STAEDEAN – Life Sciences Solution

Installation Guide for STAEDEAN Life Sciences Weighing and Dispensing

Published: April 2025

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Purpose

This document aims to aid in the installation, version upgrade, and configuration of STAEDEAN Life Sciences Weighing and Dispensing. It is assumed that all operations will be performed by users who have been trained adequately on equipment configuration, equipment connection to a personal computer, hardware configuration, system administration activities, and advanced management of operating systems and server databases.

This document does not include specifications on user accessibility to components and operations required for the installation of the application (e.g., access to the network/domain, users' rights in the shared areas, access computer client, availability of the application, etc.). User accessibility depends on the rules established by the organization.

This document does not aim to describe the operations for the installation/configuration of the equipment and/or applications (basic or complementary) used by the system (e.g., operating systems, server database, network, etc.).

1.2 Scope

The present document provides information for the technical implementation of STAEDEAN Life Sciences Weighing and Dispensing module, including:

- Pre-requisites for the hardware components
- Procedures to install the software
- Procedures to set up the basic configuration
- Procedures to upgrade the software
- Troubleshooting

This document does not provide information about available features and required data setup (for information on features, please refer to the Implementation Guide for Weighing and Dispensing and the Implementation Guide for Supply Chain Management).

1.3 Referenced Documents

- Installation Guide for a Microsoft Dynamics 365 for Finance and Supply Chain Environment
- Implementation Guide for Life Sciences Supply Chain Management
- Implementation Guide for Life Sciences Weighing and Dispensing

1.4 Responsibilities

The responsibilities are defined below.

1.5 Acronyms

SDN	STAEDEAN
LSS	STAEDEAN Life Sciences Solution
SDNWD	STAEDEAN Life Sciences Weighing and Dispensing
W&D	Weighing and Dispensing
DB	Database

2. STAEDEAN Life Sciences Weighing and Dispensing overview

2.1 Introduction

STAEDEAN Life Sciences Weighing and Dispensing consists of the following components:

Component	Description
STAEDEAN Life Sciences Weighing and Dispensing component inside LSS	STAEDEAN Life Sciences Weighing and Dispensing component inside LSS is a package, installed as part of LSS for Microsoft Dynamics 365 FO, that allows for the configuration of items to be dispensed and prevents users from getting errors before and after the weighing phase through implemented controls. It manages the incomes and outcomes of the weighing phase, such as the list of components to be dispensed, theoretical and actual quantities of components, sub-batches availability, etc.
STAEDEAN Life Sciences Weighing and Dispensing Client	STAEDEAN Life Sciences Weighing and Dispensing Client component is a Windows application that manages the weighing of components by exchanging information directly through interfaced scales. It allows for the management of accessorial dispensing processes, such as cleaning operations, scale calibrations, and gauge verifications.
Server components	Other components are a Database Server, and a shared folder used for specific files.

2.2 STAEDEAN Life Sciences Weighing and Dispensing components

The installation of the system includes:

- The W&D component inside LSS
  Refer to the Installation Guide for a Microsoft Dynamics 365 for Finance and Supply Chain Environment document to install the Weighing and Dispensing component inside LSS.
- The W&D Client app
- Database Server
  Part of the installation must be run on the Database Server. The process of installation only creates a SQL database and the relevant SQL users: no additional software is installed in the server.
- Files in a shared folder
  Part of the installation must be run on a File Server. The process of installation only creates a shared folder and copies some files there (e.g., report layouts and drivers for scales): no additional software is installed in the server.

For a non-production environment, the Database Server and the File Server can be the same machine.

2.3 Complementary Applications

The applications described in this paragraph must be installed to allow users to use STAEDEAN Life Sciences Weighing and Dispensing Client. Installation procedures for these applications are out of the scope of this document.

2.3.1 Microsoft Dynamics 365 and Life Sciences Solution

Microsoft Dynamics 365 and Life Sciences Solution must be installed and configured to allow users to complete the successful installation of SDNWD.

2.3.2 Microsoft SQL Server

The local SDNWD database is managed by Microsoft SQL Server (Microsoft SQL Server 2016 is the minimum requirement) and needs to be installed according to the installation procedure provided by Microsoft.

2.3.3 Crystal Reports

Crystal Reports allows users to manage report templates and printing from the SDNWD Master component. All required components are supplied and installed with SDNWD. The full application installation is required only on workstations with permission to modify the report layout.

3. Weighing and Dispensing Hardware

3.1 Client Component Hardware specifications

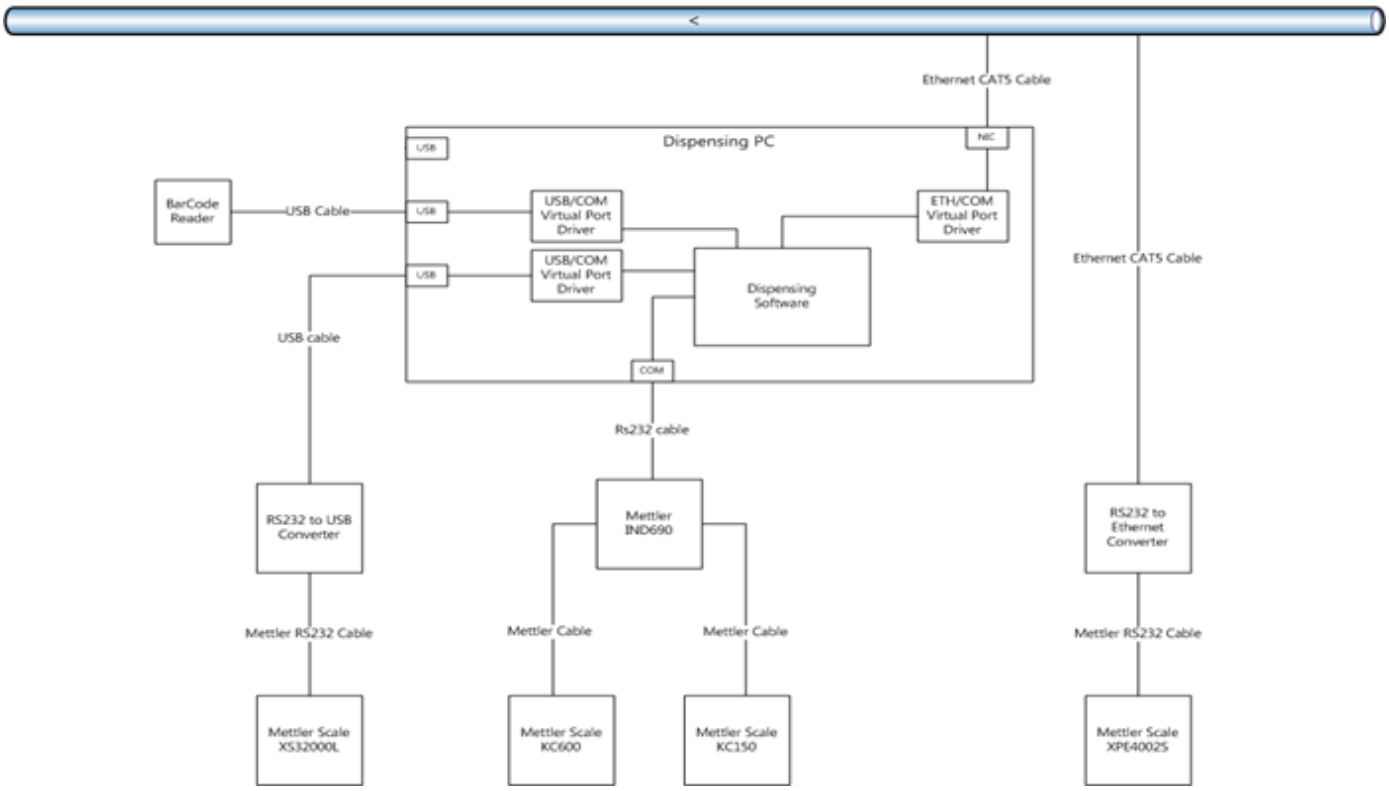
The following hardware is recommended:

- 17” width or larger monitor, with the following features:
  - XGA (1024x768) minimum resolution
  - SXGA (1280x960) or higher is suggested
  - Aspect ratio: 16:9 or 16:10
- Keyboard
- Mouse

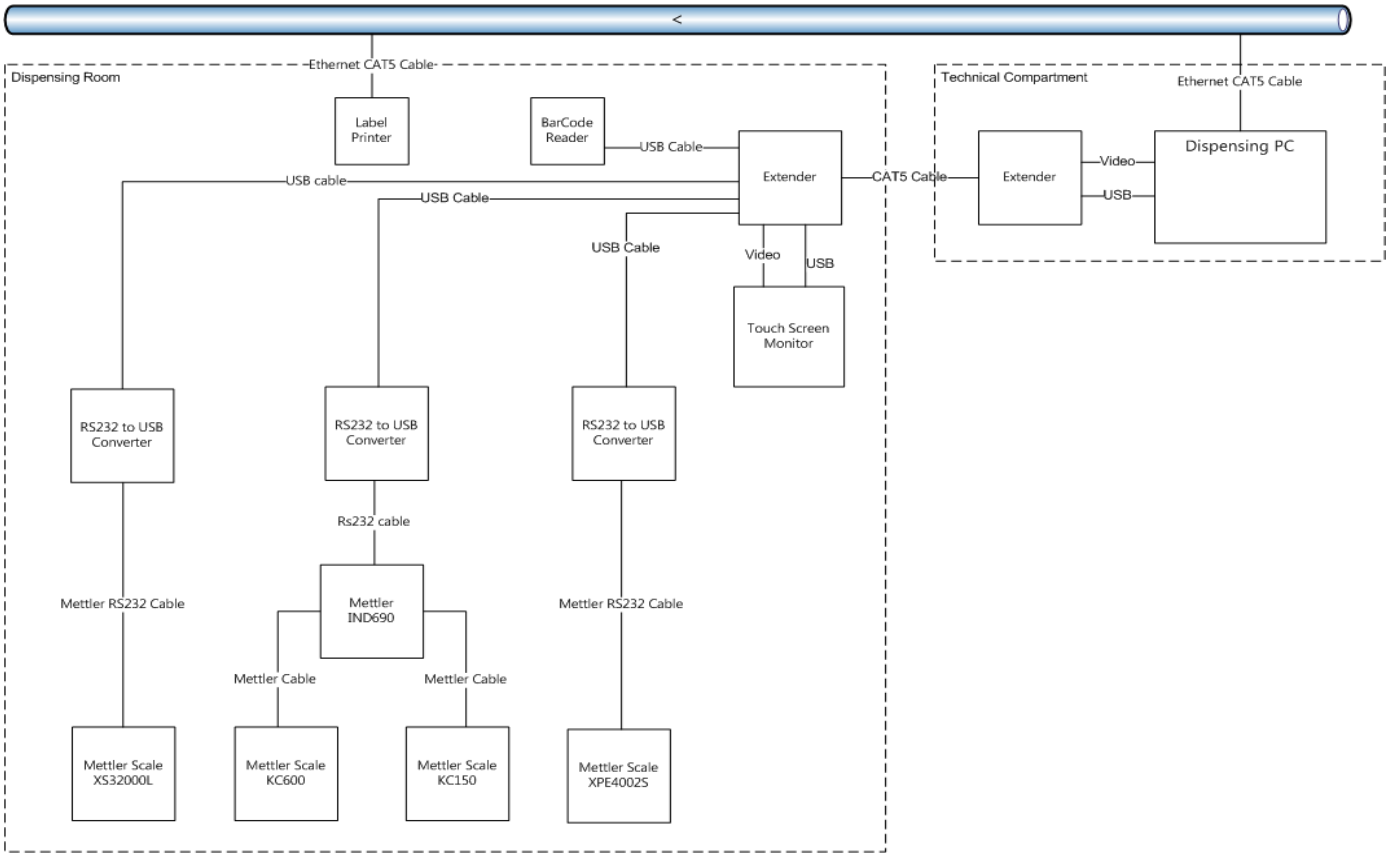
NOTE: A touch screen monitor may be used after installation to avoid using a keyboard and mouse but cannot be used for regular maintenance.

3.2 Connection schemas

Picture 1: Dispensing workstation connection schema



Picture 2: Dispensing workstation connection schema with remote computer



3.3 Server and client

The technical specifications of the server and client hosting the relevant components of SDNWD are described in the tables below.

3.3.1 Database Server

Feature	Requirement
Operating System	Microsoft Windows Server 2019 (or higher) Framework Microsoft .NET 4.5
Processor	Minimum: 1GHz (x86 processor) or 1.4GHz (x64 processor)
RAM	4 GB (suggested 8 GB or more)
Mass Memory	25 GB to manage 5 years of historical data. To be verified based on the quantity of information to be managed - suggested 100 GB available to manage the different environments and related databases.
Database server	Microsoft SQL Server 2016 (or higher)

3.3.2 SDNWD Client

Feature	Requirement
Operating System	Microsoft Windows 10 or 11 Framework Microsoft .NET 4.5
Processor	32 bit (x86) Processor or 64 bit (x64) Processor, 1 GHz or faster
RAM	4GB or more
Mass Memory	10 GB available
Video resolution	1280 X 800 or higher
Screen aspect ratio	Client screen 16:9 or 16:10
Input Devices	Standard Keyboard and Mouse
Barcode Reader	Decoded with USB or RS-232 data output

4. Weighing and Dispensing Devices

4.1 Scales

4.1.1 Interfaced manufacturers and models

The SDNWD module can be interfaced with scales that generate an ASCII string as the output. The scales produced by the manufacturers listed below are already interfaced with the SDNWD module:

- Mettler Toledo (SICS protocol) *Recommended option*
- Ohaus
- Berkel

4.1.2 Connection to the STAEDEAN Life Sciences Weighing and Dispensing Client

Scales must have RS232 data output (mandatory). Other connections are acceptable only if a software driver converts the signal into RS232 (usually known as “Virtual COM port driver” or similar):

- RS232 to USB converters
- RS232 to Ethernet converters

4.2 Barcode readers

4.2.1 Interfaced manufacturers and models

The SDNWD module can be interfaced with barcode readers with decoded output. The barcode readers produced by the manufacturers listed below are already interfaced with the SDNWD module:

- DataLogic *Recommended option*
- Metrologic
- Intermec
- Motorola

4.2.2 Connection to the STAEDEAN Life Sciences Weighing and Dispensing Client

Barcode devices must have RS232 data output (mandatory). Other connections are acceptable only if a software driver converts the signal into RS232 (usually known as “Virtual COM port driver” or similar):

- RS232 to USB converters
- RS232 to Ethernet converters

Keyboard-emulation barcode readers are not recommended.

5. INSTALLATION REQUIREMENTS

5.1 Installation checklist

Collect the following information before proceeding with the installation:

Requirement	Value
SDNWD	
Serial number	
File Server	
File Server name (FQN)	
Operating System/Version	
SDNWD Installation folder (Default C:\SDNWD)	
SDNWD Shared folder name (Default SDNWD)	
SDNWD full shared folder path (e.g., \\<servername>\SDNWD	
Database Server	
Database Server name (FQN)	
Operating System/Version	
Microsoft SQL Server version	
Microsoft SQL Instance name	
Database Admin Username	
SDNWD Database name (Default SDNWD)	
LSS	
LSS web service URL	
Client AppID	
Client Secret	
Active Directory Tenant	
Active Directory Resource	

Collect the following information for each client:

Client	
Computer name (from Control panel > System)	
Operating System	
License serial number	
Activation code	
Domain/Username	
LSS user with W&D role assigned	
User with access to SDNWD shared folder	
Equipment	
Computer name	
Terminal, if any (Maker, model, description)	
Scale 1 (Maker, model, description)	
Scale 2 (Maker, model, description)	
Scale 3 (Maker, model, description)	
Scale 4 (Maker, model, description)	
Barcode Reader (Maker, model, description)	
Connection schema	
Draw the connection schema of the equipment (please refer to Paragraph 3.2)	

5.2 Equipment checklist

The following information is required to connect each instrument.

Requirement	Value
Scale	
Scale connection to PC: • Direct • Via terminal, in this case, collect the terminal/multiplexer port number	
Connection mode (RS232, TCP/IP)	
Scale communication protocol (e.g., MT-SICS for Mettler Toledo scales)	
Communication parameters • RS232: COM Port, baud rate, parity, data bit, stop bit • TCP/IP: address, port number	
Scale weight range	
Scale precision (if the scale precision depends on the weight range, collect each range and its precision)	
Barcode reader	
Connection mode (RS232, USB)	
RS232 Communication parameters (COM Port, baud rate, parity, data bit, stop bit)	

5.3 Equipment connection verification

The following steps describe how to verify the equipment connection via HyperTerminal. This allows users to verify the equipment configuration and connection before installing and configuring the W&D components.

Scale connection (Mettler Toledo):

- Set the communication protocol to MT-SICS.
- Use HyperTerminal to send a command to the scale.
- Verify the results against SICS/scale documentation:
  - SI sends the value immediately.
  - I4 returns the scale ID (save the result).
  - I0 returns a list of commands available (save results).
- For Mettler Toledo terminals (multiple scales connected to the terminal):
  - Retrieve the scale switch command (i.e., "AW010 XXX ", "AW 010 XXX ", "SNS XXX").
  - Retrieve the scale enquiry command (i.e., "AR010", "AR 010", "SNS").

Barcode reader connection:

- Verify that the barcode reader is configured for RS232. Software drivers are available from manufacturers to get a virtual port if a USB port is used.
- Configure the barcode reader to produce a suffix character/string (CR or CR+LF).
- Use HyperTerminal to read any barcode.
- Verify that data is read.

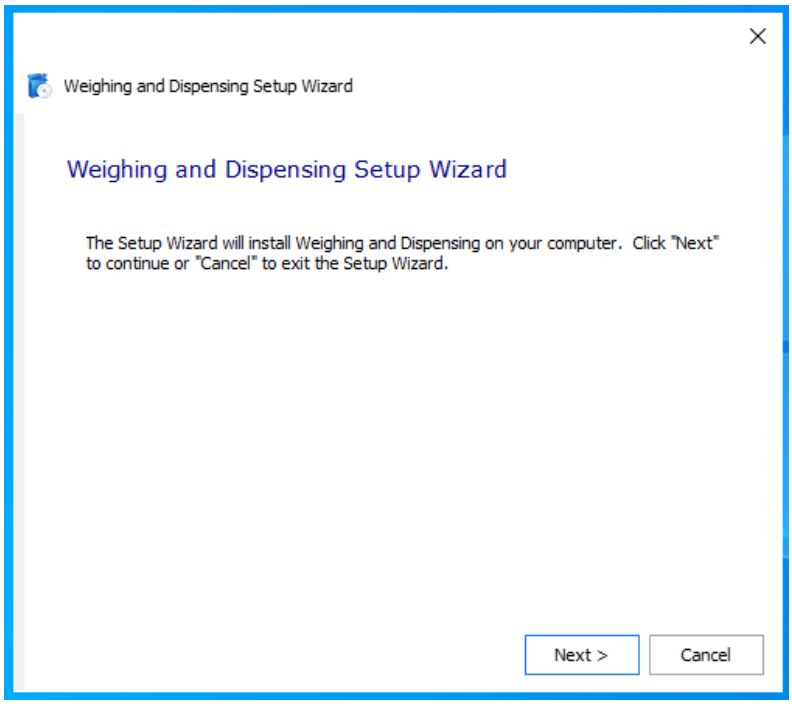
6. STAEDEAN Life Sciences Weighing and Dispensing installation

6.1 Considerations and assumptions

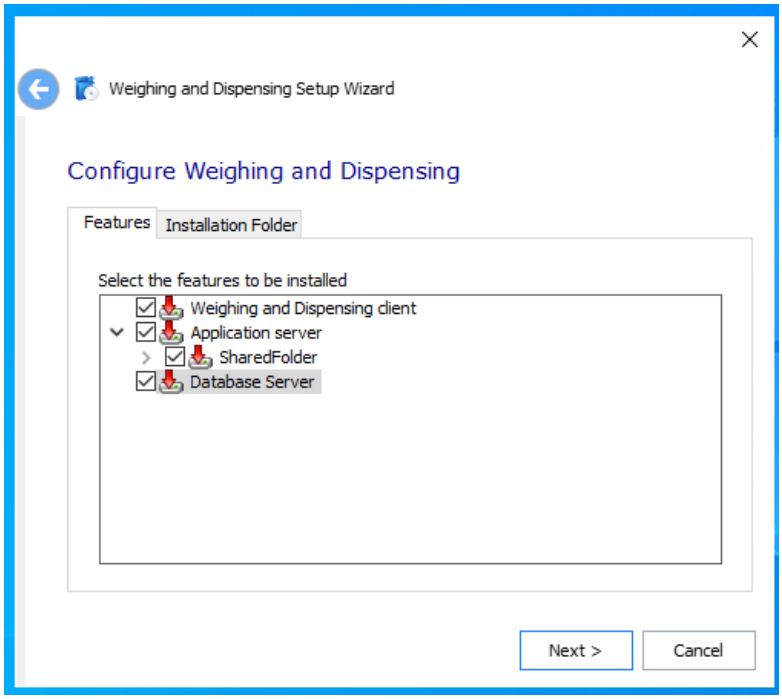
- The installation includes the following elements:
  - Client
  - File Server
  - Database Server
- Depending on the system configuration and architecture, Database Server, File Server, and Client may be installed on the same machine or different machines.
- If more than one component (i.e., Database Server and File Server) should be installed on the same computer, run the setup program, and select one or more of the components to be installed on that computer simultaneously.
- It is highly recommended that only the supplier performs the first installation (in at least one of the environments).
- All the components can be installed on a single machine for development or test environments.
- The equipment can be simulated using a Scale Emulator provided separately for testing purposes. The installation and use of the Scale Emulator software is not described in this document.
- Installation operations can only be performed by users that have administrative rights on the client and server computers.
- Database management operations must be performed by a user with a system administrator role.
- SQL Server parameter “Authentication mode” must be set to “SQL Server and Windows Authentication mode”.
- During the installation procedures, it is possible to go back and modify the information entered in the previous step by clicking the **Back** icon in the upper-left corner of the form.

6.2 Installation procedure – All components

- Run the SDNWD Setup Wizard.
- Click the **Next** button.



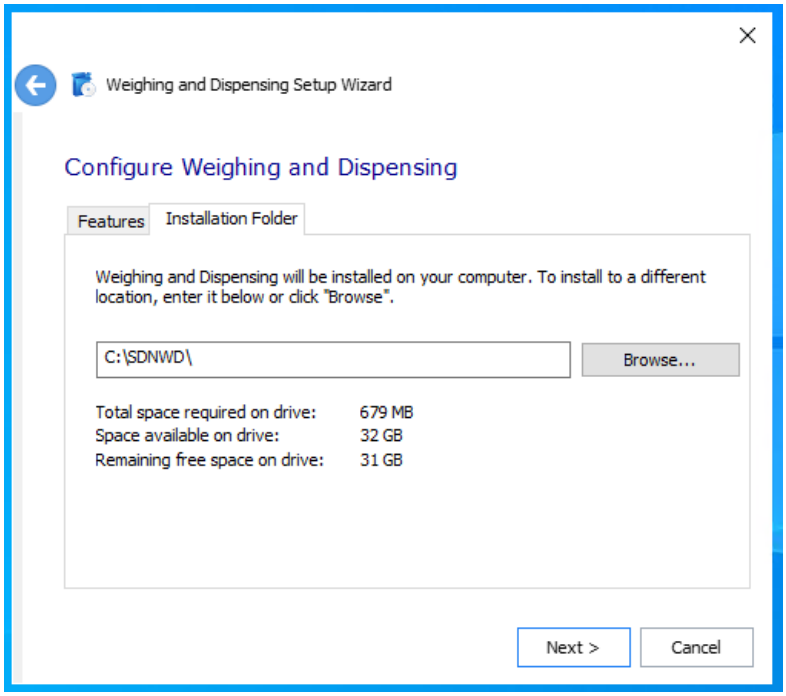
- The Weighing and Dispensing Setup Wizard shows the components to be installed. Select the following checkboxes:
  - **Weighing and Dispensing client**
  - **Application server**
  - **Database server**



- Switch to the **Installation folder** tab.
- The system requires a path where a new folder "*SDNWD_Shared*" will be created (e.g., c:\SDNWD\SDNWD_Shared).

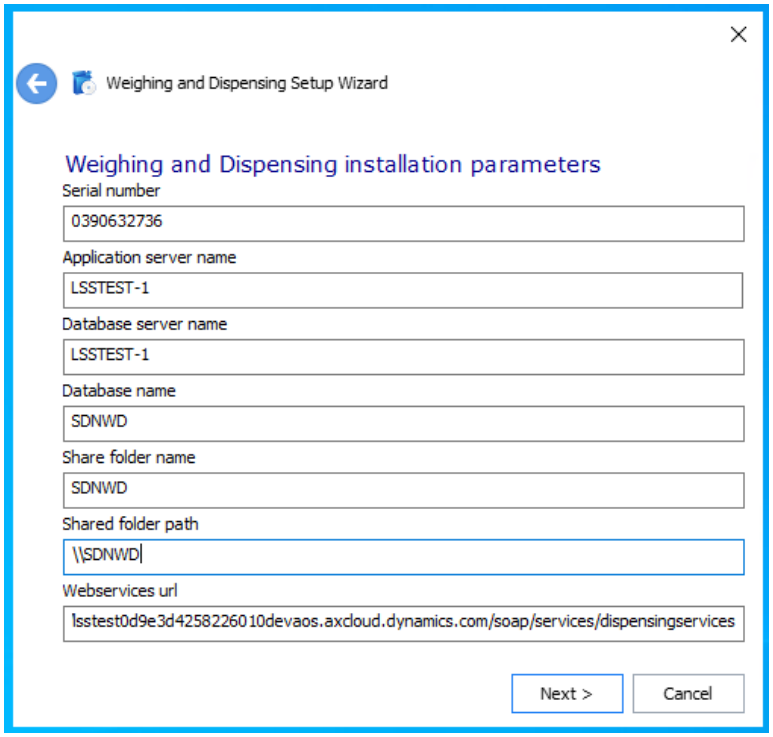
  Note: The installer will automatically create the shared folder according to the "Shared folder name" value. Users must not create the shared folder manually.

- The setup suggests "C:\SDNWD" as installation folder. It is possible to change the application folder by clicking the **Browser** button.

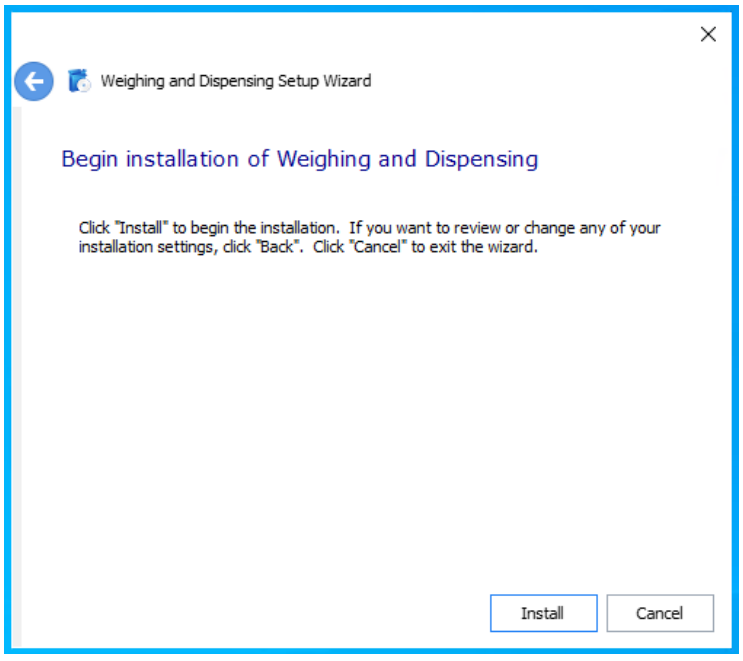


- Click the **Next** button.

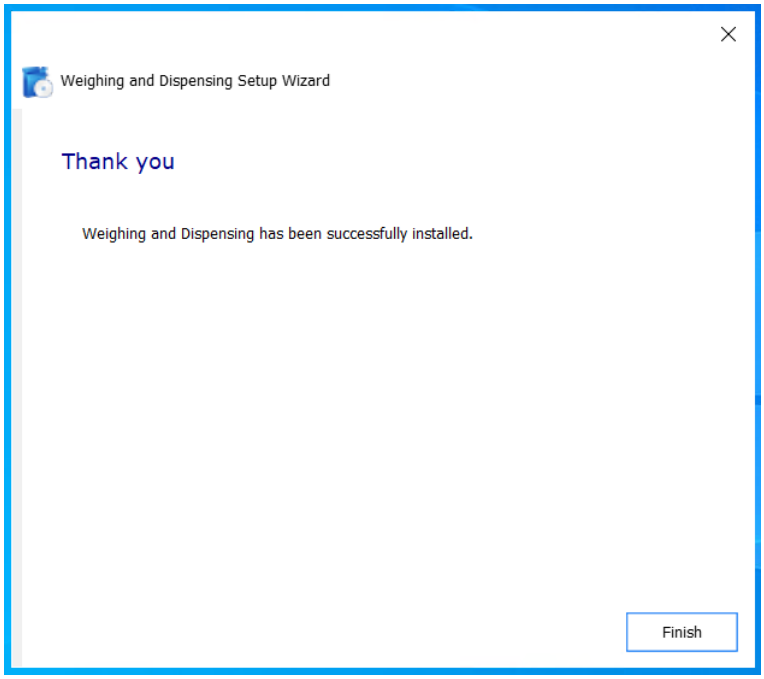
- Fill in the following information:
  - **Serial number** - provided by SDN.
  - **Application server name** - Server name or IP address of SDNWD file server.
  - **Database server name** – SQL server hostname and instance name (if available).
  - **Database name** – “SDNWD” is defaulted.
  - **Shared folder name** - Name of the shared folder, “SDNWD” is the default value.
  - **Shared folder path** - Path where the shared folder is created.
  - **Webservices URL** - URL of the STAEDEAN LSS Weighing and Dispensing web service (see Paragraph 6.5 for details).



- Click the **Next** button.
- Click the **Install** button to start the installation.



- If the installation has been performed successfully, the following dialog box is displayed. Click the **Finish** button.



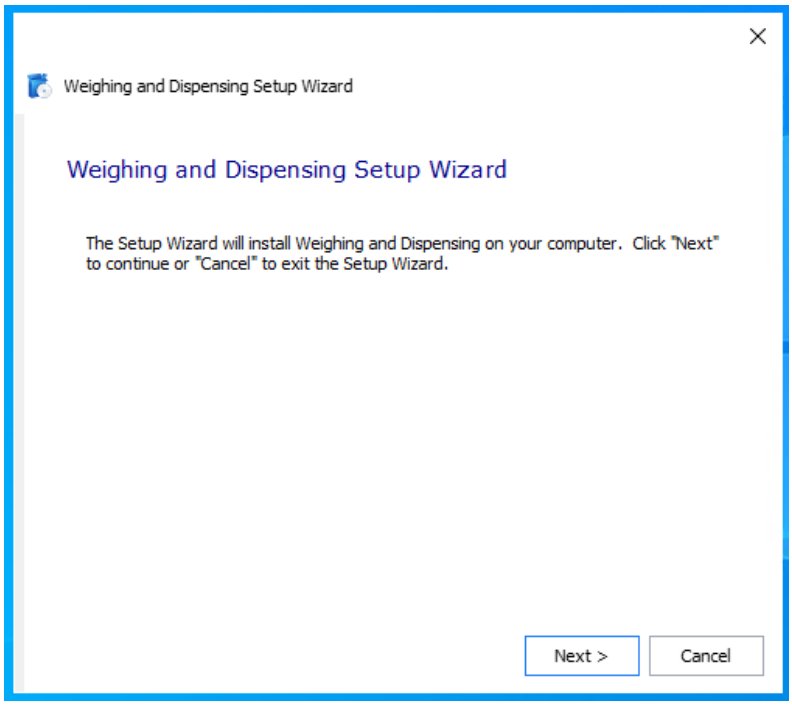
If an error message is shown, check the installation parameters. If the error persists, track the error message and contact STAEDEAN support.

6.3 Installation procedure – Single component

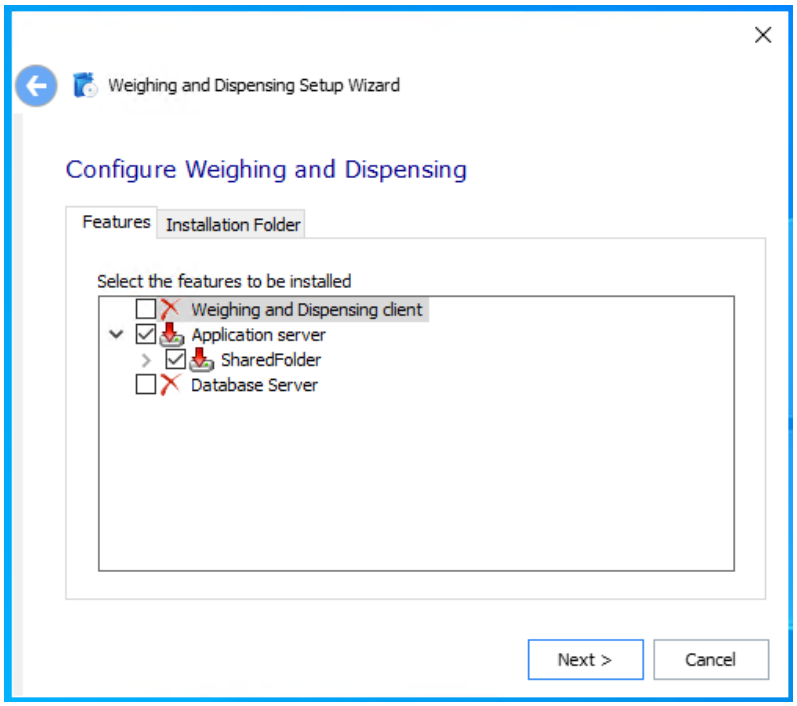
The following paragraphs describe how to install a single component among the File Server, Database Server, and Client.

6.3.1 File Server

- Run the SDNWD Setup Wizard.
- Click the **Next** button.



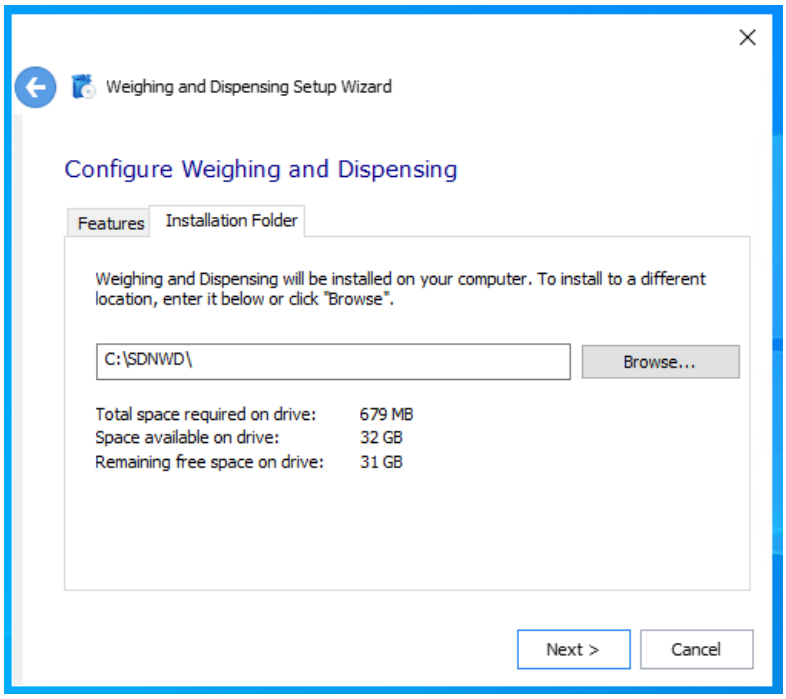
- The Weighing and Dispensing Setup Wizard shows the components to be installed. Select **Application Server**, **SharedFolder**. Untick the other features.



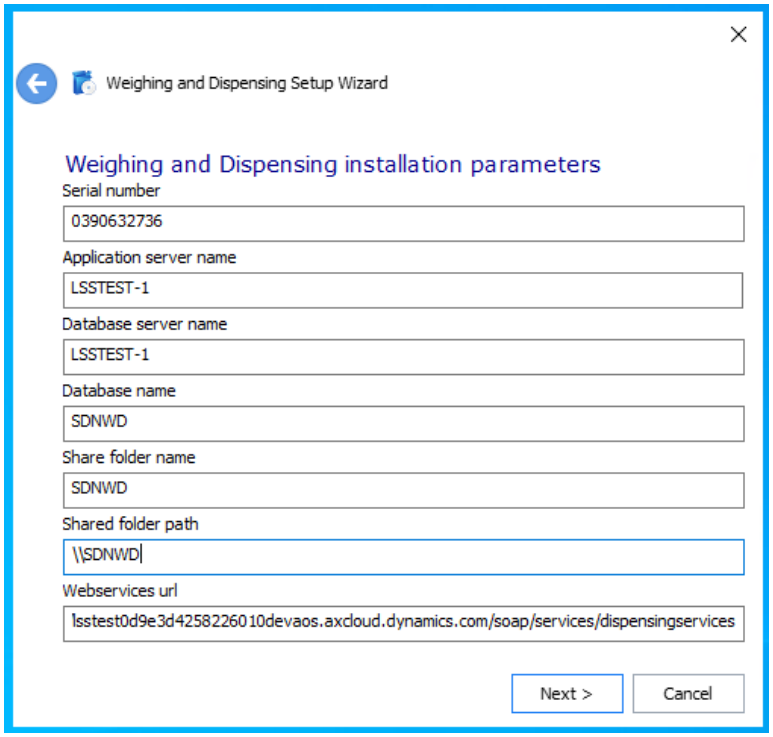
- Go to the **Installation folder** tab.
- The system requires a path where a new folder, named "*SDNWD_Shared*", will be created (e.g., c:\SDNWD\SDNWD_Shared).

  Note: The installer will automatically create the shared folder according to the "Share folder name" value. Users must not create the shared folder manually.

- The setup suggests “C:\SDNWD” as the installation folder. It is possible to change the application folder by clicking the **Browser** button.

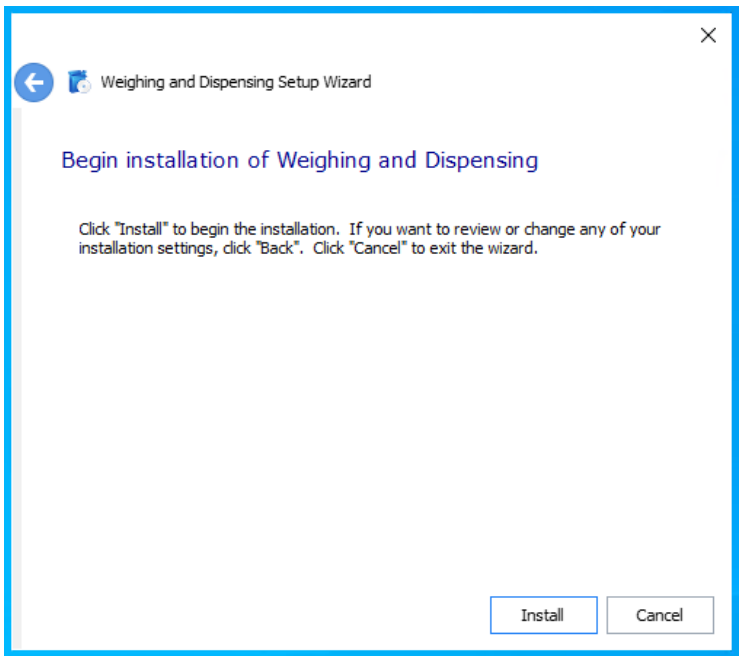


- Click the **Next** button.
- Fill in the following information:
  - **Serial number** - Serial number provided by SDN.
  - **Application server name** - Server name or IP address of the SDNWD file server.
  - **Database server name** - SQL server hostname and instance name (if available).
  - **Database name** - SDNWD defaults.
  - **Shared folder name** - Name of the shared folder used by the clients, SDNWD is set as default.
  - **Shared folder path** - Path where the shared folder is created.
  - **Webservices URL** - URL address of the STAEDEAN LSS web service (see Paragraph 6.5 for details).

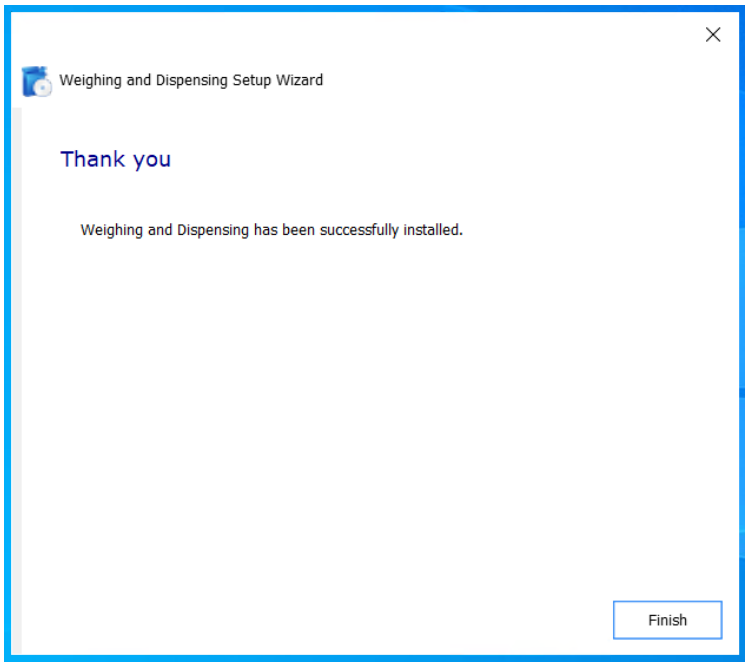


- Click the **Next** button.

- Click the **Install** button to start the installation of the file server.



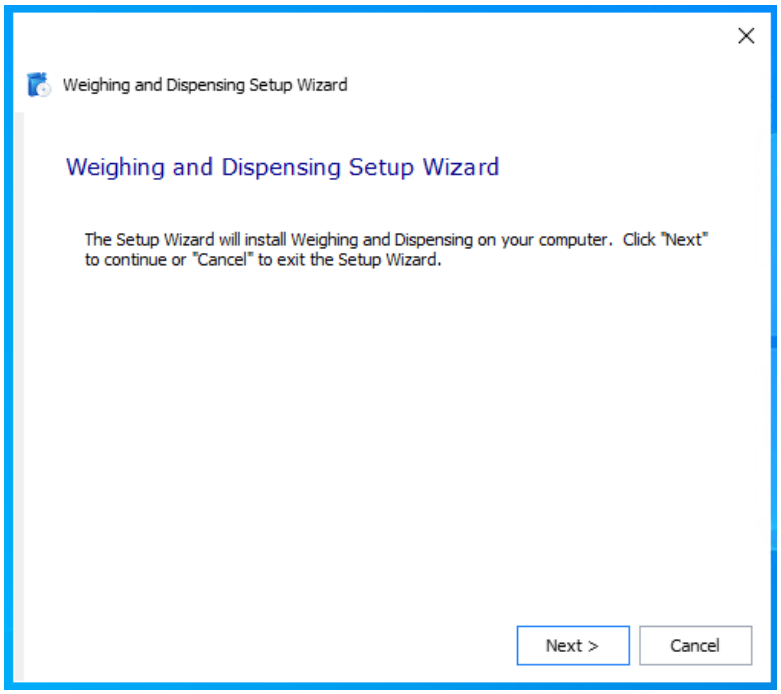
- If the installation has been performed successfully, the following dialog box is displayed. Click the **Finish** button.



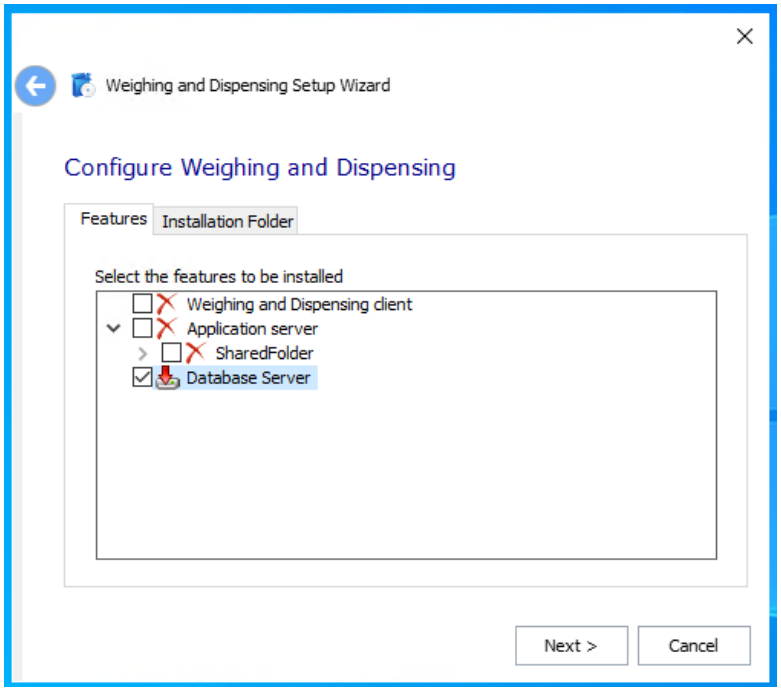
If an error message is shown, check the installation parameters described above. If the error persists, track the error message and contact STAEDEAN support.

6.3.2 Database Server

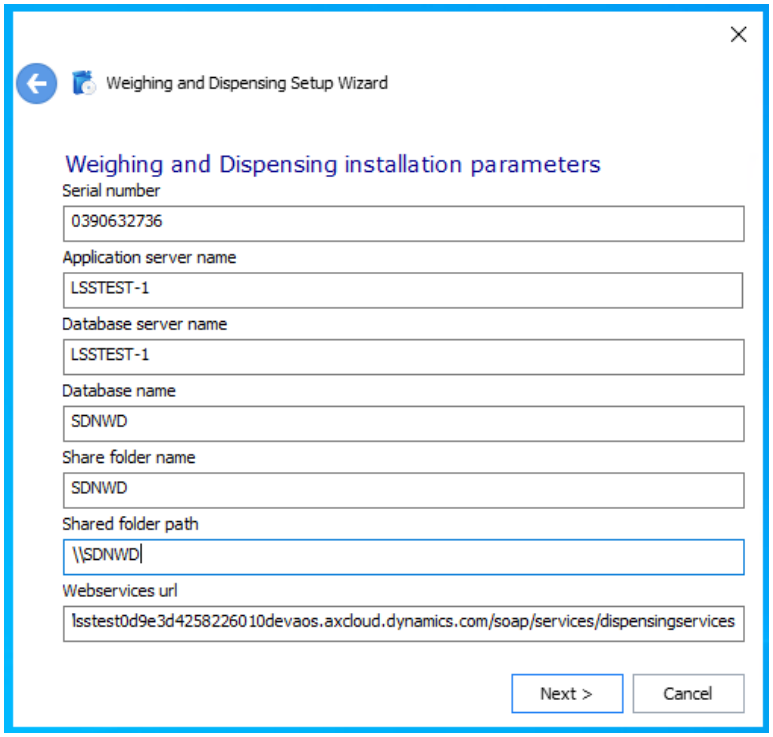
- Run the SDNWD Setup Wizard.
- Click the **Next** button.



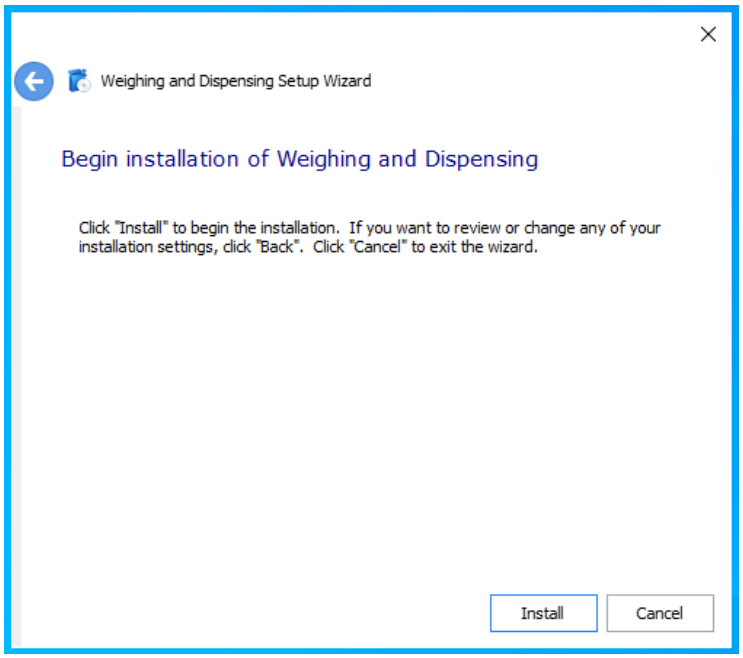
- The Weighing and Dispensing Setup Wizard shows the components to be installed. Select the **Database Server**. Untick the other features.



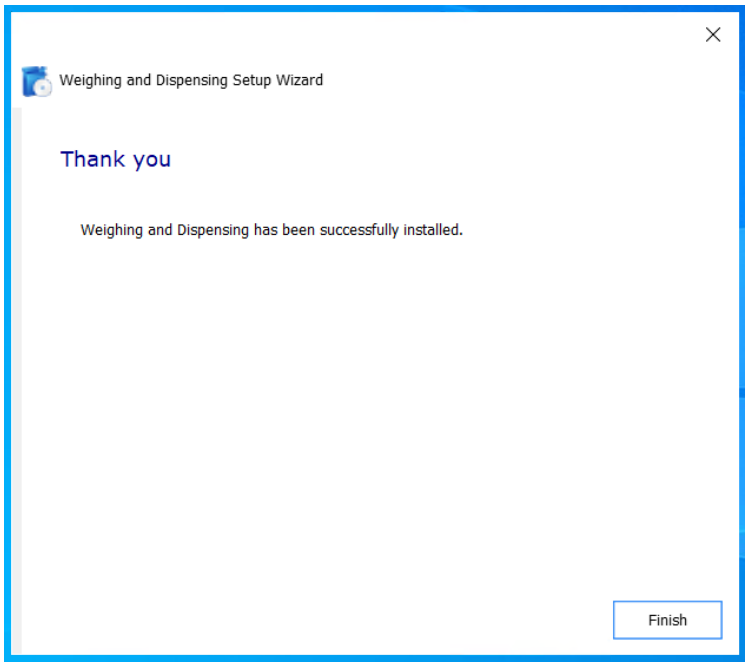
- Click the **Next** button.
- Fill in the following information:
  - **Serial number** - Provided by SDN.
  - **Application server name** - Server name or IP address of SDNWD file server.
  - **Database server name** - SQL server hostname and instance name (if available).
  - **Database name** - SDNWD defaults.
  - **Shared folder name** - Name of the shared folder used by the clients, SDNWD is set as default.
  - **Shared folder path** - Path where the shared folder is created.
  - **Webservices URL** – URL address of the STAEDEAN LSS web service (see Paragraph 6.5 for details).



- Click the **Next** button.
- Click the **Install** button to start the installation of the database server.



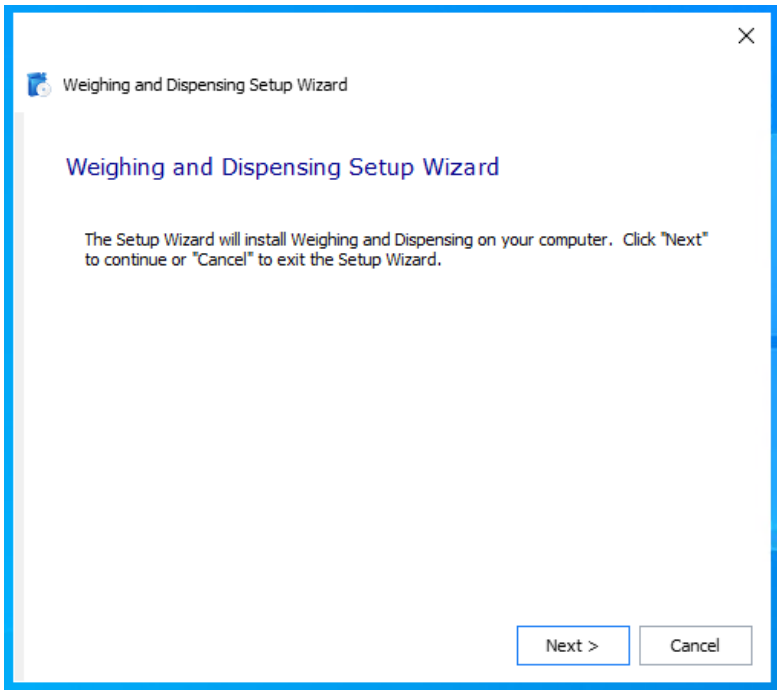
- The following dialogue box is displayed if the installation has been performed successfully. Click the **Finish** button.



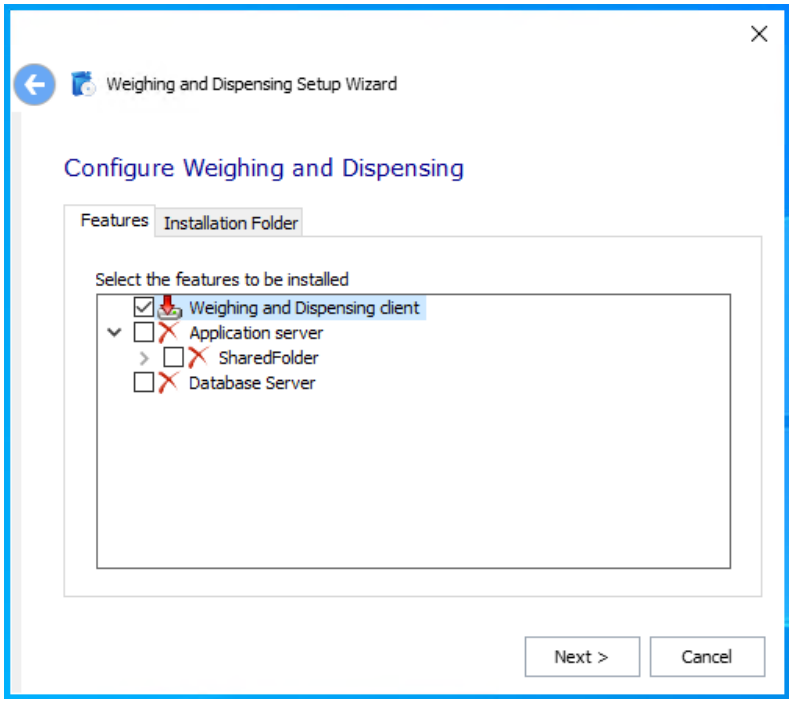
Please check the installation parameters described above if an error message is shown. If the error persists, track the error message and contact STAEDEAN support.

6.3.3 Client Application

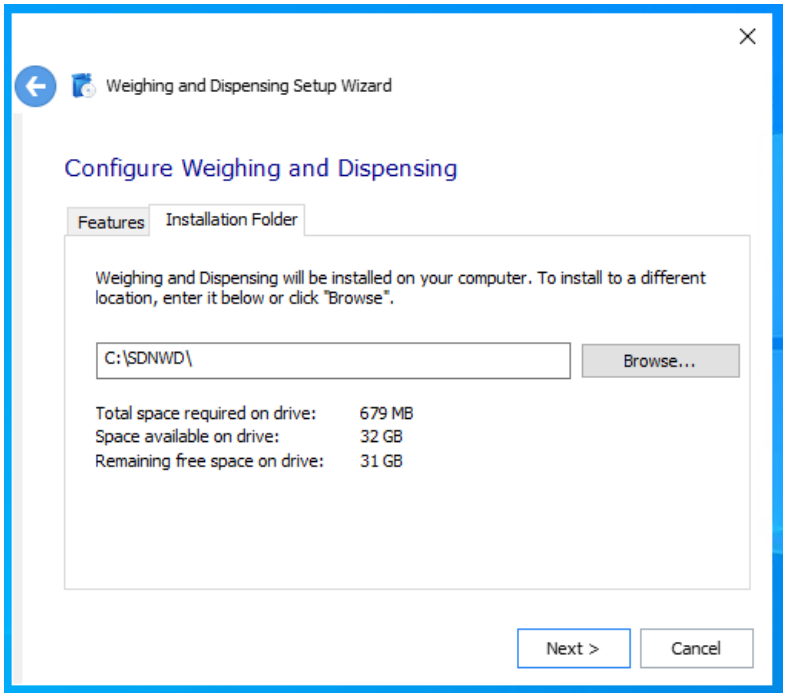
- Run the SDNWD Setup Wizard.
- Click the **Next** button.



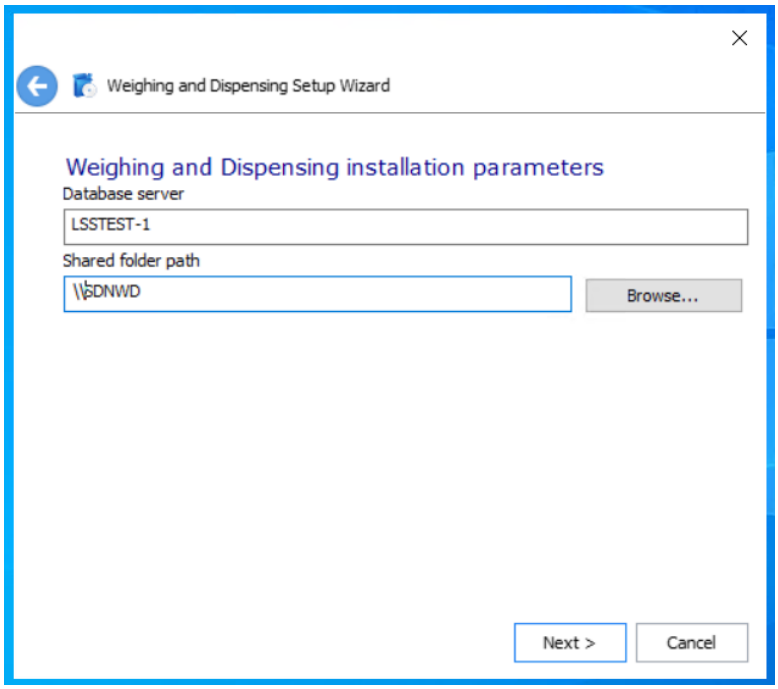
- The Weighing and Dispensing Setup Wizard shows the components to be installed. Select the **Weighing and Dispensing client** checkbox.



- Click the **Next** button.
- Go to the **Installation folder** tab.
- The setup suggests using “C:\SDNWD” as the installation folder. It is possible to change the application folder by clicking the **Browser** button.

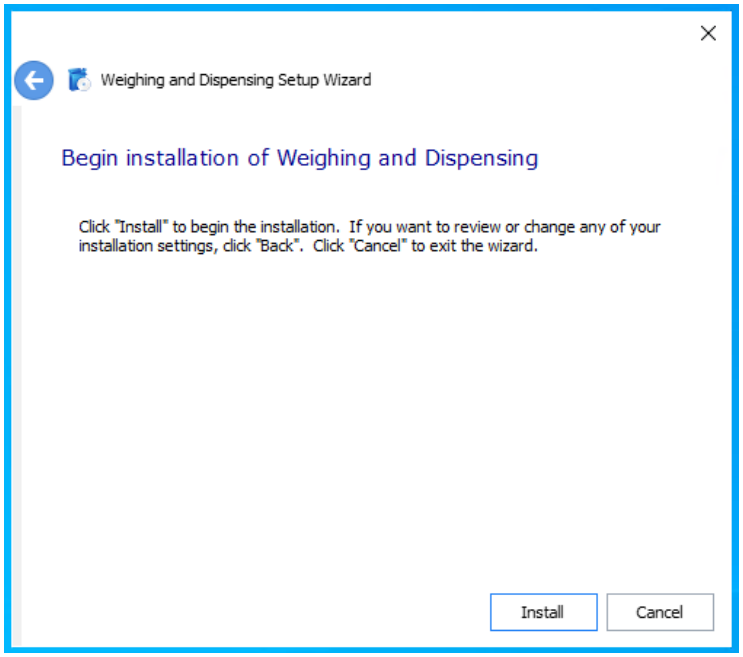


- Click the **Next** button.
- Fill in the following information:
  - **Database server** - SQL server hostname and instance name (if available).
  - **Shared folder path** - Path where the shared folder is created.

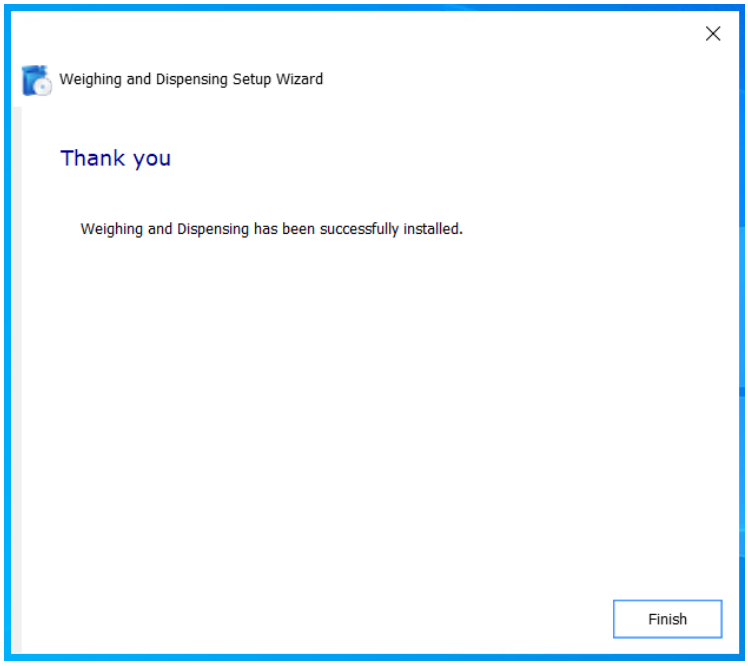


- Click the **Next** button.

- Click the **Install** button to start the installation of the Client Application.



- The following dialogue box is displayed if the installation has been performed successfully. Click the **Finish** button.



If an error message is shown, check the installation parameters described above. If the error persists, track the error message and contact STAEDEAN support.

Repeat the steps to install the Client Application on each computer.

6.3.4 Silent mode setup

To install the application on the client in silent mode, it is possible to use parameters that affect the client installation when launching the setup package from the command line or automatic deploying service.

/passive or /quiet	basic UI: **/qb**, **/passive** (only a progress bar will be shown during the installation) no UI: **/qn**, **/quiet** (no UI will be shown during the installation)
DCK_SHAREDFOLDER	File server shared path
DCK_DBSERVER	Database server

For example:

setup.exe ***/passive***

DCK_SHAREDFOLDER*: "\\SDNWD_APPSERVER \SDNWD"*

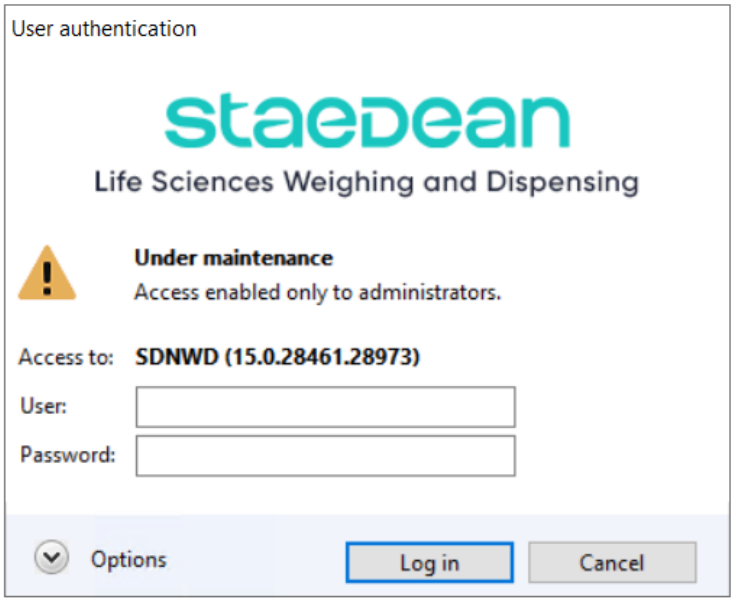
***DCK_DBSERVER**: "SDNWD_DBSERVER"*

6.4 Initial system start

The first time the user accesses the software, the following steps must be executed on the client computer.

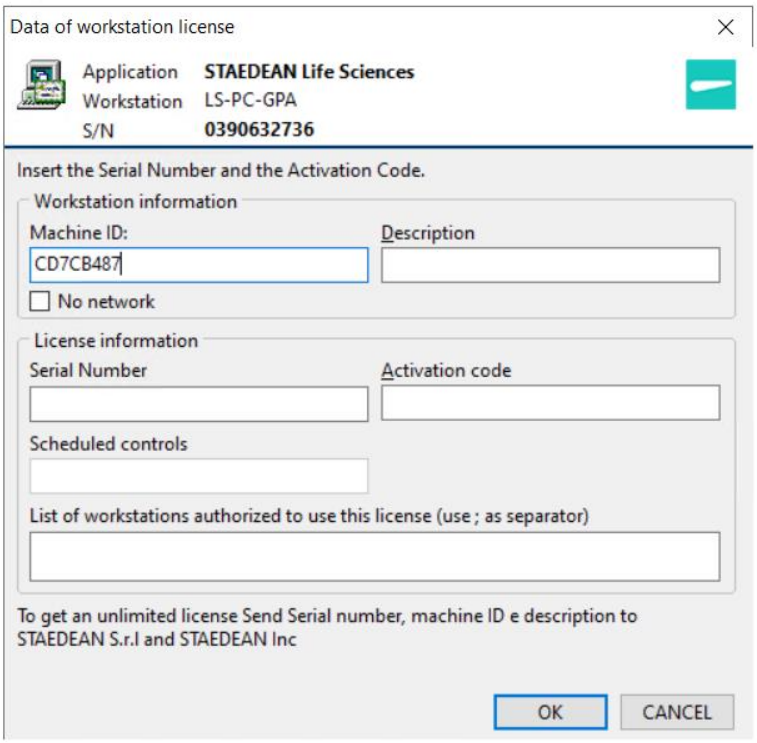
- Select the desktop shortcut of SDNWD MASTER and access the SDNWD Master component.
- Log in by using the DB user:
  - **Username**: SDNWDADMIN
  - **Password**: StaedeanUserAdmin

  Click the **Log In** button.



- Fill in License Application information as follows:
  - **Serial number –** Provided by STAEDEAN.
  - **Activation code -** Provided by STAEDEAN.
  - **Description** – Workstation/computer description.

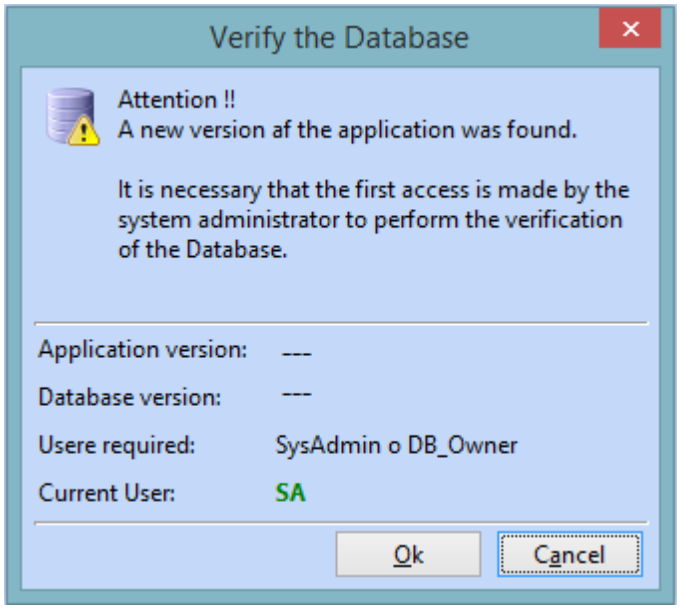
  Click **OK**.



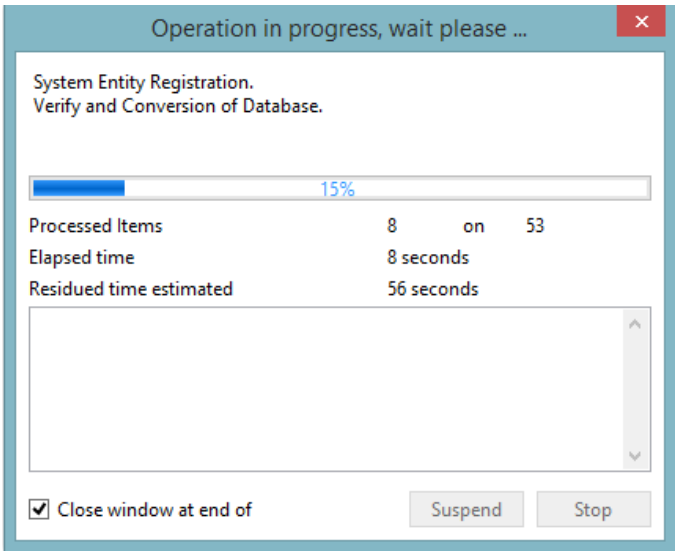
- The following form is displayed:

If an error message is shown, check the serial number and the activation code. If the error persists, track the error message, and contact STAEDEAN support.

- The system will attempt to identify an uninitialized or outdated database, and if found, it will request to perform a database verification/automatic conversion.



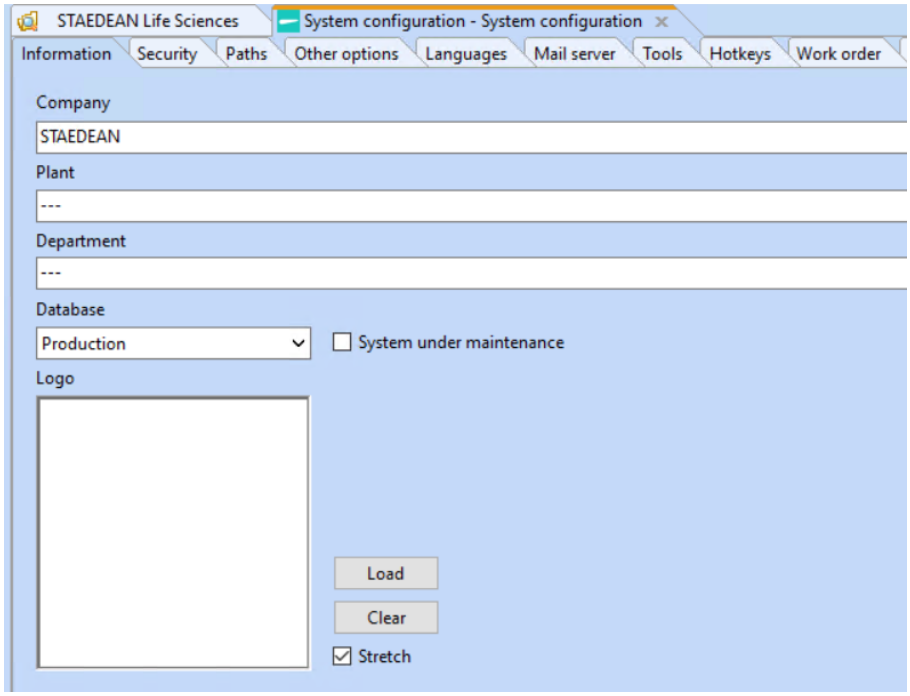
- Wait for the successful completion of the verification process and record any displayed message.



After the automatic configuration update, the following steps must be followed:

- Go to **File > Configuration > Information** tab.

- Set the **Company** and remove the flag from the **System under maintenance** checkbox.

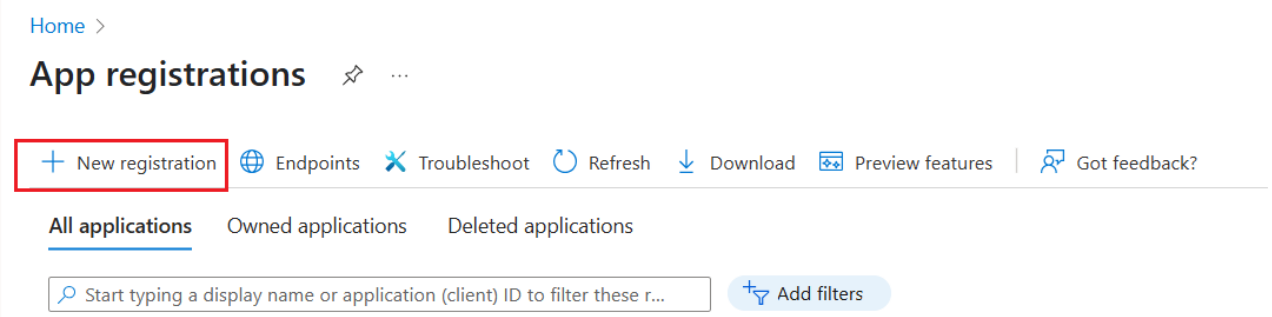


- Click **OK** to save the changes.
- Set the information in **File > Configuration > Webservice integration** as described in Paragraph 6.5.
- Click **OK** to save the changes.
- Restart the application.

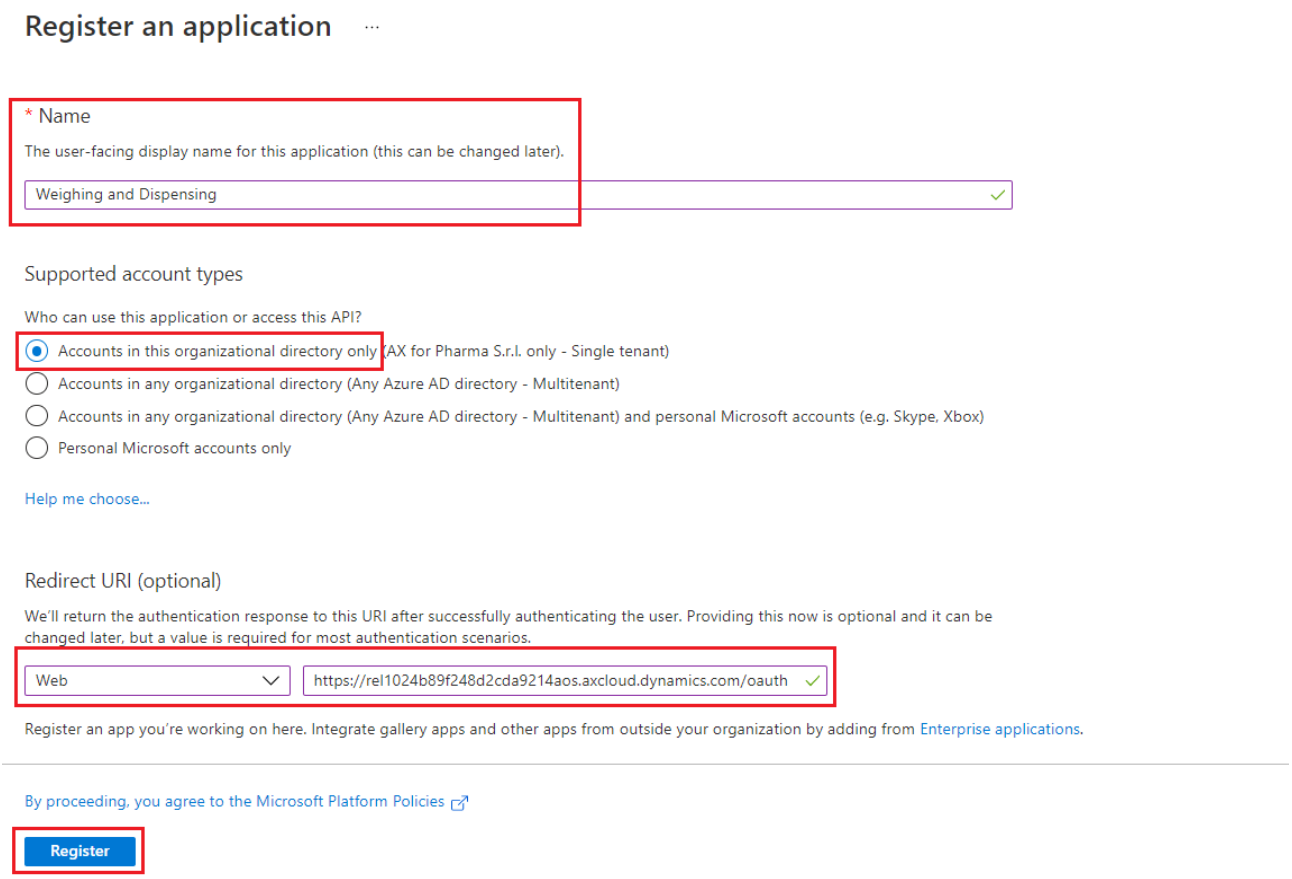
6.5 STAEDEAN LSS web service setup

The following paragraph describes how to set up the web service needed to allow for the communication between the STAEDEAN Life Sciences Weighing& Dispensing and the STAEDEAN Life Sciences Weighing& Dispensing Client and Master components.

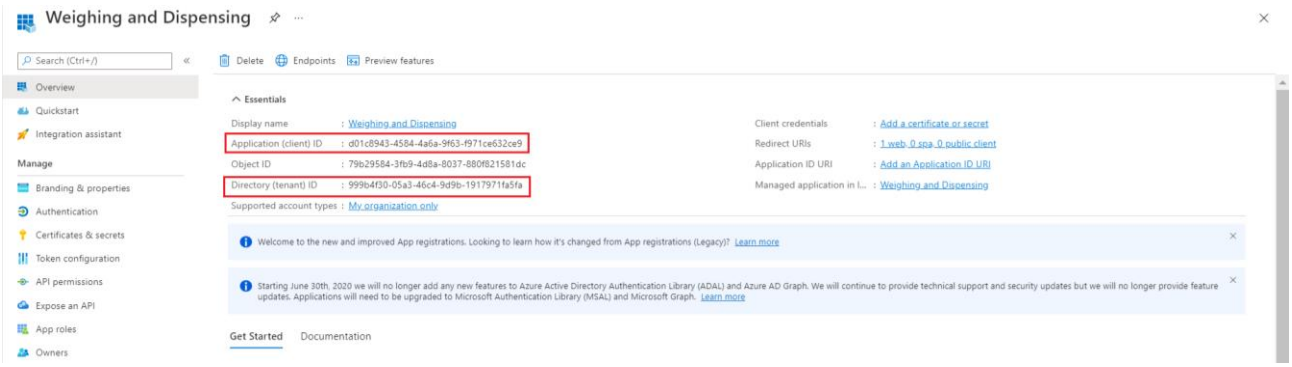
- Access the Microsoft Azure portal and navigate to the **App registrations** page.
- Click **New registration**.



- Enter an application **Name** (e.g., “Weighing and Dispensing”), set the **Supported account types** to “Accounts in this organizational directory only”, and the information in the **Redirect URI** section (“Web” as type and “[EnvironmentUrl]/oauth” as authorization type) and click **Register**.

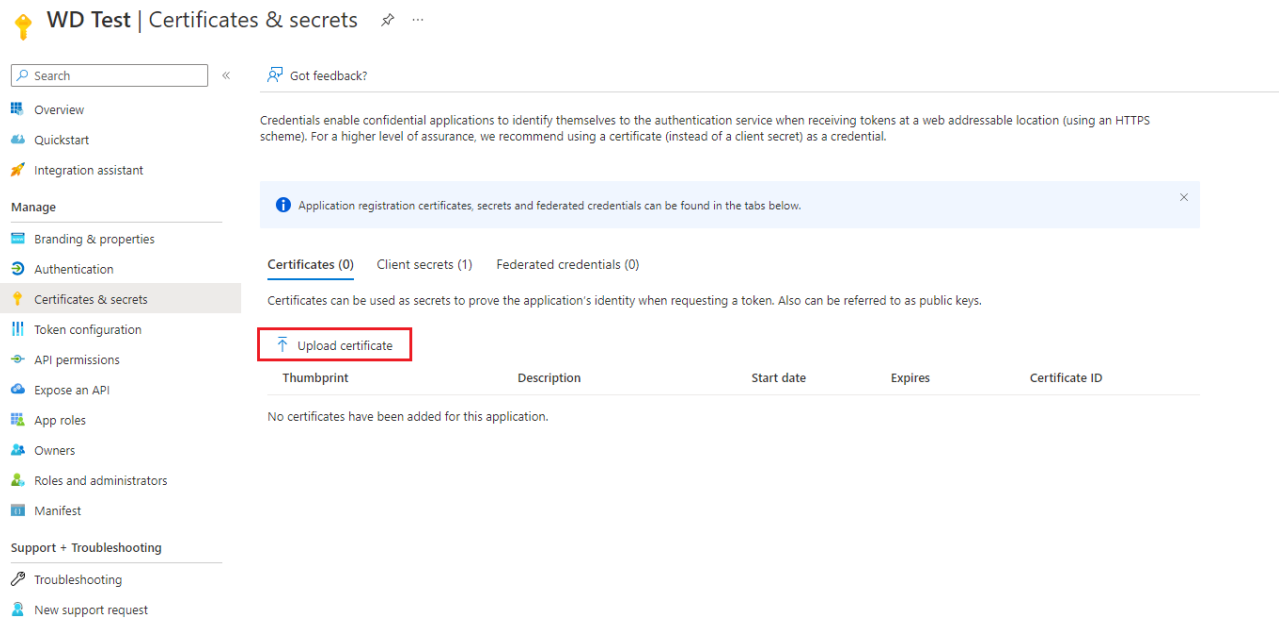


- Save the **Application (client) ID** and **Directory (tenant) ID**.

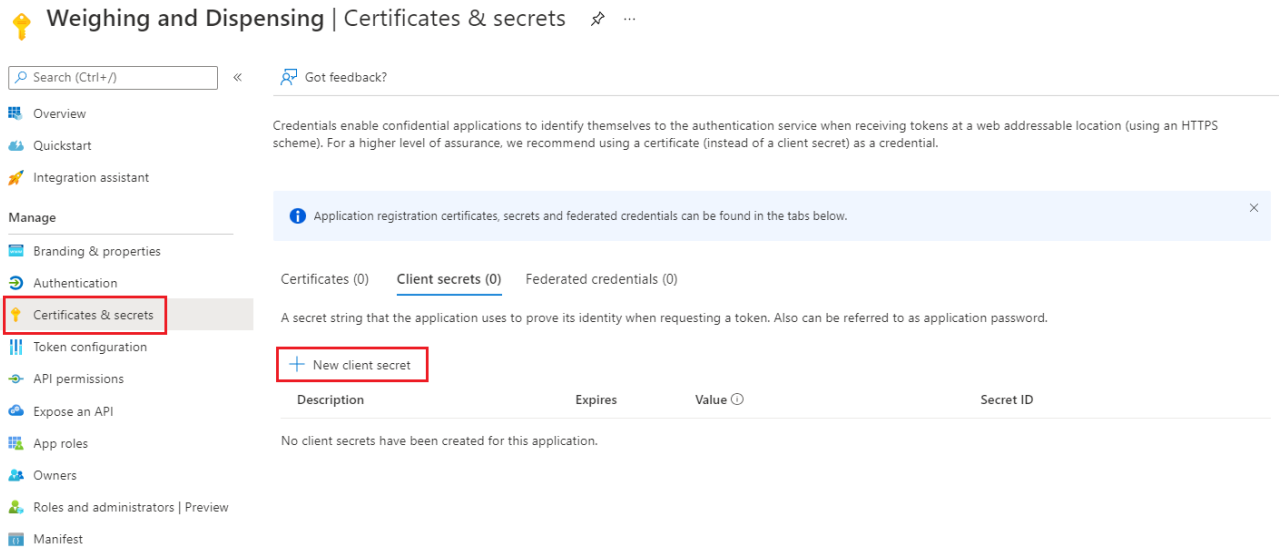


- Navigate to the **Certificates & secrets** page:
  - To use a certificate, click **Upload certificate**.
    Save the certificate **Thumbprint** as it will be required later.

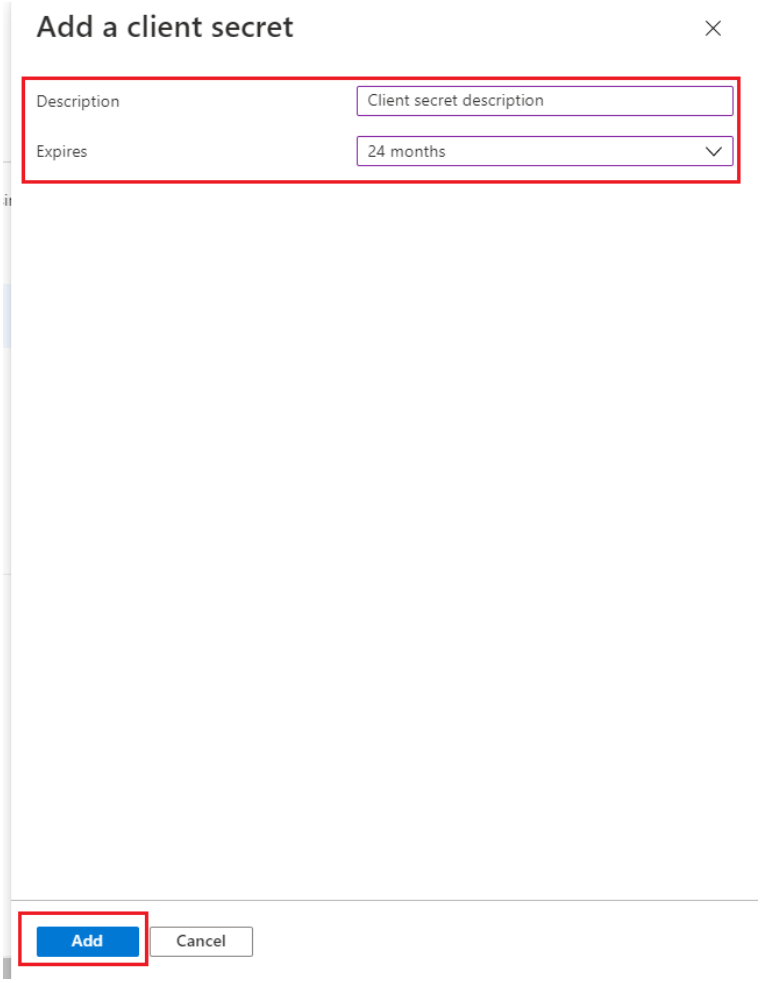
NOTE: the certificate must be available in advance, and it must be installed on each workstation.



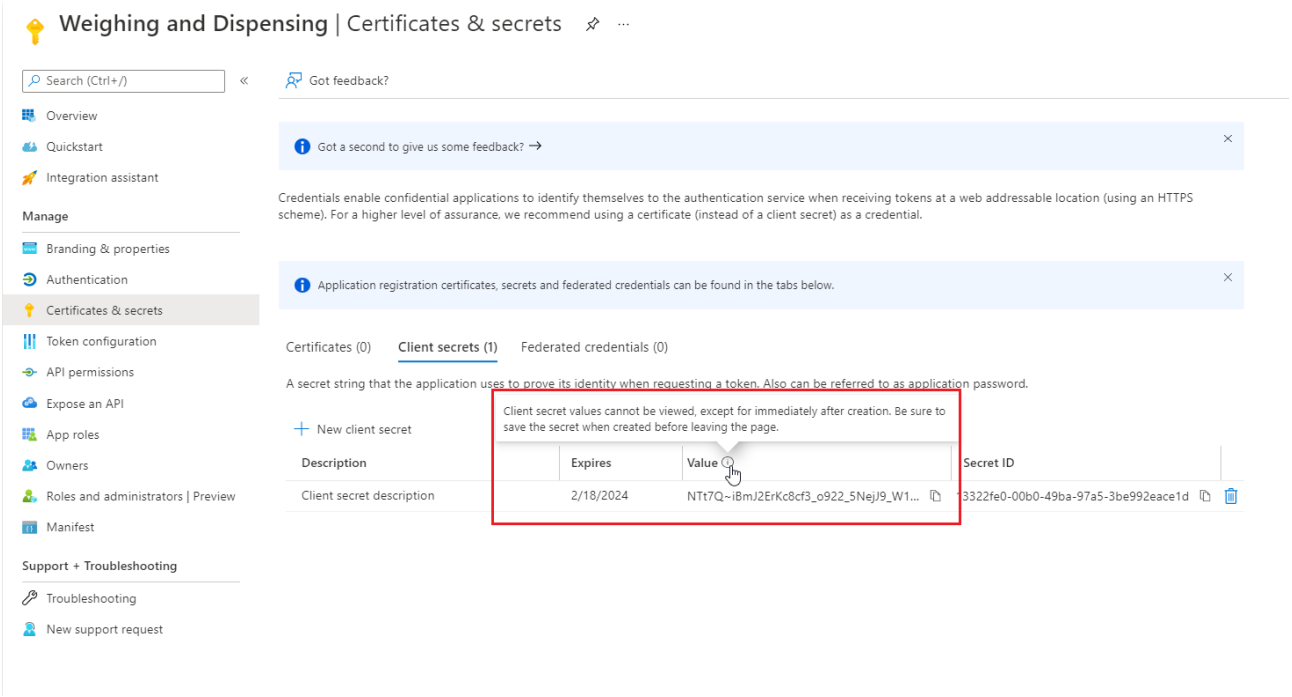
- To use a secret, click **New client secret**.



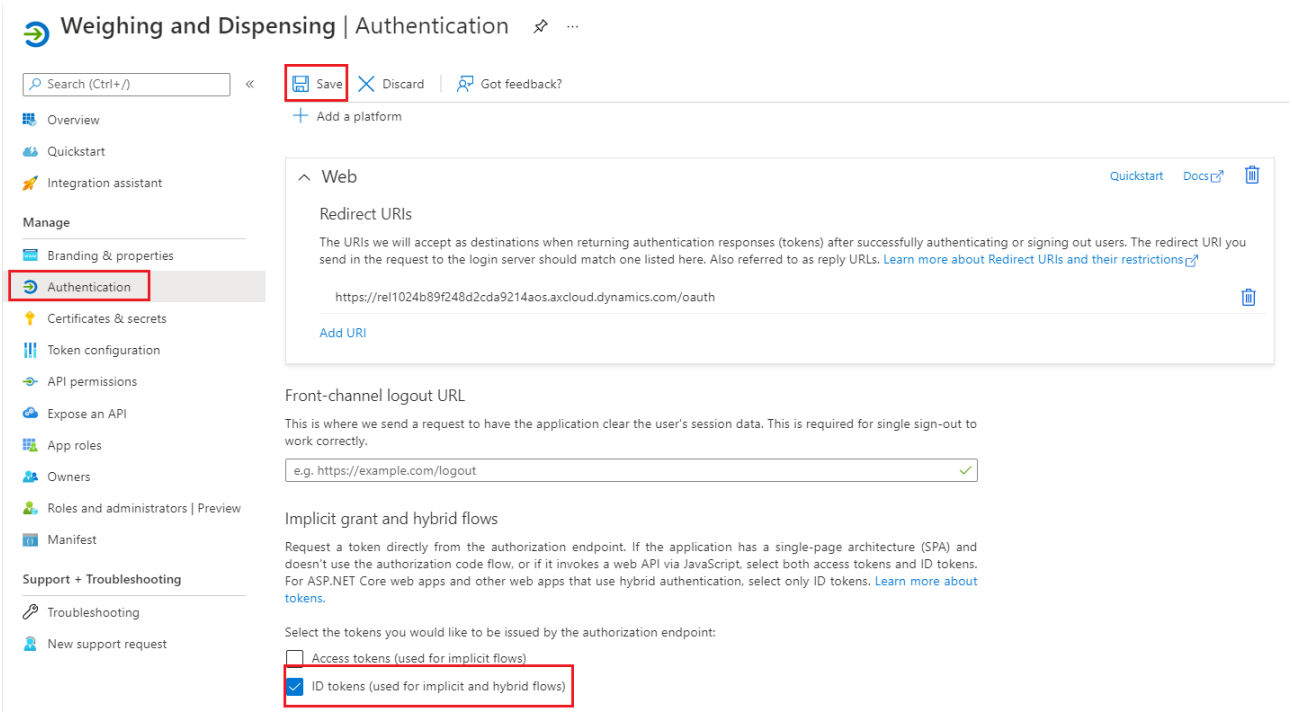
- Insert a **Description** and **Expires** and click **Add**.



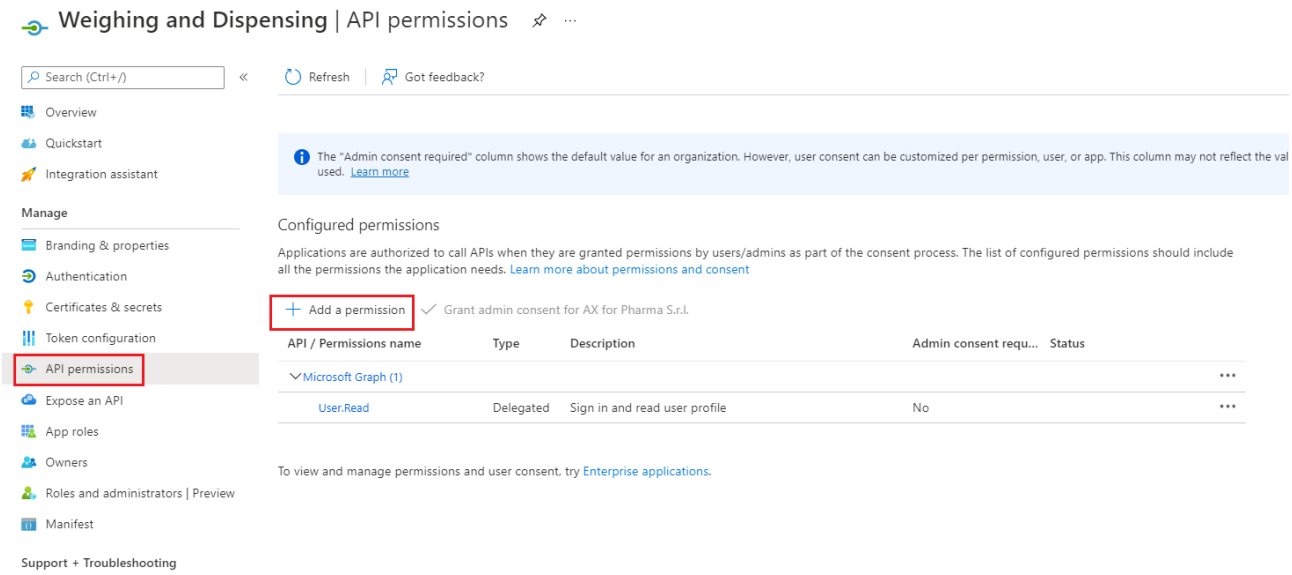
- The **Client secret** is created.
  Save the client secret **Value** as it will be required later and cannot be viewed again.



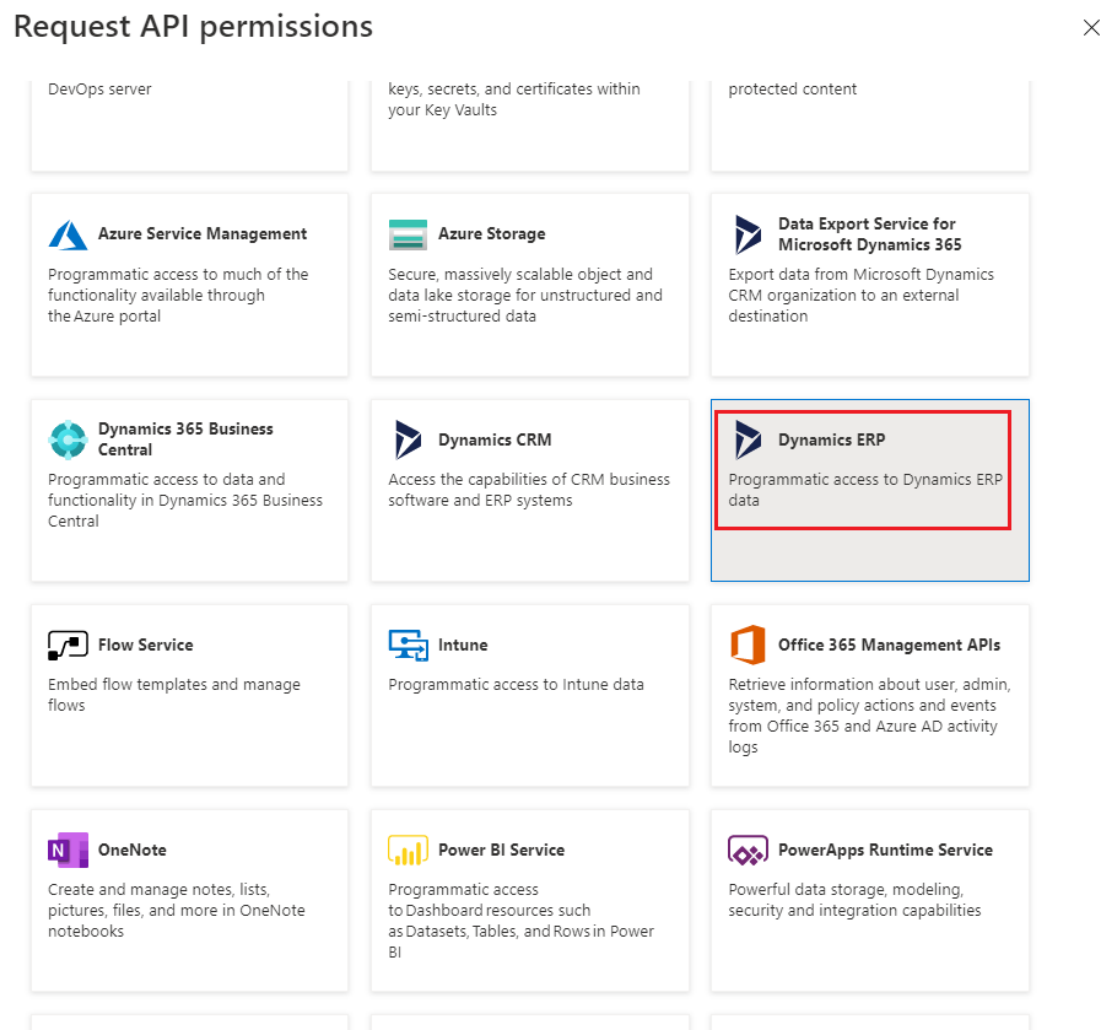
- In the **Authentication** page, enable **ID tokens** checkbox and click **Save**.



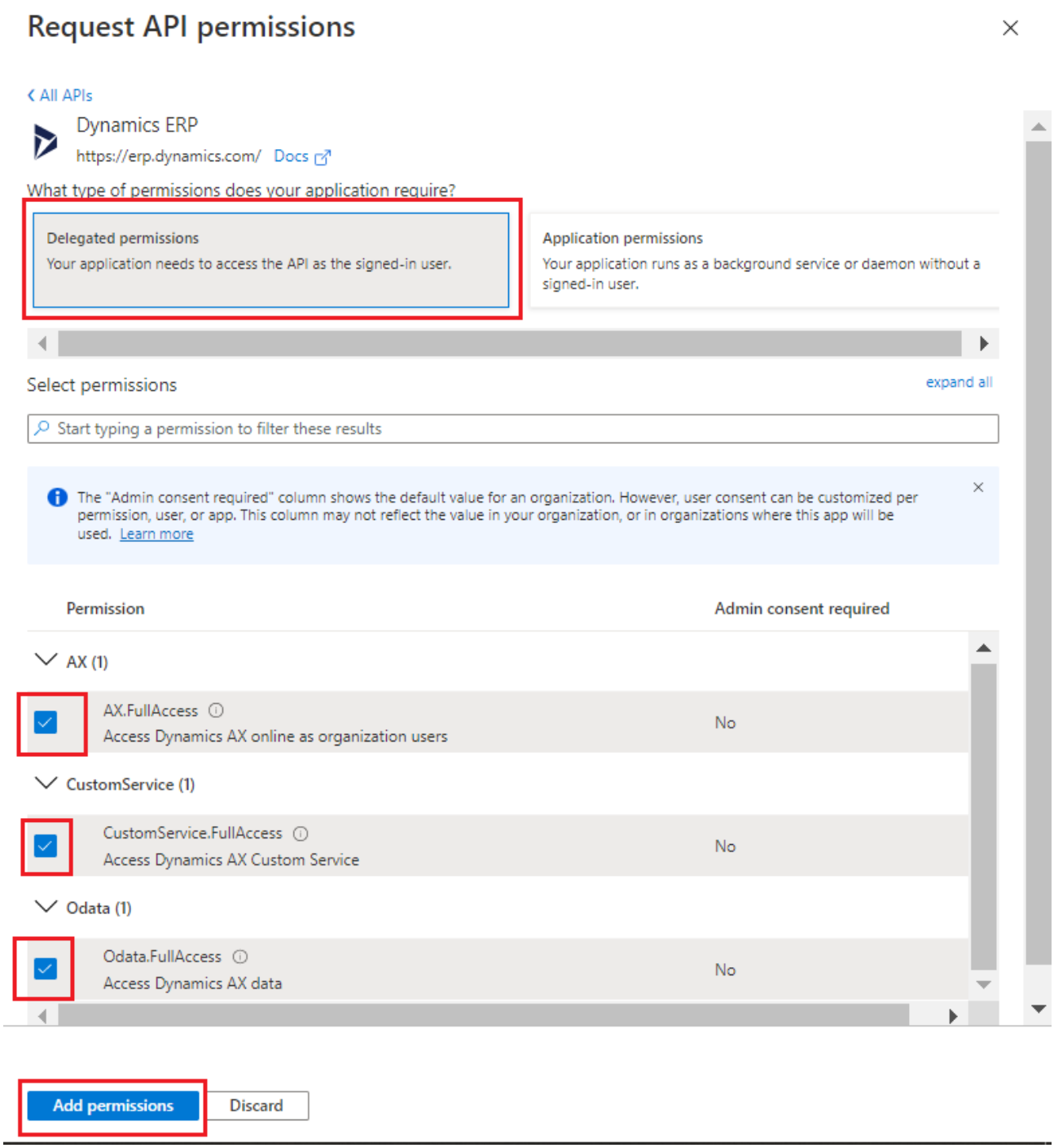
- In the **API permissions** page, click **Add a permission**.



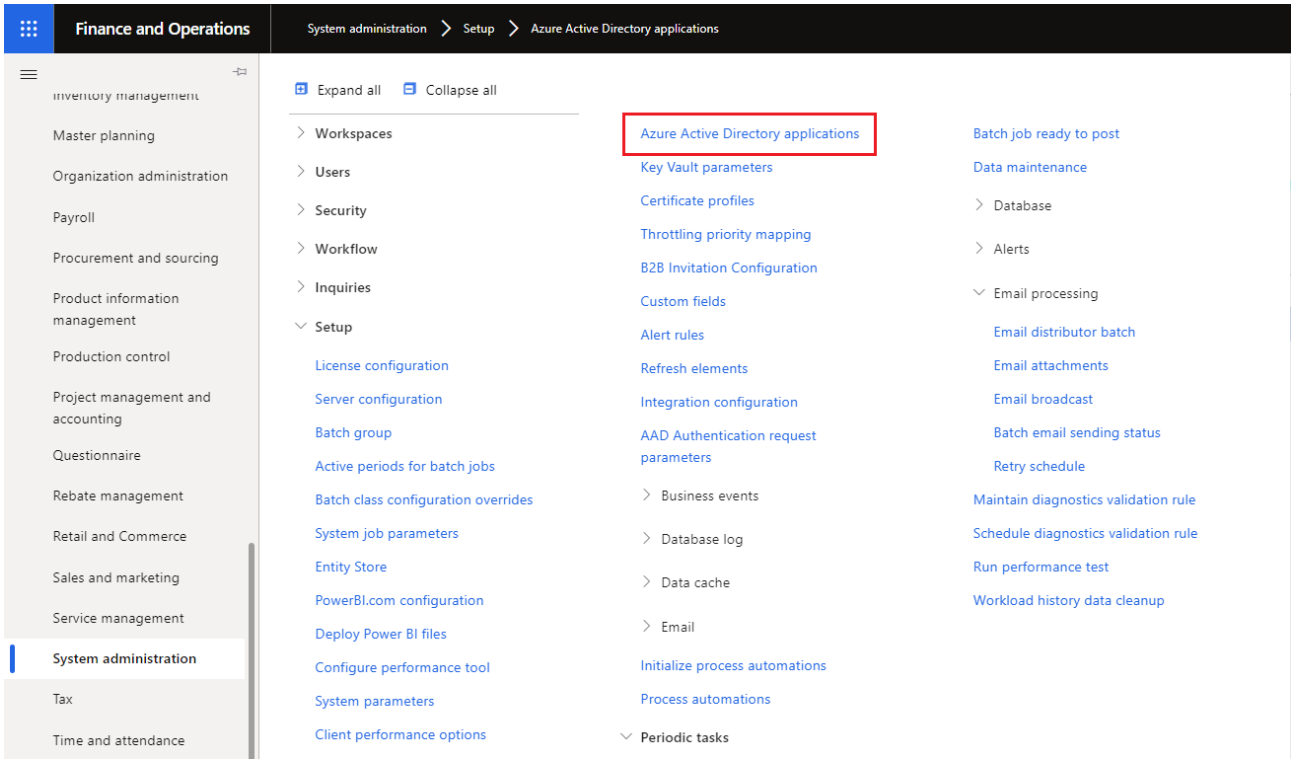
- Select **Dynamics ERP**.



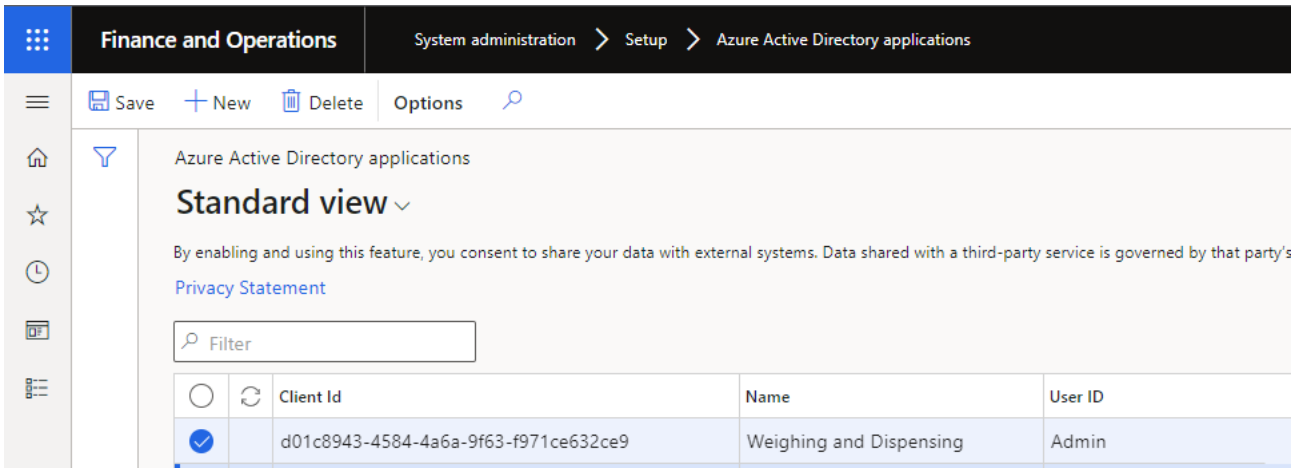
- Select **Delegated permissions**, enable all the available checkboxes, and click **Add permissions**.



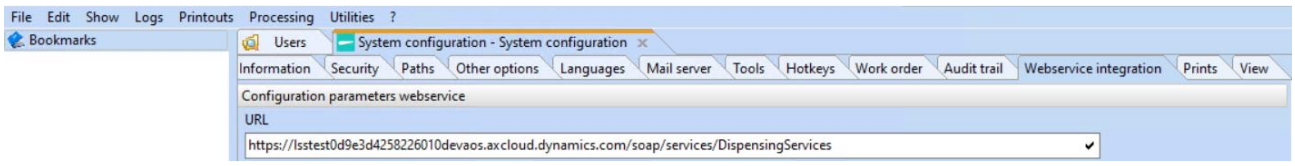
- Access D365, go to **System administration > Setup > Azure Active Directory applications**.



- Click **New** and specify the **Application (client) ID** in the **Client Id** field, the application name in the **Name** field and “Admin” in the **User ID** field.



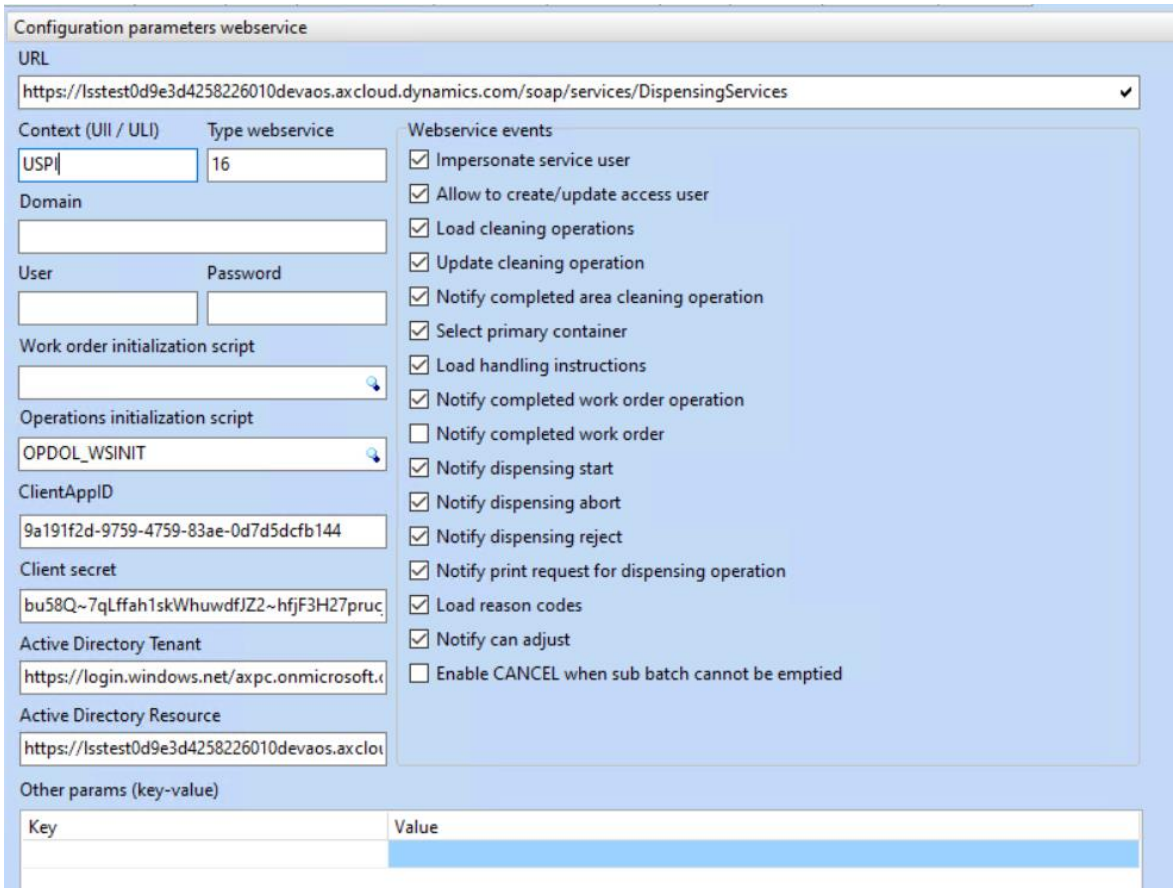
- Access the SDNWD Master component as “sdnadmin” user.
- Set the **URL** field in **File > Configuration > Webservice integration** to “[EnvironmentUrl]/soap/services/DispensingServices”.



- Specify the other field values as per the table below:

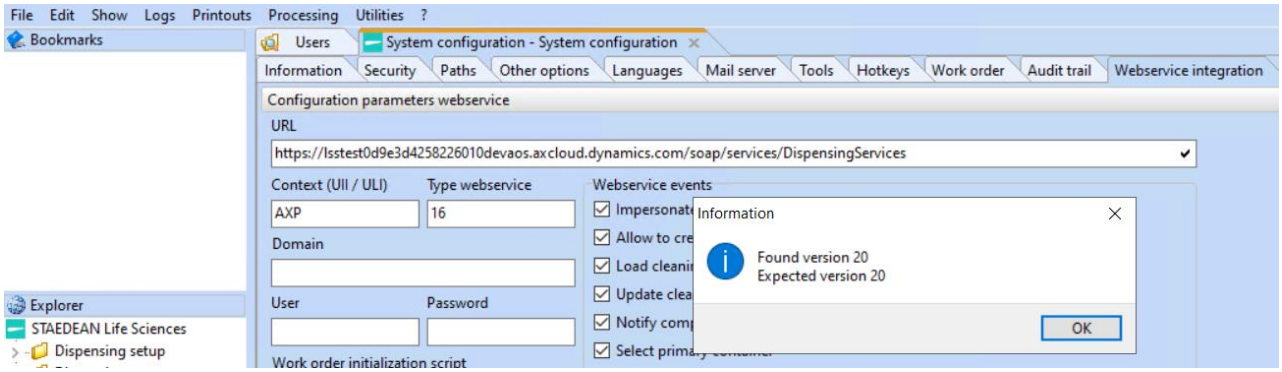
Field	Value
Context (UII/ULI)	Company used in D365
Type webservice	Set to 12 for service version 19 Set to 16 for service version 20
Domain / User / Password	[empty]
Work order initialization script	[empty]

Operations initialization script	OPDOL_WSINIT
ClientAppID	As **Application (client) ID** saved during application registration
Client secret	If a secret is used, as client secret **Value** saved during application registration
Active Directory Tenant	As https://login.windows.net/[**xxxxxxxxxx.com**] typically if the Customer's user is admin@xxxxxxxxxx.com
Active Directory Resource	As D365 environment URL
CertificateThumbprint	If a certificate is used, as certificate **Thumbprint** saved during application registration
Impersonate service user	Disabled by default
Allow to create /update access user	Enabled by default
Load cleaning operations	Enabled by default
Update cleaning operation	Enabled by default
Notify completed area cleaning operation	Enabled by default
Select primary container:	Enabled by default
Load handling instructions	Enabled by default
Notify completed work order operation	Enabled by default
Notify completed work order	Disabled by default
Notify dispensing start	Enabled by default
Notify dispensing abort	Enabled by default
Notify dispensing reject	Enabled by default
Notify print request for dispensing operation	Enabled by default
Load reason codes	Enabled by default
Notify can adjust	Enabled by default
Enable CANCEL when sub batch cannot be emptied	Enabled by default



NOTE: Web service operations can be disabled based on the business needs as part of the system configuration.

- Click the tick to verify the service compatibility.



- Click the **OK** button to save and close the application.

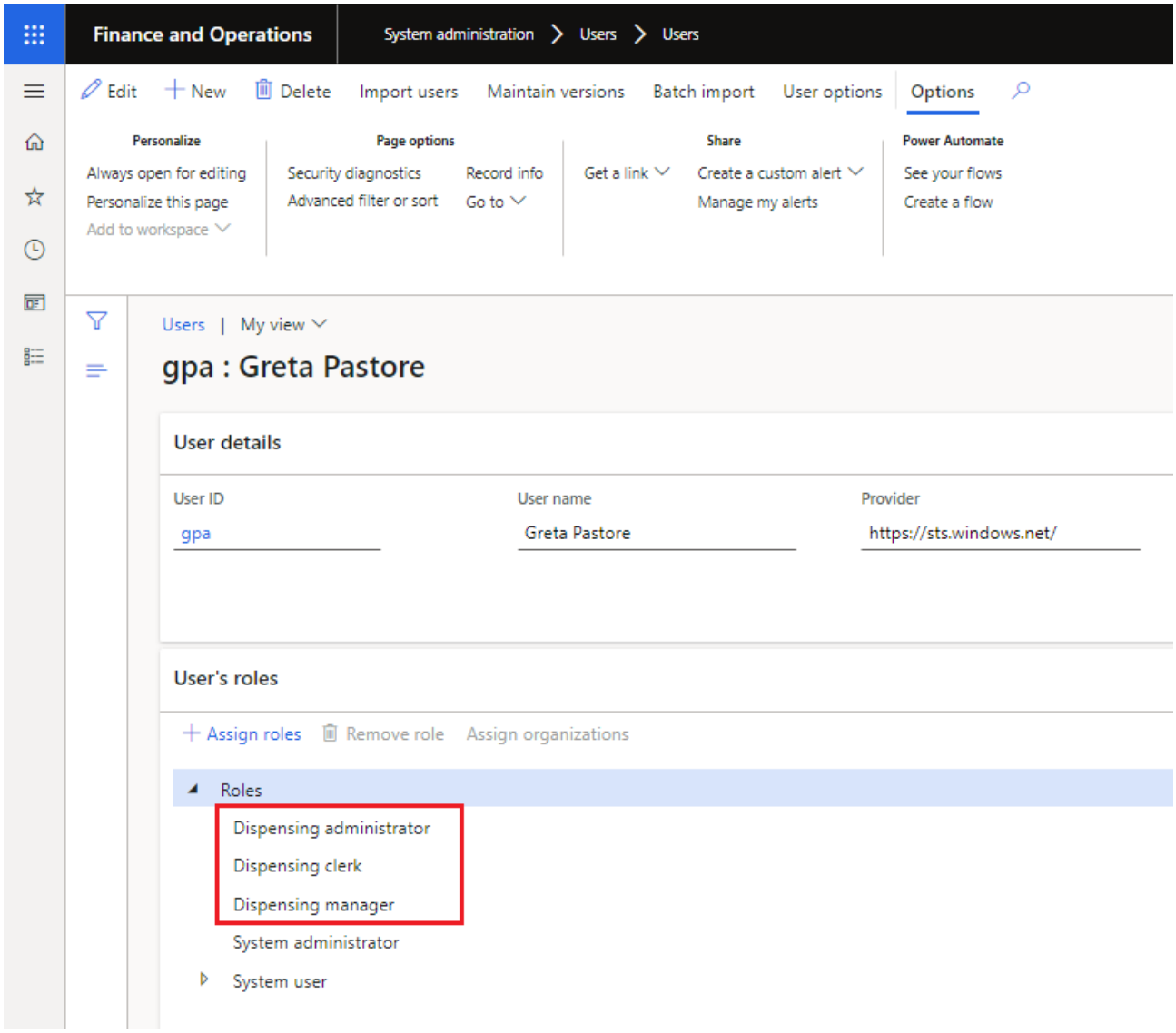
7. SYSTEM CONFIGURATION

7.1 User configuration

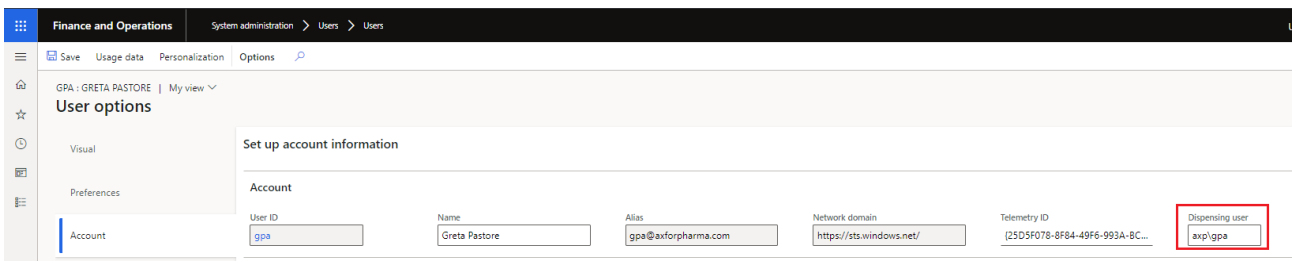
7.1.1 Active Directory users

The following paragraph describes how to create W&D users with Active Directory authentication.

- In D365, go to **System administration > Users > Users**.
- Add or select a user that requires access to the W&D module.
- Click the **Assign roles** button to assign dispensing roles to the user by selecting among the following LSS roles:
  - Dispensing clerk – Operator access level
  - Dispensing manager – Management access level
  - Dispensing administrator – Administration access level (full access)



- Go to **User options > Account** and set the **Dispensing user** field to "[Active Directory Domain]\[User ID]".



7.1.2 Local users

To create a local weighing and dispensing user, the steps below must be executed:

- Start the SDNWD Master component.
- In the Navigation Tree select the **Dispensing users** leaf. Select **Users** and right-click on the list of users.
- Select **Add User**.
- The **User** form is displayed. Fill in the following information:
  - **User ID**
  - **First name**
  - **Last name**
- In the **Association** tab **> Groups** sub-tab, right-click and select **New Association** to associate user groups to the new user. Drag and drop the user groups from the right panel to the left one to associate them with the user.
- In the **Details** tab, select the user authentication method:
  - If the **Authentication method** field is set to "User ID and Password", the user is required to set a username and password. The user is authenticated with the set of credentials locally set up. At first log in the password will automatically be set as the username, then the user is asked to change the password.
  - If the **Authentication method** field is set to "Domain", the user is authenticated with the Active Directory account. In this case, User ID must match the AD User ID. In the **Domain** field specify the domain name to be used to validate the user. The list of available domains is displayed by clicking the **Search** button.
- Click the **OK** button to save and restart the application.

7.2 Reports configuration

- Access the SDNWD Master component as an authorized user.
- Select the **Dispensing setup** leaf **> Printout catalog**. Select the first report in the list, right-click, and select the **Report verification** option.
- When the procedure is executed, click the **Close** button.
- Repeat the report verification procedure for each report in the list.

7.3 Equipment configuration

The following steps describe how to configure equipment (i.e., barcode readers and scales) in the SDNWD Master component and connect it to a workstation.

7.3.1 Barcode Reader

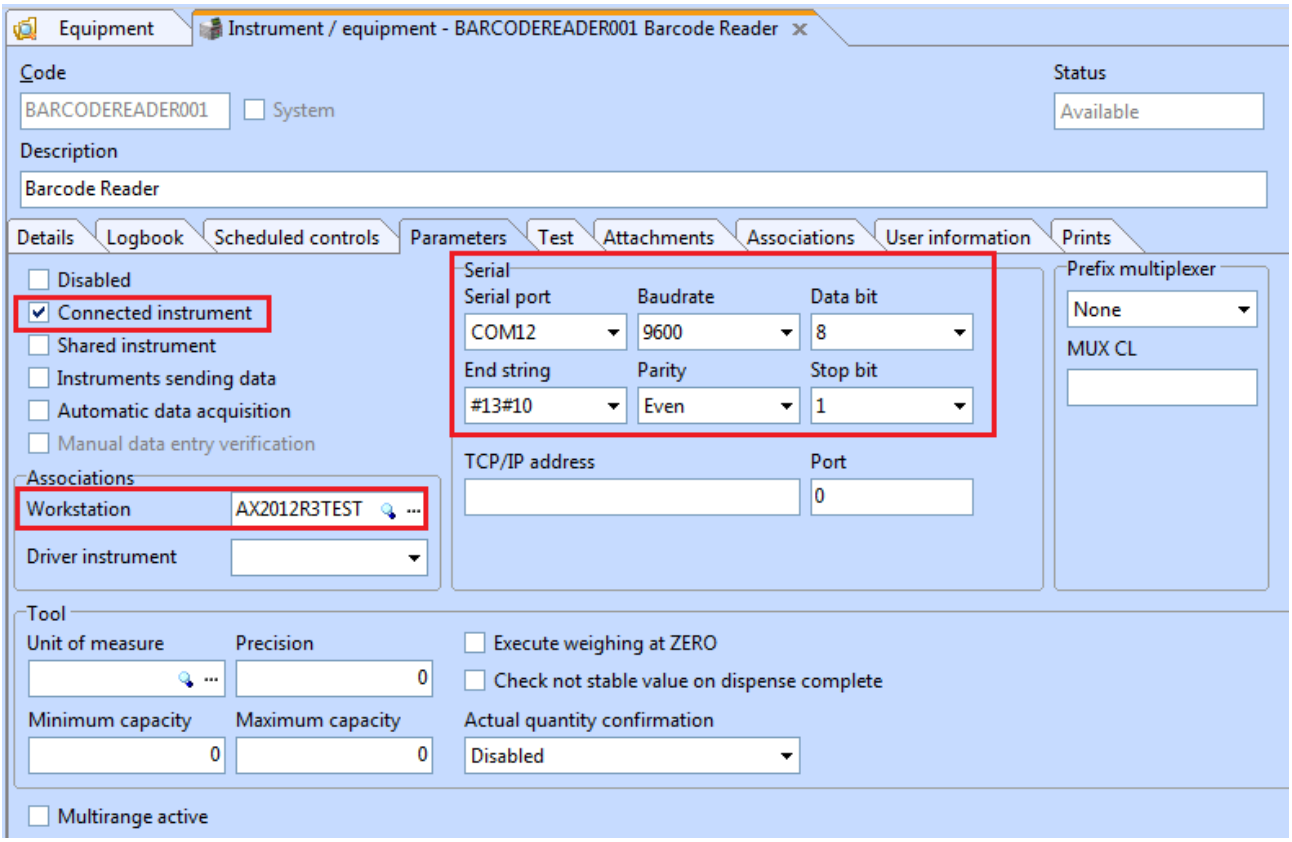
The following steps must be performed before accessing the SDNWD Master component:

- Detect the type of Barcode Reader:
  - RS-232 (Serial Barcode)
  - USB Com to simulate RS-232 standard interface
- If the Barcode Reader is "USB", go to the supplier website and download the RS-232 emulator.
- Install the serial emulator.
- Detect the configuration parameters for the barcode reader. The default values are:
  - **Baudrate**: "9600"
  - **Data bit**: "8"
  - **Stop bit**: "1"
  - **Parity**: "None"
- Connect the Barcode Reader to the computer.

Start the SDNWD Master component and follow the steps below:

- In the Navigation Tree, select the **Dispensing setup** leaf. Select **Equipment** and right-click on the list of tools.
- Select **Add Instrument/equipment**.
- Go to the **Details** tab and select a booth in the **Location** field.
- Go to the **Parameters** tab and tick the **Connected instrument** checkbox.

- Select a workstation in the **Workstation** field, only in case of stationary workstation.
- Set the information in the **Serial** group of fields according to the settings previously identified. The **Serial port** value must be detected depending on the port the barcode reader is connected to.



- Click the **OK** button to save the configuration.
- Save and restart the application.

7.3.2 Scales

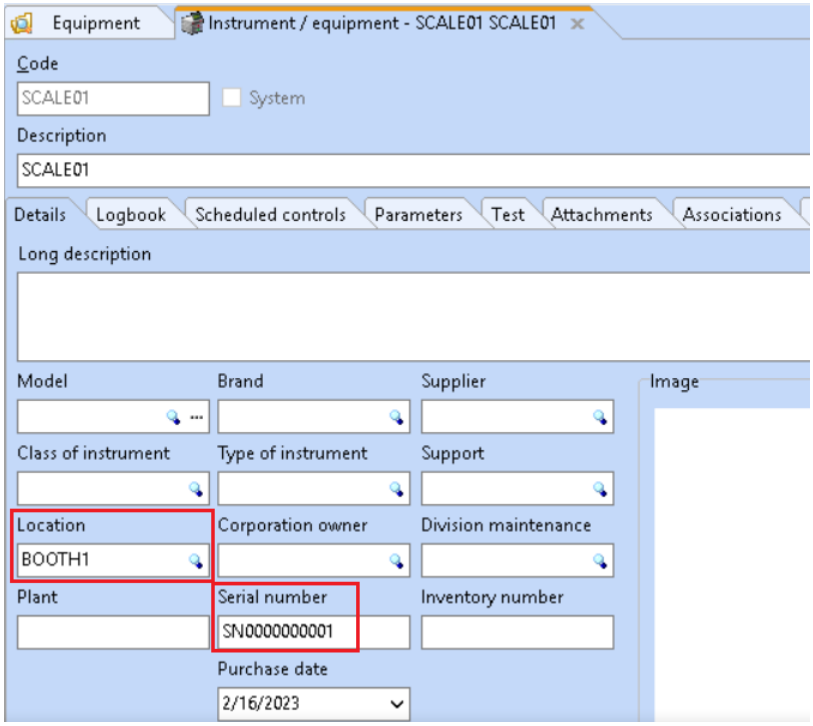
The following steps must be performed before accessing the SDNWD Master component:

- Detect if the scale is connected directly to the computer or through a multiplexer (e.g., Mettler terminal IND690 or similar). If the scale is connected through a multiplexer, get maker, model, and port number the scale is connected to.
- Detect the configuration parameters of the scale:
  - **Serial port**
  - **Baudrate**
  - **Data bit**
  - **End string**
  - **Stop bit**
  - **Parity**
  - **TCP/IP address**
  - **Port**
  - **Unit of measure**
  - **Maximum capacity**
  - **Minimum capacity**
  - **Precision**
- Connect the scale to the computer or terminal.

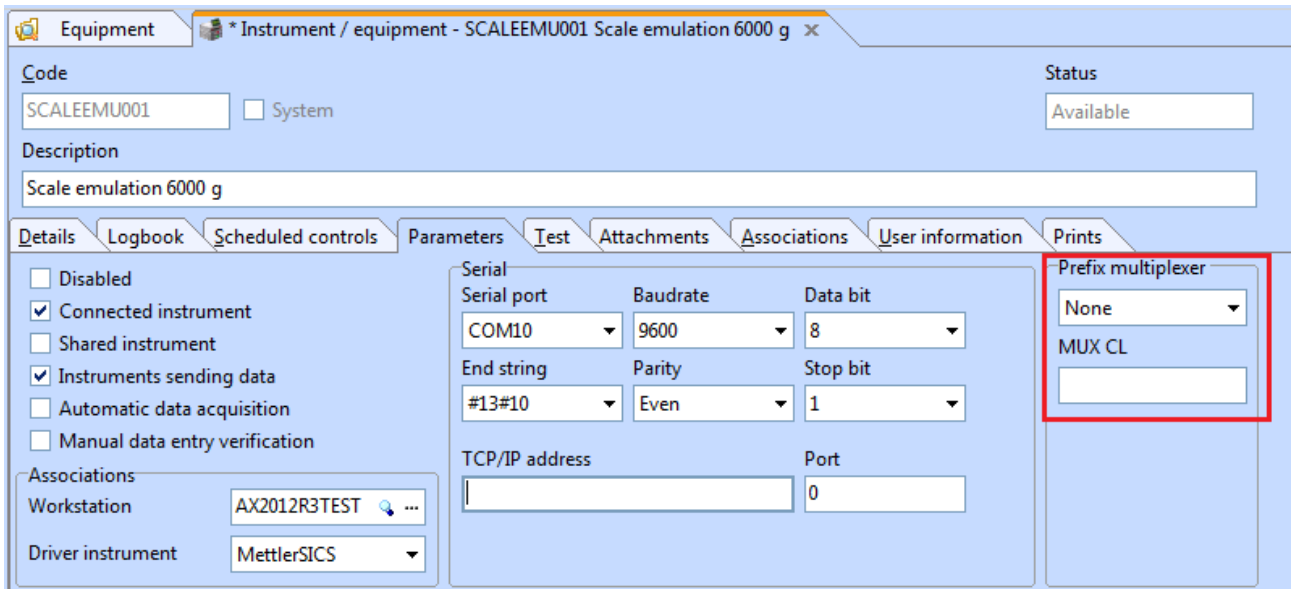
Start the SDNWD Master component and follow the steps below:

- In the **File** menu, select **Configuration**.
- Select the **Paths** tab, set the path in the **Instrument drivers** field (if already set, make sure that the path is correct), and click **OK**.
- Restart the application.

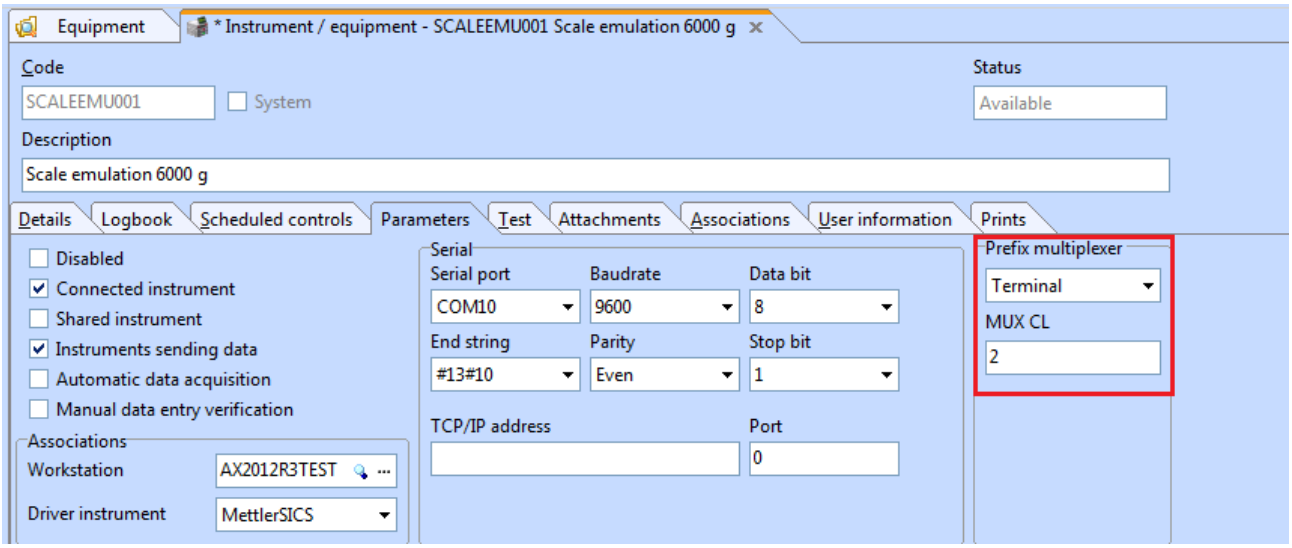
- In the Navigation Tree, select the **Dispensing setup** leaf. Select **Equipment** and right-click on the list of instruments.
- Select **Add Instrument/equipment**.
- Enter the **Serial number** of the scale. If the scale is connected through a multiplexer, enter the multiplexer serial number.
- Enter the booth where the scale is in the **Location** field.



- Go to the **Parameters** tab and tick the **Connected instrument** and the **Instrument sending data** checkboxes.
- Select a workstation in the **Workstation** field, in case of stationary workstation, and choose a driver in the **Driver instrument** field. The driver must be set to “Mettler SICS” in case of Mettler Toledo scales.
- Set the **Prefix multiplexer** to:
  - “None” if the scale is directly connected to the computer. The **MUX CL** field must be blank.

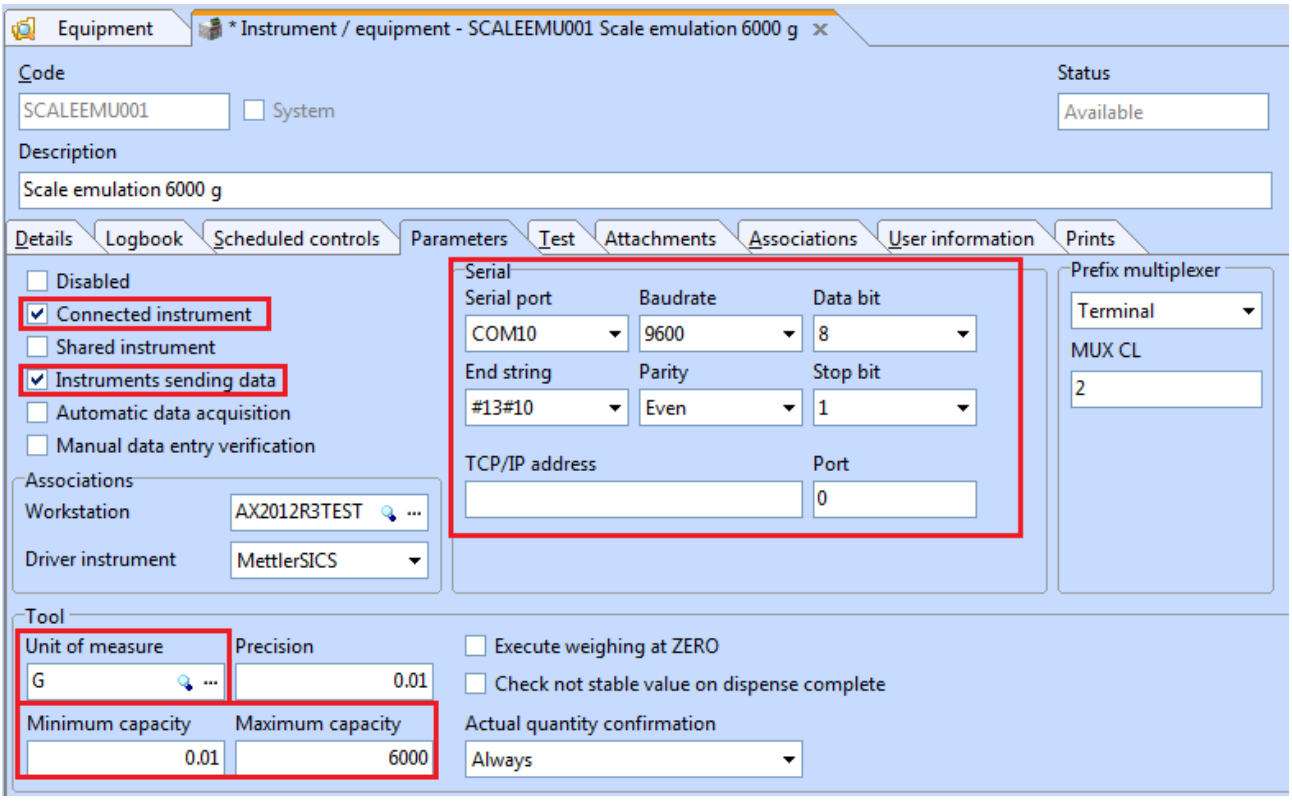


  - “Terminal” if the scale is connected via a multiplexer or terminal (Mettler Toledo IND690 or similar). The **MUX CL** field must be populated with the terminal port connected to the scale.

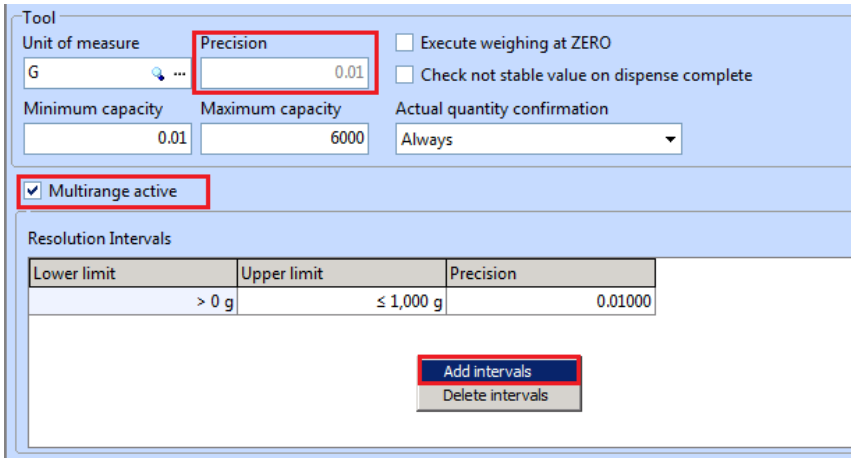


- Edit the following fields according to the parameters previously identified:
  - **Serial port**
  - **Baudrate**
  - **Data bit**
  - **End string**
  - **Stop bit**
  - **Parity**
  - **TCP/IP address**
  - **Port**
  - **Unit of measure**
  - **Minimum capacity**
  - **Maximum capacity**

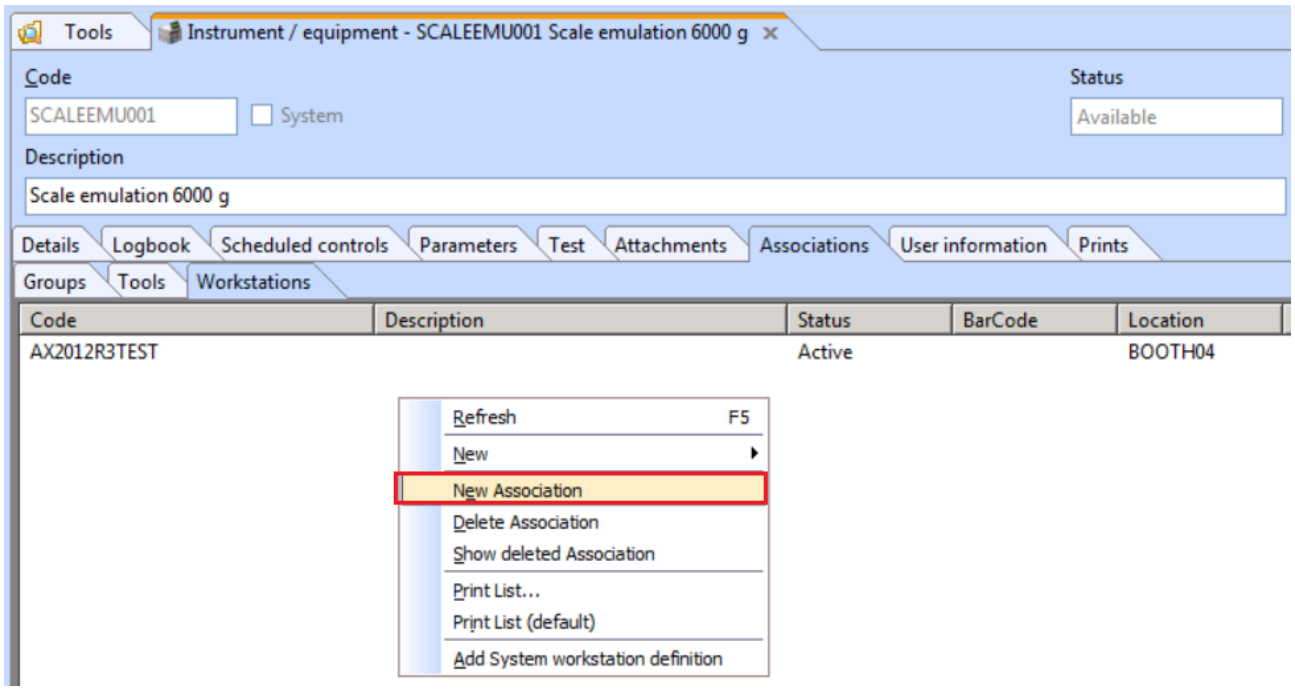
NOTE: If multiple scales are connected to the PC using a multiplexer or terminal, the same connection parameters must be set for all scales.

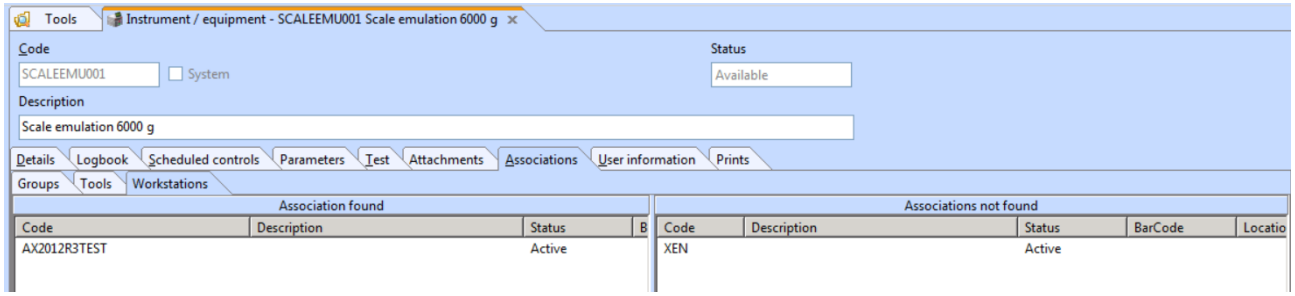


- If a scale keeps the same precision in the weighing range defined by the minimum and maximum capacity, enter the precision value in the **Precision** field. If the scale has different precision values (also called multirange), tick the **Multirange active** checkbox, then right-click and select the **Add intervals** option to set the precision for each range of capacity.

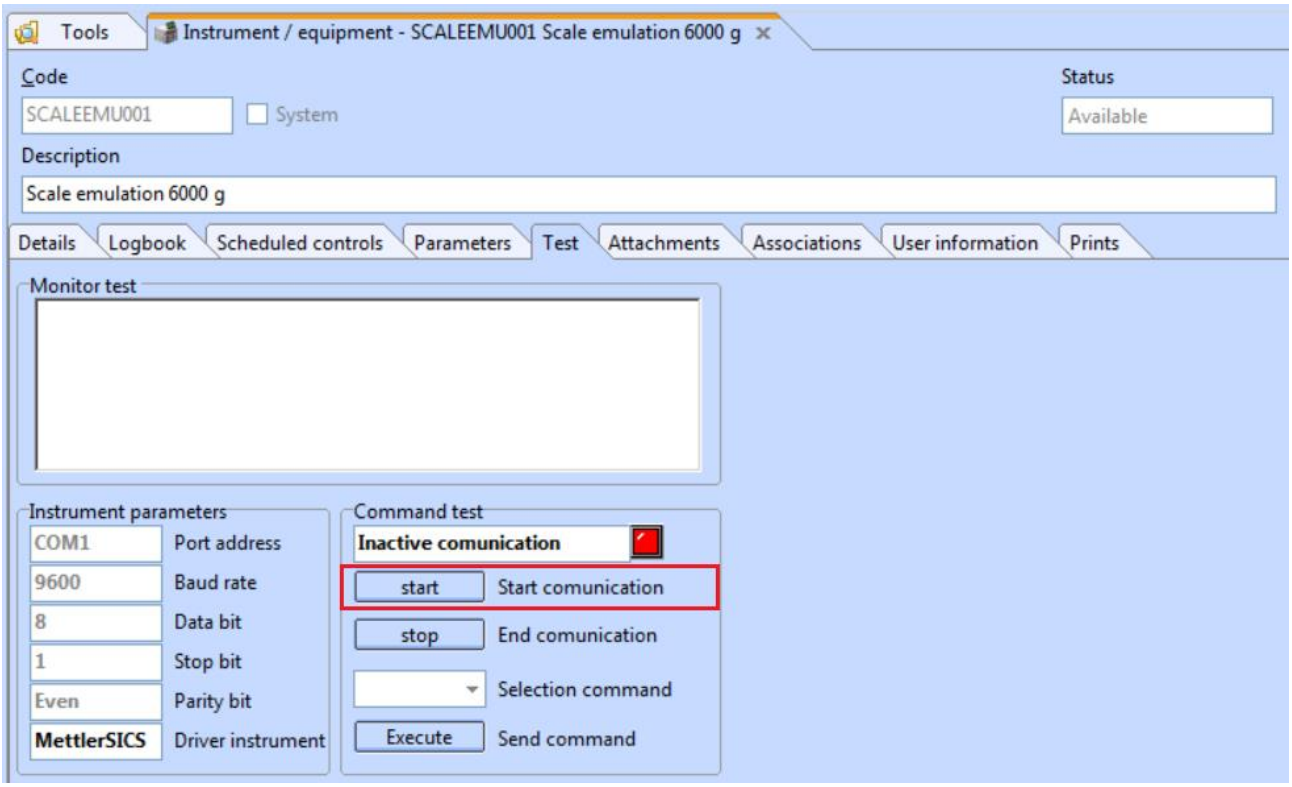


- Go to the **Association** tab **> Workstation** sub-tab and associate the workstation specified in the **Parameters** tab to the scale. Drag and drop the workstation from the right panel to the left one to associate it to the scale.

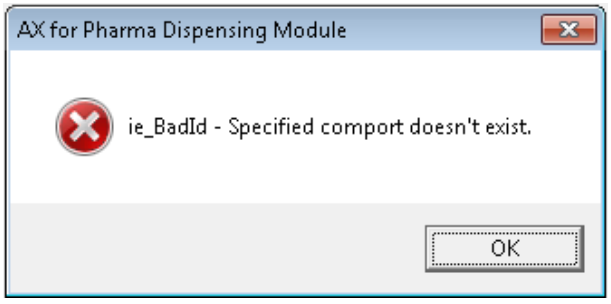




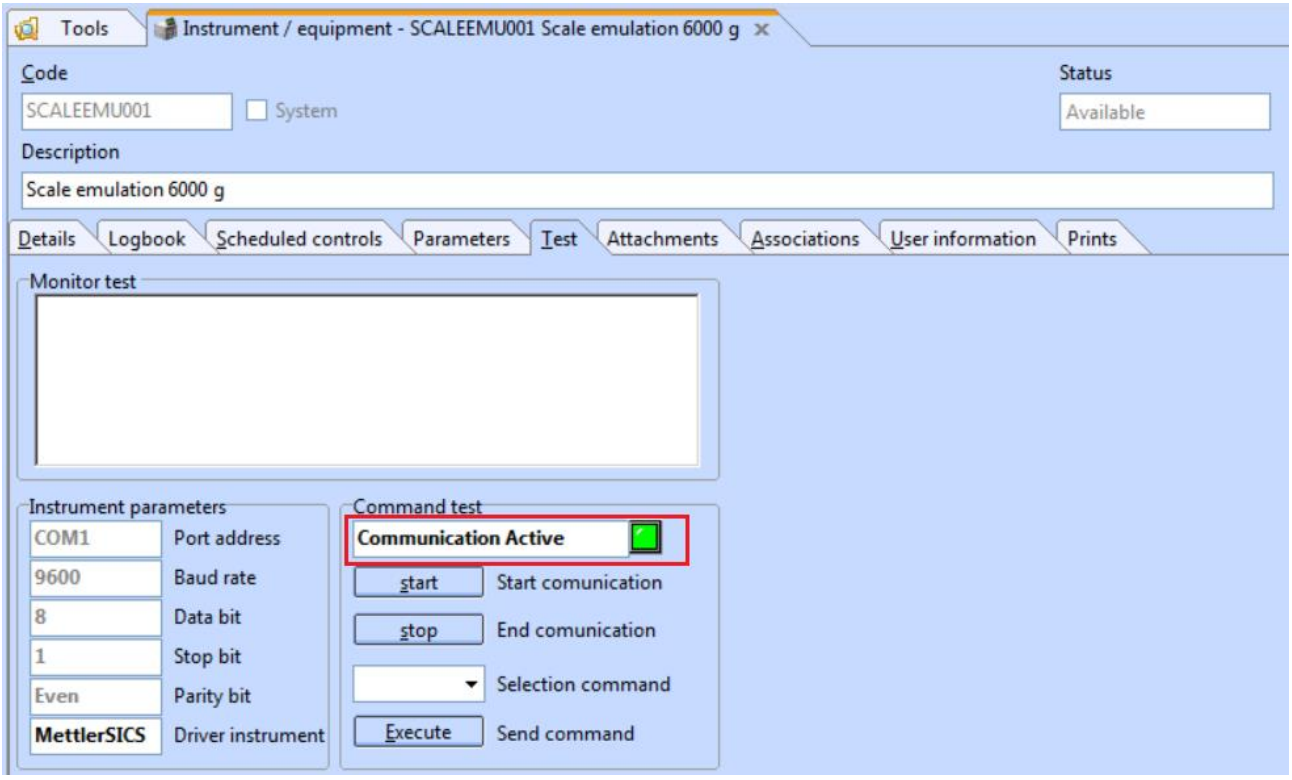
- Go to the **Test** tab and click the **Start** button to activate the communication.



- If the selected serial port does not exist, the system returns the error message: *"Specified comport doesn't exist"*.



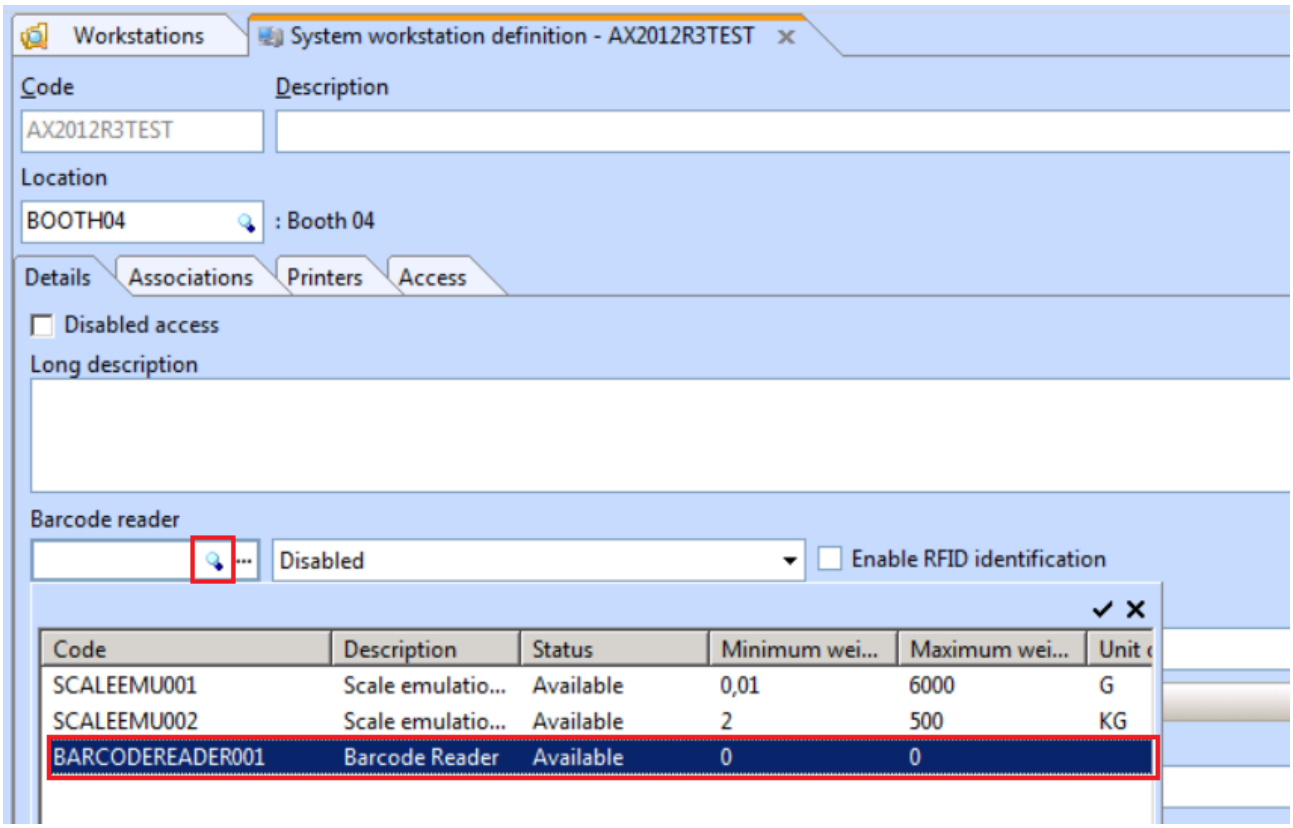
- If the selected serial port exists, the system opens the communication with the scale, and the red button becomes green.



- Select a command and click the **Execute** button. The **Monitor test** displays the result of the command.
- Click the **Stop** button to stop the communication.
- Save and restart the application.

7.4 Workstation configuration

If a Barcode reader has been associated with the workstation, go to the **Details** tab, and select the Barcode Reader in the **Barcode reader** field. Click **OK** to save.



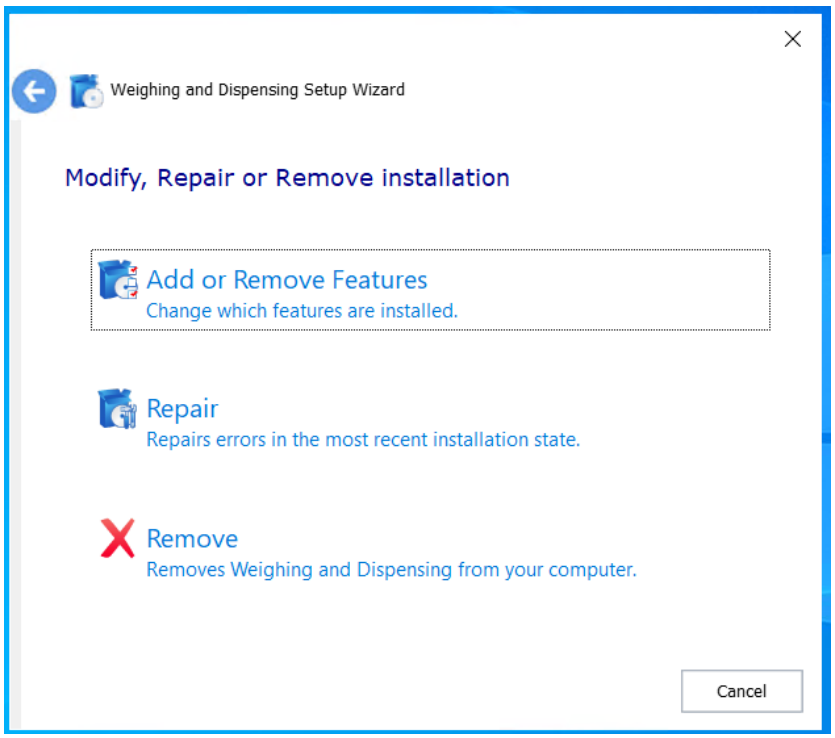
Select the booth where the workstation is in the **Location** field.

In case of mobile workstations, if the **Location** field is populated, it is used as default booth automatically selected at login. Go to the **Association** tab **> Area** sub-tab and associate the areas where the workstation can operate. Drag and drop the areas from the right panel to the left one to associate them to the workstations.

8. REMOVE AND CHANGE INSTALLATION

To remove or change the installation of the SDNWD components, users can follow one of the following standard MS-Windows procedures.

- Run the setup program.
- Choose Uninstall or change from MS-Windows Programs and Features list in the Control Panel. In this case, the user is requested to choose how the system should proceed.



Note: Some limitations must be considered during the removal process:

- **File Server** - New files added or changed in the shared folder path after the initial setup are not removed.
- **Database Server** - The database created by the setup program is not removed.
- **Client** - New files added or changed in the installation folder path after the initial setup are not removed.

9. Installation of a new STAEDEAN Life Sciences Weighing and Dispensing Client

This paragraph describes the steps required to install an additional W&D Client.

Pre-requisites:

- The user performing the installation must be a computer administrator (please refer to Paragraph 6.1).
- Information about the computer and its devices must be collected (please refer to Chapter 5).
- Requirements on W&D Client must be met (please refer to Paragraph 3.3.2).
- Devices must be connected to the computer and configured.

To install a new W&D Client, execute the following steps:

- Run the Client setup (please refer to Paragraph 6.3.3).
- Execute the first login and enter the Client license (please refer to Paragraph 6.4).
- Configure the new Client:
  - Add connected devices (please refer to Paragraph 7.3).
  - Link the devices to workstations (please refer to Paragraph 7.4).
  - Run the W&D Client.

10. CLIENT RUNNING VIA REMOTE DESKTOP

The W&D Client can run in a terminal server environment even if it is installed on the server. When running, the Client will use the client computer name (http://environmentvariables.org/SessionName). This determines the workstation identification (license and configuration load).

To provide the server computer name as the workstation ID, it is necessary to set the windows environment SESSIONNAME variable before running the Client software to run the W&D Client on another computer via remote desktop connection.

The following files must be created to run the W&D Client and Master:

SDNWD.BAT

SET SESSIONNAME=CONSOLE

SDNWD.EXE

SDNWD_MASTER.BAT

SET SESSIONNAME=CONSOLE

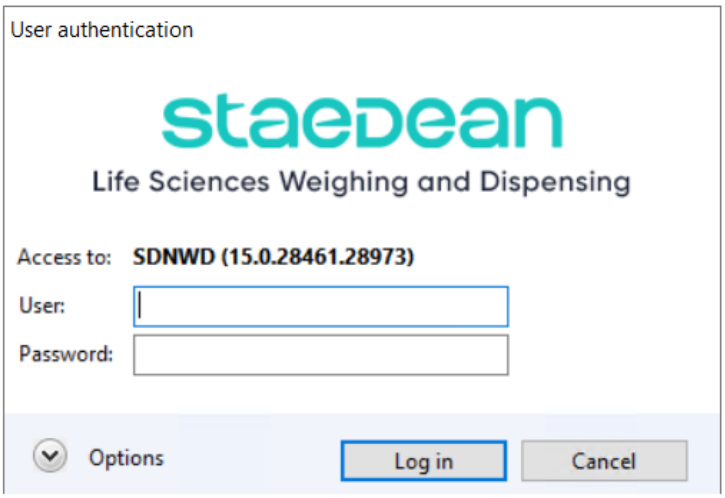
SDNWD_MASTER.EXE

Both files must be moved to the BIN folder of the Client Installation path (together with the .EXE files). It is possible to create a shortcut to run them from the desktop or the start menu.

Note: It is recommended to avoid running Client and Master via a remote desktop connection from a different client PC.

11. STAEDEAN Life Sciences Weighing and Dispensing Upgrade

Before upgrading to a new version, it is possible to check the current version in the **User Login** form as shown below.



11.1 Pre-requisites

- During the upgrade, the system must not be used:
  - Users cannot log in.
  - Dispensing operations cannot be executed.
- The **system under maintenance** checkbox in the **Configuration** form must be checked.
- Make a complete backup of the system (computer server/s and database/s content).

If the upgrade procedure is executed via Remote Desktop or from a computer that can be accessed via Remote Desktop, the following additional instructions must be followed:

- Reboot the client.
- Using Windows Task Manager, verify that no other sessions are active on the same computer.

The upgrade operations can only be performed by users with administrative rights on the client and server computers.

A user with system administrator role must perform database management operations.

SQL Server parameter “Authentication mode” must be set to “SQL Server and Windows Authentication mode” (mixed mode).

11.2 Upgrading procedure

The following paragraphs describe the steps required to upgrade the SDNWD module to a new version.

Note: Additional details may be provided separately to include all the steps to be executed depending on the existing installed version and the new version.

11.2.1 Backup

Take evidence of the configuration set up for the equipment, including:

- Instrument details.
- Parameters.
- Scheduled controls and tests.

Connect to the SDNWD database server via the SQL Server Management Console.

Prepare a Backup of the database SDNWD and store it with name:
<backup date><database name><application version>.bak

11.2.2 Upgrade – All components

- Uninstall “STAEDEAN Life Sciences Weighing and Dispensing” from:
  - File server
  - Database server
  - All Dispensing clients

  Note: After uninstalling, check if the “SDNWD\Bin” folder exists on the client PC. If so, manually delete it. If there is another process using the files in this folder, users will not be allowed to delete it since another session is running. Close all pending sessions and try again.
- Execute SQL commands as described by the upgrade procedure.
- Install the new version to:
  - File server
  - Database server
  - All Dispensing clients
- Complete the installation configuration.

(Please refer to Paragraph 6.2 for details about the installation of all the W&D components).

11.2.3 Upgrade – Single components

11.2.3.1 Database Server

Remove the previous version of the Database Server by going into the Control Panel, selecting STAEDEAN Life Sciences Weighing and Dispensing, and removing all components.

Install the new version by setting the database name to “<SDNWD database name>” and following the procedure described in Paragraph 6.3.2 for Database Server installation.

11.2.3.2 File Server

Remove the previous version of the File Server by going into the Control Panel, selecting STAEDEAN Life Sciences Weighing and Dispensing, and removing all components.

Install the new version by setting the database name to “<SDNWD database name>” and following the procedure described in Paragraph 6.3.1 for File Server installation.

11.2.3.3 Client

Remove the previous version of the client by going into the **Control Panel**, selecting the SDNWD Module, and removing all components.

Run the setup on each client PC by following the procedure described in Paragraph 6.3.3 for Client application installation.

The operations related to automated client setup and initial run of client can be skipped.

11.2.4 Initial run after update

Execute the steps as described in Paragraph 6.4.

11.2.5 Migrate instrument configuration to the new database

Add the tools configuration to the new database, then copy the parameters of the tool from the notes taken from the previous configuration (please refer to Paragraph 7.3 for details about equipment configuration).

11.2.6 Label files

Label files can be provided as separate files to update labels and text displayed in the User Interface.

The following files are installed in the “LANG” directory, available in the File Server installation folder (please refer to Paragraph 6.3.1):

SDNWD.ENU.lng (US English)

SDNWD_MASTER.ENU.lng (US English)

The following compiled label files are installed in the “BIN” directory, available in the Client installation folder (please refer to Paragraph 6.3.3):

SDNWD.ENU (US English)

SDNWD_MASTER.ENU (US English)

11.2.6.1 Label files installation

To install the label file, the following steps must be executed:

- Replace the language file in the “LANG” directory in the shared folder with the updated label file.
- Delete the compiled language file in the “BIN” directory in the client installation folder.
- Run the client software.

Steps 2 and 3 must be repeated for each client computer.

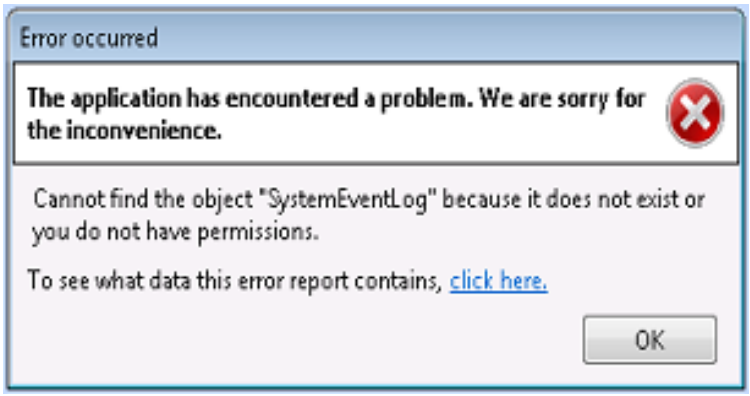
12. TROUBLESHOOTING

12.1 System user permissions

The W&D Setup file automatically creates the system user “DCK_SYS_USERREC” as database owner and server administrator to register entities and fields in the database as part of the installation process. An encrypted password protects the system user.

If the software is already installed and needs to be upgraded, the setup file uses the system created user for the previous installation and no new user is created.

If the system user already exists and the permissions of the user have been manually modified, the entity registration may fail, and the database cannot be updated. An error message is displayed.



The issue can be solved by deleting the existing system user and running the setup file again. Thus, a new system user with the correct permissions is created.

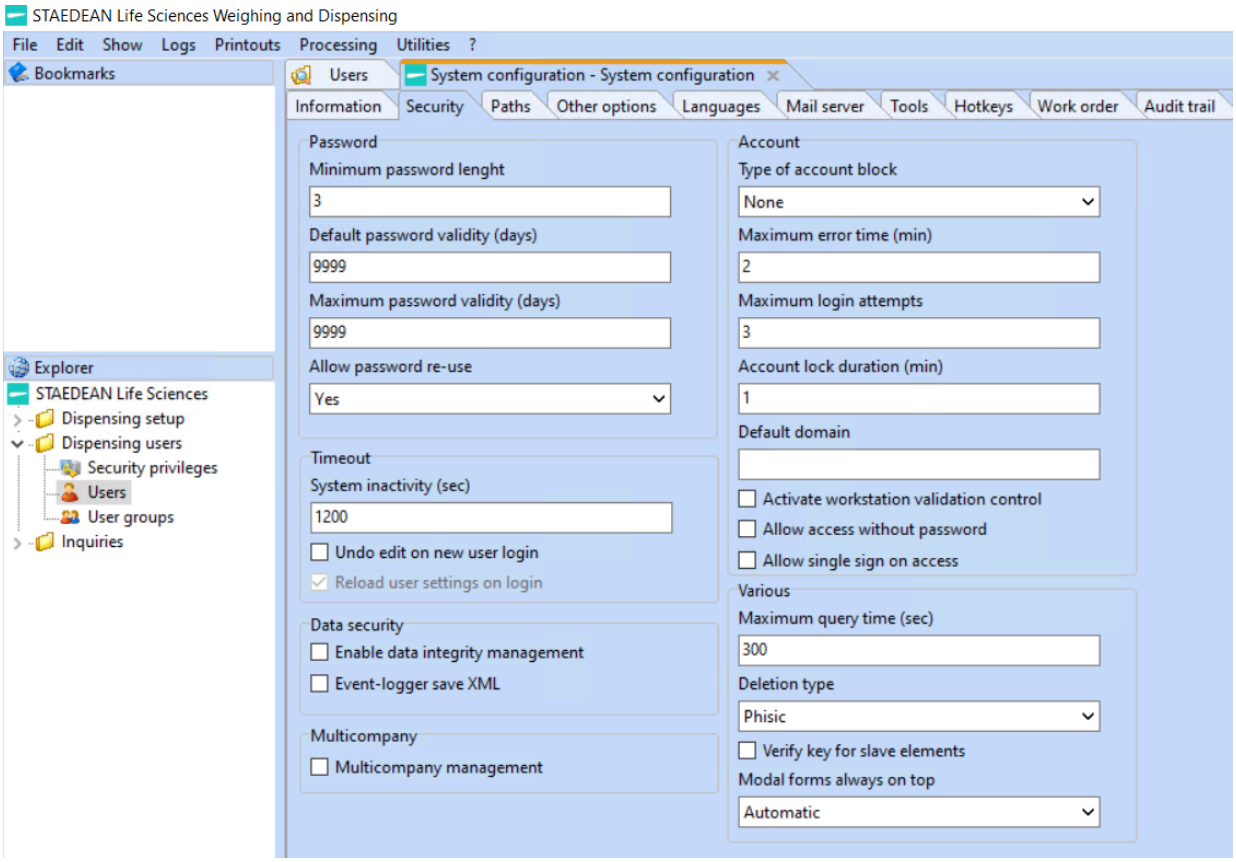
12.2 Domain search

Microsoft Windows Server may not allow the execution of domain search queries (please refer to Paragraph 7.1.2) and an error message may be returned. The same error is prompted when running the windows command “net view” on the command prompt.

This issue can be solved by enabling the “computer browser” service and other related services depending on the operating system version (please refer to Microsoft documentation, e.g., https://support.microsoft.com/en-us/help/188305/troubleshooting-the-microsoft-computer-browser-service).

Additionally, the issue can be solved through the creation of a new user by following the steps below:

- Set the **Default domain** field to the required domain in the system configuration (**File > Configuration> Security**).
- Create a new user.



The new user will be created with the authentication method set to “Active directory” and the domain set as the default domain.

12.3 Invalid user credentials

If the user cannot access the STAEDEAN LSS web service, an error message is displayed: *“Either the target name is incorrect or the server has rejected the client credentials”*.

The error can be displayed upon:

- Login.
- Weighing operation execution.
- Configuration testing.

The issue can be solved by checking the web service setups (please refer to Paragraph 6.5).

12.4 Scale communication

The following checks can be executed if the scale communication is not working.

- **Scale connection** - These checks allow users to understand if the communication is not working due to physical connection issues (scale with terminal, terminal with PC, scale with PC).
  - If the scale is connected through a multiplexer:
    - Verify that scales are connected to the terminal.
    - Verify terminal configuration screens for connected scales. Scale ID, description, and Serial Number should be shown.
    - Using the terminal keyboard, switch the selected scale and put a weight on the selected scale. The weight should be shown on the terminal display.
    - Get the RS232 communication parameters (i.e., baud rate, data bit, parity, stop bit).
  - If the scale is connected directly to the PC:
    - Get the RS232 communication parameters (i.e., baud rate, data bit, parity, stop bit).
  - Get the com port number (control panel, device manager).
  - Run the Hyperterminal, set the communication parameters, and test the communication over the com port using the scale command (based on scale communication protocol used).
- **Scale configuration** – These checks allow users to verify whether the scale configuration in the SDNWD Master component is properly set up (please refer to Paragraph 7.3.2).
  - Verify that the **Connected instrument** and **Instrument sending data** checkboxes are ticked.
  - Verify that scales are associated with the workstation in use.
  - Verify that the com port configured for the scale exists. If not, an error message is displayed: "*ie_BadId – Specified component doesn't exist.*"
  - Test the communication.

12.5 Setup log

During the installation, each operation is recorded in a log file named SDNWD_SETUP.LOG, stored in the desktop folder of the user executing the setup.

If there are issues during the installation, users should check the log content and contact STAEDEAN support.

13. BACKUP AND RECOVERY

The components of a computer system can be affected by natural or human-induced errors causing significant data loss or corruption. Disaster recovery involves a set of policies and procedures which ensure the continuity of technology infrastructure and systems. As part of the recovery plan, backup policies allow users to restore data and documents whenever necessary. A well-designed backup and recovery strategy maximizes data availability and minimizes data loss.

The Backup and recovery paragraphs define a guideline to back up and restore the SDNWD module at the time of the disaster. These operations should be integrated into the global system plan for disaster recovery of Microsoft Dynamics 365 and Life Sciences Solution.

This is not intended to:

- Define a specific disaster recovery strategy.
- Define the operations to backup and restore the system infrastructure (e.g., computer server name, database server name, network topology, client PC IP address, etc.).
- Identify tools supporting backup and restore of SQL Server database or other backup and restore dedicated software.

13.1 Assumptions

Weighing and dispensing operations must not be in progress when executing any recovery operation. Any information generated by operations in progress might be damaged, lost, or not recorded when the disaster recovery plan is launched.

13.2 Monitoring

Periodic verification of the system's performance allows users to monitor the system health and status. It is recommended to monitor the following standard alert systems of Microsoft Windows Server and SQL Server:

- SQL Server database alert system
- Windows performance monitor
- Windows event log

Routine maintenance procedures include:

- SDNWD database backup and recovery
- Application folder backup and restore
- Monitoring alerts on specific events generated by infrastructure components or by the database.

13.3 Backup procedure

A backup strategy defines the type and frequency of backups, the nature and speed of the hardware that is required for backups, and backup security. A backup strategy also defines how backups are tested, where backup media is stored, and how it is stored.

For information about how to select and implement a backup strategy, users should refer to the database documentation of their organization.

The backup frequency of the SDNWD components depends on the organization restore needs. Nevertheless, it is recommended to execute a full backup daily and after each change of the module configuration.

The user system backup should involve the following SDNWD components:

- Database:
  - SDNWD database
- Shared files folder.

Installation files and patches should be archived, and they will be used for additional client installation or restore.

The client application does not store any information, so it does not require backup.

13.4 Recovery procedure

A recovery strategy defines how to restore databases to guarantee that all user systems and data can be quickly restored if a disaster occurs, thus minimizing time and data loss.

A comprehensive recovery plan needs to contain the following elements:

- A plan to acquire a replacement for damaged hardware.
- A communication plan.
- A list of people to be contacted in case a disaster occurs.
- The instructions for contacting the people in charge of responding to the disaster.
- Information on the owner of the plan.
- A checklist of required tasks for each recovery scenario and the corresponding time of completion to help users track the history of the disaster recovery plan.

For each component of the SDNWD module, the recovery procedure includes the following recommended operations:

- Database Server:
  - Repeat the Database Server installation procedure as described in 6.3.2.
  - Replace SDNWD database with the restored database.
- File Server:
  - Repeat the File Server installation procedure as described in 6.3.1.
  - Replace shared folder and permissions.
- Client:
  - Repeat the Client Application installation procedure for each client as described in 6.3.3.
  - If a language update/patch has been previously installed, delete the compiled language file in the BIN directory in the client installation folder and apply the patch again.

Execute the “Initial system start” as described in 6.4.