

HAMPEL SOFTWARE ENGINEERING

hse-db

HAMPEL SOFTWARE ENGINEERING

Version 1.2.0 (2022-06-10)

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Documentation generated automatically and programmatically from LabVIEW!

This document was created fully automatically from the actual LabVIEW Source Code of this project using the [Release Automation Tools](#) of [Hampel Software Engineering](#).

1. STATE MACHINES

—no elements found—

2. CALLING DEPENDENCY DIAGRAMS

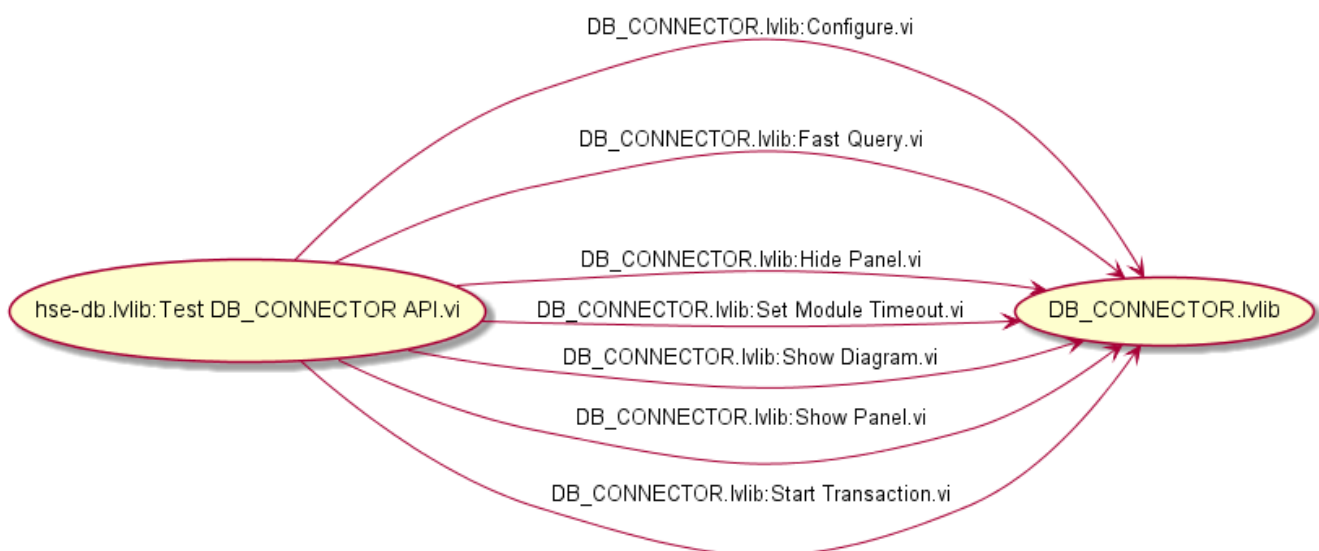
2.1. OVERVIEW

2.1.1. PROJECT



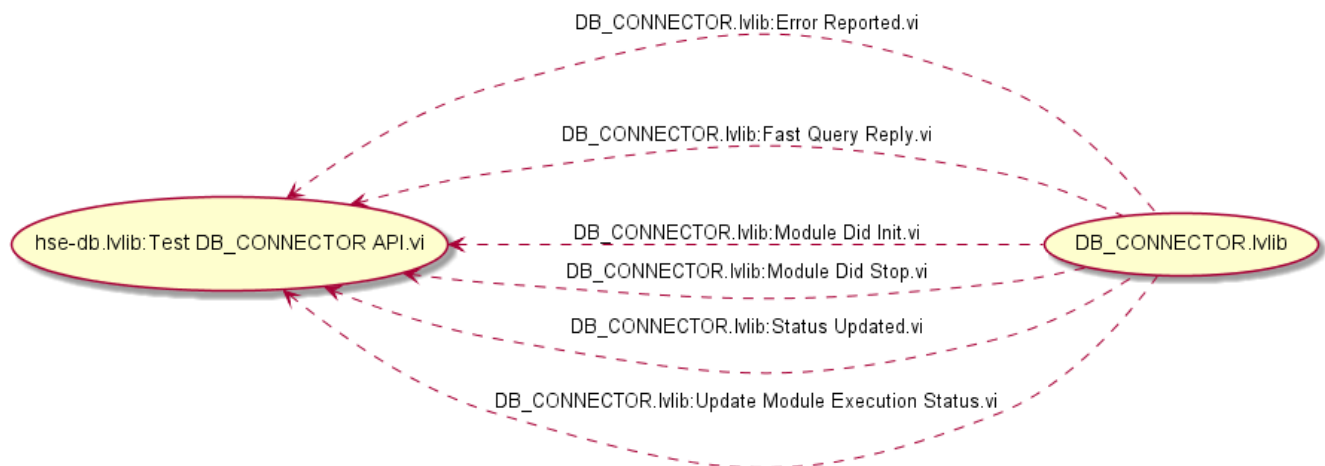
2.2. CALLERS

2.2.1. DB_CONNECTOR.LVLIB



2.3. LISTENERS

2.3.1. DB_CONNECTOR.LVLIB



APPENDIX A: DQMH

DQMH modules documentation

A.1. DB_CONNECTOR.LVLIB

Type: Cloneable

Responsibility: No description found (add content in DQMH module lvlib description)

A.1.1. MODULE START/STOP CALLS

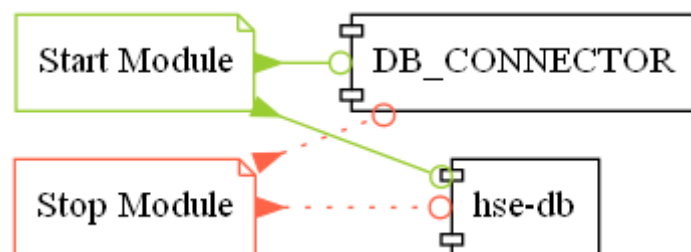


Table 1. Start and Stop module callers

| Function | Callers |
|--------------|--|
| Start Module | DB_CONNECTOR.lvlib:Load Module.vi hse-db.lvlib:Test DB_CONNECTOR API.vi |
| Stop Module | DB_CONNECTOR.lvlib:Handle Exit.vi hse-db.lvlib:Test DB_CONNECTOR API.vi |

A.1.2. MODULE RELATIONSHIP

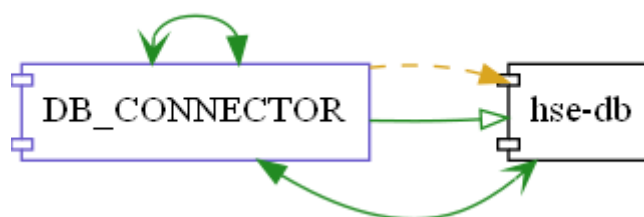


Table 2. Requests callers

| Request Name | Callers |
|---------------------------------------|---------------------------------------|
| DB_CONNECTOR.lvlib:Close Connection | |
| DB_CONNECTOR.lvlib:Commit Transaction | hse-db.lvlib:Test DB_CONNECTOR API.vi |
| DB_CONNECTOR.lvlib:Configure | hse-db.lvlib:Test DB_CONNECTOR API.vi |
| DB_CONNECTOR.lvlib:Connect | |
| DB_CONNECTOR.lvlib:Fast Query | hse-db.lvlib:Test DB_CONNECTOR API.vi |
| DB_CONNECTOR.lvlib:Get DB-Type | hse-db.lvlib:Test DB_CONNECTOR API.vi |

| Request Name | Callers |
|---|---|
| DB_CONNECTOR.lvlib:Hide Panel | hse-db.lvlib:Test DB_CONNECTOR API.vi |
| DB_CONNECTOR.lvlib:Query | DB_CONNECTOR.lvlib:Query - DBL - 1D.vi DB_CONNECTOR.lvlib:Query - DBL - 2D.vi DB_CONNECTOR.lvlib:Query - DBL - Scalar.vi DB_CONNECTOR.lvlib:Query - Int64 - 1D.vi DB_CONNECTOR.lvlib:Query - Int64 - 2D.vi DB_CONNECTOR.lvlib:Query - Int64 - Scalar.vi DB_CONNECTOR.lvlib:Query - String - 1D.vi DB_CONNECTOR.lvlib:Query - String - 2D.vi DB_CONNECTOR.lvlib:Query - String - Scalar.vi |
| DB_CONNECTOR.lvlib:Rollback Transaction | hse-db.lvlib:Test DB_CONNECTOR API.vi |
| DB_CONNECTOR.lvlib:Set Module Timeout | hse-db.lvlib:Test DB_CONNECTOR API.vi |
| DB_CONNECTOR.lvlib:Show Diagram | hse-db.lvlib:Test DB_CONNECTOR API.vi |
| DB_CONNECTOR.lvlib:Show Panel | hse-db.lvlib:Test DB_CONNECTOR API.vi |
| DB_CONNECTOR.lvlib:Start Transaction | hse-db.lvlib:Test DB_CONNECTOR API.vi |

Table 3. Broadcasts Listeners

| Broadcast Name | Listeners |
|---|---------------------------------------|
| DB_CONNECTOR.lvlib>Error Reported | hse-db.lvlib:Test DB_CONNECTOR API.vi |
| DB_CONNECTOR.lvlib:Fast Query Reply | hse-db.lvlib:Test DB_CONNECTOR API.vi |
| DB_CONNECTOR.lvlib:Module Did Init | hse-db.lvlib:Test DB_CONNECTOR API.vi |
| DB_CONNECTOR.lvlib:Module Did Stop | hse-db.lvlib:Test DB_CONNECTOR API.vi |
| DB_CONNECTOR.lvlib>Status Updated | hse-db.lvlib:Test DB_CONNECTOR API.vi |
| DB_CONNECTOR.lvlib:Update Module Execution Status | hse-db.lvlib:Test DB_CONNECTOR API.vi |

Table 4. Used requests

| Module | Requests |
|--------------|-----------------------------------|
| hse-db.lvlib | DB_CONNECTOR.lvlib:Stop Module.vi |

Table 5. Registered broadcast

| Module | Broadcasts |
|--------|------------|
| ☒—☒ | ☒—☒ |

A.1.3. MODULE CUSTOM ERRORS



Custom errors are added to the module via vi named `*--error.vi`.

Module DB_CONNECTOR.lvlib use the following custom errors:

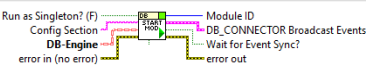
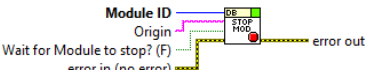
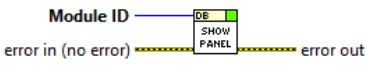
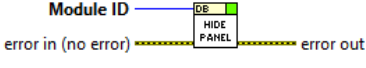
Table 6. Custom errors


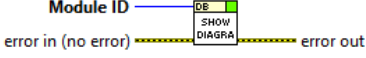



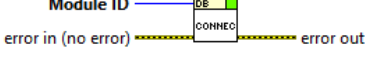

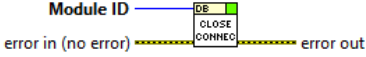

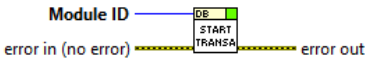

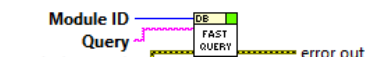

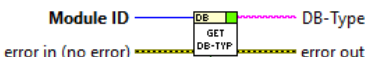

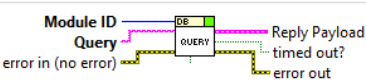

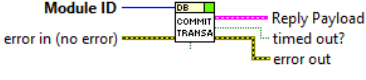

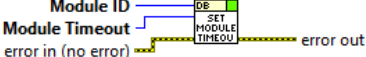

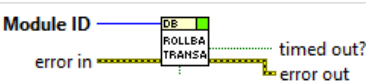

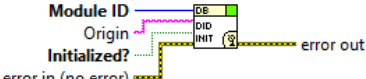

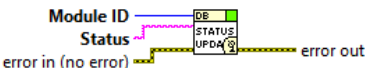

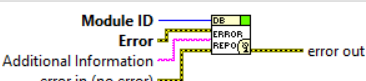

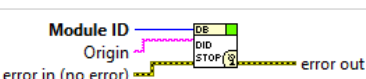
| Name | Code | Description |
|-----------------------------|--------|---|
| Module Running as Singleton | 403680 | The "%s" module is currently running as singleton, but the Start Module VI was called with 'Run as Singleton' specified as FALSE. |
| Module Not Stopped | 403682 | %s Module did not finish clean up on exit. |


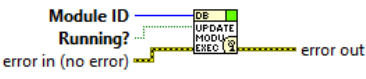

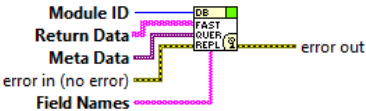
| Name | Code | Description |
|------------------------------------|--------|--|
| Module Not Synced | 403683 | %s Module was unable to synchronize events. |
| Module Not Running | 403684 | Not a single instance of "%s" Module running. |
| Module Running as Cloneable | 403685 | The "%s" module is currently running as cloneable, but the Start Module VI was called with 'Run as Singleton' specified as TRUE. |
| Request Timed Out | 403686 | The reply for the request "%s" of the "%s" Module timed out. |
| Request and Wait for Reply Timeout | 403686 | %s |
| Master Reference Not Closed | 403687 | The "%s" module cannot be run as singleton because the Master Reference is still open from a prior run as cloneable. If you plan on running this module as both singleton and cloneable, consider changing your Main VI to wire a value of TRUE to the 'Close Master Reference' input of Init Module.vi. |

A.1.4. EVENT LIST

Table 7. Events

| Name | Type | Connector pane | Description | S. | R. | I. |
|--------------|------|---|---|----|----|----|
| Start Module | |  <p>Run as Singleton? (F) — DB-Engine — error in (no error)</p> <p>Config Section — DB-Engine — error in (no error)</p> <p>Module ID — DB-CONNECTOR Broadcast Events — Wait for Event Sync? — error out</p> | Launches the Module Main.vi. | | | |
| Stop Module | |  <p>Module ID — Origin — DB-STOP MOD — error out</p> <p>Wait for Module to stop? (F) — error in (no error)</p> | <p>Send the Stop request to the Module's Main.vi. If Wait for Module to stop? is TRUE, then this VI will not complete execution until the Module Main VI has stopped running.</p> <p>Note: If the cloneable module is running as singleton, then the 'Wait for Module to stop?' input is ignored... this VI will always wait until a cloneable Main VI running as singleton has stopped running.</p> <p>Note: This VI was modified by the Validate DQMH Module tool to upgrade it to the DQMH 5.1 approach to poll the execution state of a cloneable module running as singleton to know when the module has gone idle.</p> <p>Note: This VI was modified by the Validate DQMH Module tool to upgrade it to the DQMH 5.0 approach to destroying cloneable module event references.</p> | | | |
| Show Panel | ➡ |  <p>Module ID — DB-SHOW PANEL — error out</p> <p>error in (no error)</p> | Send the Show Panel request to the Module's Main.vi. | | | |
| Hide Panel | ➡ |  <p>Module ID — DB-HIDE PANEL — error out</p> <p>error in (no error)</p> | Send the Hide Panel request to the Module's Main.vi. | | | |

| Name | Type | Connector pane | Description | S. | R. | I. |
|----------------------|---|---|---|----|----|----|
| Show Diagram |  |  | This VI tells the Module to show its block diagram to facilitate troubleshooting (add probes, breakpoints, highlight execution, etc). | | | |
| Configure |  |  | Triggers the auto-configuration of the module | | | |
| Connect |  |  | Connect to database. | | | |
| Close Connection |  |  | Close connection to the database. | | | |
| Start Transaction |  |  | Start a transaction to get sure all following SQL commands get executed or none. | | | |
| Fast Query |  |  | An asynchronous query to the DB. This request does not block and has no reply. To receive the db response register to the corresponding broadcast. | | | |
| Get DB-Type |  |  | Returns the type of the database in DB-Type | | | |
| Query |  |  | Send a SQL-Query to the database. | | | |
| Commit Transaction |  |  | Commit a transaction. Either all SQL-commands get committed or, in case of an error, all get rejected. | | | |
| Set Module Timeout |  |  | Overrides the DQMH internal Module Timeout with the specified value (must be greater than 0) | | | |
| Rollback Transaction |  |  | Rollback the active transaction. | | | |
| Module Did Init |  |  | Send the Module Did Init event to any VI registered to listen to this module's broadcast events. | | | |
| Status Updated |  |  | Send the Status Updated event to any VI registered to listen to events from the owning module. | | | |
| Error Reported |  |  | Note: This VI was modified by the Validate DQMH Module tool to parse additional information tags out of the incoming error source string. | | | |
| Module Did Stop |  |  | Send the Module Did Stop event to any VI registered to listen to this module's broadcast events. | | | |

| Name | Type | Connector pane | Description | S. | R. | I. |
|--------------------------------|---|--|--|----|----|----|
| Update Module Execution Status |  |  <p>Module ID Running? error in (no error) error out</p> | Fire the Get Module Execution Status request. | | | |
| Fast Query Reply |  |  <p>Module ID Return Data Meta Data Field Names error in (no error) error out</p> | The database reply from a (asynchronous) "Fast Query". | | | |

Type:  → Request |  → Request and Wait for Reply |  → Broadcast

Scope:  → Protected |  → Community

Reentrancy:  → Preallocated reentrancy |  → Shared reentrancy

Inlining:  → Inlined

APPENDIX B: LIBRARIES

Misc. reuse libraries

B.1. HSE-CONFIG.LVLIB

Responsibility: No description found (add content in lvlib description)

Version: 1.0.0.0

Table 8. Nested libraries

| Name | Type |
|-----------------------|---------|
| [config-base.lvclass] | LVClass |
| [config-ini.lvclass] | LVClass |

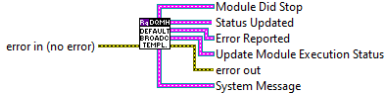
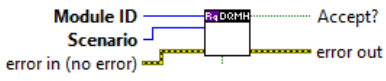
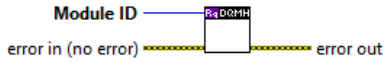
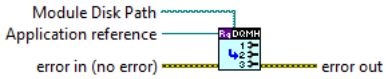
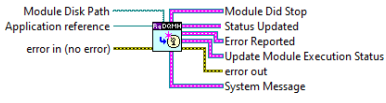
This library has no functions set to non private scope.

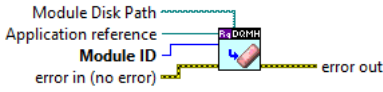
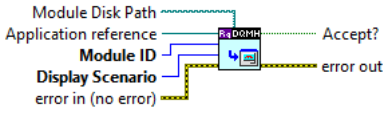
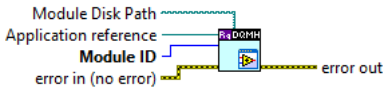
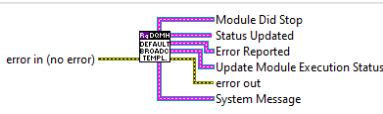
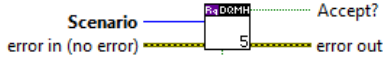

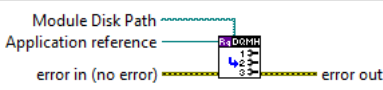
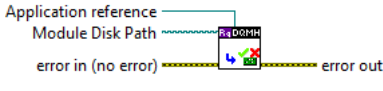
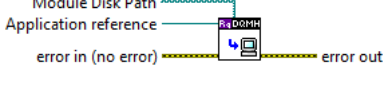
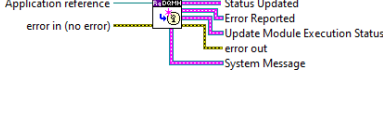
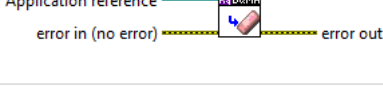
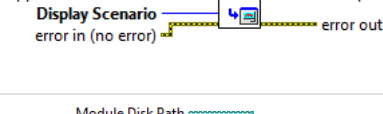
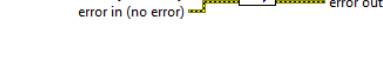
B.2. HSE-DQMH-DYNAMICREQUESTERS.LVLIB

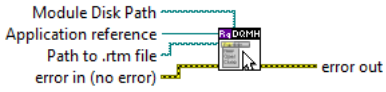
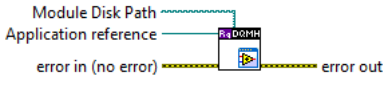
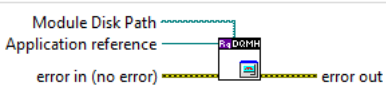
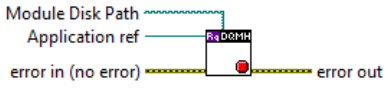
Responsibility: No description found (add content in lvlib description)


Version: 1.0.0.0


Table 9. Functions (non private scope only)

| Name | Connector pane | Description | S. | R. | I. |
|--|---|---|----|----|----|
| Default Broadcast (Cloneable)--template |  | | | | |
| Request UI Display (Cloneable)--template |  | No description found (add content in vi description) | | | |
| Show Diagram (Cloneable)--template |  | No description found (add content in vi description) | | | |
| DQMH Configure (Cloneable) |  | Calls the "Configure" request VI of the module in path | | | |
| DQMH Obtain Default Broadcast Events (Cloneable) |  | Calls the "Obtain Default Broadcast Events" request VI of the module in path | | | |

| Name | Connector pane | Description | S. | R. | I. |
|--------------------------------------|---|---|----|----|----|
| DQMH Prepare (Cloneable) |  | Calls the "Prepare" request VI of the module in path | | | |
| DQMH Request UI Display (Cloneable) |  | Calls the "Request UI Display" request VI of the module in Path to module directory . Hands over the Module ID and the Display Scenario . | | | |
| DQMH Show Diagram (Cloneable) |  | Calls the "Request UI Display" request VI of the module in Path to module directory . Hands over the Module ID and the Display Scenario . | | | |
| Default Broadcast—template |  | | | | |
| Request UI Display—template |  | No description found (add content in vi description) | | | |
| Set Modules—template |  | No description found (add content in vi description) | | | |
| DQMH Configure |  | Calls the "Configure" request VI of the module in path | | | |
| DQMH Load API Tester |  | Calls the "Load Module" request VI of the module in path | | | |
| DQMH Load Module |  | Calls the "Load Module" request VI of the module in path | | | |
| DQMH Obtain Default Broadcast Events |  | Calls the "Obtain Default Broadcast Events" request VI of the module in path | | | |
| DQMH Prepare |  | Calls the "Prepare" request VI of the module in path | | | |
| DQMH Request UI Display |  | Calls the "Request UI Display" request VI of the module in Path to module directory . Hands over the Module Name and the Display Scenario . | | | |
| DQMH Set Modules |  | Calls the "Set Modules" request VI of the module in Path to module directory . Hands over paths to all dynamically loaded modules in modules to load dynamically . | | | |

| Name | Connector pane | Description | S. | R. | I. |
|-----------------------|---|--|----|----|----|
| DQMH Set Runtime Menu |  | Calls the "Set Runtime Menu" request VI of the module in Path to module directory. Hands over the Path to .rtm file. | | | |
| DQMH Show Diagram |  | Calls the "Request UI Display" request VI of the module in Path to module directory. Hands over the Module Name and the Display Scenario. | | | |
| DQMH Show Panel |  | Calls the "Show Panel" request VI of the module in Path to module directory | | | |
| DQMH Stop Module |  | Calls the "Stop Module" request VI of the module in Path to module directory | | | |

Scope:  → Protected |  → Community

Reentrancy:  → Preallocated reentrancy |  → Shared reentrancy

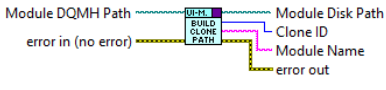
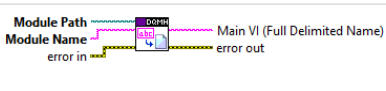



Inlining:  → Inlined

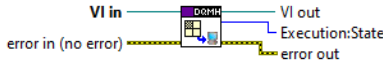
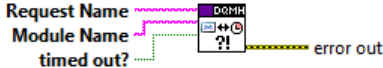
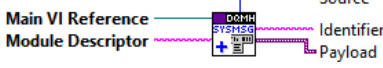
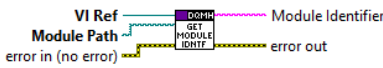
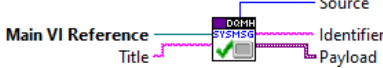
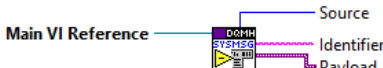


B.3. HSE-DQMH.LVLIB


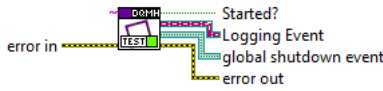
Responsibility: No description found (add content in lplib description)

Version: 1.0.0.0

Table 10. Functions (non private scope only)

| Name | Connector pane | Description | S. | R. | I. |
|---|---|---|----|---|----|
| DQMH Build Module Disk Path From DQMH Path |  | Parses the Instance Name for the Clone ID and returns the full path to the module's directory, the Clone ID and the module's name | | | |
| DQMH Get Fully Delimited Instance Name from Module Name |  | Parses the fully delimited VI name from the module path and the module name. For cloneables, the clone ID is appended to the VI name. | |  | |
| DQMH Get Module Type |  | Returns the type (singleton or cloneable) of the module in Module Path | |  | |

| Name | Connector pane | Description | S. | R. | I. |
|---|---|---|----|----|----|
| DQMH Load Main VI Reference |  | <p>Loads the VI reference to a Singleton DQMH module's main.vi. On Linux RT in Runtime Environment, the main.vi is loaded reentrant in order to circumvent a bug in LabVIEW.</p> <p>Details: On Linux RT with Embedded UI enabled running a startup.exe, a VI server invoke method (Control Value.set) doesn't work. This is possibly related to / covered by CAR 514879 (see https://forums.ni.com/t5/Delacor-Toolkits-Discussions/Deploy-and-run-at-Startup-for-RT-systems/m-p/3620339/highlight/true#M256).</p> <p>In order for this VI to work, you need to: 1. set the DQMH module's main.vi execution setting to "preallocated clone reentrant execution" 2. set the DQMH module's main.vi scope to "community" 3. add the hse-dqmh.lvlib as a friend in the DQMH module's .lvlib Friends properties</p> | | | |
| DQMH Request Reply Timed Out—error |  | No description found (add content in vi description) | | | |
| DQMH System Message - Add to Run-Time Menu |  | Sends the modul's Path and Module Descriptor via the "Add to Run-Time Menu" System Message broadcast. The UI Manager inserts the module into the relevant locations in the run-time menu. | | | |
| DQMH System Message - Get Module Identifier |  | No description found (add content in vi description) | | | |
| DQMH System Message - Ready for Display |  | No description found (add content in vi description) | | | |
| DQMH System Message - Remove from Run-Time Menu |  | No description found (add content in vi description) | | | |
| DQMH System Message - Removed from Subpanel |  | No description found (add content in vi description) | | | |
| DQMH Tester Cleanup hse-appl |  | If the hse-application object was instantiated and the hse-logger was initialized when starting the Tester, this VI cleans up both objects. | | | |

| Name | Connector pane | Description | S. | R. | I. |
|--|---|--|----|----|----|
| DQMH Tester Prepare hse- appl - Get Name and Path |  | <p>Returns APP-NAME as Project Name and /APP-NAME_Source as Project Path</p> <p>HSE projects follow this folder structure: /APP-NAME_Config Configuration Files /APP-NAME_Data Measured and Other Data /APP-NAME_Source LabVIEW Sources /APP-NAME Compiled Application</p> <p>REAL-TIME: As the configuration directory on real-time systems always needs to reside at "C:\<Project Name>_Config\", and as it tedious (embedded UI) or impossible (no embedded UI) to enter the path, it can be supplied via the optional Real-Time App Name string input.</p> | | | |
| DQMH Tester Prepare hse- appl |  | <p>If the hse-application class is not running, queries the user for the path of the containing application and instantiates the hse-appl class. Returns if it did load the class.</p> <p>HSE projects follow this folder structure: /APP-NAME_Config Configuration Files /APP-NAME_Data Measured and Other Data /APP-NAME_Source LabVIEW Sources /APP-NAME Compiled Application</p> <p>The hse-application:ApplicationInit.VI expects the "APP-NAME_Source" folder and the "application name", and processes these to automatically find the "_Config" and "_Data" directories.</p> <p>REAL-TIME: As the configuration directory on real-time systems always needs to reside at "C:\<Project Name>_Config\", and as it tedious (embedded UI) or impossible (no embedded UI) to enter the path, it can be supplied via the optional Real-Time App Name string input.</p> | | | |

Scope:  → Protected |  → Community

Reentrancy:  → Preallocated reentrancy |  → Shared reentrancy

Inlining:  → Inlined

B.4. HSE-MISC.LVLIB

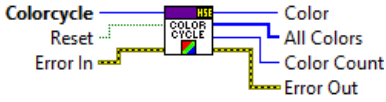







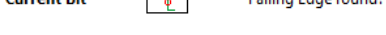





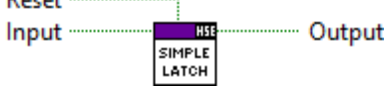


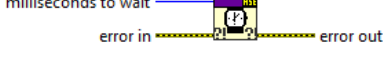



Responsibility: source code password: bowman-tyro-kickback-besides

Version: 1.0.0.0

Table 11. Nested libraries







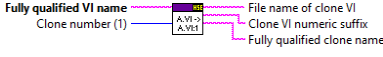







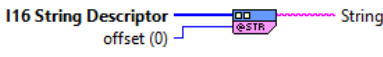


| Name | Type |
|----------------------|---------|
| [Loop Timer.lvclass] | LVClass |

Table 12. Functions (non private scope only)

| Name | Connector pane | Description | S. | R. | I. |
|--------------------------------------|--|---|----|---|----|
| ColorCycle |  <p>Colorcycle Reset Error In</p> <p>Color All Colors Color Count Error Out</p> | <p>With every call, this VI returns a color from a color pallet. If the last color from a pallet is reached, the VI continues with the first color.</p> <p>This Vi is useful to give plots and graphs better looking colors.</p> <p>The color sets are inspired by a subset of the colormaps from the Python plotting library Matplotlib.</p> | |  | |
| Get Enum Details from Type String |  <p>type string IN</p> <p>Name Item Strings Item Count</p> | No description found (add content in vi description) | |  | |
| Get Multiple Attributes from Variant |  <p>Variant in Keys error in</p> <p>Values error out</p> | No description found (add content in vi description) | | | |
| Graph Scale Axis |  <p>Values error in</p> <p>Maximum Minimum error out</p> | Calculates usefull values for the Graph scaling (Minimum, Maximum) that go 10% over the min/max-values and include zero. | |  | |
| Set Multiple Attributes to Variant |  <p>Variant in Keys Values error in</p> <p>Variant out error out</p> | Set multiple attributes (key-values-pairs) to a variant. | | | |
| Simple Edge Detection (Falling) |  <p>Current Bit</p> <p>Falling Edge found?</p> | <p>Returns True if a falling edge (True -> False) occures.</p> <p>(This VI is inlined.)</p> | |   | |
| Simple Edge Detection (Rising) |  <p>Current Bit</p> <p>Rising Edge found?</p> | <p>Returns True if a rising edge (False -> True) occures.</p> <p>(This VI is inlined.)</p> | |   | |
| Simple Latch |  <p>Reset Input</p> <p>Output</p> | A simple boolean latch with reset functionality. | |   | |
| Wait_ErrorCluster |  <p>milliseconds to wait error in</p> <p>error out</p> | Simple wrapper for the Wait function that allows for data flow. | |  | |
| ConvertStringToFloat_Array-1D |  <p>String</p> <p>error out</p> <p>Array of Doubles</p> | converts array of string values to floating point values | |  | |

| Name | Connector pane | Description | S. | R. | I. |
|--------------------------------------|---|---|----|---|---|
| ConvertStringToFloat_Array-2D |  | converts array of string values to floating point values | |  | |
| ConvertStringToFloat_Scalar |  | converts single string value to floating point value | |  | |
| Filename Sanitizer |  | Removes all characters that are not supported in filenames (/ \ : * ? " < >) and replaces it with "Replace String" (default is "_"). | |  | |
| Find Data Type |  | No description found (add content in vi description) | | | |
| Represent Boolean |  | No description found (add content in vi description) | |  |  |
| Text to UTF-8 Wrapper |  | Converts LabVIEW text to UTF-8. | |  |  |
| UTF-8 to Text Wrapper |  | Converts UTF-8 text to text encoded in the specified system. | |  |  |
| U8-Array to U64 |  | Convert an array of Bytes (U8) to an array of U64. | |  | |
| U64-Array to U8 |  | Convert an array of U64 to an array of Bytes (U8). | |  | |
| Variant_BuildClusterFromElementArray |  | From the LabVIEW Open Source project DataManipulation library v1.4.0 by Francois Normandin (https://github.com/LabVIEW-Open-Source/DataManipulation). | |  |  |
| Variant_EmptyCluster |  | From the LabVIEW Open Source project DataManipulation library v1.4.0 by Francois Normandin (https://github.com/LabVIEW-Open-Source/DataManipulation). | |  |  |
| LV Timestamp to Unix Epoch |  | Convert a LabView Timestamp (UTC Timezone) to a Unix Epoch Timestamp (C time_t). | |  |  |
| Seconds to Time |  | Convert a time range (in seconds) to a time string in the format "hh:mm:ss". E.g. 3680s -> "01:01:20". | | | |
| Unix Epoch to LV Timestamp |  | Convert a Unix Epoch Timestamp (C time_t) to a LabView Timestamp (UTC Timezone). | |  |  |
| Error_AddAdditionalInformation |  | Adds Additional Info to the source of Error In | |  | |
| Error_AppendErrorsToSource |  | Takes the first element of errors in and concatenates all other elements' code and source into the source of the first error. | |  | |

| Name | Connector pane | Description | S. | R. | I. |
|--|---|--|----|---|---|
| Error_Clear |  | Clears the error in error in | |  | |
| Error_Helper_BuildCluster |  | Builds an error cluster from Code and Additional Info | |  | |
| Error_Helper_OverwriteCluster |  | If Error In is true, overwrites the error cluster information with Code and Additional Info . | |  | |
| Error_Helper_RaiseError |  | If Raise? is true, puts the error in Error To Raise on the error output and adds Additional Info to the source of the error. | |  | |
| Error_Helper_RaiseErrorFromLabel |  | If Raise? is true, sets an error with code set by Error Labels and source by Additional Info | |  | |
| Error_LogToFile |  | If error in is true, writes the error to the file identified by path and clears the error. | |  | |
| Event_CloseRegistrationRef |  | Unregisters the given event registration from the HSE-Event | |  |  |
| Event_Generate |  | Generates an HSE-Event and sends Name , Parameter and Data as event data. | |  |  |
| Event_GetRefAndReg |  | Gets the HSE-Event refnum and a new event registration refnum for it. | |  |  |
| Event_LoadOrCreateRefs |  | Returns the refnum of the HSE-Event | |  |  |
| Hash Core |  | | |  | |
| Hash |  | | |  | |
| Delete Duplicates From 1D-Array (String) |  | (v0.2.1b; 2017-08-14 16:44) | |  | |

| Name | Connector pane | Description | S. | R. | I. |
|---------------------------|---|--|----|---|---|
| Sort 2D-Array |  | Sorts a 2D string array by the column declared in Search parameters and by Sort Order . | |  | |
| String_PadWithCharacters |  | Adds char (ASCII) characters to str in until it is length characters long. Common ASCII characters: 0x09 ... tab 0x20 ... space 0x2E ... dot (.) | |  | |
| String_StripNullValues |  | Removes all NULL values from a string | |  | |
| Generate Clone Name |  | Given the fully qualified name of a VI (meaning the name includes any library namespace prefixes), this VI returns the name of a clone of the VI. By default, it returns the name of the first clone that gets created, but you can request the Nth clone by supplying the "Clone number" input. USE WITH CAUTION. The name returned by this VI can be used with the "Open VI Reference" function to open a VI reference to a clone VI. This is an unsupported feature of LabVIEW (i.e. opening an additional reference to a clone VI was never intended to work but someone forgot to disable it when clones were added to LabVIEW). Opening extra references beyond the one used to create the clone (i.e. the clone's "this VI" reference) is known to cause instabilities, including crashes, in some situations. However, such refnums are critical for writing certain debugging tools. Be careful. | |  | |
| ShowRunningVIs |  | Returns a list of VIs in memory | | | |
| StringLogger |  | Simple helper VI for writing data to a log file. Path Data and Label form the folder structure, and Function is part of the file name. | |  | |
| TypeDescriptor_GetName |  | From the LabVIEW Open Source project DataManipulation library v1.4.0 by Francois Normandin (https://github.com/LabVIEW-Open-Source/DataManipulation). | |  |  |
| TypeDescriptor_GetPString |  | From the LabVIEW Open Source project DataManipulation library v1.4.0 by Francois Normandin (https://github.com/LabVIEW-Open-Source/DataManipulation). | |  |  |

Scope:  → Protected |  → Community

Reentrancy:  → Preallocated reentrancy |  → Shared reentrancy

Inlining:  → Inlined

B.5. HSE-DB-ADO.LVLIB

Responsibility: No description found (add content in lvlib description)

Version: 1.0.0.0

Table 13. Nested libraries

| Name | Type |
|---------------------|---------|
| [DB-ADO.lvclass] | LVClass |
| ADO-DB-Driver.lvlib | Library |

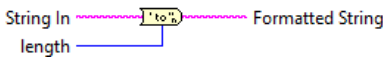



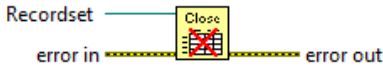
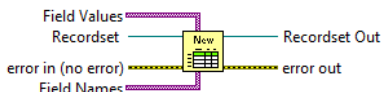
This library has no functions set to non private scope.

B.6. ADO-DB-DRIVER.LVLIB

Responsibility: ADO-DB driver.

Version: 1.0.0.0

Table 14. Functions (non private scope only)

| Name | Connector pane | Description | S. | R. | I. |
|-----------------------------------|--|--|----|----|----|
| convert " to NULL |  | No description found (add content in vi description) | | | |
| Convert from date-first Timestamp |  | No description found (add content in vi description) | | | |
| Convert to date-first Timestamp |  | No description found (add content in vi description) | | | |
| format floats for database |  | No description found (add content in vi description) | | | |
| format floats[] for database | [hse db ado.lvlib ADO DB Driver]_for_database.vi_.png[hse-db-ado.lvlib:ADO-DB-Driver.lvlib:format floats[] for database.vi] | No description found (add content in vi description) | | | |
| Close Recordset+ |  | No description found (add content in vi description) | | | |
| Create New Record in Recordset |  | No description found (add content in vi description) | | | |

| Name | Connector pane | Description | S. | R. | I. |
|---|---|--|----|----|----|
| Open Recordset+ |  | No description found (add content in vi description) | | | |
| parse field names from SELECT statement |  | No description found (add content in vi description) | | | |
| Read Recordset (DBVIEW) |  | No description found (add content in vi description) | | | |
| Read Recordset (DOUBLE) |  | No description found (add content in vi description) | | | |
| Read Recordset (STRING) |  | No description found (add content in vi description) | | | |
| Read Recordset (VARIANT) |  | No description found (add content in vi description) | | | |
| SQLSTATE Lookup |  | No description found (add content in vi description) | | | |
| _Database Driver Catalog |  | No description found (add content in vi description) | | | |
| Close Connection+ |  | No description found (add content in vi description) | | | |
| Create and Read Recordset |  | No description found (add content in vi description) | | | |
| Execute SQL Command (no data returned) |  | No description found (add content in vi description) | | | |
| Get Database Errors |  | No description found (add content in vi description) | | | |
| Get Table Info |  | No description found (add content in vi description) | | | |
| Insert BLOB data |  | No description found (add content in vi description) | | | |

| Name | Connector pane | Description | S. | R. | I. |
|-------------------------------|----------------|--|----|----|----|
| Open Connection+ | | No description found (add content in vi description) | | | |
| Rollback Transaction on Error | | No description found (add content in vi description) | | | |
| Set Command Timeout | | No description found (add content in vi description) | | | |
| Start Transaction | | No description found (add content in vi description) | | | |

Scope: → Protected | → Community

Reentrancy: → Preallocated reentrancy | → Shared reentrancy

Inlining: → Inlined

B.7. HSE-DB-MYSQL.LVLIB

Responsibility: No description found (add content in lvlib description)

Version: 1.0.0.0

Table 15. Nested libraries

| Name | Type |
|--------------------|---------|
| [DB-MySQL.lvclass] | LVClass |
| MySQL (TCP).lvlib | Library |

This library has no functions set to non private scope.

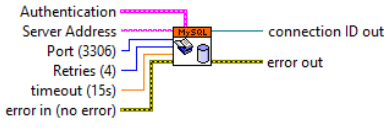

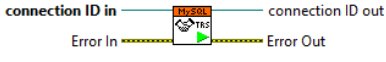

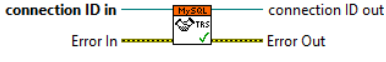

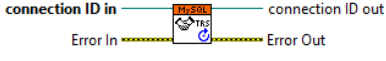



B.8. MYSQL (TCP).LVLIB

Responsibility: No description found (add content in lvlib description)

Version: 1.0.0.0

Table 16. Functions (non private scope only)

| Name | Connector pane | Description | S. | R. | I. |
|------------------|----------------|--|----|----|----|
| Close Connection | | No description found (add content in vi description) | | | |
| Execute | | No description found (add content in vi description) | | | |

| Name | Connector pane | Description | S. | R. | I. |
|----------------------|---|--|----|---|----|
| Open Connection |  | No description found (add content in vi description) | |  | |
| Begin Transaction |  | No description found (add content in vi description) | |  | |
| Commit Transaction |  | No description found (add content in vi description) | |  | |
| Rollback Transaction |  | No description found (add content in vi description) | |  | |
| Validate Connection |  | No description found (add content in vi description) | |  | |

Scope:  → Protected |  → Community

Reentrancy:  → Preallocated reentrancy |  → Shared reentrancy

Inlining:  → Inlined

B.9. HSE-DB-SQLITE.LVLIB

Responsibility: No description found (add content in lvlib description)

Version: 1.0.0.0

Table 17. Nested libraries

| Name | Type |
|---------------------|---------|
| [DB-SQLite.lvclass] | LVClass |

This library has no functions set to non private scope.

B.10. HSE-DB.LVLIB


Responsibility: No description found (add content in lvlib description)

Version: 1.0.0.0


Table 18. Nested libraries

| Name | Type |
|---------------------------------|---------|
| [DB-Interface.lvclass] | LVClass |
| DB_CONNECTOR.lvlib | Library |
| [VI Reference Management.lvlib] | Library |
| [Clone Registration.lvlib] | Library |

Table 19. Functions (non private scope only)

| Name | Connector pane | Description | S. | R. | I. |
|-----------------------------|---|--------------------------|----|----|----|
| Test DB_CONNECTOR API |  | DB_CONNECTOR API Tester. | | | |

Scope:  → Protected |  → Community

Reentrancy:  → Preallocated reentrancy |  → Shared reentrancy

Inlining:  → Inlined