Deltek ProPricer

ProPricer Installation Guide

Contents

About ProPricer

The ProPricer Installation Guide is a system administrator's reference for setting up and maintaining ProPricer and its supporting databases.

The current version of ProPricer operates in a three-tier architecture that includes an application client, an application server, and a database.

The application client is a "thick" client, meaning most of the processing work is done on the client.

The application server is a service that uses special serialization to minimize the size of transferred data, so clients are quickly and easily synchronized with the database. The service is managed by a program called ProPricer Server Manager. Additionally, the ProPricer client can connect to multiple databases through a single application server.

ProPricer supports both Microsoft SQL Server and Oracle databases. Each database type can be created with the ProPricer Database Setup program. Both SQL Server and Oracle databases have unique characteristics and uses in the workplace. The functionality and display of ProPricer are the same, regardless of the database type.

Minimum Requirements

ProPricer Client

Physical Machine or Virtual Desktop Infrastructure

- RAM
  - Minimum: 4 GB
  - Recommended: 8 GB
- Processor
  - 64-bit
  - Minimum speed: 1.4 GHz
  - Recommended speed: 2.0 GHz or faster
- Hard drive space: 500 MB (excluding database)
- .NET 8 (not included with installation)

Virtual Application Only

- RAM
  - Minimum: 1 GB
  - Recommended: 2 GB
- Processor
  - 64-bit
  - Minimum speed: 1.4 GHz
  - Recommended speed: 2.0 GHz or faster
- Hard drive space: 10 MB (for user profiles only)
- .NET 8 (not included with installation)

ProPricer Application Server

- RAM
  - 1-50 users: 4 GB
  - Every 50 additional users: Increase by 2 GB
- Processor
  - 64-bit
  - Minimum: 1.4 GHz
  - Recommended: 2.0 GHz or faster
- Hard drive space: 500 MB (excluding database)
- .NET 8 (not included with installation)

Database Server

On-Premises

- Microsoft SQL Server 2016 or newer. The newest version is recommended.
- Oracle 12c or newer.The newest version is recommended.

Cloud

- Azure SQL (Azure SQL Database or Azure SQL Managed Instance)
- Amazon RDS (SQL Server or Oracle)

SQL Database Initial Starting Sizes

- Without tutorial
  - Data: 6.25 MB
  - Log: 12 MB
- With tutorial
  - Data: 9.25 MB
  - Log: 14.60 MB

Windows Operating System Compatibility

- Windows 10
- Windows 11
- Windows Server 2016
- Windows Server 2019
- Windows Server 2022

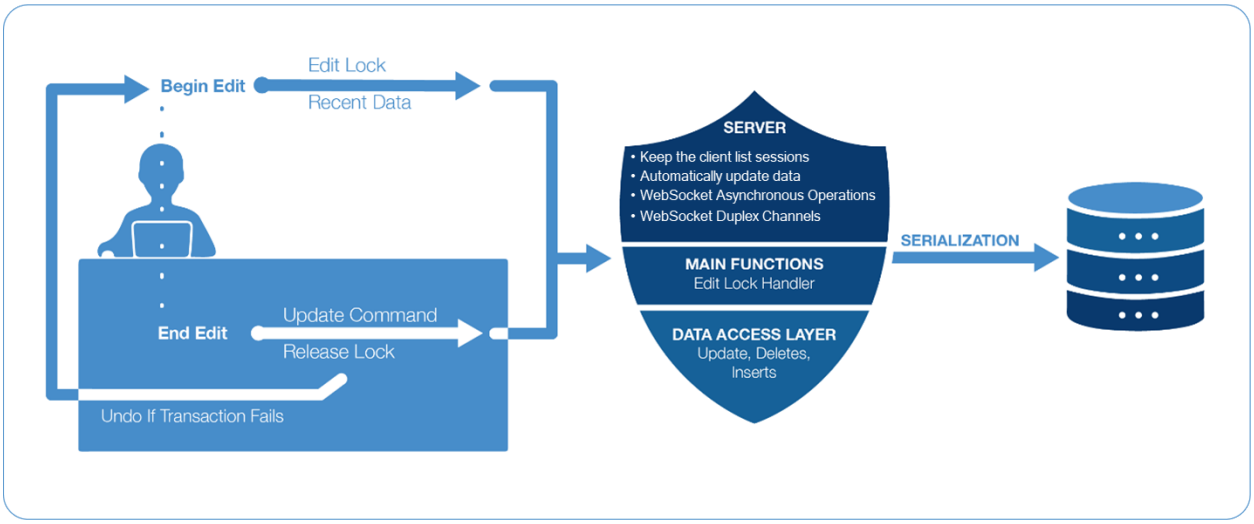
ProPricer Architecture

This section of the installation guide explains the structure of the ProPricer client, server, database, and their administrative programs.

Client-Server Communication

The communication between ProPricer clients and the server is implemented with WebSockets in ASP.NET Core using Microsoft .NET 8. ProPricer Application Server implements Kestrel web server, so it does not need a separate web server (for example, Internet Information Services for Windows Server).

WebSocket is a protocol that enables two-way persistent communication channels over TCP connections. It supports a non-blocking, asynchronous operation between clients and services where a sequence of operations is executed out of time coincidence with any event. The asynchronous method uses message queues as the transport for delivery and receipt of the message of threads. WebSocket also supports operations that occur without a regular or predictable time relationship to a specified event.



WebSocket Duplex Channel

A “duplex” message exchange pattern is based on a series of one-way interactions that form a complete conversation. For example, a long running operation can be started by a single method call for which the client does not have to wait for completion. The server can then periodically notify the caller about the percentage of work that has been completed.

Security

SSL protocols are for encrypting and decrypting traffic between the client and server. ProPricer Application Server (Kestrel) uses the system default TLS protocol versions. This allows TLS 1.3 to be used by default in environments that support it, but it also allows TLS 1.0 to be used in some environments (such as Windows Server 2016 by default). You can configure specific TLS versions to be used, or you can block them.

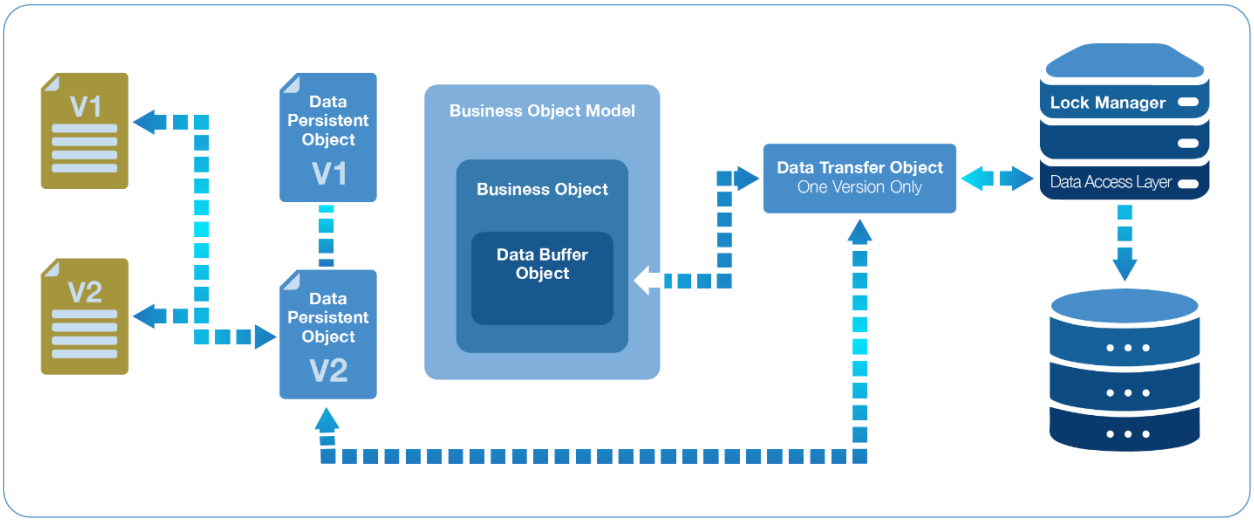
ProPricer Data Model (API)

The ProPricer data model can be made accessible to other applications with our Application Programming Interface (API). Our API provides access to all the data in a ProPricer database.

Data Model Terms

- BOM: Business Object Model
- DAL: Data Access Layer
- BO: Business Object
- DTO: Data Transfer Object
- DBO: Data Buffer Object
- DPO: Data Persistent Object

Data Model

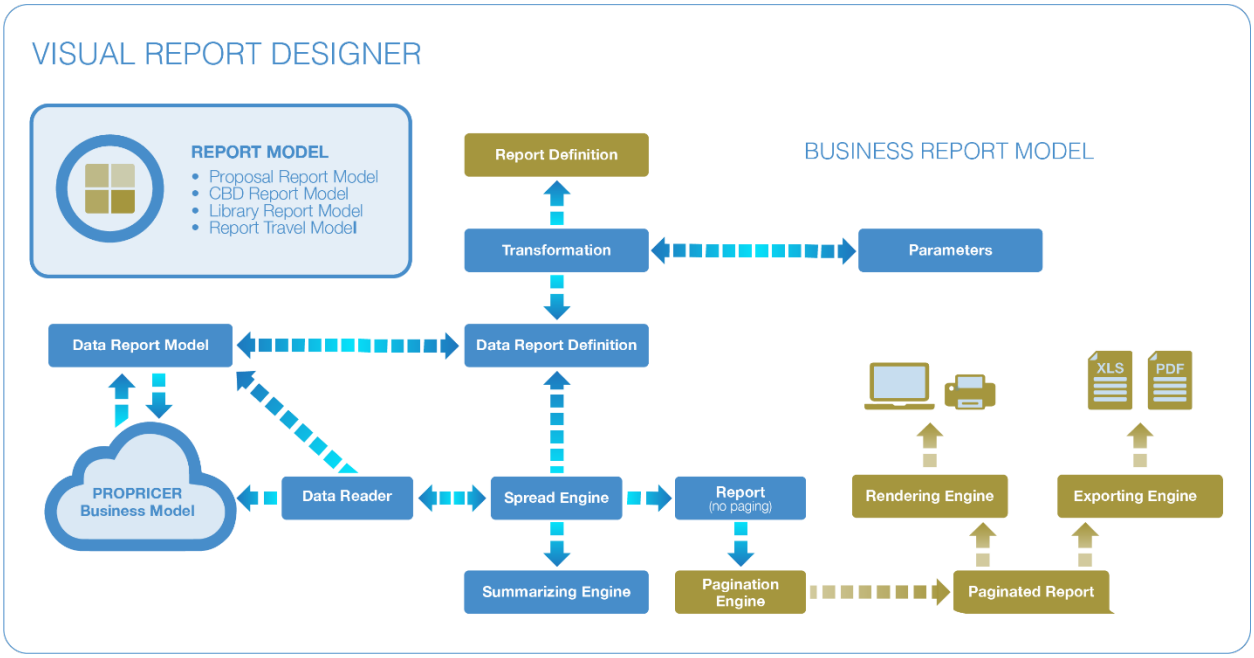


User Interface

- Standard components of the ProPricer user interface such as tabs, forms, textboxes, labels, buttons, and grids come from the third party developer, DevExpress WinForms.
- In multi-user environments, ProPricer data is updated automatically without the need to manually refresh.
- The user interface allows multiple tabs to be open but does not support running multiple processes at the same time.

Reports

ProPricer 9 uses the following report engine model for its Report Designer feature.



Databases

The enterprise versions of Microsoft SQL Server and Oracle databases are primarily used by larger companies that have more data to store in ProPricer, require better security, or need better reliability. The express versions of these databases are used by smaller companies that might only have a few users.

- If your company uses more than one database, all of them can be handled by the same application server.
- The minimum requirements are listed in the Database Server section of this guide.

Following are the advantages and disadvantages of using SQL Server or Oracle databases, as well as some other things to consider before installation.

Advantages

- The databases are robust. Data corruptions hardly ever occur.
- An unlimited number of users can reliably connect to the databases.
- There is no limit on storage capacity, except when express versions are used.
- The databases are secure. An end user cannot access them without the proper permissions.
- The databases are usually located on their own server. This reduces the impact of network traffic.
- The databases are easy to back up.

Disadvantages

- There must be IT infrastructure in place to support SQL Server and Oracle databases. Maintenance of the databases must be done by a database administrator, which could be an added cost.
- These databases are more expensive, although there are free express versions of both SQL Server and Oracle. For full enterprise versions, a powerful server must house the databases so it can handle all the ProPricer functions and users connecting to them.
- The databases are potentially difficult to restore. The restore process can take anywhere from a few hours to all day. This depends on the size of the databases.

Things to Consider Before Installation

ProPricer Database Components

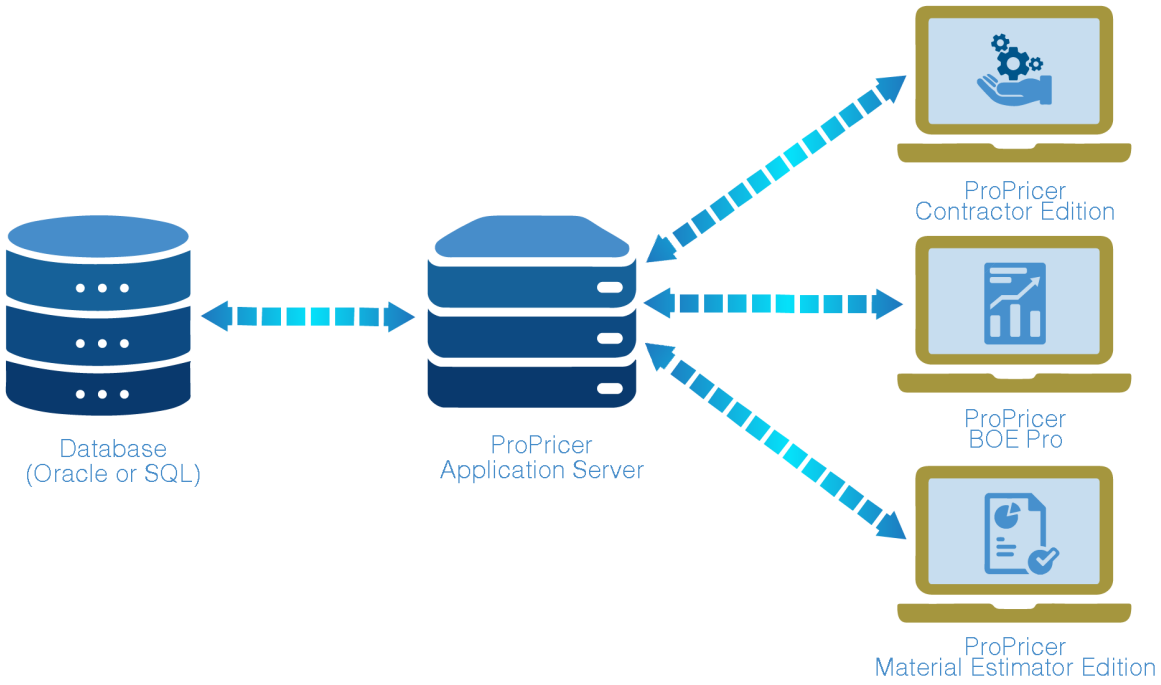
- System data: Information about ProPricer users, rights, settings, etc.
- Global data: Libraries and rate tables shared between proposals.
- Proposal-specific data: Information entered or used in a certain proposal.

How a ProPricer Database Works

- The entire ProPricer database, including system, global, and proposal data is stored in a single Oracle or SQL Server database.
- The ProPricer database does not require a dedicated Oracle or SQL Server database. Any Oracle or SQL Server database can be used without affecting the existing applications and data. However, ProPricer does require that its data be separated from all other data in the database. It also requires full privileges to modify its own data, including future database upgrades.
- There is no relationship between ProPricer users and database users. ProPricer users are part of their own security model, which is used to restrict access to certain ProPricer areas. ProPricer does not rely on or use any SQL Server or Oracle security capabilities.
- Only the application server communicates with the database, and it only uses one SQL Server or Oracle user account to do it. The application server then sends data to the ProPricer clients, which can have many user accounts. Additionally, a single application server can support multiple databases.
- It is highly recommended that the application server and the database are located in the same data center or Azure virtual network. Issues may arise if the application server attempts to connect to databases in multiple locations.
- To use ProPricer with an Oracle database, the server and client must be installed and configured as described in the Oracle Database Server Setup and Oracle Client Setup sections of this guide.
- Connection information is placed in an encrypted format in a central location. End users only see descriptive information about existing ProPricer databases. ProPricer extracts and uses connection information via the application server, which is only accessible to system administrators.
- When working with an SQL Server or Oracle database, ProPricer uses a "thin" server, which creates database constraints to ensure data integrity. Logical rules are enforced and applied by the ProPricer client.
- Currently, no SQL Server or Oracle multi-user capability is needed, because ProPricer uses its own locking schema via the application server to resolve multi-user conflicts. This is based on ProPricer logical units, not database tables or records.

ProPricer Connectivity

Linking multiple ProPricer applications to the same application server allows users to easily share data. A single ProPricer application can be used to input all data, which eliminates duplicate data entry issues and allows for some configuration control.



If your company uses more than one database, all of them can be handled by the same application server.

To learn more about the ProPricer architecture, see the ProPricer Architecture section of this guide.

All editions of ProPricer, such as Contractor Edition and Government Edition, can connect to the same application server and database.

Downloading ProPricer

Go to the Deltek Software Manager (DSM) at dsm.deltek.com to download the installation files. The ProPricer client and application server installed must be the same version number.

If a silent installation with Microsoft System Center Configuration Manager (SCCM) is preferred, the correct .zip file needs to be downloaded and extracted to a folder. For example, the file for Contractor Edition is called DeltekProPricer_9_6_101_0_pps_ce_client_sccm.zip.

ProPricer Installation File Types

- **Application server:** Designed to install ProPricer Application Server, ProPricer Server Manager, ProPricer Server Configuration Tool, and ProPricer Database Setup.
- **Client application:** Designed to install the ProPricer client, ProPricer Client Configuration Tool, and ProPricer Custom Data Manager.
- **Client, server, and SQL Server Express (all-in-one):** Designed for standalone installations. This puts the ProPricer client, application server, and a SQL Server 2022 Express database in the same system and connects them.

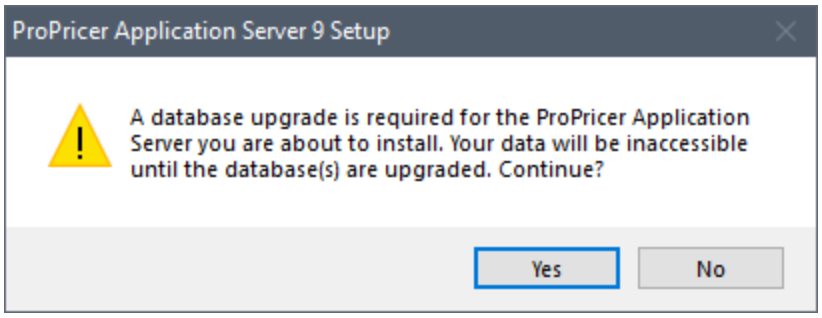
Installing ProPricer Application Server

1. Double-click the **ProPricer Application Server** installation file.
2. Read the details about the installation process. When you are ready to begin, click **Next**.
3. Accept the default location for the installation, or click **Browse** to select a different folder, then click **Next**.
4. If needed, change the program folder's name, then click **Next**.
5. Review the installation settings, then click **Install**.
6. Select **Launch ProPricer Database Setup**, then click **Finish**.
7. Follow the instructions in ProPricer Database Setup to create or upgrade existing databases.

Upgrading the Application Server

To upgrade, the latest ProPricer Application Server installation file is required.

1. Double-click the **ProPricer Application Server** installation file.
2. Read the details about the upgrade process. When you are ready to begin, click **Next**.
3. A message will warn you that your data will be temporarily inaccessible while upgrading. Click **Yes** to continue the upgrade process.



4. Click **Finish**.

SSL Certificate

ProPricer Application Server requires an SSL certificate to encrypt the communication between client and server. Before installation, ensure that you have an SSL certificate that meets all the requirements, and you have the password for it, if needed.

Advanced users can manually configure multiple endpoints, including the URLs and the certificates to use, either from a file on disk or from a certificate store. For a single endpoint, manual configuration is not required or recommended. Instead, use ProPricer Server Configuration Tool.

ProPricer Server Configuration Tool

The ProPricer Server Configuration Tool is designed to validate your SSL certificate and configure a single endpoint. It also provides optional settings for logging.

Before using the tool, verify that the certificate meets the requirements and is installed in the Local Machine location.

With the ProPricer Server Configuration Tool, no manual configuration is needed. As long as your certificate is valid, the tool creates or edits the following files for you:

- `ProPricerServer.config.json`
- `ProPricerServerManager.config.json`

When you use an invalid certificate (for example, a self-signed certificate), the tool creates or updates `ProPricerServerManager.config.json` and `EBS.ProPricer.Client.config.json` with the certificate serial number. It also updates the host and port in `ProPricerServerManager.config.json`, and the endpoint information in `ProPricerServer.config.json`.

If the ProPricer Server Configuration Tool finds any syntax errors in your configuration files, it explains what they are and where to find them. The tool can then automatically fix the errors when it updates the files.

Configuring your ProPricer endpoint

1. Verify that your SSL certificate meets the requirements.
2. Install your certificate in the **Local Machine** location.
3. Run **ProPricerServerConfig.exe** to start the ProPricer Server Configuration Tool.
4. In the navigation pane, click **Connection Data**.
5. Next to the **Certificate Name** field, click the **Load from store** button.
6. When selecting a store, **Local Machine** is the only **Location** option. In the **Name** field, select the store that has the certificate.
7. Click **Search**.
8. Select the certificate that was found, or click **More Choices** to select a different certificate in the store, then click **OK**.
9. The **Host** field will have valid names from the certificate's subject. If needed, you can edit the **Host** and **Port** values.
    - If you use a wildcard certificate, edit the **Host** value so it is a valid host name (fully qualified domain name).
10. In the navigation pane, click **Connection Settings**.
11. The **Keep Alive Interval (sec)** field determines how often a signal is sent to the server to maintain a connection. Enter the length of time as a number of seconds. The default is 15 seconds.
12. The **Remote Inactivity Timeout (sec)** field determines how long inactivity can last before a connection closes. Enter the length of time as a number of seconds. The default is 30 seconds.
    - ProPricer utilizes a duplex channel, so both the client and server send messages and should have the same, or at least compatible, settings. Both parties periodically send KeepAlive messages to notify the other party they are still alive. If no message is received from the other party during the timeout, then the party (client or server) closes the underlying connection.
    - **Remote Inactivity Timeout** should be equal to or greater than double the **Keep Alive Interval**.
    - The internal **ReconnectTimeout** setting keeps the server-side session open for a set time to allow the client to reconnect. The default is five minutes. The **ReconnectTimeout** setting is not visible in the ProPricer Server Configuration Tool and cannot be changed.
13. Click **File** > **Apply Changes to File**.
14. If your certificate is invalid, a warning will appear. Click **Yes** to continue and complete the configuration. The tool will create or edit `ProPricerServer.config.json`, `ProPricerServerManager.config.json`, and `EBS.ProPricer.Client.config.json`.

Configuring ProPricer logging

The Logging settings in the ProPricer Server Configuration Tool allow you to configure server-side logging. With OpenTelemetry, you can send logs to your own external platform.

Configuring ProPricer logging is recommended. If you are troubleshooting an issue with Deltek Customer Support, the support representative may ask you to change the settings and submit your log file for review.

1. Run **ProPricerServerConfig.exe** to start the ProPricer Server Configuration Tool.
2. In the navigation pane, click **Logging**.
3. In **Common**:
    - Select **Network Activity** to log the network activity between the client and server.
    - Select **Database Operations** to log the ProPricer database transactions and connection information.
4. In **File**:
    - Next to the **File Path** field, click the ellipsis button to select a log file save location.
    - Enter the **File Name** of the log.
    - Select a **Rolling Interval** option to determine how often a new log is created.
    - Select **Roll On File Size Limit** to create a new log when the log reaches the file size limit of 1 GB. If you clear this option, a new log is not created and further events are not recorded.
5. In **Open Telemetry**:
    - You can enter your own URL as the **Endpoint** to log externally using OpenTelemetry.
    - Select the **Protocol** type that fits your needs. You can use HTTP or gRPC.
6. In **Authorization Header**, you can enter the authorization header information in **Name** and **Value**, or you can leave the header information blank.
7. Select **Audit Log** to include Audit Log events that capture timestamped user and system actions in ProPricer.

Advanced server configuration

If the ProPricer Server Configuration Tool does not meet your needs, you can edit the configuration files on your own.

This example shows the configuration of an HTTPS endpoint for propricerserver.mycompany.com using port 8092, and a certificate stored in the Local Machine location:

```
{
  "Kestrel": {
    "Endpoints": {
      "Https": {
        "Url": "https://propricerserver.mycompany.com:8092",
        "Certificate": {
          "Subject": "propricerserver.mycompany.com",
          "Store": "My",
          "Location": "LocalMachine",
          "AllowInvalid": "false"
        }
      }
    }
  }
}
```

Schema notes

Set `AllowInvalid` to `true` to permit the use of invalid certificates (for example, self-signed certificates).

Any HTTPS endpoint that doesn't specify a certificate (`HttpsDefaultCert` in the preceding configuration example) falls back to the certificate defined under `Certificates:Default` or the development certificate.

Endpoint names are case-insensitive. For example, `HTTPS` and `Https` are equivalent.

The `Url` parameter is required for each endpoint, and it must begin with `https`. An endpoint will be unreachable if you enter `http` instead. The format for this parameter is the same as the top-level `Urls` configuration parameter, except that it is limited to a single value.

These endpoints replace those defined in the top-level `Urls` configuration rather than adding to them. Endpoints defined in code via Listen are cumulative with the endpoints defined in the configuration.

The `Certificate` section is optional.

- If the `Certificate` section isn't specified, the defaults defined in `Certificates:Default` are used.
- If no defaults are available, ProPricer Application Server loads all valid certificates by default.
- If there are no defaults and no certificate is present, the server throws an exception and fails to start.

The `Certificate` section supports multiple certificate sources.

Any number of endpoints may be defined in the configuration, as long as they do not cause port conflicts.

Certificate sources

Certificate nodes can be configured to load certificates from a number of sources:

- `Path` and `Password` to load .pfx files.
- `Path`, `KeyPath`, and `Password` to load .pem/.crt and .key files.
- `Subject` and `Store` to load from the certificate store.

For example, the `Certificates:Default` certificate can be specified as:

```
"Default": {
  "Subject": "<subject; required>",
  "Store": "<cert store; required>",
  "Location": "<location; defaults to CurrentUser>",
  "AllowInvalid": "<true or false; defaults to false>"
}
```

Reference: https://learn.microsoft.com/en-us/aspnet/core/fundamentals/servers/kestrel/endpoints?view=aspnetcore-6.0#replace-the-default-certificate-from-configuration-1

SSL certificate requirements

A valid SSL certificate is required. ProPricer Application Server will not start if there are no valid SSL certificates installed or configured.

The SSL certificate must comply with the following requirements:

- It is intended for server authentication and client authentication.
  - The key pair must be generated properly because a private key is required.
  - Enhanced Key Usage must contain Server Authentication (1.3.6.1.5.5.7.3.1).
- It has Subject Alternative Name (OID value: 2.5.29.17).
- It is valid (not expired, and trusted by server and client machines).
  - To permit the use of invalid certificates (for example, self-signed certificates) set `AllowInvalid` to `true`.

Self-signed certificates

You can use self-signed certificates with ProPricer. The all-in-one installer generates a self-signed certificate using the computer name, and the configuration allows this certificate to be used across the ProPricer application server, client, and tools like Server Manager.

If you want to use a self-signed certificate, the certificate must comply with the certificate requirements, and you must allow the usage of it. By default, self-signed certificates are not allowed.

After configuring the SSL certificate on the server using the ProPricer Server Configuration Tool, copy `EBS.ProPricer.Client.config.json` to all clients. This allows using the invalid certificate.

Using a self-signed certificate

1. Create the self-signed certificate for server authentication.
   - You can generate the certificate using OpenSSL or other tools, and then add it to the **Local Machine** location.
   - Use your desired domain as your endpoint. You can use `localhost` to only accept connections from your local computer. You can use the computer name to accept connections from the LAN. You can use a fully qualified domain name to accept connections from the internet.
2. ProPricer Application Server will load all certificates available automatically. Alternatively, you can specify which certificate to use for each endpoint:

```
{
  "Kestrel": {
    "Endpoints": {
      "Https": {
        "Url": "https://propricerserver.mycompany.com:8092",
        "Certificate": {
          "Subject": "propricerserver.mycompany.com",
          "Store": "My",
          "Location": "LocalMachine",
          "AllowInvalid": "true"
        }
      }
    }
  }
}
```

3. Allow invalid certificates in the ProPricer Client Configuration Tool:
   - Edit the file `EBS.ProPricer.Client.config.json`.
   - Go to the `CertificateValidation` section:

     ```
     "CertificateValidation": {
       //"AllowAny": "True"
       //"AllowedIds": [ "43aeece0568e2f8e4b761f20da78ddcf"]
     }
     ```

   - To only permit the invalid certificate, enter its serial number in `AllowedIds`:

     ```
     "CertificateValidation": {
       //"AllowAny": "True"
       "AllowedIds": ["46C220213F4713B0419DF68140FF9BC8"]
     }
     ```

   - Alternatively, you can remove the comment `AllowAny: "True"` to allow all invalid certificates to be used by the ProPricer Client Configuration Tool. This is recommended when the client connects to multiple servers:

     ```
     "CertificateValidation": {
       "AllowAny": "True"
       //"AllowedIds": ["46C220213F4713B0419DF68140FF9BC8"]
     }
     ```

4. Allow invalid certificates in ProPricer Server Manager:
   - Edit the file `ProPricerServerManager.config.json`.
   - Go to the `CertificateValidation` section:

```
"CertificateValidation": {
  "AllowAny": false,
  "AllowedIds": [ ]
}
```

   - To permit the invalid certificate, enter its serial number on `AllowedIds`:

```
"CertificateValidation": {
  "AllowAny": false,
  "AllowedIds": ["46C220213F4713B0419DF68140FF9BC8"]
}
```

   - Alternatively, you can change `AllowAny` to `true` to allow all invalid certificates to be used by Server Manager:

```
"CertificateValidation": {
  "AllowAny": true
  //"AllowedIds": ["46C220213F4713B0419DF68140FF9BC8"]
}
```

5. Allow invalid certificates on the ProPricer client:
   - Edit the file `EBS.ProPricer.Client.config.json`.
   - Go to the `CertificateValidation` section:

```
"CertificateValidation": {
  //"AllowAny": "True"
  //"AllowedIds": [ "43aeece0568e2f8e4b761f20da78ddcf"]
}
```

   - To only permit the invalid certificate, enter its serial number in `AllowedIds`:

```
"CertificateValidation": {
  //"AllowAny": "True"
  "AllowedIds": ["46C220213F4713B0419DF68140FF9BC8"]
}
```

   - Alternatively, you can remove the comment `AllowAny: "True"` to allow all invalid certificates to be used by the ProPricer client. This is recommended when the client connects to multiple servers:

```
"CertificateValidation": {
   "AllowAny": "True"
   //"AllowedIds": ["46C220213F4713B0419DF68140FF9BC8"]
}
```

Azure Active Directory (AD) Setup

ProPricer supports Azure AD logins. To enable Azure AD logins, follow the procedure for creating an application registration, and use the ProPricer Server Configuration Tool to point to it.

The following procedures in this section are optional. However, completing the steps will allow users to authenticate with your Azure AD tenant, and your authentication methods, such as multi-factor authentication, will be enforced.

Creating an application registration

1. Sign into the Azure Portal.
2. If you have access to multiple tenants, use the **Directory +** subscription filter in the top menu to switch to the tenant in which you want to register the application.
3. Search for and select **Azure Active Directory**.
4. Under **Manage**, select **App registrations** > **New registration**.
5. Enter a display name for your application. For example, **ProPricer 9**.
6. Specify who can use the application, sometimes called its sign-in audience. **Accounts in this organizational directory only** is recommended.
7. Under **Redirect URI (Optional)**, leave the fields blank.
8. Click **Register**. Wait for the application registration creation.
9. Under **Manage**, select **Authentication** > **Add a platform**.
10. Go to **Configure platforms** and select **Mobile and desktop applications**.
11. Select all redirect URI checkboxes, then click **Configure**.
12. Click **Save**.
13. Go to **API registration** and select **Grant admin consent for your tenant**.
14. Under **Overview**, copy the **Application (client) ID** and **Directory (tenant) ID**. You will need this information in Step 3 of the next procedure.

Reference: https://docs.microsoft.com/en-us/azure/active-directory/develop/quickstart-register-app

Configuring your Azure AD logins for ProPricer

1. Complete your endpoint configuration.
2. Under **Azure AD**, select an **Instance** option. Typically, ProPricer customers select **Azure US Government**.
3. In **Tenant ID** and **Client ID**, paste the **Directory (tenant) ID** and **Application (client) ID** copied during step 14 of the previous procedure.
4. Click **Apply**.
5. Restart the application server service to apply the changes.
    - When your setup is complete, open the ProPricer client to create users with Azure AD logins. Ensure that your System Options allow this login type.

ProPricer Database Setup

Use the ProPricer Database Setup program to create a new SQL Server or Oracle database, upgrade an existing database, or create the ProPricer data structure within an existing SQL Server or Oracle database. If your company uses more than one database, all of them can be handled by the same application server.

Currently there is no special utility tool for converting an SQL Server database to an Oracle database or vice versa. Instead, use the ProPricer Archive/Restore features to move data between SQL and Oracle databases.

SQL Server Database Required Information

The following information is required:

- Database Name
- Database Server Name
- Login ID and Password for SQL Server authentication

The following information is not required, but you can provide it if needed:

- Database Data File: Path and Filename, Size, Max Size, and File Growth
- Database Log File: Path and Filename, Size, Max Size, and File Growth

Oracle Database Required Information

- Host Name: The IP address or name of the host for the Oracle server.
- Port Number: The Oracle TCP/IP port. The default is 1521.
- Service Name: The Oracle instance name.
- The host name, port number, and service name must be configured correctly in the tnsnames.ora file before running the ProPricer Database Setup program. This file is located in the ProPricer Server 9 installation folder.
- System Username and Password: Username with SYSDBA privileges.
- System Temporary Tablespace Name
- Schema/Username and Password
- Data Tablespace Name
- Data Tablespace Path and Filename
- Index Tablespace Name
- Index Tablespace Path and Filename
- The ProPricer server needs to be connected to the pluggable database (PDB) that is connected to a container database (CDB).

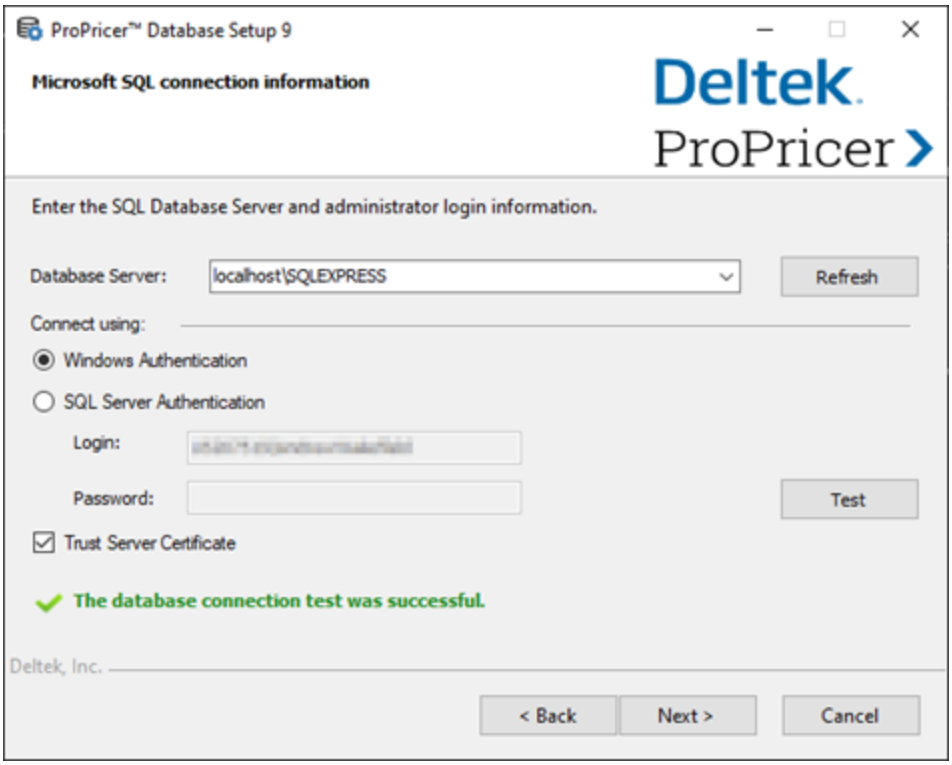
SQL Server Database Setup

After installing the application server, open ProPricer Database Setup. If you use the all-in-one installer, it runs automatically.

1. Run **ProPricerDatabaseSetup.exe**.
2. In the **ProPricer Database Setup** window, select **Create a new Microsoft SQL Server Database**, then click **Next**.
3. Enter the SQL Server connection information, then click **Test**. If the connection is successful, click **Next**.
4. If you connect using Windows authentication, read all the following Windows authentication information:
    - Windows authentication is recommended for network environments.
        - When Windows authentication is used, SQL Server Authentication is disabled, but the application host name needs to be defined to allow access to the database.

- For database creation and upgrade, the required roles are DBOwner, DBCreator, or the following individually assigned permissions: Create Database, Alter Database, Execute, Create Procedure, Create Table, Create Function, and Create Type.
- For client connection, the required roles are DBOwner, DBCreator, or the following individually assigned permissions: Insert, Delete, Select, Update, and Execute.

- When Windows authentication is used, you must log on to the ProPricer Application Server 9 service with the correct account.
  - In Windows, open the Services console, right-click **ProPricer Application Server 9**, then click **Properties**.
  - Select **Log On** > **This Account**.
  - Enter the password, and then click **OK** or **Apply**.
  - Restart the ProPricer Application Server 9 service.
- In this example, **localhost\SQLEXPRESS** is the database server, and **Windows Authentication** is selected for the login information.



5. By default, **Trust Server Certificate** is selected, regardless of the authentication type. The option ensures a secure, encrypted connection with the database while using a self-signed SSL certificate. If your organization purchased a valid certificate and it is configured in SQL Server, clear the option.

6. Enter the SQL Server database information, and then click **Next**.
    - To create the ProPricer data structure within an existing SQL Server database, enter the name of that database.
    - Selecting **Grant database owner permissions for NT Authority/SYSTEM user** gives the LocalSystem account permission to access the database.
    - Clearing **Use default database file settings** is only recommended for database administrators or advanced users who need to modify the minimum and maximum size of the database and log file.
7. Enter the Database Custom Information, and then click **Next**.
    - You must select the database currency. The default currency is **USD - US Dollar**.
    - Changing the default login is optional but recommended.
    - You must create a password that meets the provided requirements.
8. Verify the settings, and then click **Create**.

Oracle Database Server Setup

When creating an Oracle database, the **tnsnames.ora** file must be configured with the correct host name, port number, and Oracle System ID (SID) before running ProPricer Database Setup.

You can find an example **tnsnames.ora** file in the ProPricer Application Server installation folder. You can edit it to include the required information, or you can copy a **tnsnames.ora** file to the folder from somewhere else if the required information is correct.

After configuring or replacing the **tnsnames.ora** file:

1. Run **ProPricerDatabaseSetup.exe**.
2. In the **ProPricer Database Setup** window, select **Create a new Oracle Schema**, then click **Next**.
3. Enter the SID and login credentials, then click **Test**. If the connection is successful, click **Next**.
4. Enter and verify the schema and tablespace information, then click **Next**.
5. Verify the settings, then click **Create**.

ProPricer Application Server Oracle Setup

When ProPricer Application Server is installed, Oracle Managed Driver is installed along with it. Neither the client nor application server for ProPricer require the Oracle client to be installed. However, before setting up the Oracle client, the **tnsnames.ora** file must be configured with the correct host name, port number, and Oracle system ID (SID). If this step was completed before running the ProPricer Database Setup program, it does not need to be repeated.

You can find an example **tnsnames.ora** file in the ProPricer Application Server installation folder. You can edit it to include the required information, or you can copy a **tnsnames.ora** file to the folder from somewhere else if the required information is correct.

Creating a Database Upgrade Script

To see what the upgrade process will change without affecting the current database, create a database upgrade script. Keep in mind that outdated clients will not be able to connect to the database after it is upgraded.

To generate a database upgrade script, the latest version of ProPricer Application Server must be installed, and ProPricer Database Setup must be run with command line parameters.

1. Go to the Deltek Software Manager (DSM) at dsm.deltek.com, download the latest version of ProPricer Application Server, and then install it.
2. In Windows, find the folder where ProPricer Application Server is installed. The default location is **C:\Program Files\Deltek\ProPricer Server 9**.
3. Open the **Command Prompt** application.
4. Enter `ProPricerDatabaseSetup /?` to see all command line parameter options (optional).
5. Enter `ProPricerDatabaseSetup.exe /t:upgrade /cn:CONNECTION_NAME /tofile`.
    - For example: `ProPricerDatabaseSetup.exe /t:upgrade /cn:PP96_101_0_SQL /tofile`
6. If done correctly, a message will appear. Click **OK**.
7. The file you created will be named **UpgradeScript_CONNECTION_NAME.sql**.
    - For example: **UpgradeScript_PP96_101_0_SQL.sql**
8. Open the file in a text editor, such as Notepad, to see the changes that the upgrade process will make.

Upgrading the Database

Installing new versions of ProPricer requires a database upgrade. To check if a database upgrade is required, see the release notes for the version of ProPricer you want to install.

To upgrade a database, the latest version of ProPricer Database Setup is required. Its default location is **C:\Program Files\Deltek\ProPricer Server 9**.

1. Run the ProPricer Database Setup program, select **Upgrade Existing Database**, then click **Next**.
2. Select the **Database Connection**, click **Test** to make sure there is a connection to the database, then click **Next**.
3. Verify the settings, then click **Upgrade**.
    - The ProPricer client can be upgraded by running the client installer.

Windows Service Account Configuration

If SQL Server is installed on a separate machine, a Windows service account may need to be configured to prevent a connection issue for your ProPricer users. Before configuring a Windows service account to work with the ProPricer Application Server 9 service, the following must be completed:

- Set up a SQL Server database using ProPricer Database Setup.
- Create a Windows service account.

When a SQL Server database uses Windows authentication and you test the database connection in ProPricer Server Manager, you might encounter a misleading successful connection message. This can happen because it tests the local user's account instead of the intended Windows service account. By default, the ProPricer Application Server 9 service runs under the local system account.

This connection issue can be resolved by configuring the Windows service account with the correct permissions before attempting to connect to ProPricer.

Set the following permissions to correctly configure the Windows service account:

1. ProPricer Application Server 9 service permissions:
    - Default schema: **dbo**
    - Database role membership: **db_owner**
2. ProPricer Server folder permissions: **Full Control**
    - Alternatively, add the service account to the local Administrators group. If the service account is not intended to be in the Administrators group, the ProPricer server certificate permissions must also be configured for the account. In the permissions, add the service account and grant it the **Read** permission.

ProPricer Server Manager

Use ProPricer Server Manager to turn the service on and off, create connection files that connect ProPricer to its database server, manage ProPricer connections, view and remove active users, and maintain concurrent licenses. ProPricer Server Manager supports both SQL Server and Oracle databases.

Using ProPricer Server Manager

Run **ProPricerServerManager.exe** to open ProPricer Server Manager 9.

- The **Service** page allows you to start or stop the ProPricer Application Server 9 service. Under **Service Information**, click **Start** or **Stop**.
- The **Database Connections** page is for testing the current connection or creating a new ProPricer connection file. Right-click the preferred connection, then select **Generate Client Config File** to create a .ppc file for that database. Once the .ppc file is created, it can be moved to any location.
- To manage database connections, the ProPricer Application Server 9 service must be running.
- Point ProPricer to the generated file by holding **Shift** on your keyboard when you start ProPricer for the first time.
- The **Active Users** page shows all connected users, how long they've been connected, and how long they've been idle. To disconnect a user from ProPricer, right-click the name, then select **Disconnect Session**.
- The **Connections** page is a log of the computers or profiles that have connected to the application server.
- The **Concurrent Licenses** page is for setting up and maintaining concurrent licenses. It is only used if the license type is **Concurrent**.
- The **Options** page lets you decide if you want ProPricer Server Manager to open automatically when Windows starts. You can also set the server port.
- The default port for ProPricer is 8092.
- After changing the port, you need to restart the service to make the change take effect.
- Closing ProPricer Server Manager will minimize it to the system tray.

Ask Dela Setup

Ask Dela is a digital artificial intelligence assistant powered by Azure OpenAI models or local models using Ollama. It is designed to integrate seamlessly with existing infrastructure while maintaining strict data privacy and security standards.

How does Ask Dela operate in the background to deliver its capabilities?

- Azure OpenAI integration: Ask Dela leverages the power of Azure OpenAI services, utilizing cutting-edge GPT-4 models or higher to ensure high-quality responses and interactions.
- User tenant deployment: Ask Dela is deployed within the user's Azure tenant. This setup ensures all interactions and data remain within the user's own environment, enhancing security and compliance with organizational policies.
- API key and configuration: To activate Ask Dela, administrators must provide the appropriate API key and related information from their Azure OpenAI tenant. This ensures the assistant can authenticate and operate correctly within the specified tenant.
- Data privacy and security: One of the core principles of Ask Dela is maintaining the privacy and security of user data. We do not have access to any of the users' questions or data. All interactions with Ask Dela are processed within the user's own environment.
- Data storage and management: Users' questions and any related data are stored in the user's database. This data is under the user's control and can be managed as needed. Users can clear this data at any point, ensuring full control over their information.

To enable Ask Dela for ProPricer, you must create an Azure AI service and the required models, and then use the ProPricer Server Configuration Tool to point to the service.

The following sets of instructions in this section are optional. However, completing them allows ProPricer users to interact with and receive answers from Ask Dela.

Creating an Azure AI service

1. Sign into the Azure Portal.
2. If you have access to multiple tenants, use the **Directory +** subscription filter in the top menu to switch to the tenant in which you want to register the application.
3. Search for and select **Azure OpenAI services** or **Azure AI services**.
4. Follow the instructions to create a new service. This will create the endpoint and keys required in the ProPricer Server Configuration Tool.

Creating required models

1. Go to Azure AI Studio for the service you created.
2. Create a new deployment using the **GPT-4 (completion)** model.
3. Create a new deployment using the **text-embedding-ada-002 embedding** model.

Setting up ProPricer Application Server

1. Run **ProPricerServerConfig.exe** to open the ProPricer Server Configuration Tool.
2. In the navigation pane, click **AI Settings**.
3. In **Service**:
    - Select an AI service provider.
        - **AzureAI** (Azure OpenAI Service)
        - **OpenAI** (OpenAI API)
        - **OllamaAI** (self-hosted Ollama)
    - Enter the **Endpoint** and **API Key** for your AI service.
4. In **Embedding**:
    - In **Deployment**, if you are using the AzureAI service, enter the name of your embedding deployment. This is only required for the AzureAI service.
    - In **Model Id**:
        - For Azure/OpenAI, enter **text-embedding-ada-002**.
        - For OllamaAI, enter **mxbai-embed-large**.
    - In **Request Delay**, enter **1**.
5. In **Completion**:
    - In **Deployment**, enter the name of your completion deployment.
    - In **Model Id**:
        - For Azure/OpenAI, enter **gpt-4**.
        - For OllamaAI, enter **llama3.1** or another model.
6. Click **File** > **Apply Changes to File**.
7. Restart ProPricer Application Server to apply the AI settings.

ProPricer Client

Use the ProPricer client to access, manage, and report the data and proposals that are stored in the database. Regardless of the database type (SQL Server or Oracle), the client must be launched after the database has been set up and the ProPricer connection file (.ppc) has been created in ProPricer Server Manager.

ProPricer license files are stored in the end user's roaming profile. If a system administrator is installing the ProPricer client, it should be activated with an end user's Windows credentials, not the administrator's credentials.

Installing the ProPricer Client

1. Double-click the ProPricer client installation file.
2. Select the installation language, then click **Next**.
3. Enter your registration key, then click **Next**. If you copied the key to your clipboard, click **Paste** instead of pressing **Ctrl+V**.
4. Accept the default location for the client files, or click **Browse** to select a different folder, then click **Next**.
5. If needed, change the program folder's name, then click **Next**.
6. Select any of the additional options, then click **Next**.
    - You can create a desktop icon for ProPricer after installation.
    - You can display a notification when ProPricer starts explaining that a .ppc file must be selected to connect to the database server.
8. Verify the settings, then click **Install**.
9. Click **Finish**.
10. The first time ProPricer starts, you must point the client to the database using the .ppc file created in ProPricer Server Manager. To do this, hold **Shift** while starting ProPricer, select the file, then click **Open**.
11. Enter your registration key, then click **Register**. If you already provided the key previously, it will be entered here automatically.

Upgrading the ProPricer Client

If an upgrade is available, the application server and the database must be upgraded first before the client can be upgraded. If the client is upgraded but the database and application server are not, or vice versa, the client will not be able to connect to the server.

The ProPricer client and application server installed must be the same version number.

To upgrade the ProPricer client, download the installation file for the latest version of ProPricer from the Deltek Software Manager (DSM) at dsm.deltek.com. Double-click the file to run the installation.

All-In-One Installation

The client, server, and SQL Server 2022 Express (all-in-one) installation file is only recommended for standalone installations. Use it if:

- The ProPricer client, application server, and database are going to be on the same system.
- The system is not intended to be connected to a network ProPricer setup.

Because an SSL certificate is required for secure client-server communication, the all-in-one installation creates a self-signed certificate. It also completes the server configuration automatically so the certificate can be used.

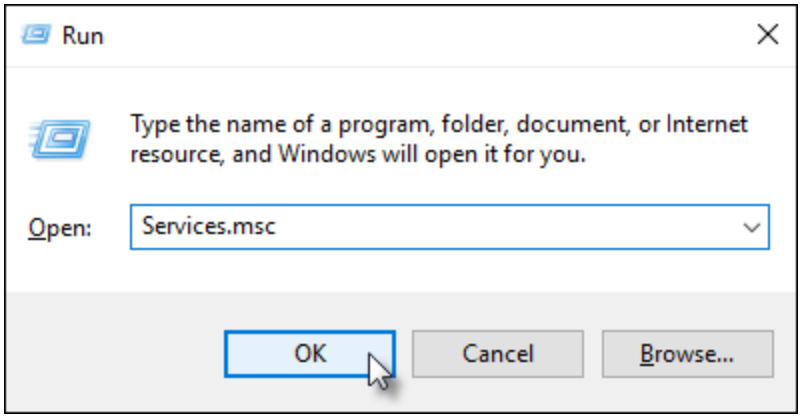
Troubleshooting a Connection Error

You might receive the following error message:

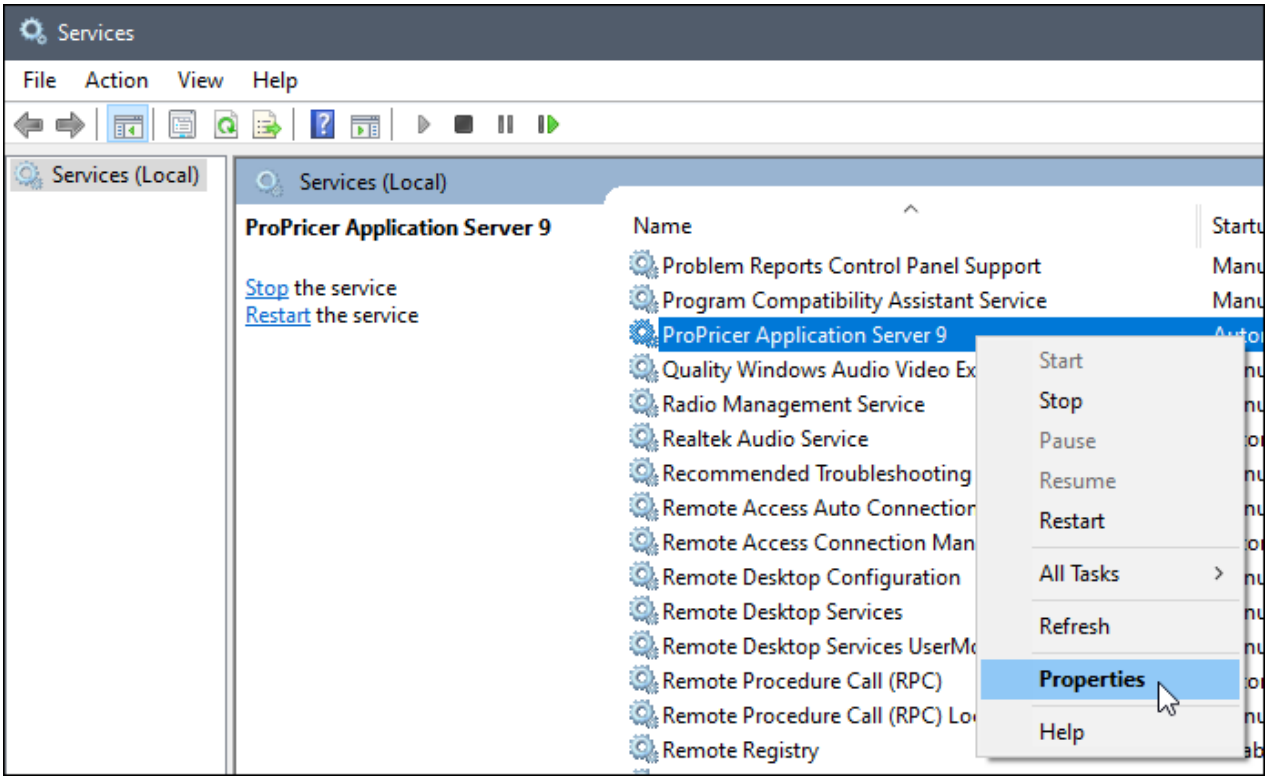
Cannot open database “NAME BASE NAME” requested by the login. The login failed. Login failed for user “USER NAME HERE”.

If you encounter this error, the ProPricer Application Server service needs the correct account to properly authenticate with the database.

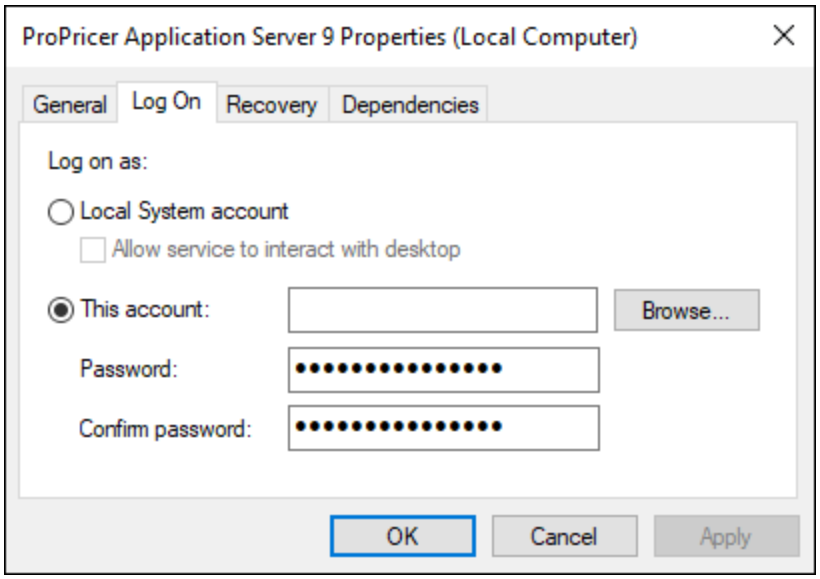
1. Verify the Windows service account configuration. The service account must be configured with the following permissions for the ProPricer Application Server 9 service.
    - Default schema: **dbo**
    - Database role membership: **db_owner**
2. Press **Windows Key+R**. When prompted, type **Services.msc**, then click **OK** to open the Services console.



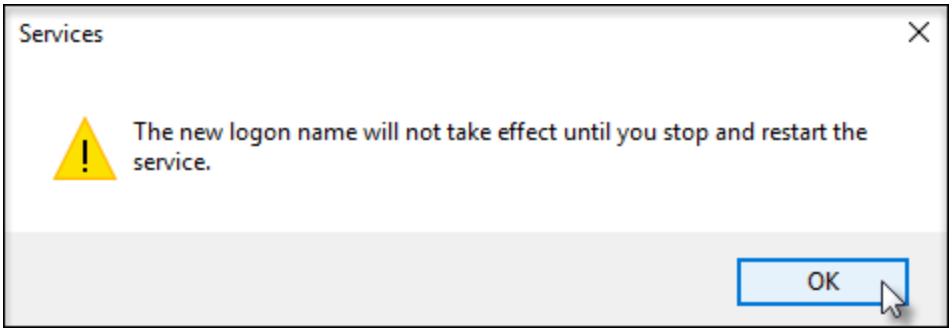
3. In the console, right-click **ProPricer Application Server 9**, then click **Properties**.



4. In the properties, click **Log On** and enter the service account credentials that will be used to access the ProPricer database.



5. A prompt to restart the application server service will appear. Click **OK**. You can restart the service with the option provided in the Services console (next to the list of services). Alternatively, you can open ProPricer Server Manager and restart the service there.



Remote Desktop Services or Citrix Server

ProPricer uses RAM heavily. For each user session running on a Remote Desktop Session Host server or Citrix server, at least 2 GB of RAM should be dedicated to the ProPricer client.

ProPricer licensing information is stored in a user's roaming profile. When using a Remote Desktop Session Host server or Citrix server, the user's roaming profile must be preserved to maintain the licensing information.

Concurrent licenses are recommended in this type of environment.

Prerequisites

- .NET 8 (not included with installation)

Downloads

The ProPricer client and server installation files can be downloaded from the the Deltek Software Manager (DSM) at dsm.deltek.com.

Installing the ProPricer Client on a Remote Desktop Services or Citrix Server

Repeat the first nine steps from Installing the ProPricer Client, and then begin with step one of the following procedure:

1. Open Citrix Studio. After adding a VDA image to **Machine Catalogs and Delivery Groups**, click **Applications** > **Add Applications**.
2. Click **Next**.
3. Select one or more delivery groups, then click **Next**.
4. Click **Add** > **From start menu**. This will search for available applications.
5. After a search of the available applications, select **ProPricer 9**, then click **OK**.
6. Click **Next**.

Command Line Arguments for ProPricer Tools

Database Setup: ProPricerDatabaseSetup.exe

```
ProPricerDatabaseSetup /t:showversion [<optional-arguments>]

ProPricerDatabaseSetup /t:showversion /cn:[CONNECTION_NAME] [<optional-
arguments>]
```

Usage for SQL Server

```
ProPricerDatabaseSetup /t:createmssql /u:[USERNAME] /p:[PASSWORD] /sn:[SERVER_
NAME] /db:[DATABASE_NAME] [<optional-arguments>]

ProPricerDatabaseSetup /t:createmssql /wa /sn:[SERVER_NAME] /db:[DATABASE_NAME]
[<optional-arguments>]

ProPricerDatabaseSetup /t:createmssql /db:[DATABASE_NAME] /tofile [<optional-
arguments>]

ProPricerDatabaseSetup /t:upgrade /cn:[CONNECTION_NAME] [<optional-arguments>]

ProPricerDatabaseSetup /t:drop /cn:[CONNECTION_NAME] [<optional-arguments>]
```

Usage for Oracle

```
ProPricerDatabaseSetup /t:createoracle /db:[SCHEMANAME] /p:[PASSWORD] /dba:
[DBA_USER/DBA_PASSWORD] /sn:[INSTANCE_NAME] /tsp_data:[DATA_TABLESPACE_PATH]
/tsn_data:[DATA_TABLESPACE_NAME] /tsp_index:[INDEX_TABLESPACE_PATH] /tsn_index:
[INDEX_TABLESPACE_NAME] [<optional-arguments>]

ProPricerDatabaseSetup /t:createoracle /db:[SCHEMANAME] /p:[PASSWORD] /dba:
[DBA_USER/DBA_PASSWORD] /sn:[INSTANCE_NAME] /tsp_data:[DATA_TABLESPACE_PATH]
/tsp_index:[INDEX_TABLESPACE_PATH] [<optional-arguments>]

ProPricerDatabaseSetup /t:createoracle /db:[SCHEMANAME] /p:[PASSWORD] /tsp_
data:[DATA_TABLESPACE_PATH] /tsp_index:[INDEX_TABLESPACE_PATH] /tofile
[<optional-arguments>]

ProPricerDatabaseSetup /t:upgrade /cn:[CONNECTION_NAME] [<optional-arguments>]

ProPricerDatabaseSetup /t:upgrade /cn:[CONNECTION_NAME] /tsn_data:[DATA_
TABLESPACE_NAME] /tsn_index:[INDEX_TABLESPACE_NAME] [<optional-arguments>]

ProPricerDatabaseSetup /t:drop /cn:[CONNECTION_NAME] /dba: [DBA_USER/DBA_
PASSWORD] [<optional-arguments>]
```

```
ProPricerDatabaseSetup /t:drop /cn:[CONNECTION_NAME] /dba: [DBA_USER/DBA_
PASSWORD] /tsn_data:[DATA_TABLESPACE_NAME] /tsn_index:[INDEX_TABLESPACE_NAME]
[<optional-arguments>]
```

Options

Command	
`/h` or `/?`	Show this command line argument help information.

`/t`	The process type to execute. Options are:
	`createmssql`
	`createoracle`
	`upgrade`
	`drop`
	`showversion`

`/u`	The database user that will be used to connect. If Windows Authentication is used, this will be ignored.
`/p`	The database password that will be used to connect. If Windows Authentication is used, this will be ignored.
`/wa`	[Boolean] Uses Windows Authentication to connect to the database.
`/sn`	The database server name (SQL Server) or service name (Oracle) that will be used to connect.
`/db`	The database name (SQL Server) or schema name (Oracle).
`/gsys`	Optional. Grant SQL Server database owner permissions for NT AUTHORITY\SYSTEM user.
`/cn`	The connection name used.
`/tsn_data`	The data tablespace name used to create or upgrade an Oracle database. If this value is omitted, the name will be like: `{SCHEMANAME}_DATA`

Command	
/tsn_index	Optional. The index tablespace name used to create or upgrade an Oracle database. If this value is omitted, the name will be like: {SCHEMANAME}_INDEX
/tsn_temp	Optional. The temporary tablespace name used to create an Oracle database. If this value is omitted, the name will be like: TEMP
/tsp_data	The path where the data tablespace will be stored in the Oracle server.
/tsp_index	The path where the index tablespace will be stored in the Oracle server.
/dba	The Oracle system DBA user information. Required when creating a schema. Format: USER/PASSWORD
/c	Optional. The default currency for the system. If this value is omitted, USD will be used by default. Options are: AUD CAD CNY EUR GBP JPY MXN USD
/tofile	Optional. This will output the script instead of executing it.
/v	Optional. Run the process in Verbose mode.
/q	Optional. Run the process in Quiet mode. On-screen messages will not appear.
/uv	Optional. Run the process in Upgrade View.

ProPricer Server Configuration Tool: ProPricerServerConfig.exe

Usage

```
ProPricerServerConfig.exe /host:[HOST] /p:[PORT] /s[SUBJECT] /sn[STORENAME]
```

Options

`/h` or `/?` Show this command line argument help information.
`/host` The host name/IP of the ProPricer application server.
`/p` The IP port on which the ProPricer application server listens for connections.
`/s` The subject name of the SSL certificate that will be used. This name must match the host name.
`/sn` The name of the store that will be searched for the SSL certificate.

Server Manager: ProPricerServerManager.exe

Usage

```
ProPricerServerManager.exe [/serviceHost:<host>] [/servicePort:<port>] [/quiet]
```

Options

Command	
`/h` or `/?`	Show this command line argument help information.
`/serviceHost:<host>`	The host name/IP of the ProPricer application server.
`/servicePort:<port>`	The IP port on which the ProPricer application server listens for connections.
`/q`	Optional. Run the process in Quiet mode.

Silent Installation, Upgrade, or Removal

Use command prompts or Microsoft System Center Configuration Manager (SCCM) to run a silent installation, silent upgrade, or silent removal of ProPricer. A silent installation can be helpful when ProPricer is needed on multiple machines.

Before any action can be taken, the correct .zip file needs to be downloaded from the Deltek Software Manager (DSM) at dsm.deltek.com and extracted to a folder. For example, the file for Contractor Edition is called DeltekProPricer_9_6_101_0_pps_ce_client_sccm.zip.

Running a Silent Installation

Find the extracted files that were downloaded from the Deltek Software Manager (DSM) at dsm.deltek.com and make sure the **SetupInstall.iss** file is included. Then run this command as an administrator:

```
DeltekProPricer_9_6_101_0_pps_ce_client_sccm.exe /s
/f1"C:\Users\QA\Desktop\DeltekProPricer_9_6_101_0_pps_ce_client_
sccm\SetupInstall.iss"
```

Notice that the only spaces in the string are before and after `/s`. The `s` means that the command is being run in “silent” mode.

If you would like to edit the parameters that the file installs ProPricer with, open the file in Notepad and make your desired changes. For example, if you would like the installation to create a default .ppc connection file, change the string `CreateDefaultPPC=0` to `CreateDefaultPPC=1`.

If you would like to include your own .ppc connection file in the installation, place a copy of the file in the extracted folder location prior to running the silent installation file.

To generate a log file for the installation, add the parameter `/f2`. For example, `/f2"C:\result.log"`

Recording the Installation Process

To record the installation process, rather than edit the **SetupInstall.iss** file to set your parameters, go to the folder that contains the extracted files, then run this command as an administrator:

```
DeltekProPricer_9_6_101_0_pps_ce_client_sccm.exe /r
/f1"C:\Users\QA\Desktop\DeltekProPricer_9_6_101_0_pps_ce_client_
sccm\SetupInstall.iss"
```

Notice that the only spaces in the string are before and after `/r`. The `r` means that the command is being run in “record” mode.

After the .iss file has been set up to record, double-click the **DeltekProPricer_9_6_101_0_pps_ce_client_sccm.exe** file and install ProPricer with your desired parameters. Make sure this is a clean installation to ensure that your parameters are recorded correctly.

Running a Silent Upgrade

Run a silent upgrade of ProPricer with the **SetupUpdate.iss** file by running this command as an administrator:

```
DeltekProPricer_9_6_101_0_pps_ce_client_sccm.exe /s
/f1"C:\Users\QA\Desktop\DeltekProPricer_9_6_101_0_pps_ce_client_
sccm\SetupUpgrade.iss"
```

- Note: For all the possible settings and parameters, go to docs.revenera.com/installshield19helplib/helplibrary/IHelpSetup_EXECmdLine.htm

Running a Silent Removal

Run a silent removal of an installation with the **SetupRemove.iss** file by running this command as an administrator:

```
DeltekProPricer_9_6_101_0_pps_ce_client_sccm.exe /s
/f1"C:\Users\QA\Desktop\DeltekProPricer_9_6_101_0_pps_ce_client_
sccm\SetupRemove.iss"
```

Contact Us

For assistance installing ProPricer, please visit the Deltek Support Center at deltek.custhelp.com.