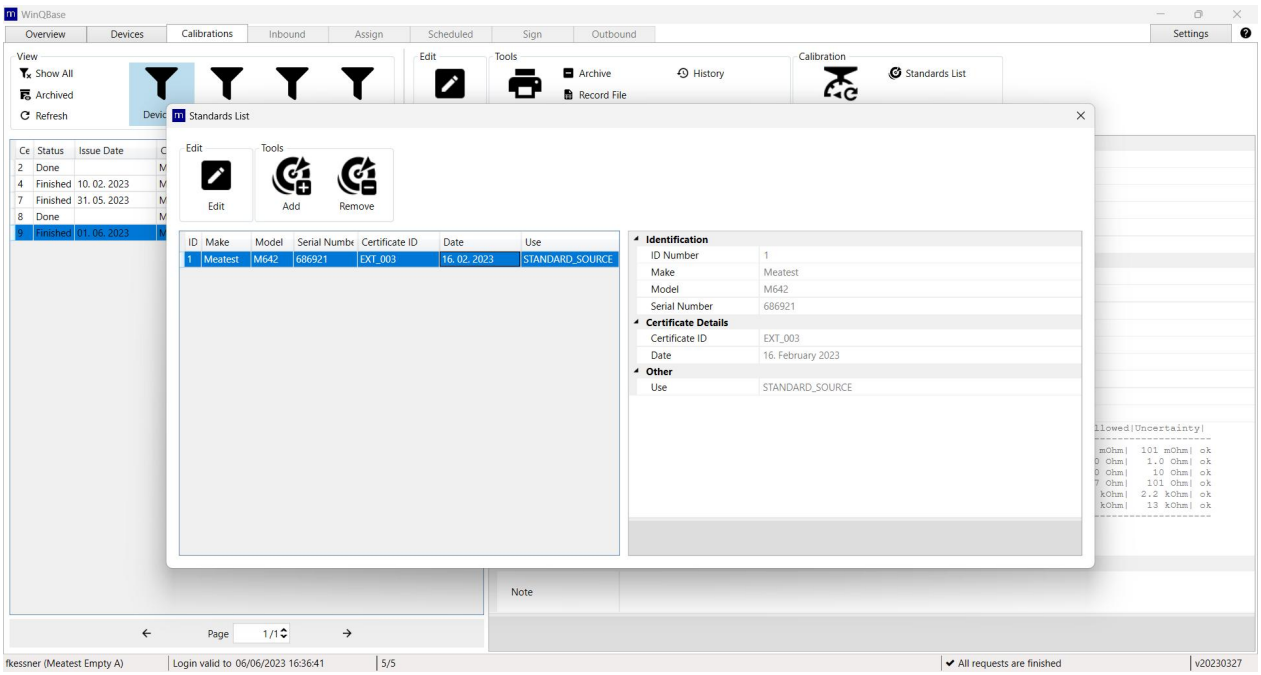
meatest

EN, rev. 04 SW ver. 4.20

WinQBase – Database software for calibration laboratories

User manual



This PDF user manual is an auto-conversion of interactive CHM help. Interactive CHM help provides better reading experience and is also available from Meatest website.

WinQBase Client

WinQServer

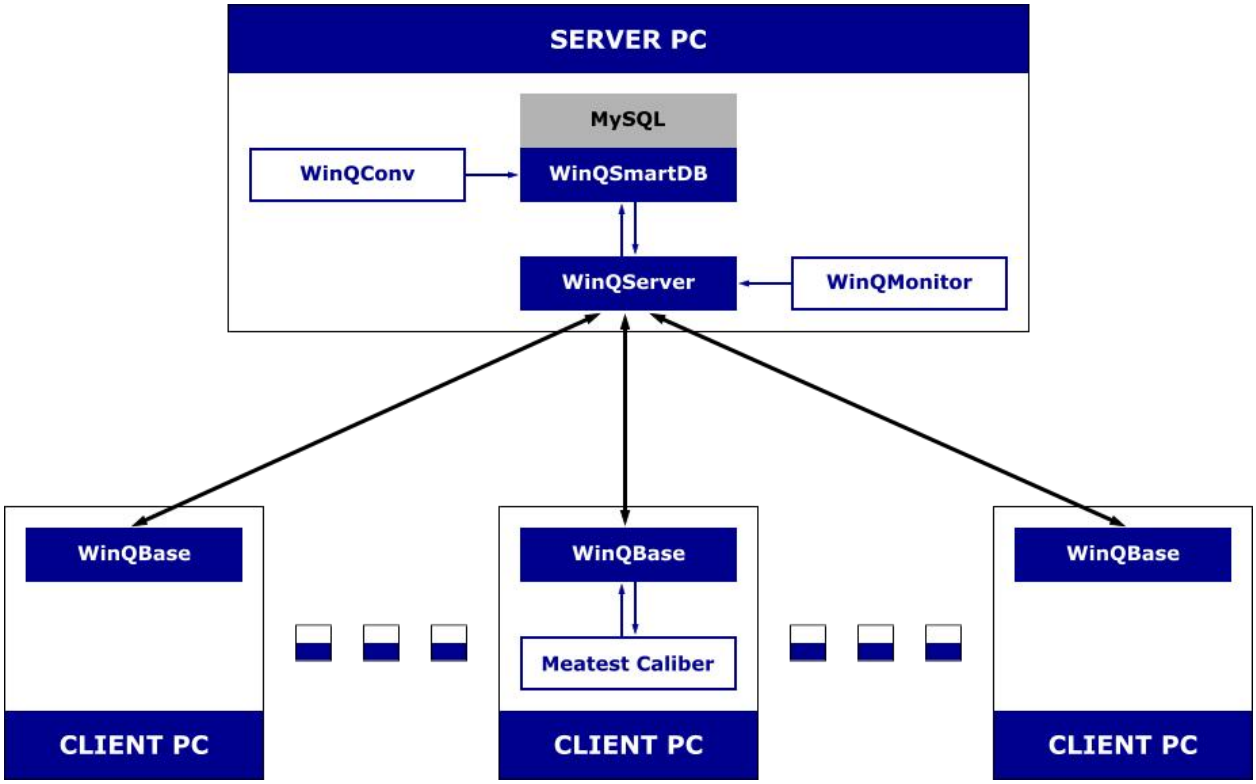
WinQMonitor

Introduction

WinQBase is database software for calibration laboratories that keeps track of laboratory resources as well as its customers, equipment provided for calibrations and other essentials. Client app interacts with calibration software Caliber to create, manage and run calibration procedures. Calibration results are processed by WinQbase again to provide calibration certificates and keep records in central database.

The system holds history of changes that is easy to browse through and can recall past records if needed. The central database that stores all WinQBase as well as all Caliber resources can be backed-up using native MySQL or MSSQL tools.

WinQBase is based on client – server topology consisting of one central database server and several client PCs that access the data over local area network. Diagram chart below shows an example of such system and its interactions:

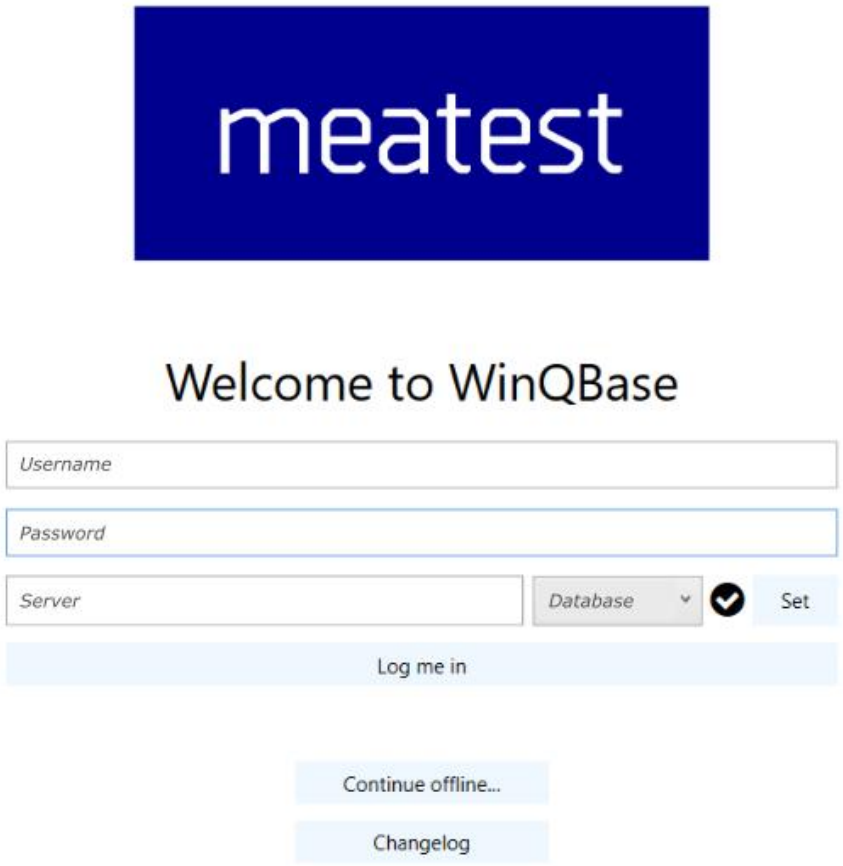


WinQServer is the backbone of WinQbase system, managing its central database and providing data access to users via client applications (WinQBase) installed on their local PCs. This concept allows simultaneous work of multiple client stations within WinQBase system all while maintaining database integrity.

The server side includes two utilities: WinQConv and WinQMonitor. WinQConv is used to migrate data from previous versions of WinQBase. WinQMonitor is graphical user interface for server setup, management and monitoring. Both tools as well as the entire server side of WinQbase system shall be managed by system administrators only.

Login screen

Login screen is the user's entry point into the system.



On each WinQBase startup, the user may choose to either log in online to access the central database or run the app in offline mode. It's recomended to use online mode at all times. Login form keeps username and server setup from last sucessful login.

Online mode (default)	Offline mode
Online mode connects the user to local database (or one of local	Offline mode is designed for scheduled calibrations at customer

databases if the calibration lab runs multiple databases on a single server), providing up-to-date data in real time. Status icon next to **Set** button indicates availability of selected server.

Users can log in online by clicking on **Log me in**. The app will then contact selected server, identify the user through login and password, load necessary data and display **Dashboard**.

SEE MORE

sites where VPN connection to central server cannot be established.

This mode provides limited set of tools and access to locally stored procedures, allowing the user to run calibrations offline and later import the calibration data into the database.

Users can enter offline mode by clicking **Continue offline**. Offline mode requires offline data to be stored in local client app and will only run if offline data have been previously downloaded.

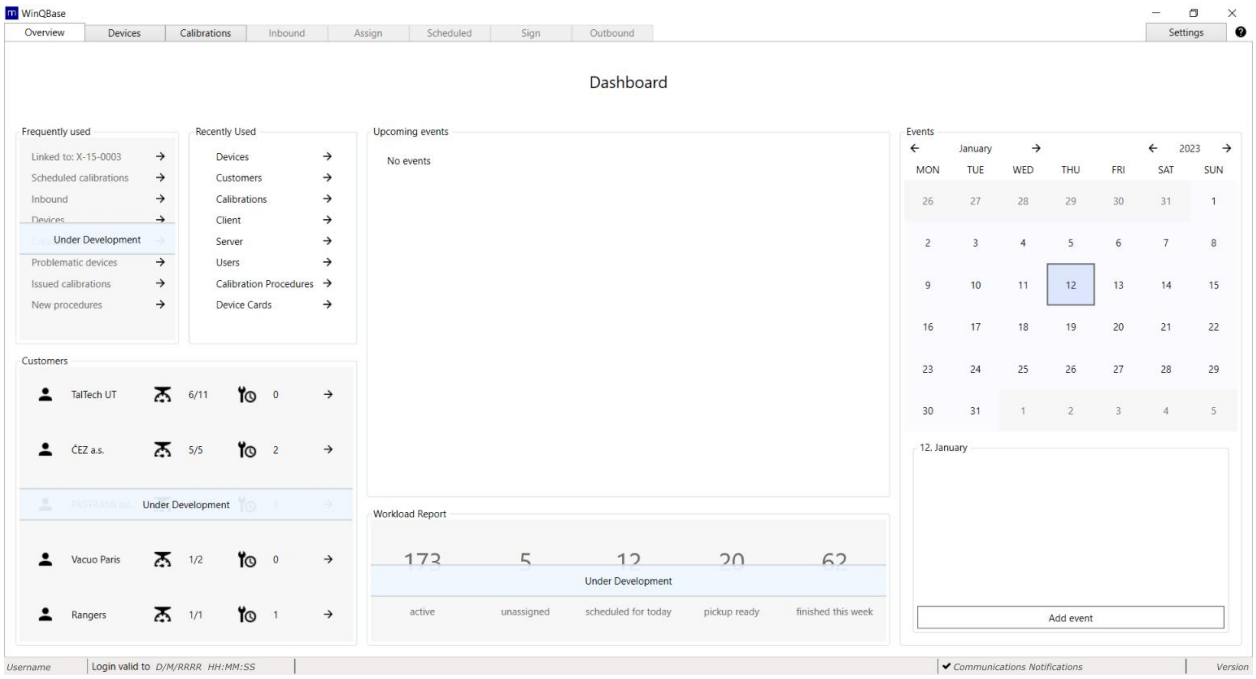
SEE MORE

Go back to Home page.

Dashboard tab

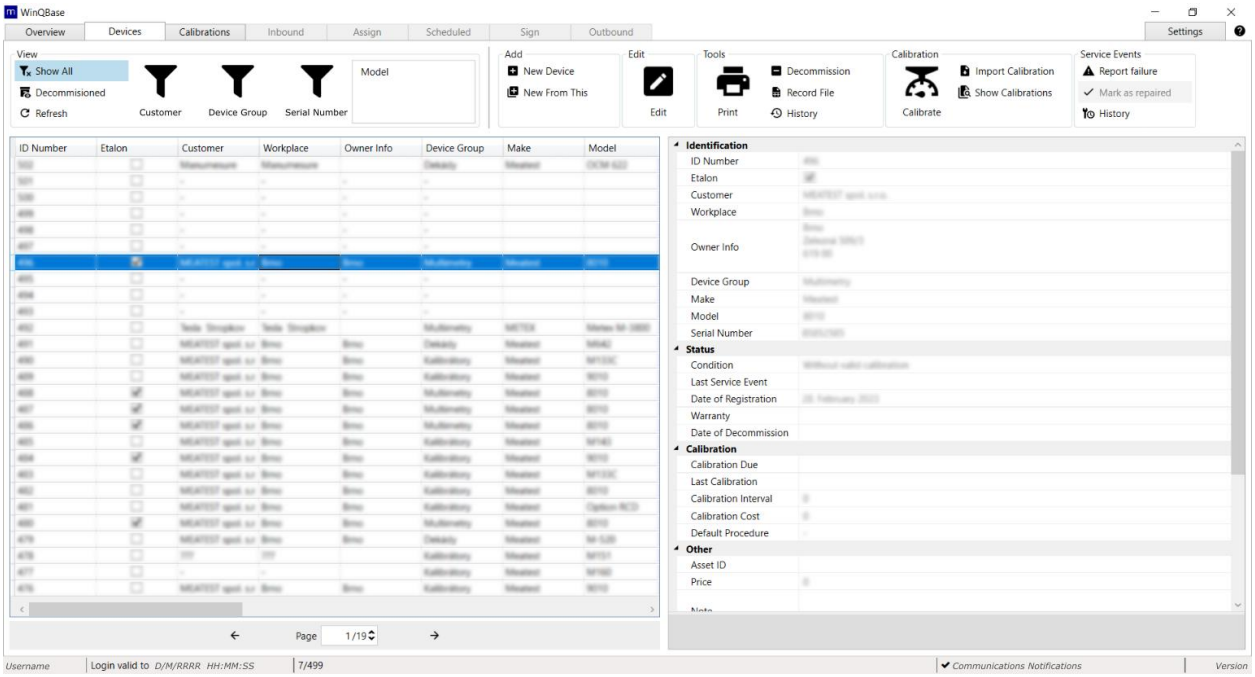
Dashboard tab is the first to show up once the user successfuly logs in and the client app downloads initial data from database. The tab includes shortcuts to tabs and filtered views **Recently used** by current user and **Events** calendar to manage the user's agenda.

User may also click on **Devices** or **Calibrations** tab to browse database records or manage application and system settings in **Settings** tab on the far right.



Devices tab

Devices tab shows records of all instruments in the database, ie. both laboratory standards and customer assets. Devices tab is divided into three sections: list of records on the left, single record overview on the right and toolbar on top.



By default, the **list of records** shows all active (ie. not decommissioned) devices. The list can be filtered out using predefined filters in **View** section of the toolbar, sorted by clicking on individual columns of the list, reorganized and listed through using navigation panel below. The rest of the toolbar as well as **single record overview** are related to- and interact with the record selected in the list of records.

Toolbar groups' help

View

Add

Edit

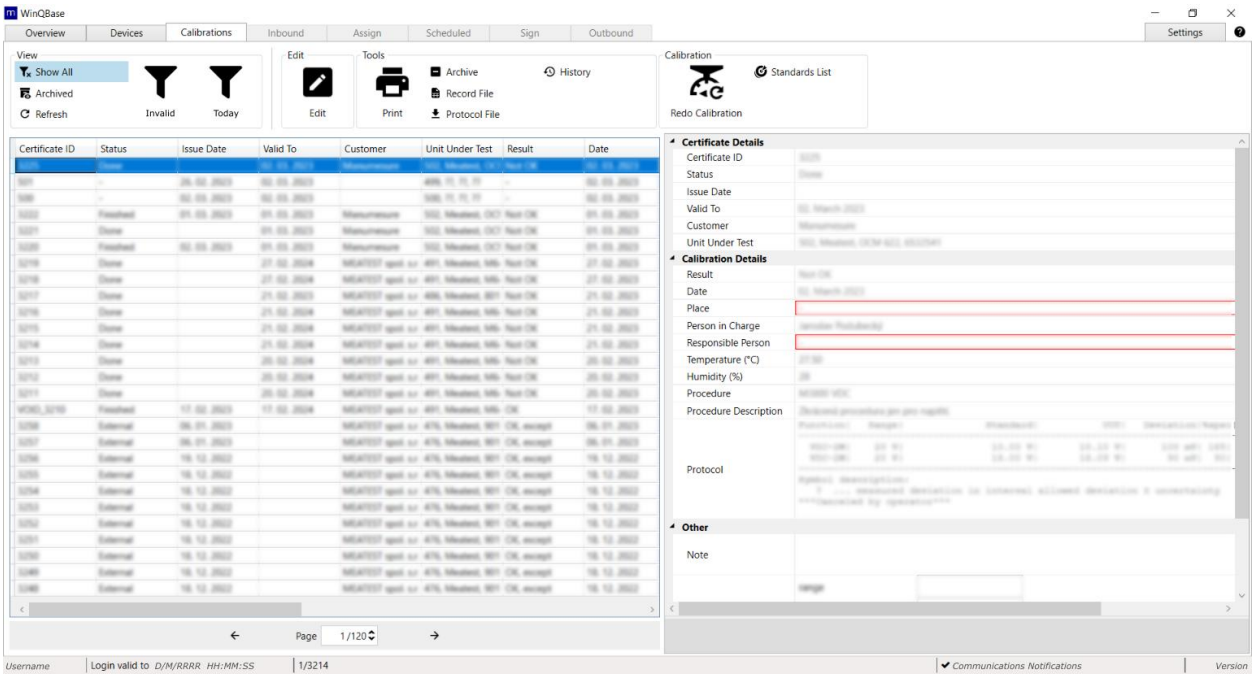
Tools

Calibration

Service events

Calibrations tab

Shows calibrations and prints **calibration certificates**. Calibration tab can be accessed directly or through **Calibration group** tools on **Devices tab**. The former is recommended when searching all calibrations of certain type (fe. expired calibrations), the latter is recomended when looking up calibration of a particular device or group of devices. Calibrations tab is divided into three sections: list of records on the left, single record overview on the right and toolbar on top.



The **list of records** can be filtered out using predefined filters in **View** section of the toolbar, sorted by clicking on individual columns of the list, reorganized and listed through using navigation panel below. The rest of the toolbar as well as **single record overview** are related to- and interact with the record selected in the list of records.

Toolbar groups' help

View

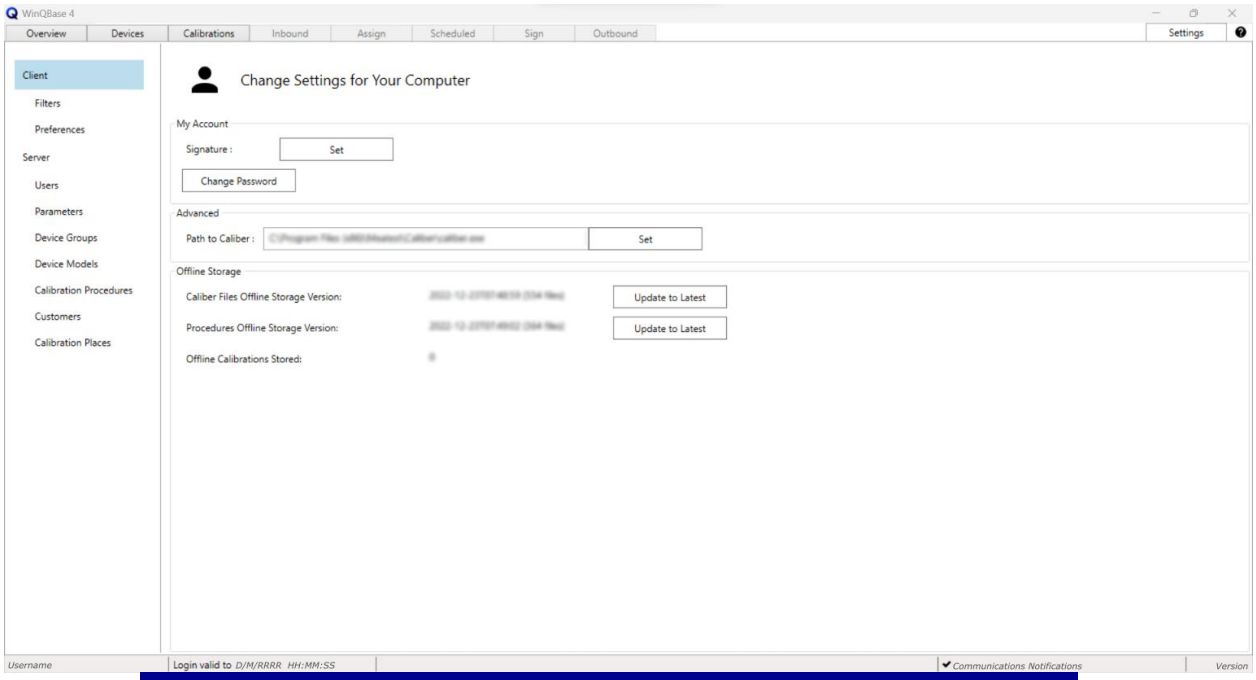
Edit

Tools

Calibration

Settings tab

Manages client application and certain system settings, divided into individual categories on the left. See category descriptions below for more details.



Settings category

Client

Filters

Server

Users

Parameters

Device groups

[Device cards]

[Calibration Procedures]

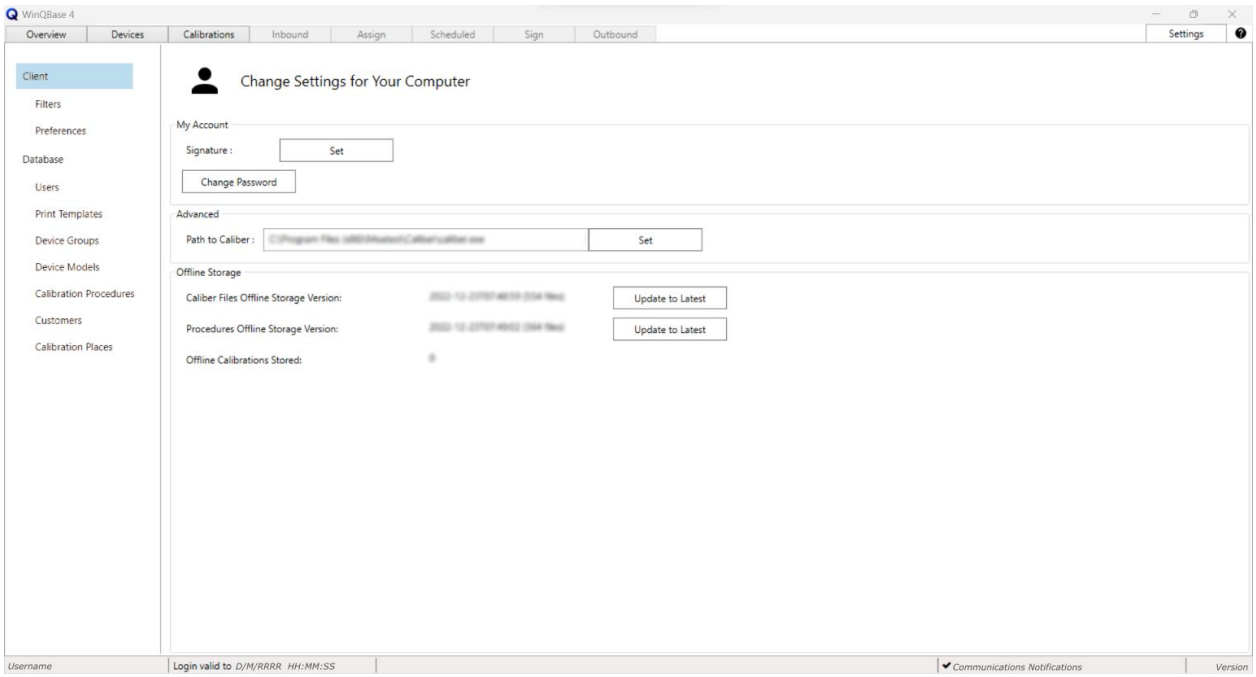
[Customers]

[Calibration places]

Settings - Client

Access level: everyone

Personal settings of client application. My Account settings affect current user across the entire network, all other settings on this page affect this PC only. Setting up Path to Caliber is required to run calibrations, manage Device Cards and Calibration Procedures using Caliber as external program.



My Account

- **Signature** Sets user signature in JPG, JPEG, PNG or BMP format to be used in calibration certificates and other client-generated documents.
- **Change password** Changes current user password. Minimum length is 6 characters.

Advanced

- **Path to Caliber** Used by WinQBase client to call Caliber on current PC to run calibrations, edit Instrument Cards or Procedures. Default Caliber location is C:\Program Files (x86)\Meatest\Caliber\caliber.exe

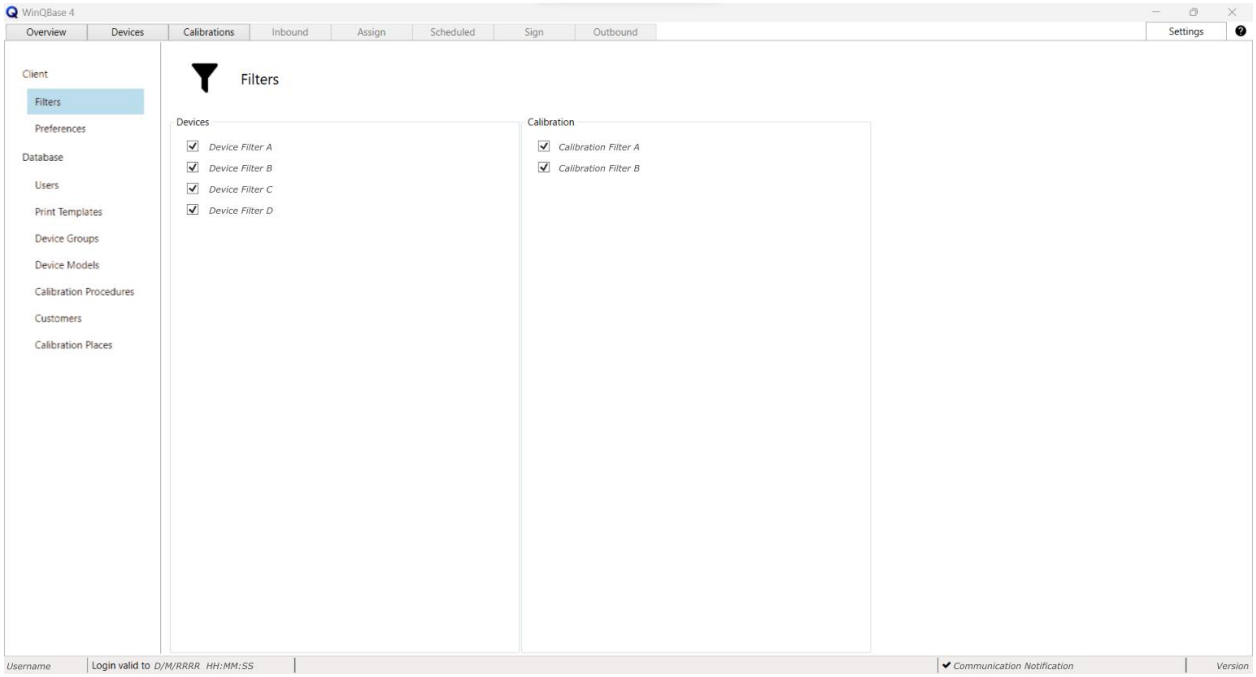
Offline Storage

- **Caliber Files** and **Procedures** Allow user to update local data storage to be used later in offline mode. Both items show date of the last update (if any).
- **Offline calibrations stored** Shows the number of offline calibrations saved on current PC. Offline calibrations can imported into online database using Import Calibration tool on Devices tab.

Settings - Filters

Access level: everyone

Each user can indivially pick filters to be shown in their View group on Devices and Calibrations tabs.

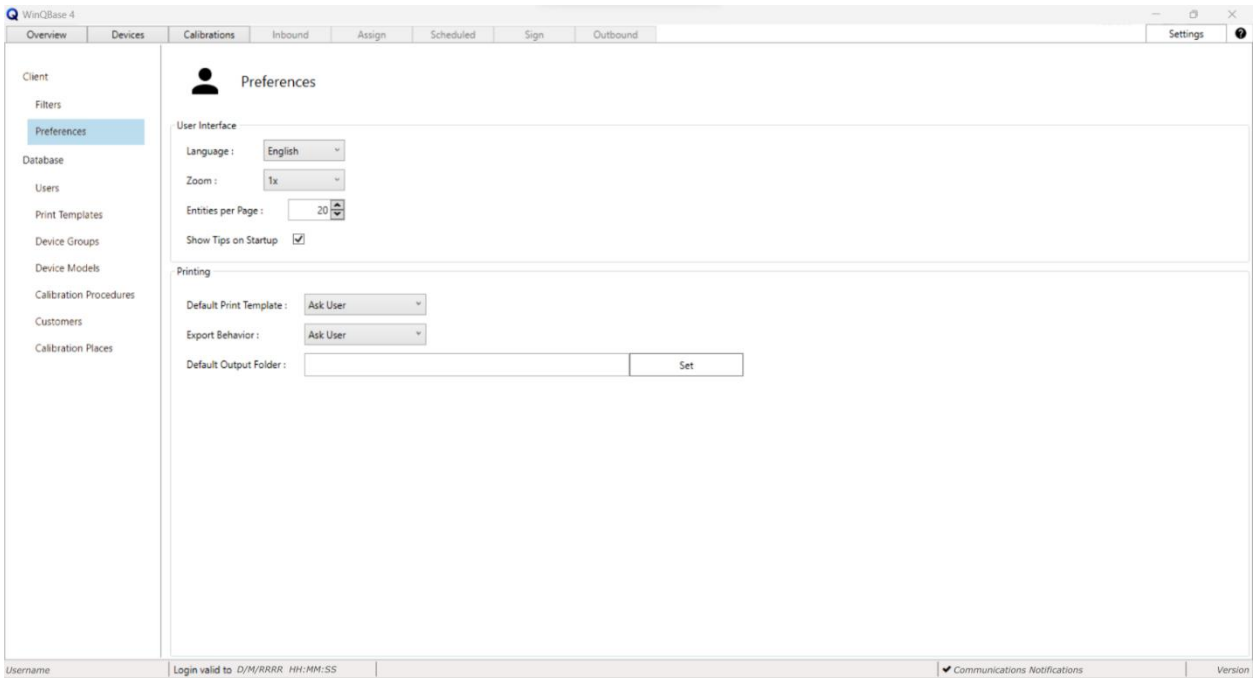


The list of available filters here can be managed and expanded by system administrators only. See this page in server manual for more details.

Settings - Preferences

Access level: everyone

Additional user interface preferences of client application. Settings on this page affect this PC only.



User interface

- **Language** Sets client application language (changing the language requires restarting the application)
- **Zoom** Magnifies text and on-page elements of client application. Useful for extra large or extra small displays.
- **Entries per page** Sets the number of records shown per page in List of Records on Devices and Calibrations tabs.
- **Show Tips on Startup** Shows tutorial info-bubbles on client startup when turned on.
- **Default Code Page** Changes character encoding for all the text files. Always match the Code Page with your OS.

Printing

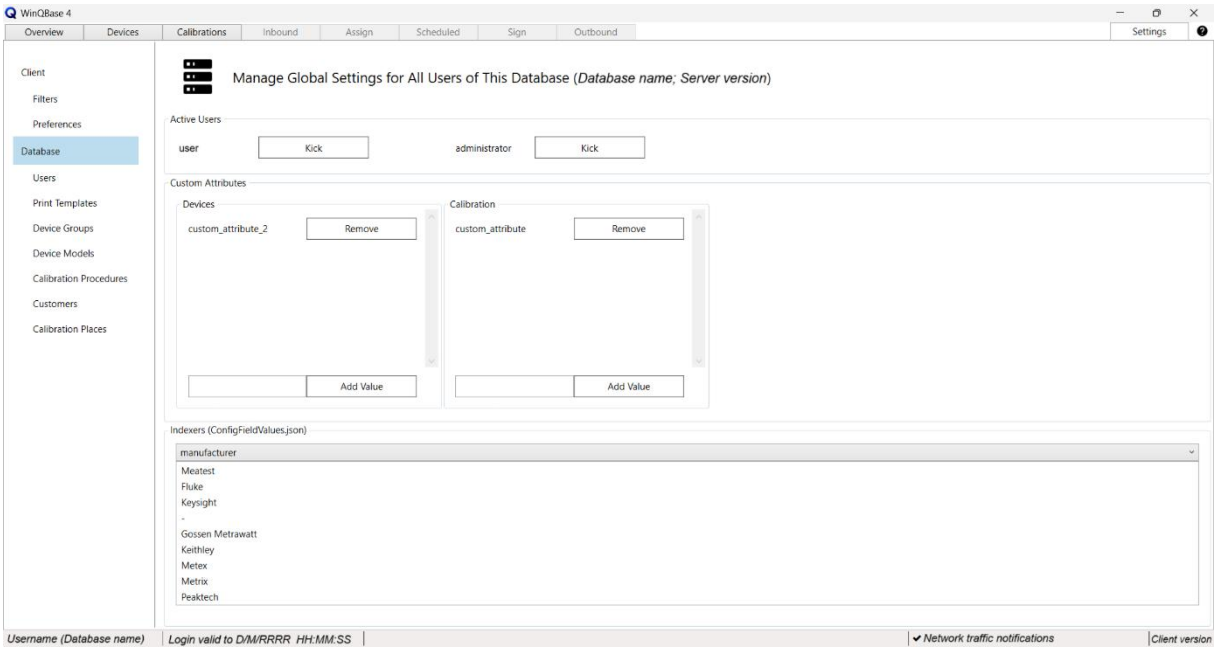
There are several options to choose from when printing calibration certificate on Calibrations tab. Selecting default options here will suppress

user prompt pop-ups that normally show up when printing a calibration certificate and use selected defaults instead. User may select **Default Print Template**, **Default Output Folder** and whether the certificate shall be exported in original format or printed on a printer under **Export Behavior**. There is no option to preselect a specific printer.

Settings - Database

Access level: Administrator only

This page includes basic database management tools for system administrators. See **WinQServer manual** for more database setup tools. Tools on this page **may cause irreversible data loss**, make sure to read page element descriptions below thoroughly before taking any action.



Active Users

Shows active users on the server. **Kick** button will force selected client app to shut down and disconnect from the server.

Custom Attributes

Adds and removes custom attributes to/from **Device** and **Calibration** records. Type in a unique attribute name and click **Add value** to add new custom attribute or click **Remove** to remove the selected attribute.

Warning: Remove button permanetly deletes the attribute and its data in all records! Custom attributes' names cannot be renamed once created. Any operation with Custom atributes may take seconds or even minutes to complete.

Indexers

System administrators may define a list of selectable Indexers for each text attribute to unify the responses provided by users. This page just shows Indexer lists associated with defined attributes. For more information about adding, editing and managing Indexer lists, see Indexer configuration page in server manual.

Tips & Tricks

Print Templates

Print Templates are files, stored in database and available as templates for generating documents like calibration certificates, calibration stickers, inventory records and other record printouts. When selected for printing, WinQBase will make a copy of the template file, replace all **Keywords** inside the file with record data and either save the file on a local PC or print the content on a printer based on **Client Preferences**. See below an example of .docx print template (left) and calibration certificate generated from this template (right):

meatest

Calibration certificate no. $CertificateID$

Customer	**$Customer$**
Unit under test	ID UUT
Result	$Result$
Calibration date. validity	$Date$, $ValidTo$
Standards used	$StandardsList[standards_list_text]$
Procedure	$ProcedureDescription$
Lab conditions	Workplace $Place$ Temperature $Temperature$ °C Humidity $Humidity$ %
Notes	$Note$

Calibration data:
$ProtocolTable$

Calibrated by $PersonInCharge$ Approved by $PersonResponsible$

meatest

Calibration certificate no. 34

Customer	**MEATEST s.r.o.**
Unit under test	ID 2, METEX, M3850D, GD405459
Result	OK
Calibration date. validity	30/10/2023, 30/10/2024
Standards used	M143, Meatest, SN: 670081 (5155578v, 30/10/2023)
Procedure	Direct measurement of M143 Multifunction Calibrator.
Lab conditions	Workplace Lab 1 Temperature 23 °C Humidity 50 %
Notes	-

Calibration data:
DC Voltage

Function	Range	Standard	UUT	Deviation	%spec	Allowed	Uncertainty	
VDC-2W	4 V	1.000 V	1.002 V	2.00 mV	50	4.01 mV	0.59 mV	ok
VDC-2W	4 V	4.000 V	4.002 V	2.00 mV	15	13.01 mV	0.67 mV	ok
VDC-2W	40 V	4.00 V	4.00 V	0.0 mV	0	22.0 mV	5.8 mV	ok

Print Template management

Print templates can be added, updated and deleted from database on **Settings - Server** page but their content **can be edited only in its default editor** outside WinQBase (f.e. MS Word for .docx files). Supported file formats are: MS Word documents (**.docx**, **.doc**, **.xlsx**, **.xls**...) and other plain-text file formats (**.txt**, **.html**, **.xml**,...).

Keywords

Click any item in **Single Record Overview** to see its Keyword shown in tooltip at the bottom of the page. Such Keywords, wrapped between **Key signs** as defined on **Settings - Server** page ('$' by default) can be placed

into any print template to be replaced by record data items when the record gets printed. F.e. *$Manufacturer$* may print as "Meatest" or "Keysight" when printing Device-type record, i.e. inventory list. Calibration certificate print templates can use additional keywords from table below:

KEYWORD TYPE	DESCRIPTION	EXAMPLES
DUT data	Use *"Device."* prefix to access Device Under Test data.	$Device.Model$ $Device.AssetID$ ...
Standards' data	List standards used in calibration from its**Standards List**. See available formats in **ConfigVars.ini** server file	$StandardsList[standards_list_text]$ $StandardsList[standards_list_html]$ ...
Protocol	Use $Protocol$ keyword to print calibration data into any template as plain text. Monospaced font is recomended for this type of output. MS Word templates also support $ProtocolTable[*parameters*]$ keyword to print calibration data in table format. See note below the table for more details.	$Protocol$ $ProtocolTable[Diagram=#ff0000\|#000000\|#0000ff, Header=#00008e,Rows=#ffffff\|#e3e3e3]$
Signatures	Print signature images used by PersonInCharge or PersonResponsible. Signatures can be set by each user on **Settings - Client** page.	$SIGNATURE_PERFORMED$ $SIGNATURE_APPROVED$

Table protocols in MS Word

Table format can be customized in three ways:

1. **Keyword parameters.** ProtocolTable keyword can be modified with parameters Diagram, Header and Rows, divided by comma. All parameters are optional.

   Add **Diagram** parameter to print measurement diagram with each cal point. Optionally, assign Diagram parameter with up to 3 hex colors, divided by '|' to define diagram colors for DUT specification limits, measured value and source value.

   Define cell background colors with **Header** and/or **Rows** parameters. Rows paramater may hold up to 2 hex colors, divided by '|'. Second value defines interchanging row color. Omitting any of

these parameters will cause WinQBase to use default table colors defined in the template document.

2. **MS Word text styles** with names "ProtocolTableHeaderText" and "ProtocolTableContentText" define table header and content text format. Furthermore, Caliber 3.04 and higher supports styles in protocol notes. Any note with non-zero style inside the protocol will split the protocol table and print the note on a separate line with "style*X*" text style. F.e. Note created in Caliber with style number 7 will print using MS Word's "style7" text style. Missing styles are replaced by document's default style.

3. **Caliber Report settings.** Go to Caliber > Modify > Configuration > Text Report to define column order, widths and header texts to be printed in both Plain-text and Table protocols of WinQBase. All other settings on that page like protocol footer note, symbol descriptions, decimal sign definition, etc. will also affect WinQBase output.

Viewing the Standard List in the printing template

The Standards List is always part of the print template for calibration and will always be printed in full.

User can decide where this list appears in your report by using the keyword "StandardsList" and specifying its format in square brackets.

This format refers to a variable defined in the ConfigVars.ini file on the server. This variable determines how each line of the list will look, including links to different attributes of each record.

This way, you can customize the order, separators, or even the table row format in HTML. All keywords are wrapped in a key symbol ($ by default).

When the print template is being created, each record is processed in order, with each one ending on a new line.

To see an example of how to define the format of the Standards List click **here**.

Standards List

WinQBase is able to recognize when a device is used in a calibration as a Standard, and to view the list of Standards in generated reports.

Requirements

1.The Device has to have a CAL file assigned, and the CAL file has to contain a Serial Number. CAL file is created within Caliber in the Instrument card window, by filling in the „Calibration data". For more info visit Help in Caliber (open Caliber and press F1), on the page „Calibration data".

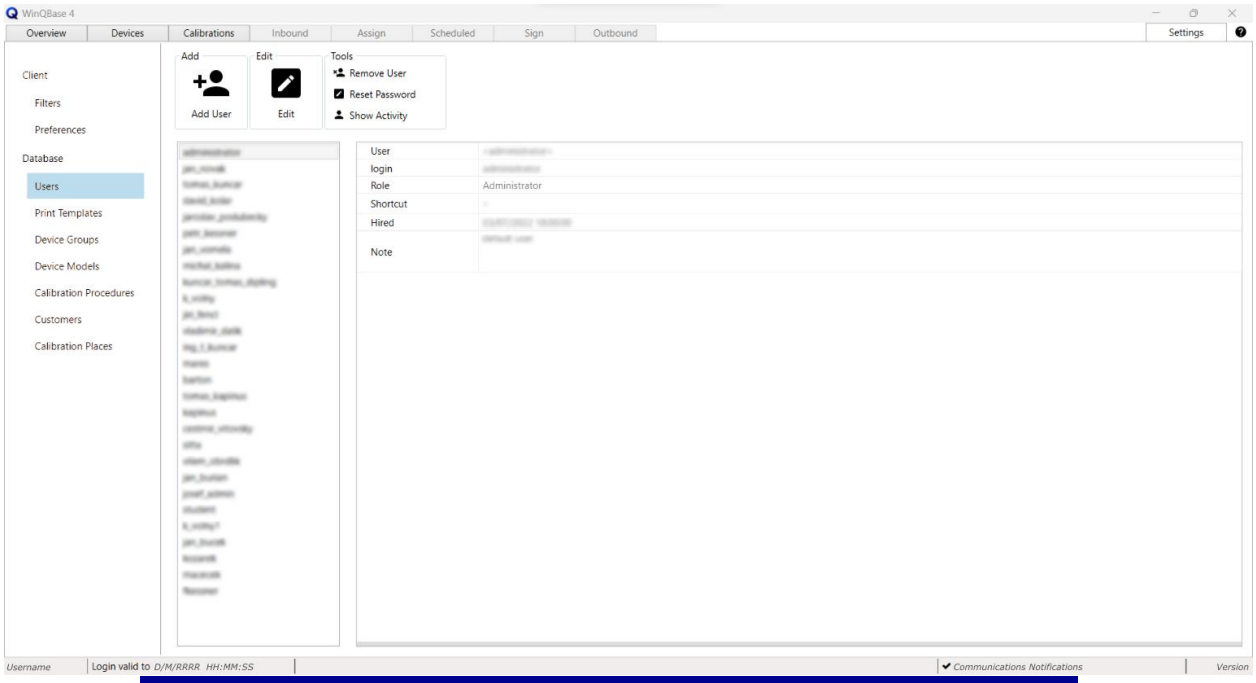
2.The Serial Number in the CAL file must be matching the Serial Number in WinQBase. This is done in Caliber by using „Create by Program" or „Edit by Program" options, within Device Models under Settings. After calibration, Serial Number in CAL file is imported to WinQBase along with the protocol, and it's being matched with the record in WinQBase.

3.The Device has to have a checkmark in the „Standard" field in WQB.

Settings - Users

Access level: Administrator, Head of Laboratory

Manages user accounts and their access to the database. Note: Login is generated automatically from User name when the user gets added and **cannot be changed later**. Remove user permanently removes user from the database rather than archiving its data and therefore **cannot be undone**. Click the Access level link above to see permissions associated with user Roles.



Toolbar controls

Add

Edit

Tools

Roles

WinQBase system allows a hierarchy of users using roles that have defined levels of permission to access forms and controls. Table below shows an overview of roles and their permissions.

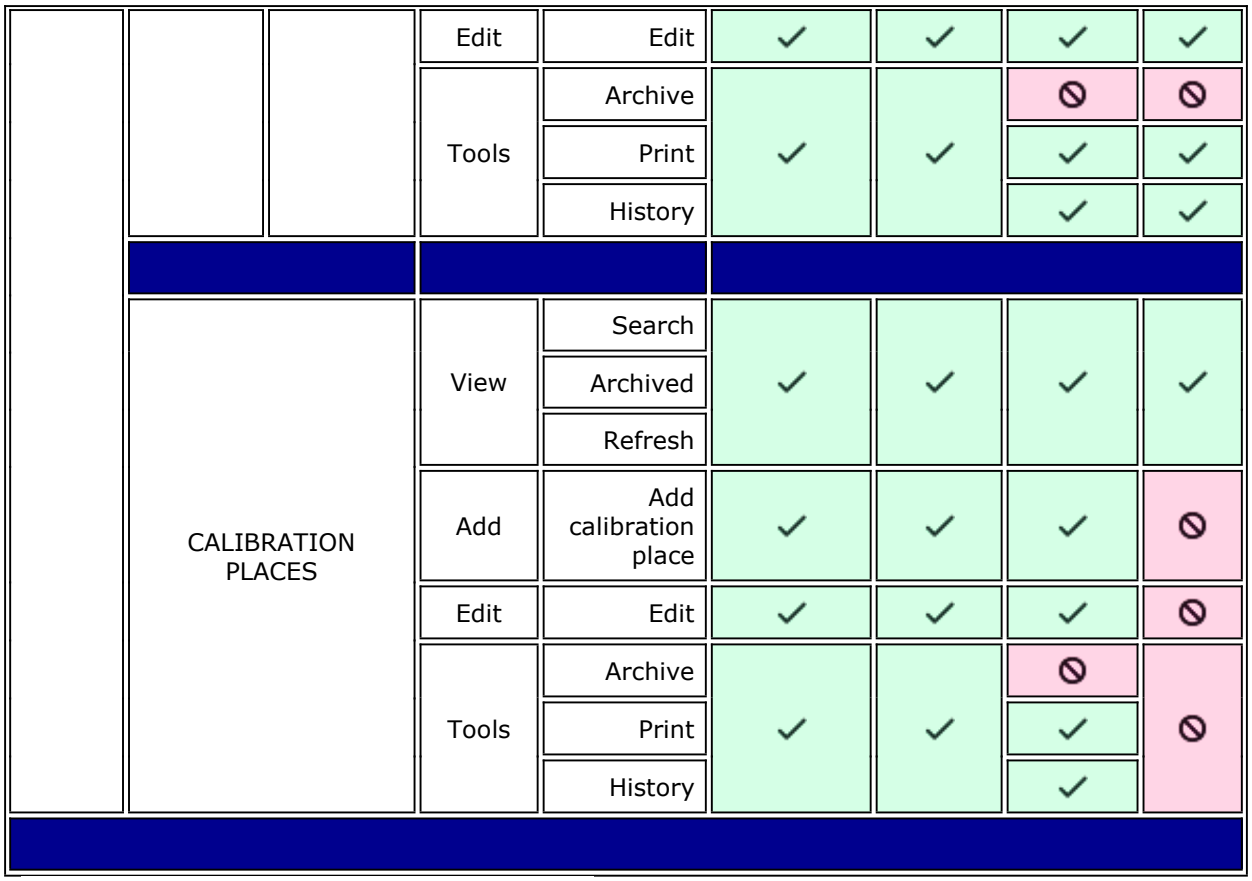
Setting a role for user is done through the **Users** form which is accessible by settings menu tabs on sidebar. Menu **Settings** is accessible by main menu tabs on top bar.

CLIENT TAB	SECTION / TOOL		ACCESS GRANTED TO			
			Administrator	Head of laboratory	Calibration technician	Logistic
DASHBOARD		Recently used	✓	✓	✓	✓
		Events	✓	✓	✓	✓
		Upcoming events	✓	✓	✓	✓
DEVICES	View	Show all	✓	✓	✓	✓
		Decommisioned				
		Refresh				
		Filter				
	Add	New device	✓	✓	✓	✓
		New from this				
	Edit	Edit	✓	✓	✓	✓
	Tools	Print	✓	✓	✓	✓
		Decommission			⊘	⊘
		History			✓	✓
	Calibration	Calibrate	✓	✓	✓	✓
		Import calibration				
		Show				

		calibration				
	Service Events	History	✓	✓	✓	⊘
		Report failure				
		Mark as repaired				
CALIBRATIONS	View	Show all	✓	✓	✓	✓
		Archived				
		Refresh				
		Filter				
	Edit	Edit	✓	✓	✓	⊘
	Tools	Print	✓	✓	✓	✓
		Archive			⊘	⊘
		Protocol file			✓	✓
		History			✓	✓
	Calibration	Redo calibration	✓	✓	✓	⊘
		Standards list				
SETTINGS	CLIENT	My account	✓	✓	✓	✓
		Advanced	✓	✓	✓	⊘
		Offline storage	✓	✓	✓	⊘
	FILTERS	Devices	✓	✓	✓	✓
		Calibration	✓	✓	✓	✓
	PREFERENCES	User interface	✓	✓	✓	✓
		Printing	✓	✓	✓	✓
	DATABASE	Active users	✓	⊘	⊘	⊘
		Custom attributes	✓	⊘	⊘	⊘

		Indexers	✓	⊘	⊘	⊘
	USERS	Add	Create user	✓	✓	⊘	⊘
		Edit	Edit	✓	✓	⊘	⊘
		Tools	Delete user	✓	✓	⊘	⊘
			Reset password				
			Show activity				
	PRINT TEMPLATES		Print templates	✓	✓	✓	⊘
			Data linkages (view only)	✓	✓	✓	⊘
	DEVICE GROUPS	View	Search	✓	✓	✓	⊘
			Archived				
			Restore				
		Add	New device group	✓	✓	✓	⊘
		Edit	Edit	✓	✓	✓	⊘
		Tools	Archive	✓	✓	⊘	⊘
			Print			✓	
			History			✓	
	DEVICE CARDS	View	Search	✓	✓	✓	⊘
			Archived				
			Refresh				
		Add	Create by program	✓	✓	✓	⊘
			New from this				
			Import				
		Edit	Edit	✓	✓	✓	⊘
			Edit				
		Tools	Export	✓	✓	✓	⊘

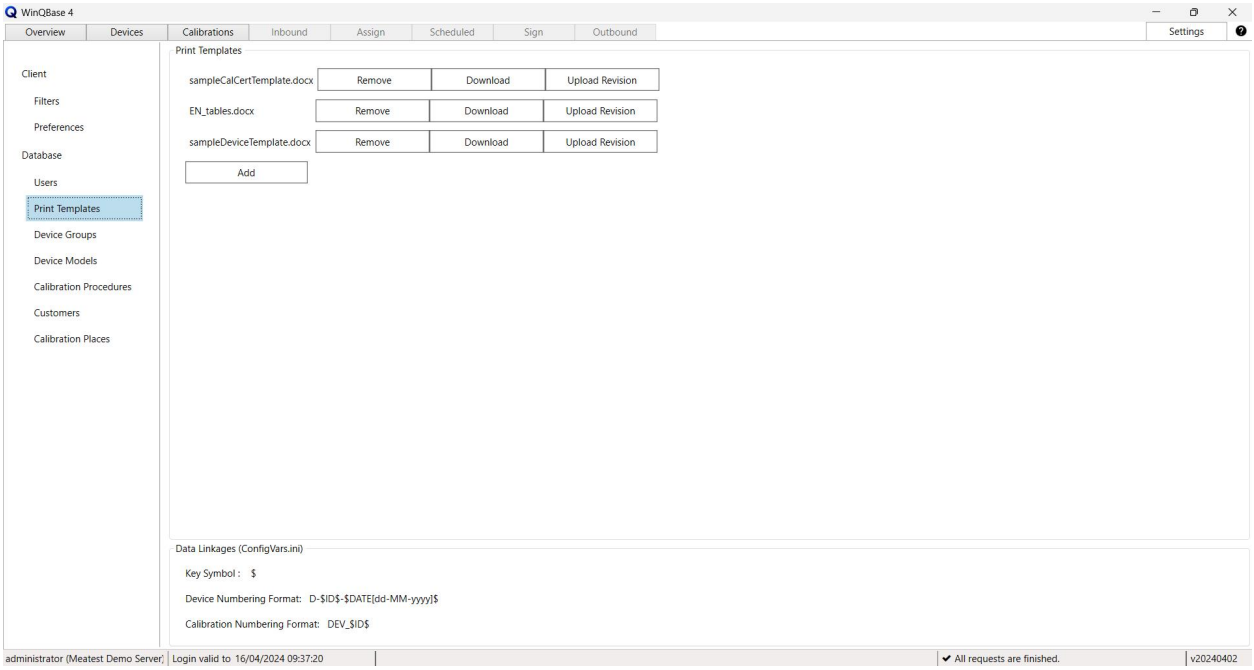
			Archive			⊘	
			Print			✓	
			History			✓	
			Upload DEV file			⊘	
	CALIBRATION PROCEDURES	View	Search	✓	✓	✓	⊘
			Archived				
			Refresh				
		Add	Create by program	✓	✓	✓	⊘
			Import				
		Edit	Edit	✓	✓	✓	⊘
			Edit				
		Tools	Export	✓	✓	✓	⊘
			Archive			⊘	
			Print			✓	
			History			✓	
	CUSTOMERS		View	Search	✓	✓	✓	✓
				Archived				
				Refresh				
			Add	Add customer	✓	✓	✓	✓
			Edit	Edit	✓	✓	✓	✓
			Tools	Customer workplaces	✓	✓	✓	✓
				Archive			⊘	⊘
				Print			✓	✓
				Historie			✓	✓
		WORKPLACES	View	Archived	✓	✓	✓	✓
			Add	Add new workplace	✓	✓	✓	✓



Settings - Print Templates

Access level: Administrator, Head of Laboratory

Lists print templates available in this database and enables their editing.



Print Templates

- **Remove** Removes print template from current database.
- **Download** Downloads print template file to local PC.
- **Upload Revision** Replaces print template with selected file on local PC.
- **Add** Adds new template from selected file on local PC.

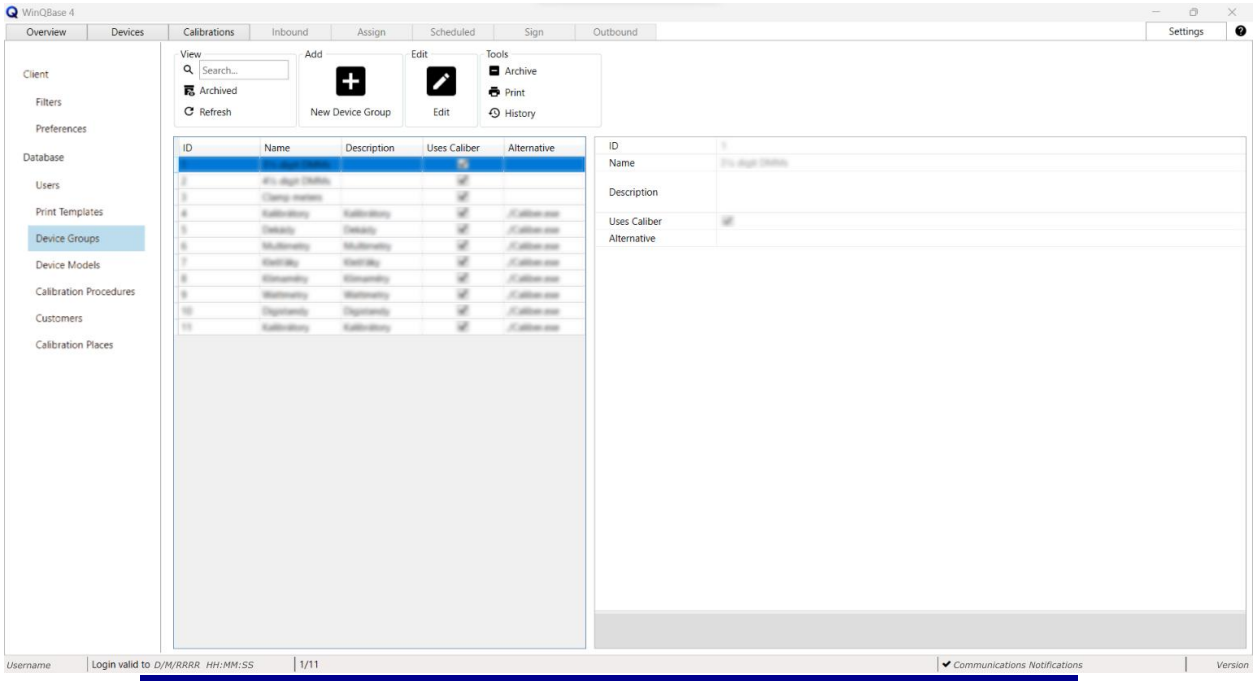
Items listed here are important for print template design. **Key symbol** is character used in print report templates to mark sections to be completed by WinQBase when generating documents. **Numbering formats** determine how ID numbers of new Devices (used in inventory lists) and Calibrations (used in calibration certificates) are created. All items on this page are read only and can be set up in **ConfigVars.ini** server configuration file.

Settings - Device Groups

Access level: Administrator, Head of Laboratory, Calibration Technician

Devices can be sorted into Device Groups allowing users to search devices in the database more effectively.

Future development will allow use of alternative programs for calibrations of devices within a group and user role allocation based on Device Groups.



Toolbar controls

View

Add

Edit

Tools

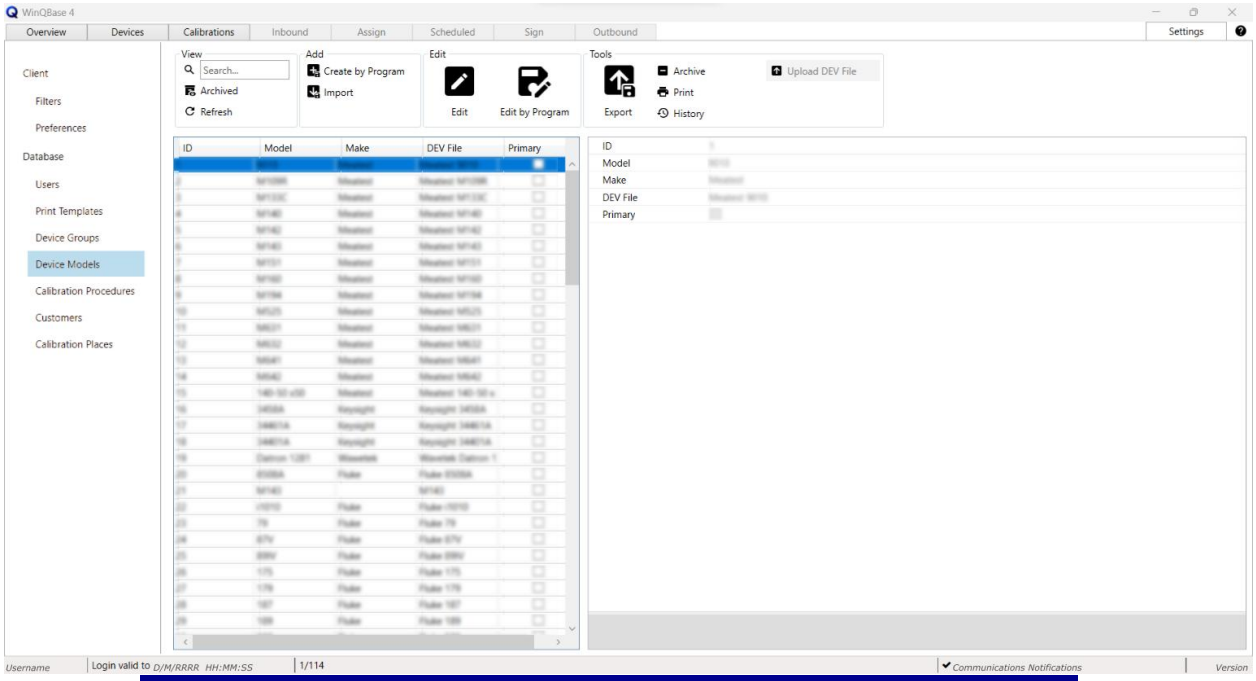
Settings - Device Models

Access level: Administrator, Head of Laboratory, Calibration Technician

This page lists Device Models available to be assigned to individual devices in the database. Each record includes a link to Caliber's Instrument Card, ie. device driver that provides Caliber with necessary data to use the

device in a calibration. In general, all tools with floppy disk icon use Caliber to perform the associated task and therefore proper setup of Path to Caliber on Settings - Client page is required to use them.

Caliber may use auxiliary Instrument Cards in procedures for virtual converters, alternative instrument setup, specifications, etc. Such Instrument Cards get imported into the database during procedure creation or procedure import as new Device Model records which may represent the same model as another record or may represent no device at all but are still necessary for Caliber to operate properly. For this reason, **newly created Device Models need to be marked as** Primary **to become assignable in** Devices **tab**. All other records will remain hidden and available only to Caliber.



Toolbar controls

View

Add

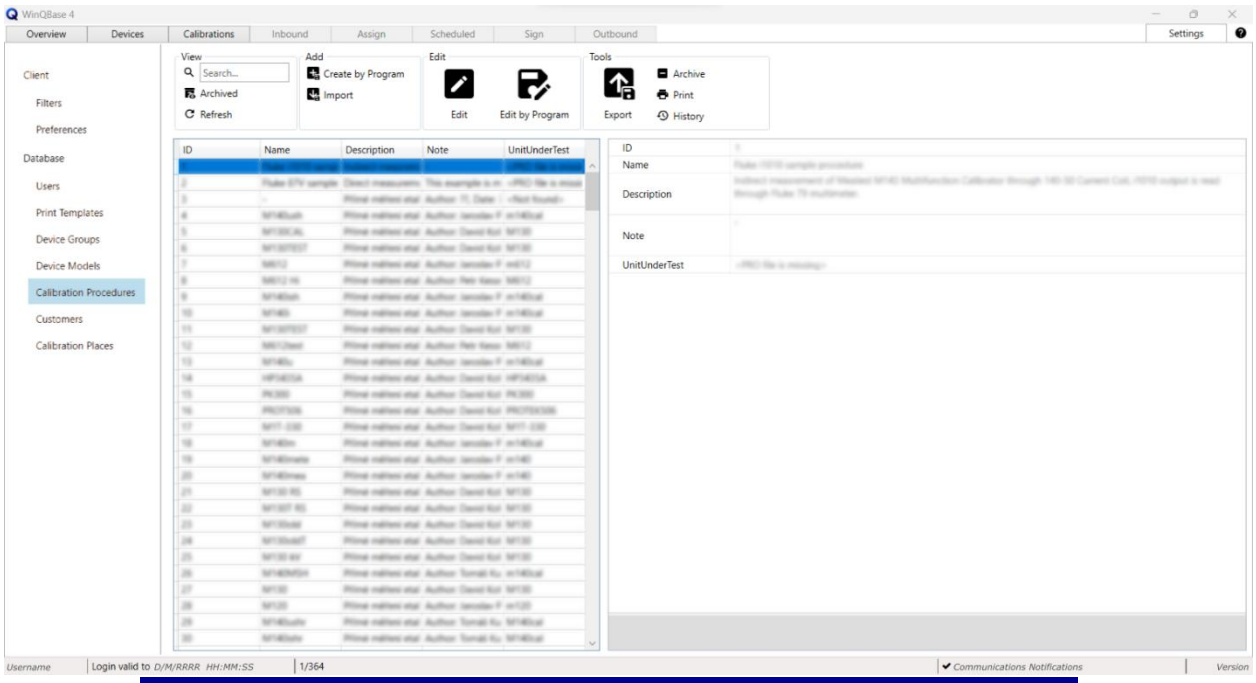
Edit

Tools

Settings - Calibration Procedures

Access level: Administrator, Head of Laboratory, Calibration Technician

Manages Caliber's Procedures that can be used to run calibrations. All tools with floppy disk icon use Caliber to perform the associated task and therefore proper setup of Path to Caliber on Settings - Client page is required to use them. New Instrument Cards generated by procedure creation or import in Caliber get automatically imported into the database as new Device Model records.



Toolbar controls

View

Add

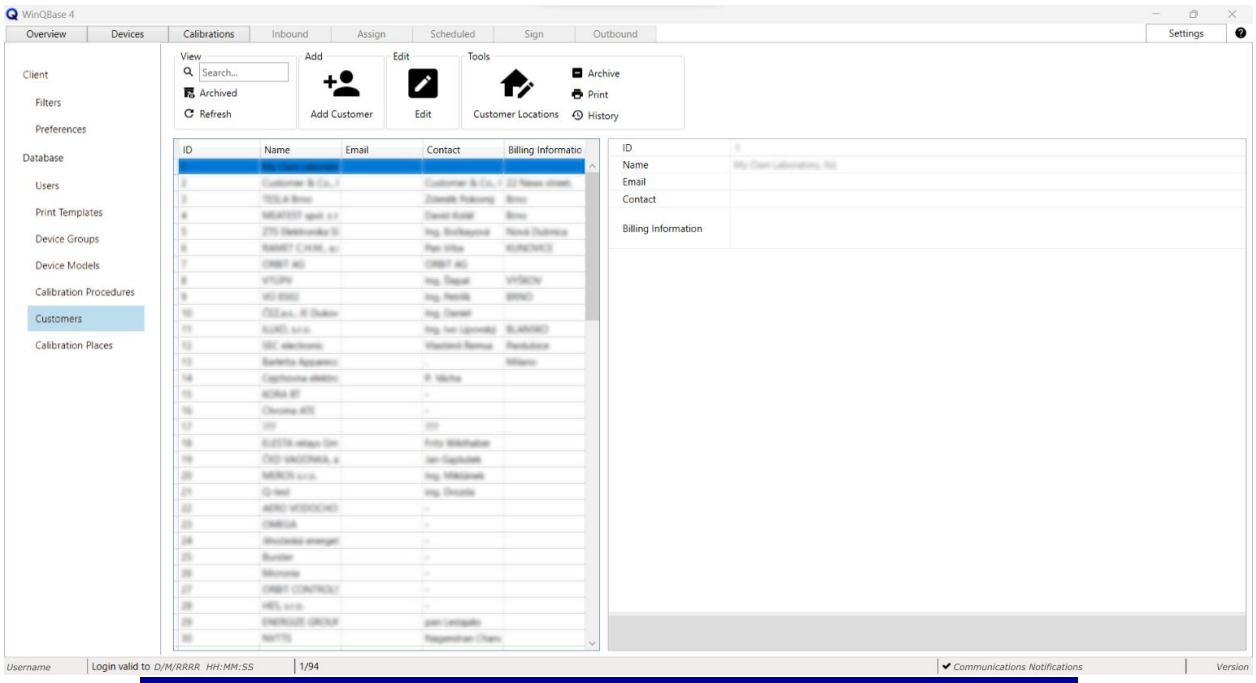
Edit

Tools

Settings - Customers

Access level: everyone

Devices in database can be linked to a Customer, whose data will be printed on all future calibration certificates. It is recomended to create one or more customer records for the calibration laboratory itself in order to distinguish between internal and external devices. Addresses of customers being based in multiple locations can be distinguished by defining Customer Locations.



Toolbar controls

View

Add

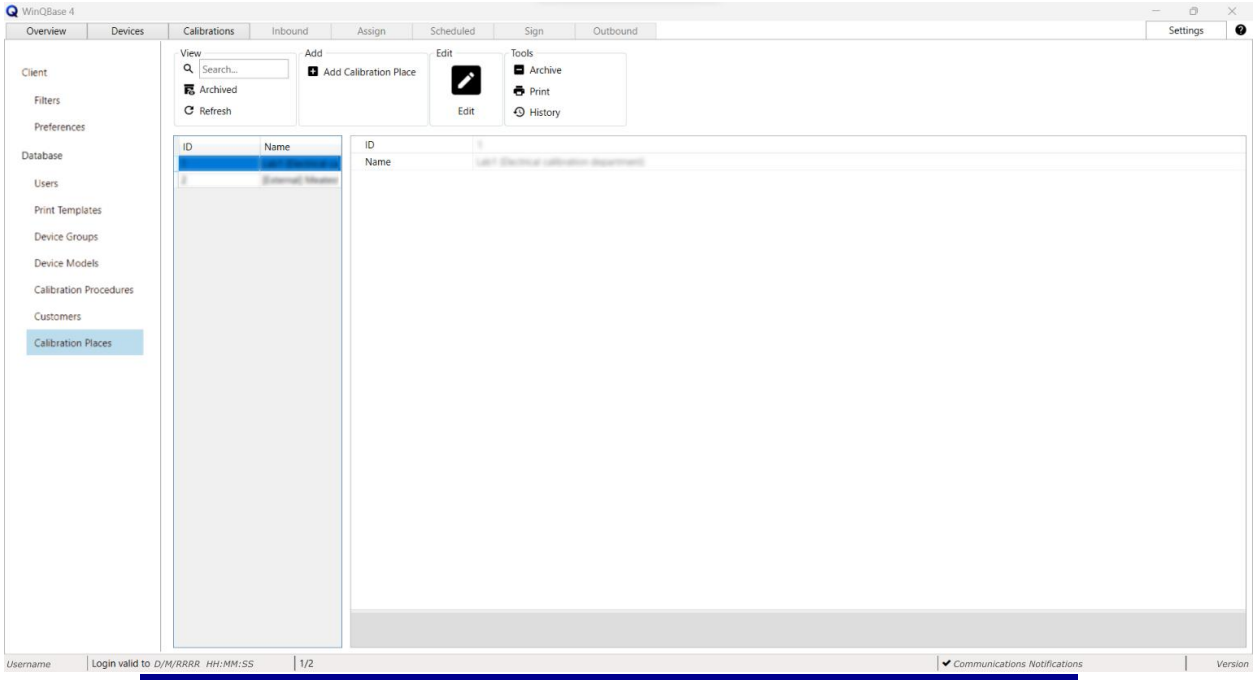
Edit

Tools

Settings - Calibration Places

Access level: Administrator, Head of Laboratory, Calibration Technician, Logistics

Manages list of laboratory workplaces, teststands or locations to be later associated with Calibrations and printed in calibration certificates. Third party laboratories can be listed here too, allowing the user to associate eternal calibration certificates (imported for tracebility purposes) with certain location.



Toolbar controls

View

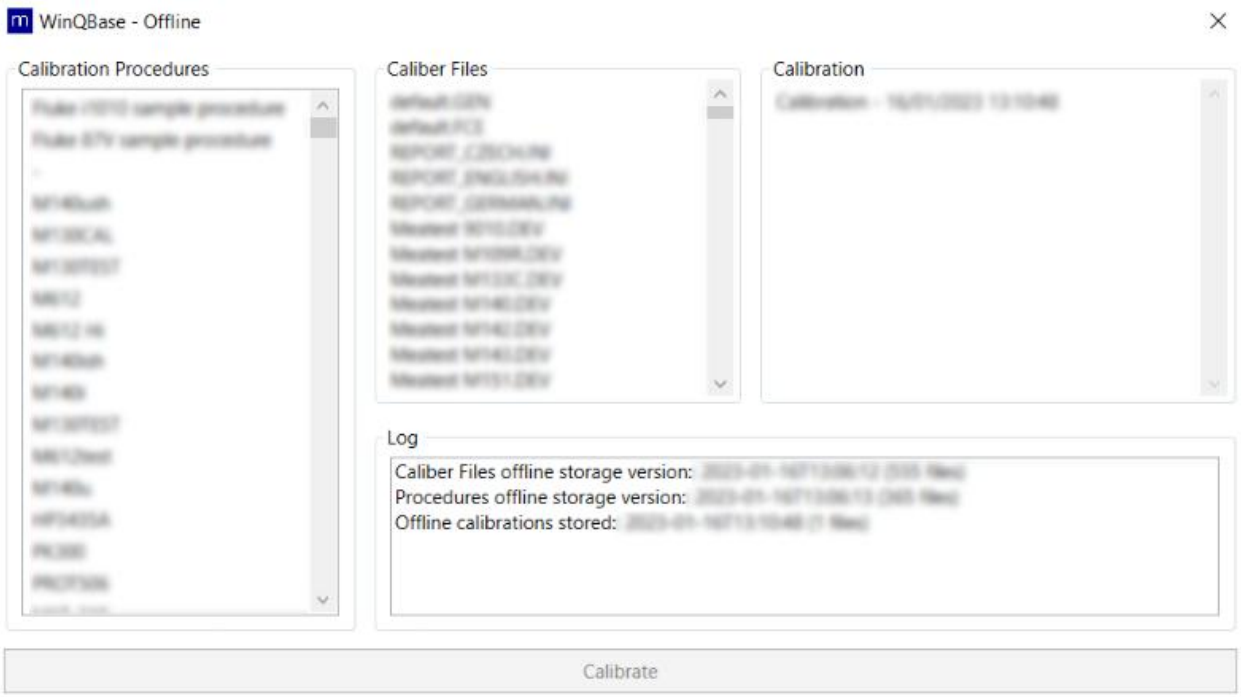
Add

Edit

Tools

Calibration in Offline mode

Offline mode allows the user to run calibrations in Caliber offline, using locally stored procedures and instrument cards. Offline mode requires having properly configured interface for Meatest software **Caliber** and offline data to be stored in local client app. These can be set up in online mode under **Offline storage** and **Advanced** sections of **Settings > Client** screen.



Offline calibration process is as follows:

1. Select procedure from the **Calibration Procedures** list.
2. Click **Calibrate** to initiate the offline calibration in **Caliber** app. Calibration record will appear in **Calibration** list once the calibration is done.
3. Next time you log in online, go Devices tab, find the associated UUT and click on **Import calibration button** to save the offline calibration into online database.

4. Finally, print the calibration certificate (online) using **Print button** to complete the calibration process and set the calibration record status to **Completed**.

Toolbar - View group

View group tools narrow down the **List of Records** to help the user find a particular record. Devices & Calibrations can be filtered out using preselected **Filters** whereas records in Settings tab can be filtered out using **Search** query.

Filters

Used in **Devices** & **Calibrations** tabs. Individual Filters can be toggled on and off by clicking on individual Filter buttons or deactivated all at once by clicking **Show all** button. Some filters may request additional search criteria (such as Serial Number filter asking for serial number to search the list for). Each user can indivially pick filters for their user interface at **Filters** page on **Settings** tab. The list of available filters there can be managed and expanded by system administrators as described **here**.

Search

Used in **Settings** tab only. Type in a search phrase to find all records that contain such phase in any of their text attributes.

Tools common to both methods:

Archived Decommissioned

Toggles visibility of archived records. Visibility of archived items is turned of by default. With visibility turned on, user may browse through both archived and active records.

Refresh

Refreshes **List of Records** using selected filters. The list gets refreshed automatically when switching filters, the main purpose of this button is to clear the list from newly archived records.

Toolbar - Add group

Add group tools add new records into the database.

New Device
Add Calibration Place
New Device Group
Add Customer
Add User
New Workplace

Adds new record of given type and activates **edit mode**, enabling user to enter individual values in **single record overview** below.

See more info on: **adding users** or **adding workplaces**.

New from This

Clones selected record and activates **edit mode**, enabling user to edit copied values in **single record overview** below.

Create by Program

Starts external program (**Caliber** by default) to create new **Procedure** or **Instrument card** and add it into the database.

Import

Starts external program (**Caliber** by default) to import external **Procedure** or **Instrument card** file into the database.

Toolbar - Edit group

Most records in WinQBase are read-only by default and can only be edited in **edit mode**. Clicking on Edit icon will activate the edit mode and allow the user to change certain entries. Once in edit mode, the edit group tools get replaced with **Save** and **Cancel** options and the rest of the toolbar, list of records and tab switch become locked, forcing the user to either save or discard changes before leaving edit mode.

Edit

Activates edit mode (see above) and allows the user to edit entries in **single record overview** below the toolbar.

Edit by program

Starts external program (**Caliber** by default) to edit associated **Procedure** or **Instrument card**.

Toolbar - Tools group

General tools:

Archive Decommission

Toggles condition of the selected record to or from archived state. Archived/decommisioned records no longer appear in the **list of records** unless recalled using related switch in **view group** of the toobar.

History

Shows history of changes of the selected record in dedicated **History pop-up window**.

Printing & data export:

Print

Prints selected record data (fe. to create a calibration certificate). See more details **here**.

Record File

Exports the entire content of the **list of records** into CSV or HTML table file. List record count affects the time needed to create the Record File so the export **may be a lentghy operation**. Avoid using this tool on long and unfiltered lists.

Protocol File

Calibrations tab only. Exports just the calibration data (rather than all calibration data like **Print** does) from the selected calibration record. This can be useful as raw data export for further processing.

Export

Settings - Device Cards & Calibration Procedures only. Starts external program (**Caliber** by default) to export **Procedure** or **Instrument card** from the database into a file.

Tools specific to Settings - Server - Users:

Delete User

Removes selected user from the database. **This action cannot be undone.**

Reset Password

Opens pop-up window for the operator to set a new password for the selected user. Old password will no longer work once the new password is set.

Show Activity

Opens pop-up window that shows activity of the selected user (ie. actions done inside the WinQBase system) within selected timeframe. This popup is similar to **Record History**.

Other tools:

Customer Locations

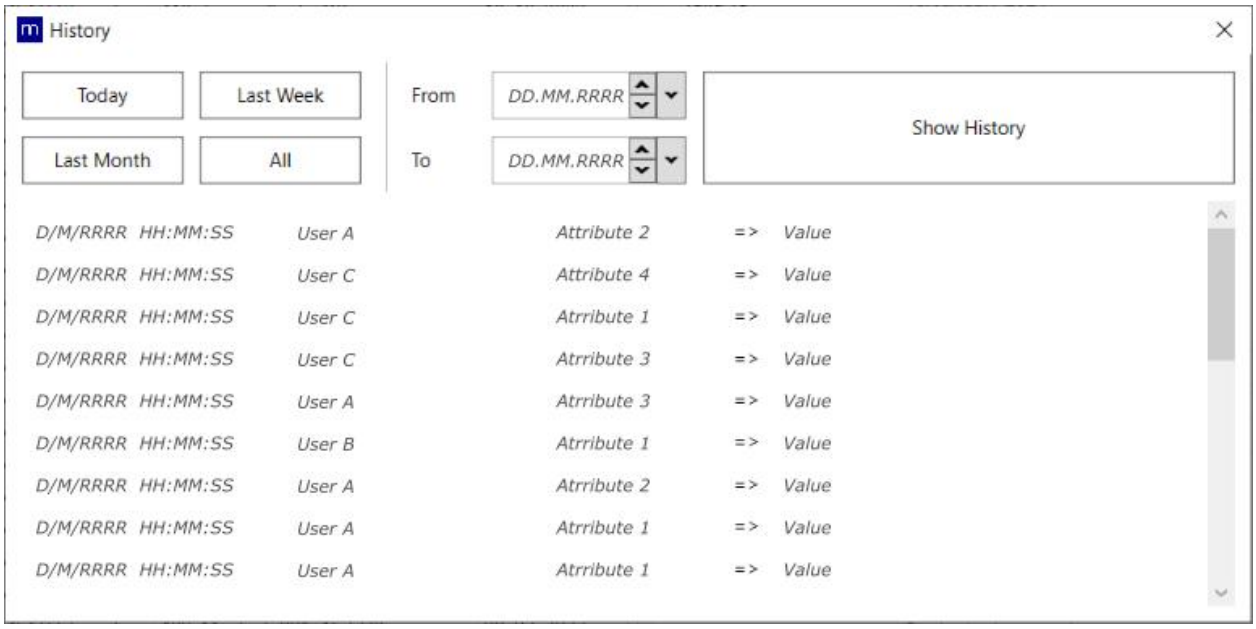
Opens pop-up window where the user can manage different customer locations. Each Customer record is associated with at least one Location record. Newly added Customers get automatically associated with a default Location created from Customer data.

Upload DEV File

For use by system administrators only. This tool restores device card record's missing link to a DEV file. DEV-less device cards can be created only through database conversion from WinQBase 3.9 or earlier. Similarly to **Import** tool, Upload DEV File starts external program (**Caliber** by default) to import external **Instrument card** file into the database and link it to selected record.

History

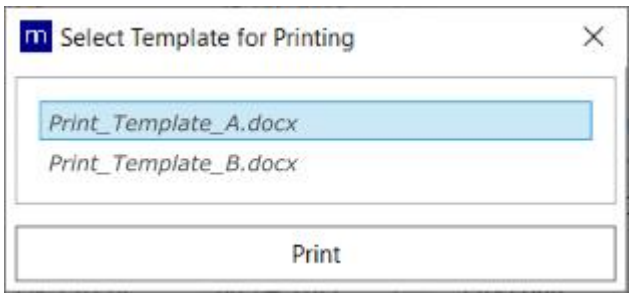
History form is used to display the editing history of the selected record. When viewing the history, the user has the option of choosing a time window of display. It defines this using preset speed dials or by directly entering the start and end date.



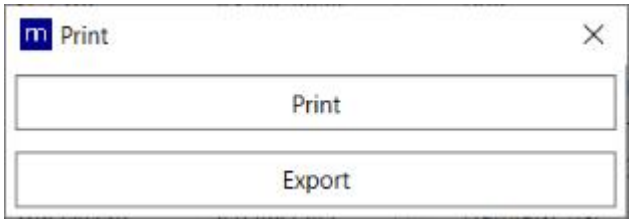
The form is accessible through **History** or **View activity** tool in the **Tools** control section, located on the parent record form.

Print

Print form is used to specify a print for the selected record. One or more records to be printed are selected from the list on the form of the given type of records. When entering a print job, user has the option of choosing which of the print templates will be used. Management of print reports used in the system is done on the **Server** settings form. A description of the rules for creating or editing a template can be found **here**.



After processing the print template, the user has the option to determine how to complete the print job by printing on the selected device or by exporting to a file.



The form is accessible through the **Print** tool in the **Tools**section of the controls, located on the parent record form.

Print	Export
The user selects the output device for printing through the standard system dialog, and then the prepared data is printed itself.	The print template is processed and then saved in the original file format on the client device. The location of the exported data is specified by the user through the file explorer dialog window.

Toolbar - Calibration group

Tools specific to Devices tab:

Note: All these tools will eventually switch to Calibrations tab.

Calibrate

Opens pop-up window with list of available calibration procedures. Clicking on Calibrate inside the pop-up will start external program (**Caliber** by default) to run this procedure.
Once the calibration is done, WinQBase will switch to **Calibrations** tab, use the data from external program to create new calibration record, associate it with selected device and activate **Edit mode** for the user fill in additional details.

Import Calibration

Asks the user to choose calibration data source for a new calibration record. User may import either data from previously created **offline calibration** or an external calibration report.
WinQBase will then switch to **Calibrations** tab, use the data to create new calibration record, associate it with selected device and activate **Edit mode** for the user fill in additional details.

Show Calibrations

Switches to **Calibrations** tab and shows calibrations related to the selected device. This is done by filtering out all other calibrations from the **List of Records**.

Tools specific to Calibrations tab:

Redo Calibration

Starts external program (**Caliber** by default) to re-run selected calibration.
Once the calibration ends, WinQBase will use the data from external program to create new calibration record, copy all other data from the previously selected calibration record and activate **Edit mode** for the user touch up any details as needed.

Standards List

Opens pop-up window with list of standards used in selected calibration. The list can be printed in calibration report as required by ISO17025.
User may add and remove devices from current database flagged as **Standards** to/from the list using Add Standard and Remove Standard buttons in the pop-up window.

Toolbar - Service events group

Service event tools manage failures that may impact device performance and therefore prevent the device from being used in a calibration.

Report Failure

Opens pop-up window for the user to describe and report a new failure of the selected device. Clicking on

Mark as Repaired

Opens pop-up window for the user (repair technician) to describe the work done on the selected device in order to

History

Opens pop-up window with list of all failures associated with the selected device for the user to manage. Setting a

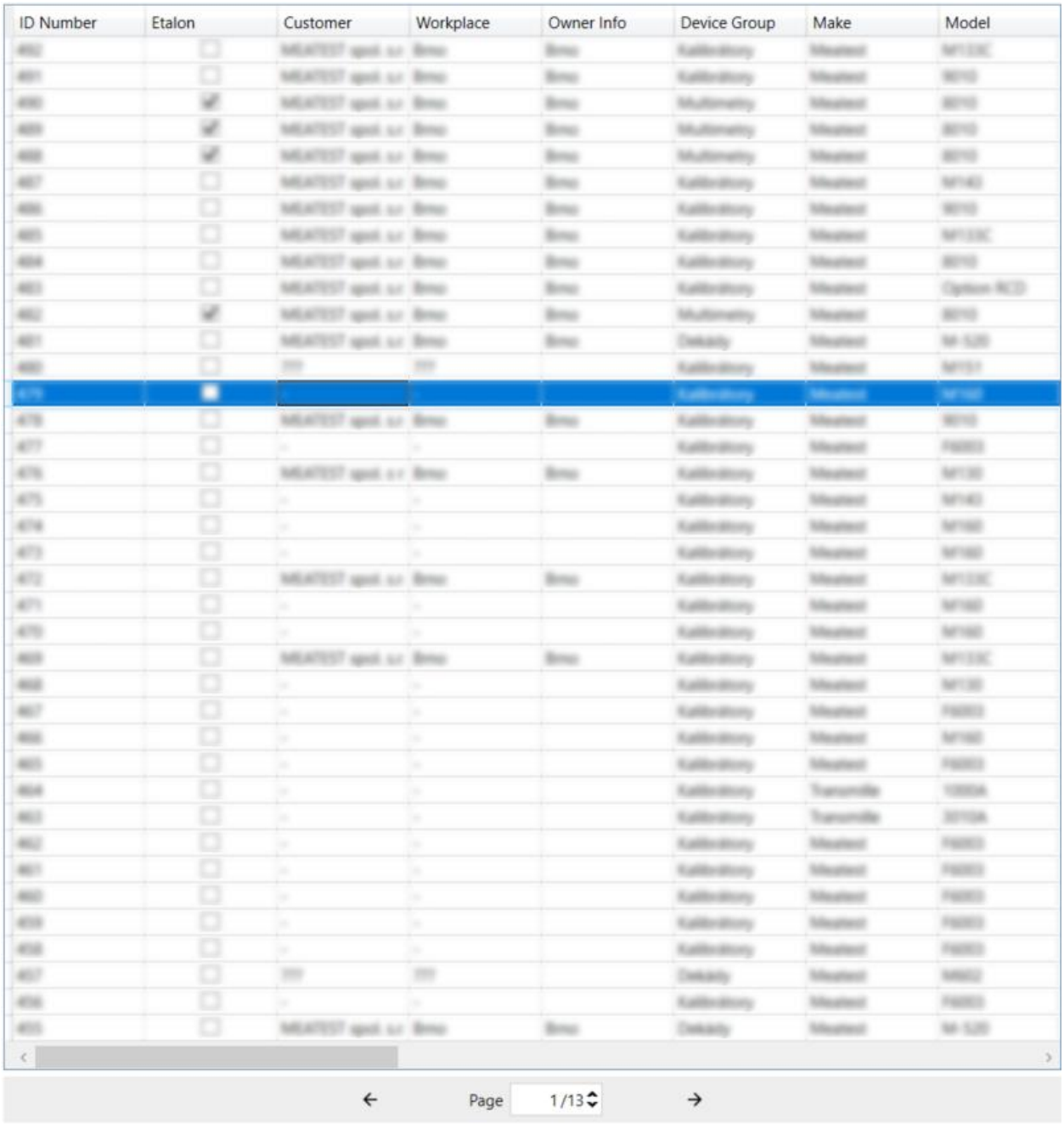
Report Failure inside the pop-up will set the device condition to **Malfunction**, create new service event and associate it with the device.

restore it into working condition. Clicking on Mark as Repaired inside the pop-up will set the device condition back to **Ok** and close the active service event of the device.

Solved date will render the **Failure** solved and ultimately restore the **Device** condition to Ok.

List of records

List of records shows preview of records of a given type. The list can be filtered out using predefined filters in **View** section of the toolbar or sorted by clicking on individual columns of the list. Selecting a record in the list will show its details in **single record overview** and allow the user to interact with the record through toolbar above.



List is divided into pages that can be listed through using navigation panel below the list. Number of records that fit on a page is defined by **Entities per Page** on **Client** page of Settings tab.

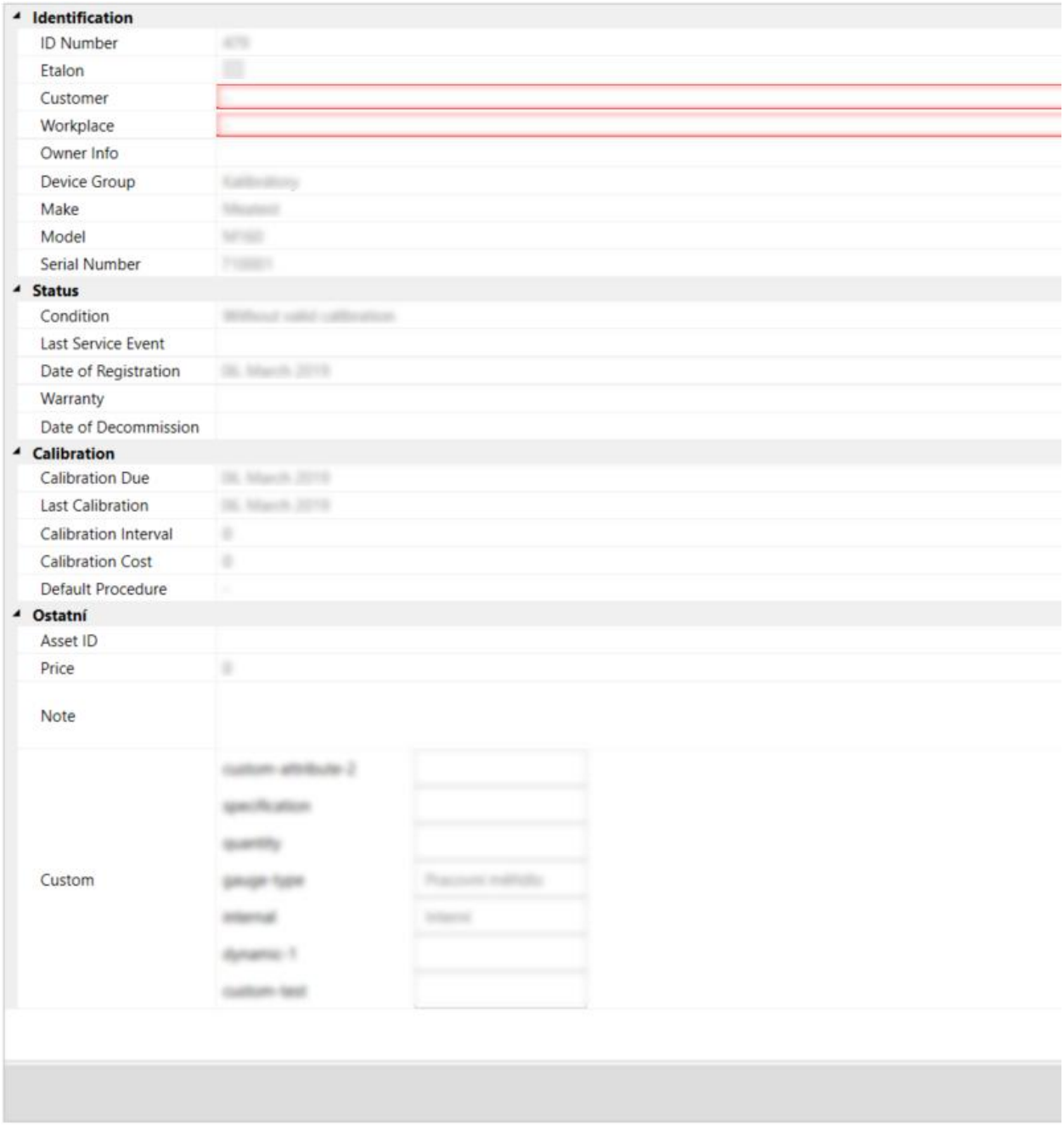
List customization

Columns in the list can be reordered, resized, added or removed to achieve optimal personalized layout. Custom layouts are saved individually for each user. Drag and drop column header to change its position. Drag column header edge or double-click the edge to resize it. Right click on column header and select either **Add columns** or **Remove column** to select which data columns will be shown in the list.

Boundary between the list and single record overview can be adjusted as well. The fewer columns there are in the list, the more space you get for the overview and vice versa.

Single record overview

Single record overview shows all attributes of the record selected in list of records. Attributes are grouped into foldable sections for clarity. Overview width can be adjusted by draging the boundary between the overview and list of records. The fewer columns there are in the list, the more space you get for the overview and vice versa.



By default, all data in the overview are read-only and can only be edited in edit mode, activated by Add or Edit tools. In edit mode, user can either pick values from dropdowns/selectors on the right or type in custom values as appropriate.
Fields with red borders are mandatory. Mandatory fileds have to be filled out in order to save changes done in Edit mode. The only exceptions are "Calibration Place" and "Person Responsible" items in Calibration records which can be left blank if no Calibrations Places or Persons Responsible have been defined yet. See Users and Calibration Places settings sections for more details.

System administrators may define content of certain dropdowns in ConfigFieldValues.json server configuration file.

System Requirements

WinQServer has the following system requirements:

- **Windows OS** (any desktop version from Windows 7 to Windows 11 or server version from Windows Server 2008 to Windows Server 2022).
- **MySQL or MSSQL** The tested versions are MySQL 8.0.28 and MSSQL 15.0.2104.1 (version 2019, build KB4518398). Newer versions should work but are not tested, with older versions you could stumble upon some issues.
- **MySQL or MSSQL database, installed on SSD drive.** Database installation is part of the installation procedure. Performance is significantly reduced when the database is installed on HDD.
- **Internet connection** for periodic online license validation & update.
- **Display resolution** minimum of 1280x1024 and recommended full HD

Setting up a VPN is recommended for remote access to the database.

Server Configuration - Config.ini

File: SYSTEM_DRIVE:/ProgramData/WinQServer/Config.ini
Scope: entire system

The file contains categories of properties that are used for basic configuration of application. Table below shows their definitions and values.

CATEGORY	PROPERTY	VALUE	DESCRIPTION
[Logs]	RelativePath	\Logs	Relative path (relative to location of configuration file) of folder with server's log files.
	FileTemplate	ServiceLog_{0}_{1}_{2}.txt	Pattern of log file names. Symbol {0} represents year, {1} is month, and {2} represents day.
[Database]	Server	localhost	Domain name or IP address of computer with RDBMS installed.
	Username	Username	Username to access RDBMS.
	Password	Password	Password to access RDBMS.
	Database	Database name	Name of the database in RDBMS with WinQDB modules that will be used.
[Pooling]	PoolMaximum	10	Specifies number of requests that server can handle simultaneously.
	LockTimeout	10	Maximum number of seconds that a single request

			can take to be serviced before it is forced to terminate.
	AutoClose	300	Defines number of seconds after slot is closed to requests if it is not in use.
[Service]	Port	8080	Number of communication port that is used for operation of service. **WARNING:** Each service that is managed in server's operating system must have its own unique port number assigned!
	Protocol	http	Type of communication protocol that is used to operate the service.
	LoginExpirationMinutes	60	Defines number of minutes after which each user's login is valid.
[Session]	SessionActivityProtectionMins	15	Number of minutes that a user is considered active even if they do not send any requests to the server.

If server have to manage more than one database, then to add new database, new **Database*X*** and **Service*X*** categories must be created in the configuration file with the definition of its interface. Index ***X*** can take on values from 2 to 10. Server together with the mandatory default database service is able to manage up to 10 different databases in total. Table below shows the category definitions and values.

CATEGORY	PROPERTY	VALUE	DESCRIPTION
[Database*X*]	Server	localhost	Domain name or IP address of computer with RDBMS installed.
	Username	Username	Username to access RDBMS.
	Password	Password	Password to access RDBMS.
	Database	Database name	Name of database in RDBMS with WinQDB modules that will be used. **WARNING:** Multiple server services must not be connected to one physical database!
[Service*X*]	Port	Port number	Number of communication port that is used for operation of service. **WARNING:** Each server service must be assigned its own unique port number (eg 8081, 8082, etc.)!
	Protocol	http	The type of communication protocol that is used to operate the service.
	LoginExpirationMinutes	60	Defines number of minutes after which each user's login is valid.

Server Configuration - ConfigXFilters.json

File: SYSTEM_DRIVE:/ProgramData/WinQServer/ConfigXFilters.json
Scope: entire system

ConfigXFilters.json defines **filters for Device and Calibration records**. Filters help users to search specific records or list certain records (f.e. devices past calibration due date).
All filters listed in this file show up on **Settings - Filters** page in client application, where each user can indivially pick which filters they want to

use. Newly added filters are deactivated on Settings - Filters page by default.

Syntax

Each filter is defined by a group between **'{'** and **'}'**, separated by **','** from another filter. Filter group consists of the following parameters:

FILTER GROUP PARAMETER	DESCRIPTION	EXAMPLE	
"type"	Can be "device" or "calibration". Defines where the filter is supposed to show up.	**"type": "device",**	
"name"	Display name for client application users.	**"name": "Customer",**	
"join"	Used for advanced filtering using records from multiple SQL tables. Part of SQL command to be added after **JOIN** clause (including "join")s.	**"join": "JOIN failure ON device_enr.id=failure.fk_device",**	
"sql"	Part of SQL command to be added after **WHERE** keyword. SQL commands can be fixed or further parametrized by **arguments** as defined below.	**"sql": "fk_workplace = '{{Location ID}}'",** with *Location ID* being f.e. 5, this filter will generate SQL command "SELECT * FROM device WHERE fk_workplace = 5"	
"description"	Description for client application users.	**"description": "Displays devices that belong to the customer's selected workplace.",**	
"arguments"	Arguments allow users to parametrize filters with their inputs. F.e. to search for a particular device based on its serial number. When user clicks on a filter with arguments in client application, a pop-up form with parameter names, inputs and descriptions will appear. Parametrized filter then activates as soon as user types in required inputs and hits OK.	**"arguments": [{"name": "Serial Number", "type": "string"}],**	

Each argument group consists of the following parameters:

ARGUMENT GROUP PARAMETER	DESCRIPTION	EXAMPLE
"name"	Display name for client application users.	"name": "Location ID",
"type"	Argument type. Can be "string", "integer", "decimal", "boolean", "datetime" or "enum".	"type": "integer",

"description"	Description for client application users.	"description" : "workplace ID number"
"allowedValues"	**Enum** type only. List of available enum values.	"allowedValues": ["apple", "orange"],
"defaultValues"	Default value to be pre-filled in client application form.	"defaultValues": "apple",
"isArray"	Allows multiselect and defines argument as an array of values. Can be "true" or "false".	"isArray": "true",

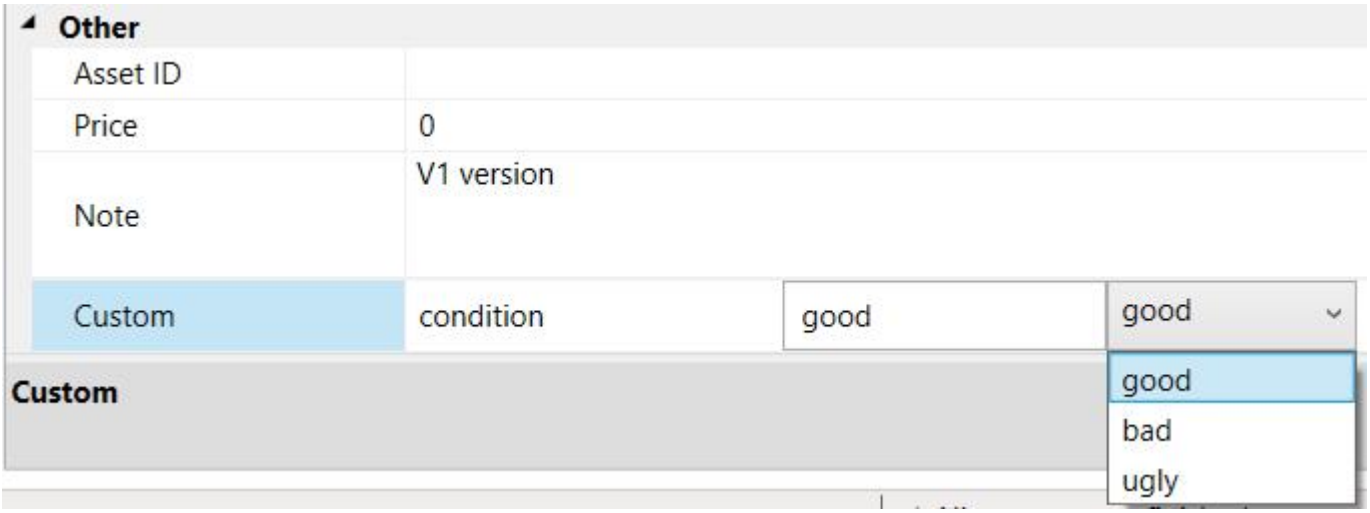
Example of filter definition:

```
{
  "type": "device",
  "name": "Customer",
  "sql": "fk_workplace = '{{Location ID}}'",
  "description": "Displays devices that belong to the customer's selected
workplace.",
  "arguments": [
    {
      "name": "Location ID",
      "type": "integer",
      "description" : "workplace ID number"
    }
  ]
},
```

Server Configuration - ConfigFieldValues.json

File: SYSTEM_DRIVE:/ProgramData/WinQServer/ConfigFieldValues.json
Scope: database; servers running multiple databases have additional ConfigFieldValues*X*.json files, one for each database

ConfigFieldValues.json defines **presets for custom items** of Device and Calibration records and "Manufacturer" item in Device records. Items listed in this file show up with dropdowns next to manual entry in client app, allowing users to pick a value from the list rather than typing values in by hand:



File contents can be also viewed in client application on **Settings - Parameters** page. See **Settings - Server** page in client app for list of custom items that presets can be defined for.

Syntax

Each preset is defined by a group between **'{'** and **'}'**, consisting of item name and list of associated values. Value list consists of individual values, listed between **'['** and **']'** and separated by **','**. Preset groups are also separated by **','** from one another. Default content of ConfigFieldValues.json is as follows:

```
{
  "Name": "manufacturer",
  "Values": [
    "Chauvin Arnoux",
    "Fluke",
    "Gossen Metrawatt",
    "Keysight",
    "Keithley",
    "Meatest",
    "Wawetek",
    "Yokogawa"
  ]
},
```

Configuration - ConfigVars.ini

File:SYSTEM_DRIVE:/ProgramData/WinQServer/ConfigVars.ini
Scope: database; servers running multiple databases have additional ConfigVars*X*.ini files, one for each database

ConfigVars.ini includes custom definitions of Key symbol for printing templates, record numbering formats for Devices and Calibrations, standard listing formats for calibration certificates, password policies defining requirements for newly created passwords and how overall calibration result is determined.
Record IDs cannot be changed once created so make sure to set numbering formats before adding any new items into the database.

Syntax

Each variable needs to be defined on a separate line with format VARIABLE_NAME=VALUE. Furthermore, Wildcards and Iterators used in numbering and standards' list formats need to be wrapped between Key symbols as shown under Print Templates section of client app settings. Default key symbol is dollar sign ($). Alternative key symbol may be defined here using key_symbol variable, f.e. "key_symbol=#".

ConfigVars.ini content example:

```
calibration_list_format=CAL$DATE[yyyy-MM]$-$ID$
device_list_format=$ID$
standards_list_text=$EtalonModel$, $EtalonManufacturer$, SN:
$EtalonSerialNumber$ ($CertificateID$, $CertificateDate$)
```

Calibration and Device numbering formats

Main IDs are assigned to newly created records according to these numbering format definitions. By default, main IDs use primary database record IDs (wildcard "ID") to create a unique ID for each newly created record. Both definitions can be customized by adding characters, calibration numbering formats may use additional wildcards and iterators:

CALIBRATION RECORD WILDCARD	DESCRIPTION	EXAMPLE
USERID	Prints operator's ID number.	**$USERID$** prints as "5", "2",...
DATE[*format*]	Prints calibration date with specified "format".	**$DATE[dd-MM-yyyy]$** prints as "31-12-2023", "01-01-2024",...
ITERATOR[*label*]	Iterators can be used as an alternative to ID wildcard. Prints a number, starting with 1 and counting up with each new record. "Label" defines how often the counter gets reset to 1 with available options being "daily_label", "weekly_label", "monthly_label" and "yearly_label".	calibration format description **"CAL $DATE[dd-MM-yyyy]$-$ITERATOR[daily_label]$"** creates IDs like "CAL 12-03-2023-1", "CAL 12-03-2023-2", "CAL 13-03-2023-1",...

Standards' list printing format

Include $StandardsList[standards_list_*format*]$ label into your Calibration print templates to print a list of standards used in the calibration. Multiple standard list formats can be defined to handle specifics of certain template format, for example "standards_list_html" or "standards_list_text".

Format definition may include the following wildcards:

STANDARD LIST WILDCARD	DESCRIPTION
$EtalonManufacturer$	Prints standard's make, f.e. "Meatest" or "Keysight.
$EtalonModel$	Prints standard's model number, f.e. "9010" or "3458A".
$EtalonSerialNumber$	Prints standard's serial number, f.e. "751461".
$CertificateID$	Prints calibration certificate number of standard's last calibration, f.e. "CAL3210"
$CertificateDate[*format*]$	Prints calibration date of standard's last calibration with specified "format", f.e. "20-10-2024"

Text format example

ConfigVars.ini definition	standards_list_text=$EtalonManufacturer$, $EtalonModel$, SN:$EtalonSerialNumber$ (Cert. $CertificateID$ from $CertificateDate$)
Template entry	Standards used: $StandardsList[standards_list_text]$
Result	Standards used: Meatest, 9010, SN:751461, (Cert. 3210 from 20-10-2024) METEX, 3850D, SN:GD405459, (Cert. 3177 from 16-8-2024)

HTML example

Config Vars.ini definition	standards_list_html=<tr><td>$EtalonManufacturer$<\td><td>$EtalonModel$<\td><td>$EtalonSerialNumber$<\td><\tr>
Template entry	$StandardsList[standards_list_html]$
Result	<tr><td>Meatest<\td><td>9010<\td><td>751461<\td><\tr>

(text) <tr><td>METEX<\td><td>3850D<\td><td>GD405459<\td><
\tr>

Custom password policy

Default password policy in WQB is for the password to have at least 6 characters. Alternative password policy can be defined using regular expression such as this one:

```
password_policy_regex = ((?=.*[a-z])(?=.*[A-Z])).{8,}$
password_policy_description = Minimum password length is 8 characters.
Password has to include both small and capital letters.
```

Overall calibration result

By default, overall calibration result is PASS only if all test points are PASS too. Adding a line "treat_uncertain_as_pass = true" into ConfigVars.ini will result in calibrations passing even with UNCERTAIN test points or in other words, all calibrations with no FAIL test points will be evaluated as overall PASS.

Syntax

Each variable needs to be defined on a separate line with format VARIABLE_NAME=VALUE. VALUE may consist of any characters (except Key symbol), **Wildcards and Iterators** as defined table below. Both Wildcards and Iterators need to be wrapped between **Key symbols** ('$' by default) as shown under **Print Templates** in Database settings in the client app. Default content of ConfigVars.ini is as follows:

```
calibration_list_format=$ID$
device_list_format=$ID$
standards_list_text=$EtalonModel$, $EtalonManufacturer$, SN:
$EtalonSerialNumber$ ($CertificateID$, $CertificateDate$)
```

Calibration and Device numbering formats

Main IDs are assigned to newly created records according to these numbering format definitions. By default, main IDs use primary database record IDs (wildcard "ID") to create a unique ID for each newly created record. Both definitions can be customized by adding characters, calibration numbering formats may use additional wildcards and iterators:

CALIBRATION RECORD WILDCARD	DESCRIPTION	EXAMPLE
USERID	Prints operator's ID number.	**$USERID$** prints as "5", "2",...
DATE[*format*]	Prints calibration date with specified "format".	**$DATE[dd-MM-yyyy]$** prints as "31-12-2023", "01-01-2024",...
ITERATOR[*label*]	Iterators can be used as an alternative to ID wildcard. Prints a number, starting with 1 and counting up with each new record. "Label" defines how often the counter gets reset to 1 with available options being "daily_label", "weekly_label", "monthly_label" and "yearly_label".	calibration format description **"CAL $DATE[dd-MM-yyyy]$-$ITERATOR[daily_label]$"** creates IDs like "CAL 12-03-2023-1", "CAL 12-03-2023-2", "CAL 13-03-2023-1",...

Standards' list printing format

Calibration certificate templates may use $StandardsList[standards_list_format]$ label to print a list of standards associated with the calibration. Such label will print standard details as defined in standards_list_*format*, one standard per line. Format definition may include wildcards "EtalonManufacturer", "EtalonModel" & "EtalonSerialNumber" to print standard identification details and/or wildcards "CertificateID" & "CertificateDate" to print its traceability details. Multiple standard list formats can be defined to handle specifics of certain template filetypes. This is done by changing "format" suffix into something else, f.e. standards_list_**html** example below includes html tags as required by HTML templates:

```
standards_list_html=<tr><td>$EtalonModel$<\td><td>$EtalonManufacturer$<\td>
<td>$EtalonSerialNumber$</td></tr>
```

Override uncertain results

There may be a situation when results of calibration are not certain, but you may still want the calibration to pass without disruption - in such case you can add the following formula in your ConfigVars.ini file:

```
treat_uncertain_as_pass = true
```

Example of how to define the format of the Standards List:

```
$EtalonID.Model$, $EtalonID.Manufacturer$, SNO:$EtalonID.SerialNumber$,
CertifikátKalibrace$, $DatumKalibrace$

standards_list_html =<tr><td>$EtalonID.Model$<\td>
<td>$EtalonID.Manufacturer$<\td>
<td>$EtalonID.SerialNumber$<\td>
<td>$CertifikátKalibrace$<\td>
<\td>$DatumKalibrace[DD.MM.YYYY]<\td> <\tr>
```

Example of how to define the location of the Standards List in the print report:

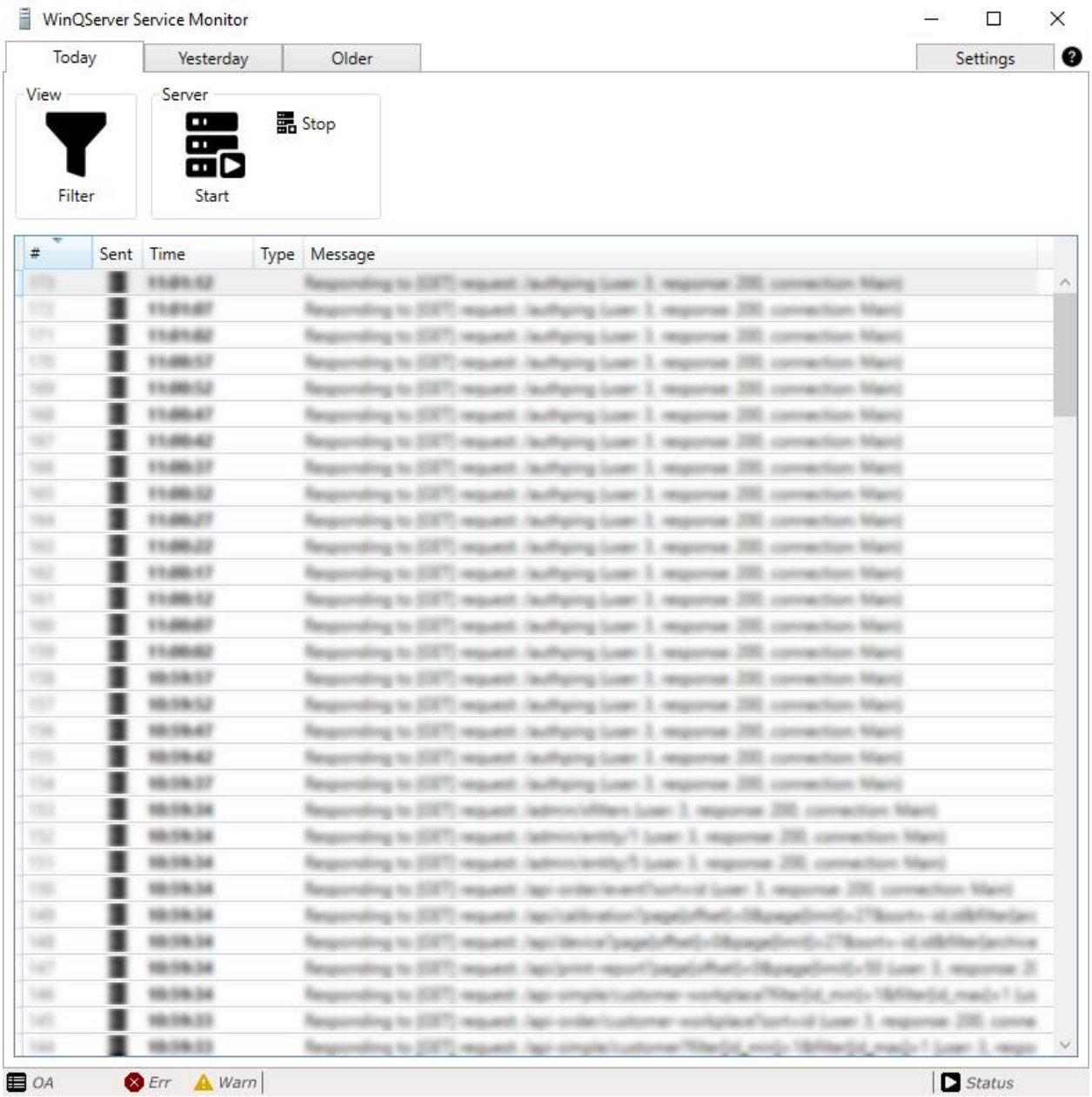
```
Standards used: $StandardsList[standards_list_text]$
```

Example of the result in the print template:

```
Standards used:
9010, Meatest, SNO:771463, 3210, 20.10.2022
M3850D, METEX, SNO:GD405459, 3177, 16.8.2022
```

Today

Today form is used to preview current entries in log file of **WinQServer** server service. Each record consists of data on originator of the event, time of occurrence, type (severity level) and its brief description. It also includes a set of basic tools that serve user to control server service itself.



The form is accessible throught the main menu tabs on the top bar and by default displays a complete overview of records. A defined set of control elements can be used to work with records.

The bottom information bar contains record statistics and current status of server service. The statistical indicator **OA** (overall) is total number of logged records, **Err** (Error) is number of logged records with error type, and **Warn** (Warning) is number of logged records with warning type.

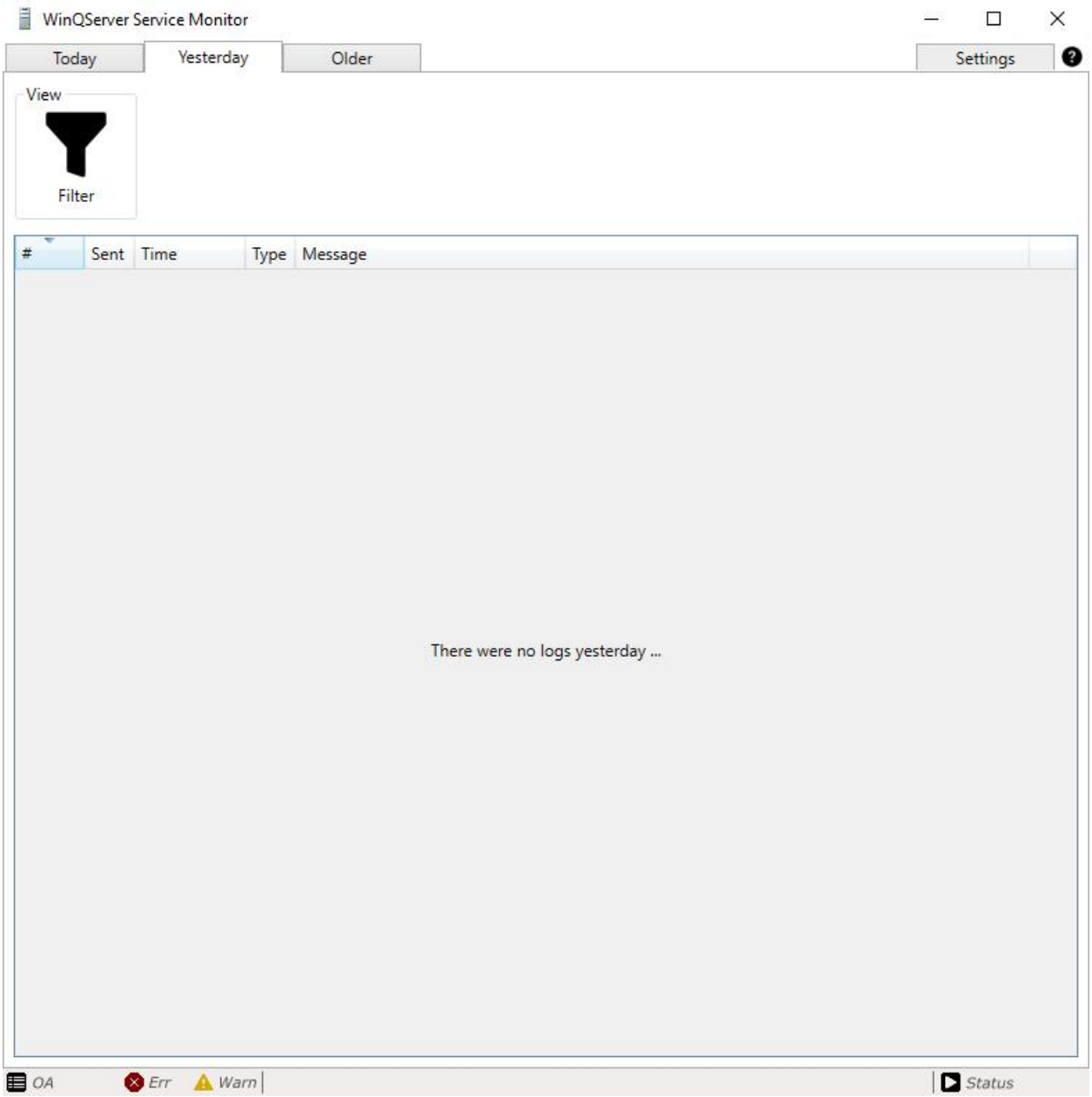
Controls

View

Server

Yesterday

Yesterday form is used to preview entries in the log file of **WinQServer** server service that were recorded the previous day. Each record consists of data on originator of event, time of occurrence, type (severity level) and its brief description.



The form is accessible through the main menu tabs on the top bar and by default displays a complete overview of records. A defined set of control elements can be used to work with records.

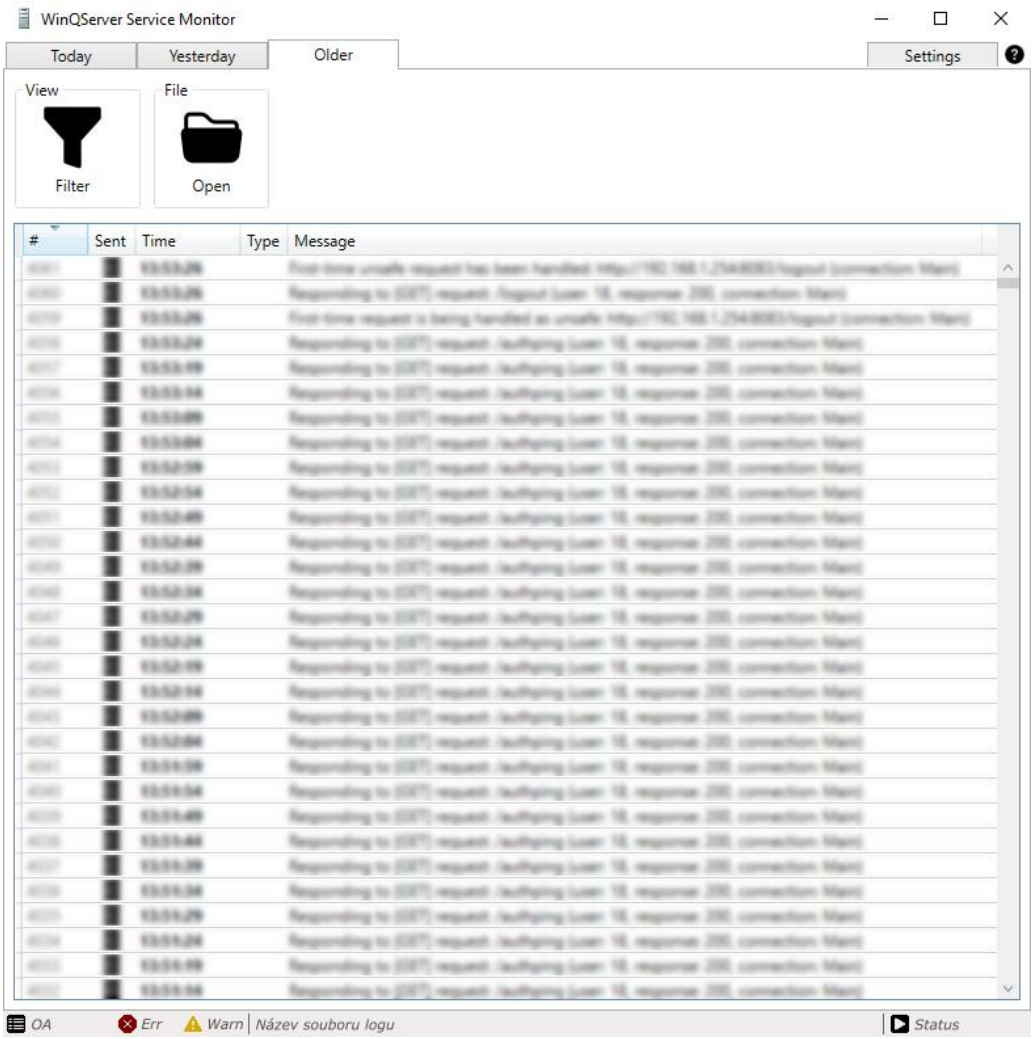
The bottom information bar contains record statistics and current status of server service. The statistical indicator **OA** (overall) is the total number of logged records, **Err** (Error) is the number of logged records with error type and **Warn** (Warning) is number of logged records with warning type.

Controls

View

Older

Older form is used to preview past entries in the log file of the **WinQServer** server service. Each record consists of data on the originator of the event, time of occurrence, type (severity level) and its brief description. A tool for browsing and selecting from saved log files is



included.

The form is accessible trought the main menu tabs on the top bar and by default displays a complete overview of records. A defined set of control elements can be used to work with records.

The bottom information bar contains record statistics, name of displayed file and current status of server service. The statistical indicator **OA** (overall) is total number of logged records, **Err** (Error) is number of logged records with error type, and **Warn** (Warning) is number of logged records with warning type.

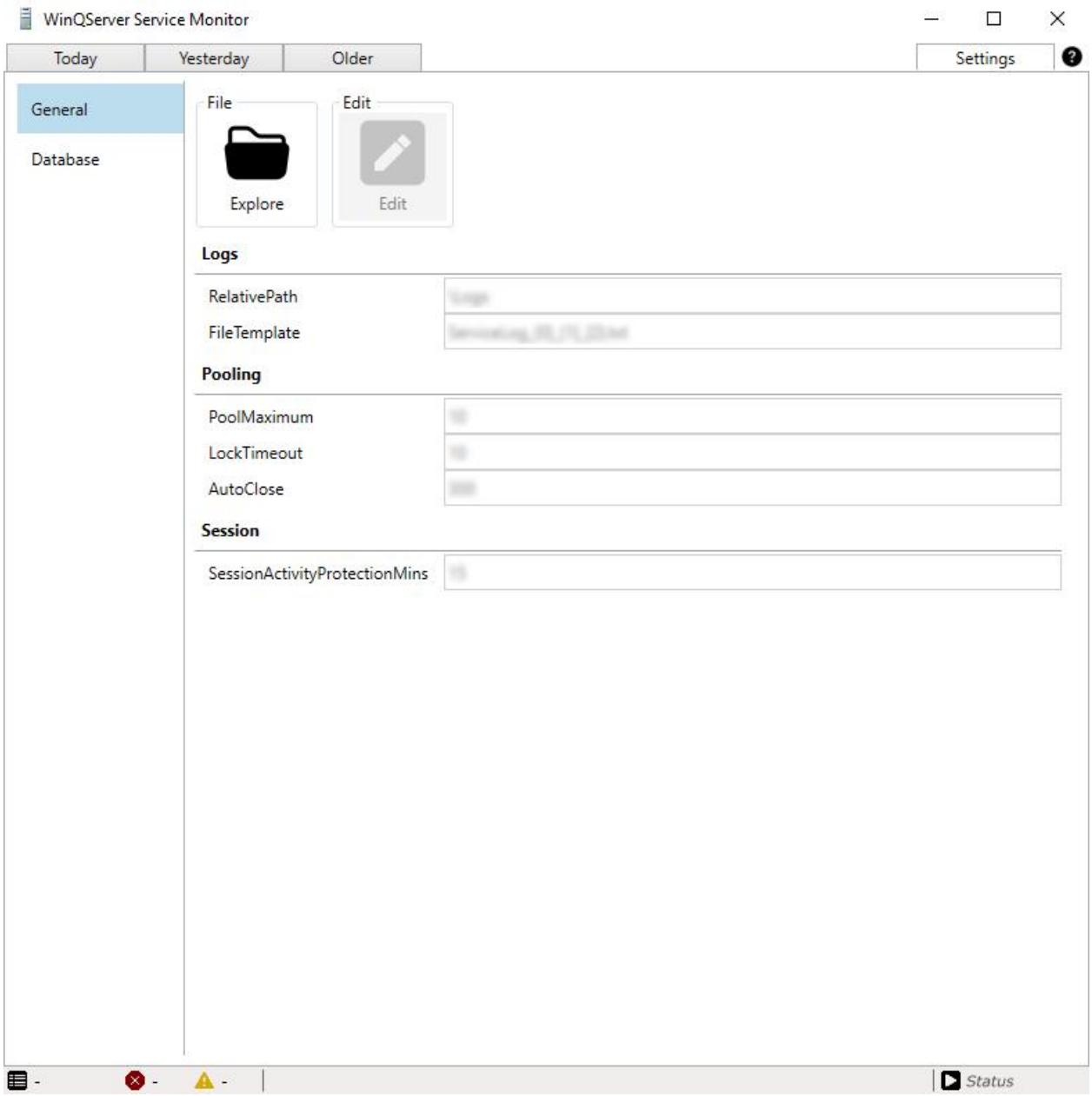
Controls

View

File

Settings - General

General settings form is used to preview selected parameters of **WinQServer** server service, which are used for its basic **configuration**. User can use the explorer's direct access to settings files through prepared controls.



The form is accessible through the settings menu tabs on the sidebar and by default displays an overview of configurable parameters. **Settings** menu is accessible through the main menu tabs on the top bar. A defined set of control elements can be used to work with records.

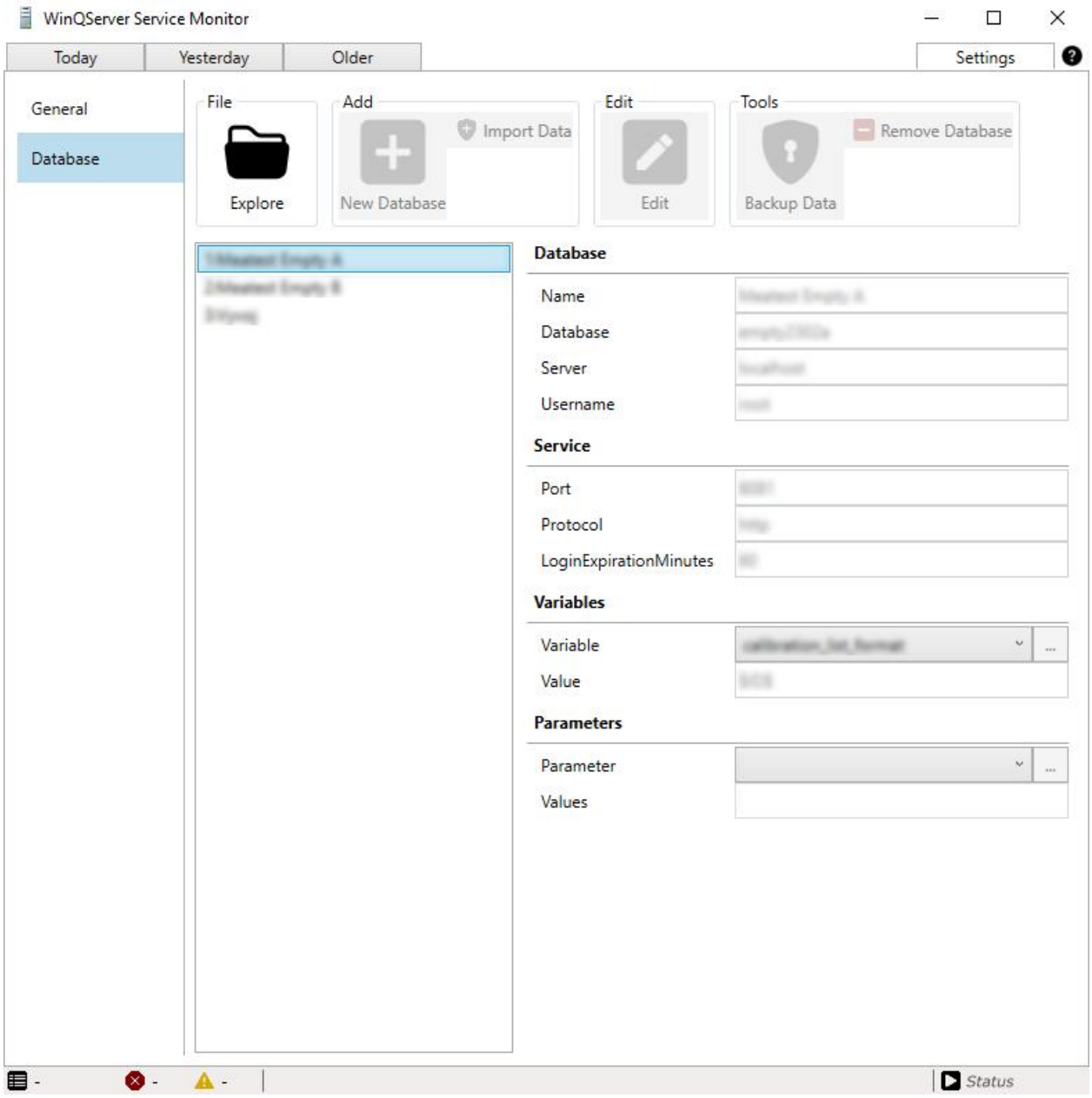
Controls

File

Edit

Settings - Database

Database settings form is used to preview parameters of connected databases in the **WinQServer** server service. This view contains properties from basic **configuration** that are related to database setup. Information from the files **variables** and **parameters** of viewed database is also attached. User can use the explorer's direct access to the settings files through the prepared controls.



The form is accessible trought the settings menu tabs on the sidebar and by default displays an overview of configurable parameters. **Settings** menu is accessible trought the main menu tabs on the top bar. A defined set of control elements can be used to work with records.

Controls

File

Add

Edit

Tools

Controls - View

View controls group groups together tools intended for filtering displayed records. It is therefore possible to effectively pre-select displayed records (from their total number) based on preset criteria.

Filter

Only records that meet the criteria set by the filter are included in the displayed set of records of the given type.

DETAIL

Controls - Server

Server controls group groups together tools intended for filtering displayed records. It is therefore possible to effectively pre-select displayed records (from their total number) based on preset criteria.

Start

Starts running the installed server service **WinQServer**.

Stop

Initiates an **immediate** stop of **WinQServer** server service.

Controls - File

File controls group groups together tools designed to access the file system. For example you can select log files or navigate directly to folder with configuration files of **WinQServer** server service.

Open

Opens a system dialog that allows the user to browse and select a file.

Explore

Through operating system explorer displays contents of folder with configuration files of WinQServer **WinQServer** server service.