyExt tries to set parent Control point value from first column and first row of returned table from query.
- **Update Frequency** – Frequency of how often query is executed
- **Last update** – Time of last successful query execution

Sql queries examples

Inserting value into table with timestamp

```
INSERT INTO TABLE (address, time_stamp, value)
```

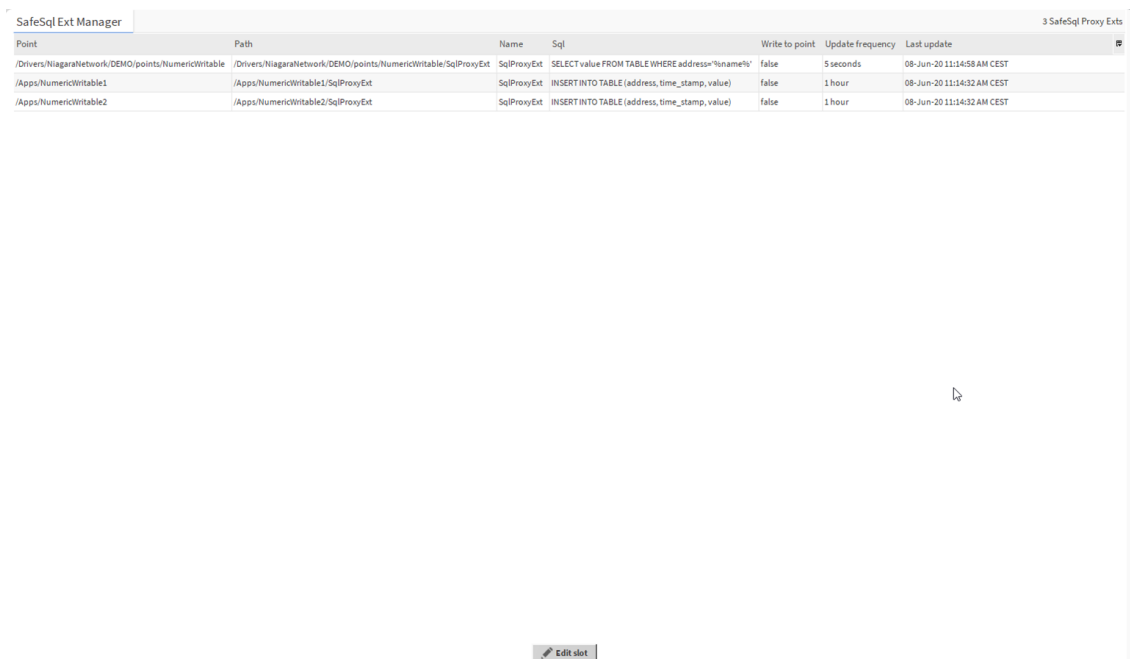
```
VALUES ('%name%', %time().getMillis%/1000, %getOut.getValue%)
```

Setting value of control point from database, keep in mind that Write To Point property must be set to true

```
SELECT value FROM TABLE WHERE address='%name%'
```

SafeSqlExtManager

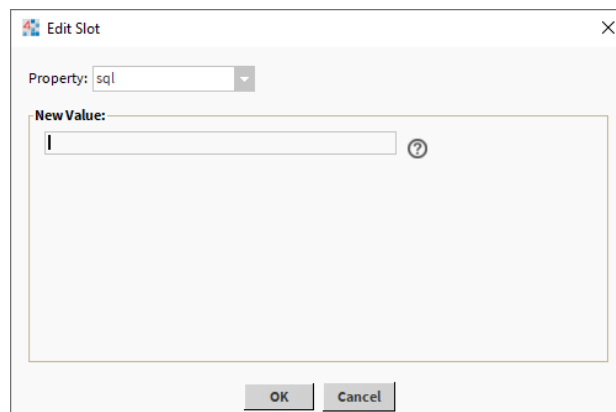
SqlService has SafeSqlExtManager view which provides place to see all SafeSqlProxyExts in one place and enables user to batch edit their slots.



Point	Path	Name	Sql	Write to point	Update frequency	Last update
/Drivers/NiagaraNetwork/DEMO/points/NumericWriteable	/Drivers/NiagaraNetwork/DEMO/points/NumericWriteable/SqlProxyExt	SqlProxyExt	SELECT value FROM TABLE WHERE address='%name%'	false	5 seconds	08-Jun-20 11:14:58 AM CEST
/Apps/NumericWriteable1	/Apps/NumericWriteable1/SqlProxyExt	SqlProxyExt	INSERT INTO TABLE (address, time_stamp, value)	false	1 hour	08-Jun-20 11:14:32 AM CEST
/Apps/NumericWriteable2	/Apps/NumericWriteable2/SqlProxyExt	SqlProxyExt	INSERT INTO TABLE (address, time_stamp, value)	false	1 hour	08-Jun-20 11:14:32 AM CEST

Figure 4: SafeSqlExtManager view

To edit multiple slots on SafeSqlProxExts select multiple extensions with CTRL key and press Edit slot button. A new Edit Slot window appears. Select slot which you want to edit in dropdown menu. Editor will change correspondig to type of chosen slot. Input new value and press Ok. Table will automatically refresh with new values.



Edit Slot [X]

Property:

New Value:

[?] [OK] [Cancel]

Figure 5: Edit Slot window

FAQ

Q: Connection to SQL database is not working!

A: Check wiring of your JACE 8000 or PC with Tridium Supervisor 4 to LAN. Through right-click menu try to Reconnect to database