



**Deltek**. ProPricer >

# BOE Pro Windows Deployment and Upgrade Guide

# Contents

Introduction .....	1
Architecture .....	1
Integration architecture .....	2
Prerequisites .....	3
Enable Web Server (IIS) .....	3
Install the .NET 8 Windows Server Hosting Bundle .....	4
Install the URL rewrite 2.1 IIS extension .....	4
BOE Pro .....	5
Minimum requirements .....	5
Upgrade recommendations .....	5
Known limitations .....	5
BOE Pro deployment package .....	6
BOE Pro WebAPI .....	6
BOE Pro Reports .....	6
BOE Pro WebApp .....	7
BOE Pro Database Setup .....	7
WebSpellChecker (Optional) .....	7

Install BOE Pro .....	8
Create a BOE Pro database .....	9
Windows authentication for database connection .....	10
Create BOE Pro Reports Server .....	11
Prerequisites .....	11
Installation .....	11
Create BOE Pro WebAPI Server .....	13
Prerequisites .....	13
Installation .....	13
Firewall .....	15
Install WebSpellChecker (Optional).....	16
Prerequisites .....	16
Hardware requirements .....	16
Software requirements .....	17
Install the Application Request Routing (ARR) 3.0IIS extension .....	17
Installation .....	17
Verify operability .....	25
Create BOE Pro WebApp .....	26
Prerequisites .....	26
Installation .....	26

Configure your installation .....	28
Microsoft Clarity (Optional) .....	30
Enable logging .....	31
Add BOE Pro to Authorization Server Pro .....	32
Link BOE Pro to Authorization Server Pro .....	33
Add a BOE Pro license .....	34
Add BOE Pro users .....	35
Test your installation .....	36
Enable AI configuration (Optional) .....	38
Enable Windows authentication (Optional) .....	40
Prerequisites .....	40
BOE Pro settings .....	40
BOE Pro WebAPI configuration (Optional) .....	41
References .....	42
Enable Azure AD authentication (Optional) .....	43
Prerequisites .....	43
BOE Pro settings .....	44
References .....	45

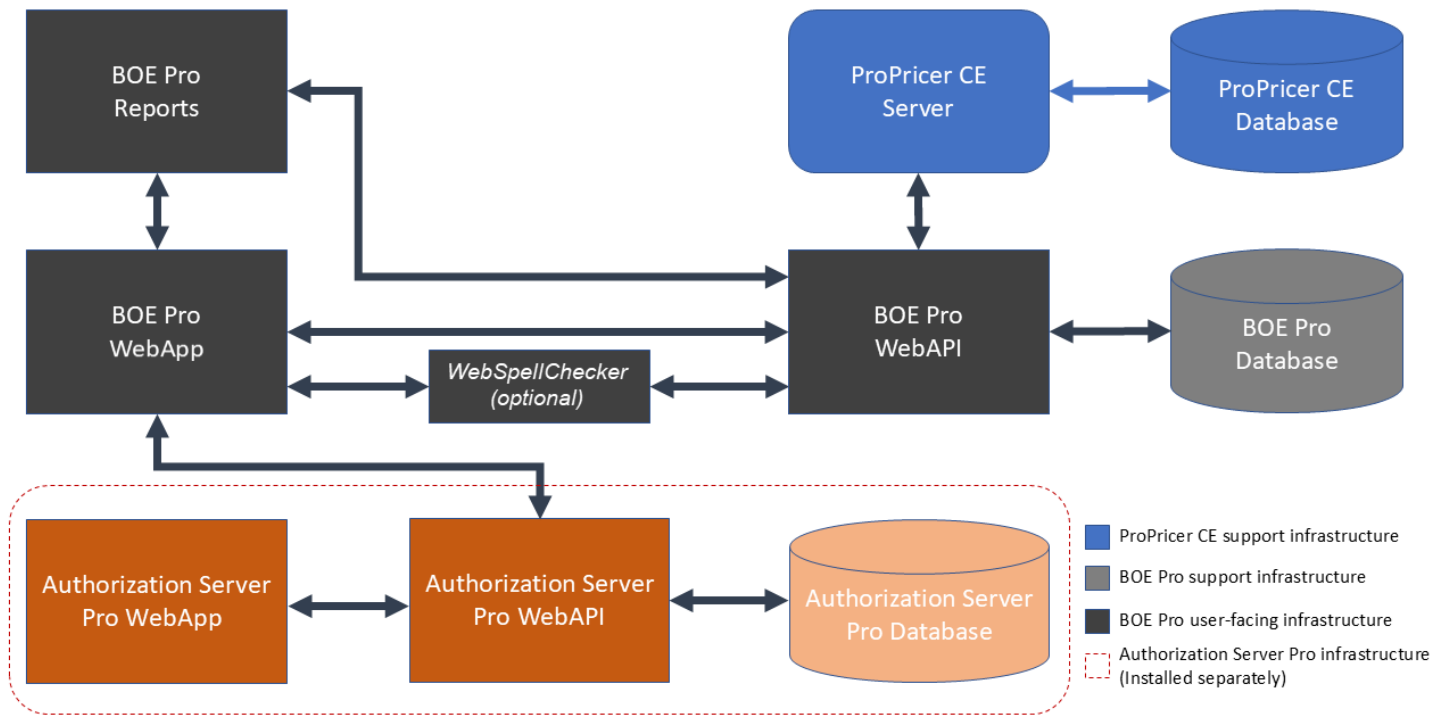
Remove ProPricer 9 WebAPI .....	46
Remove BOE Pro Authorization Server .....	47
Upgrade BOE Pro.....	48
Upgrade recommendations .....	48
Upgrade instructions .....	48
Troubleshoot.....	50
Authorization Server Pro, BOE Pro WebAPI Server, and BOE Pro Reports Server – Fetch error .....	50
Solution 1 .....	51
Solution 2 .....	51
Solution 3 .....	51
Solution 4 .....	51
Solution 5 .....	51
BOE Pro WebAPI – Common errors .....	52
HTTP Error 500.31 - Failed to load ASP.NET Core runtime.....	52
500.119 .....	52
HTTP Error 503 – The service is unavailable .....	52
Bad Request – Request header too long.....	52
Cannot access path ‘Deltek, Inc\PROPRICER\9’ .....	53
Database Setup reference.....	54
create command.....	55

upgrade command .....	56
addsysadmin command .....	57

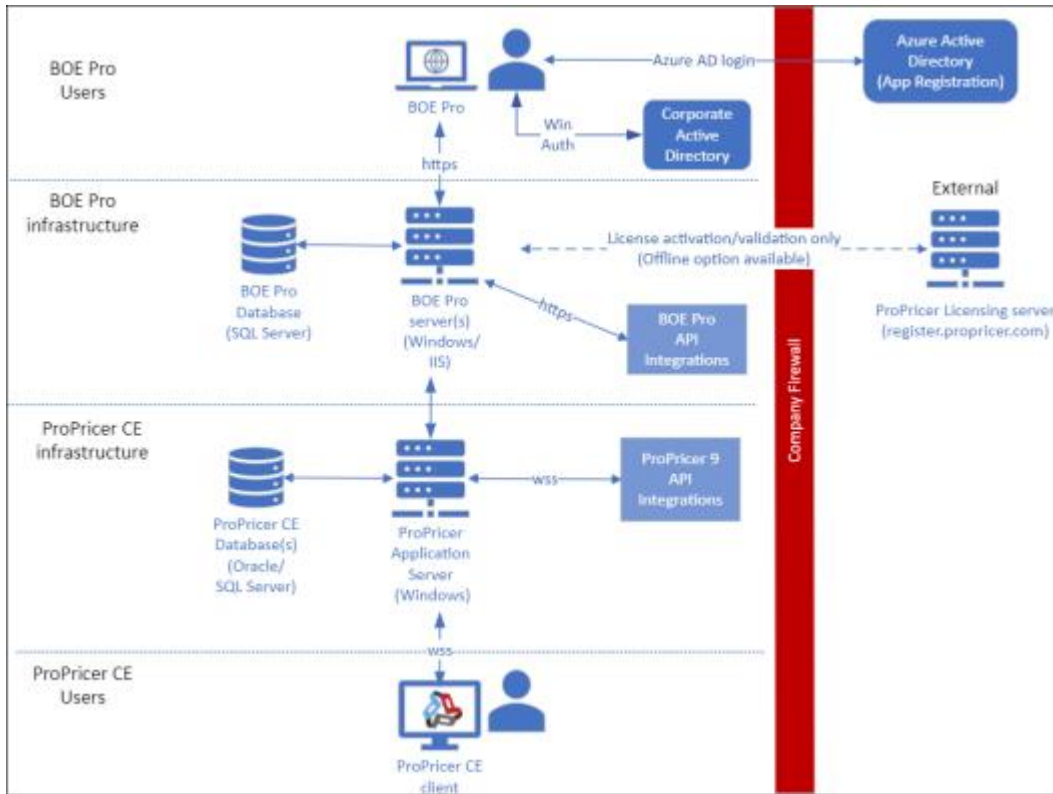
# Introduction

BOE Pro, an n-tier web application developed with ASP.NET Core, supports various deployment options. The focus of this guide is deployment on Microsoft Windows servers using Internet Information Services (IIS). It explains in detail how to install BOE Pro on premises.

## Architecture



# Integration architecture



# Prerequisites

BOE Pro is composed of three websites. You can install all sites on a single Windows server or multiple servers. All sites must comply with the following requirements.

## Enable Web Server (IIS)

1. Open **Add Roles and Features**.
2. Select **Web Server (IIS)**.
3. Select the following role services:
  - **Common HTTP Features**
    - **Default Document**
    - **Directory Browsing**
    - **HTTP Errors**
    - **Static Content**
  - **Health and Diagnostics**
    - **HTTP Logging**
  - **Performance**
    - **Static Content Compression**
  - **Security**
    - **Request Filtering**
  - **Management Tools**
    - **IIS Management Console**
  - **Application Development**
    - **WebSockets Protocol**

## Install the .NET 8 Windows Server Hosting Bundle

Install the latest .NET 8 Hosting Bundle on the hosting system. The bundle installs the .NET 8 Runtime, .NET 8 Library, and the ASP.NET Core Module. The module allows ASP.NET Core apps to run behind IIS.

1. Go to the [Download .NET 8.0](#) page.
2. Under **ASP.NET Core Runtime**, download the installer using the **Hosting Bundle** link.

Run apps - Runtime ⊙

### ASP.NET Core Runtime 8.0.11

The ASP.NET Core Runtime enables you to run existing web/server applications. **On Windows, we recommend installing the Hosting Bundle, which includes the .NET Runtime and IIS support.**

**IIS runtime support (ASP.NET Core Module v2)**  
18.0.24295.11

OS	Installers	Binaries
Linux	<a href="#">Package manager instructions</a>	<a href="#">Arm32</a>   <a href="#">Arm32 Alpine</a>   <a href="#">Arm64</a>   <a href="#">Arm64 Alpine</a>   <a href="#">x64</a>   <a href="#">x64 Alpine</a>
macOS		<a href="#">Arm64</a>   <a href="#">x64</a>
Windows	<a href="#">x64</a>   <a href="#">x86</a>   <a href="#">Arm64</a>   <a href="#">Hosting Bundle</a>   <a href="#">winget instructions</a>	<a href="#">x64</a>   <a href="#">x86</a>   <a href="#">Arm64</a>

3. Run the installer on the server.
4. Restart IIS or execute the following commands in a command shell:
 

```
net stop w3svc /y
net start w3svc
```

## Install the URL rewrite 2.1 IIS extension

Download the extension at: <https://www.iis.net/downloads/microsoft/url-rewrite>

# BOE Pro

## Minimum requirements

- Microsoft Windows Server 2016 (64 bits).
- Internet Information System 8.0.
- Microsoft SQL Server 2016 (13.x) or later.
- Valid SSL certificates for all websites.
- DNS entry to resolve the fully qualified domain name matching the SSL certificates.
- Compatible Authorization Server Pro instance installed.

## Upgrade recommendations

- Stop all BOE Pro sites and application pools before upgrading the following:
  - Reports
  - WebAPI
  - WebApp
- Back up a copy of your sites before upgrading them.
- Back up your database before upgrading it.
- Go to the [Deltak Software Manager \(DSM\)](#) to download the ZIP package for the new version you want to upgrade to.

## Known limitations

- Bookmarking the URL of the Log In page can cause login issues for users. To quickly open BOE Pro in a browser, users should bookmark the web application start URL instead.
- BOE Pro v3.5.103.3 and newer WebAPI does not support IIS Web Farm.

# BOE Pro deployment package

The platform-specific and framework-dependent package includes only the application folders and its dependencies. The .NET runtime is provided by ASP.NET Hosting Bundle. The application folders include a Windows x64 platform specific executable.

Typically, all folders are deployed to the same Windows server, but you can deploy each to different servers for performance reasons.

The ZIP package is available in the [Deltak Software Manager \(DSM\)](#).

The file name of the ZIP package is **DeltakProPricer\_BOEPro\_[version]\_win-x64.zip**.

## BOE Pro WebAPI

Back-end BOE Pro web API that receives requests from the BOE Pro web application, provides the WebSockets implementation for live collaboration updates, communicates with the database to persist the information, and links BOE Pro with your installation of ProPricer 9. This component requires .NET 8 ASP.NET Core runtime.

## BOE Pro Reports

BOE Pro report engine. Processes reporting requests from the web application and communicates with the web API to retrieve the information. This component requires .NET 8 ASP.NET Core runtime.

## BOE Pro WebApp

Front-end BOE Pro web application. This component uses only static files such as JS, HTML, CSS, etc. (the files are included in the folder).

## BOE Pro Database Setup

Console application that creates and upgrades BOE Pro databases. This component uses .NET 8 single .exe deployment (.NET 8 is included in the .exe).

## WebSpellChecker (Optional)

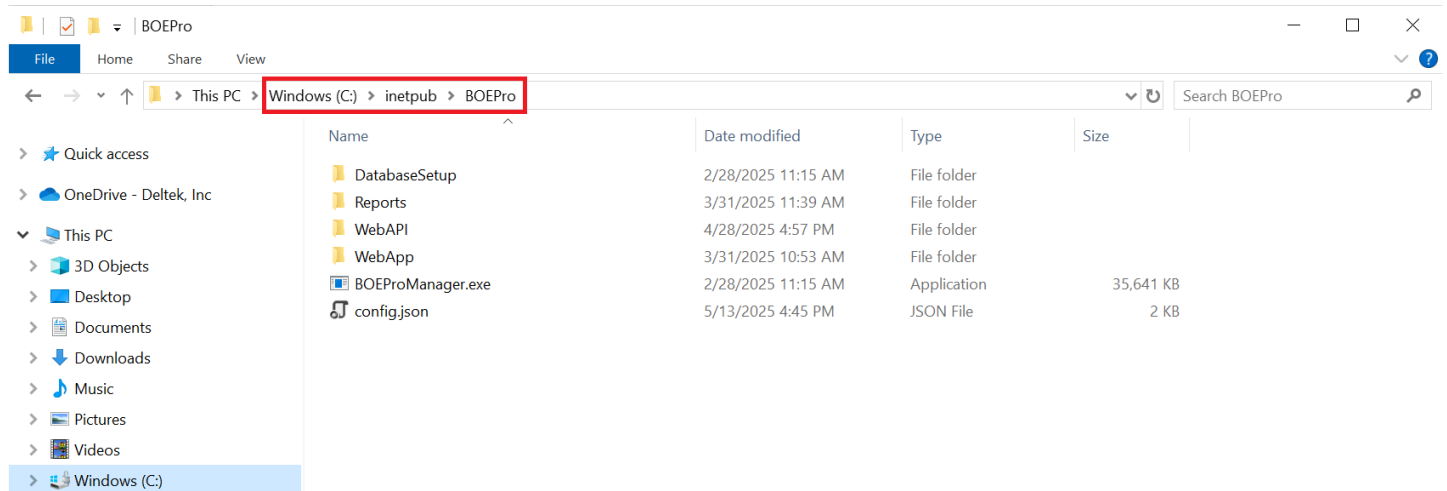
### **wsc\_app\_x64\_[wsc\_version].exe**

WebSpellChecker installation package for a Windows-based server. This component (downloaded separately) provides Spelling, Grammar, and Autocomplete in BOE Pro. It requires CPU with AVX2/AVX512\* instructions support.

\*AVX stands for Advanced Vector Extensions. [Read more](#).

# Install BOE Pro

1. Download and extract the BOE Pro zip package.
2. Move the **BOEPro** folder to the desired site location (for example, **C:\inetpub**).



---

The file *config.json* does not appear for new installations. *BOEProManager.exe* uses this file and creates it automatically when it does not exist.

---

# Create a BOE Pro database

You must begin setting up BOE Pro by creating your BOE Pro database. BOE Pro Database Setup is a command line tool that allows database administrators to create and upgrade BOE Pro databases.

1. Open a command prompt dialog and go to the folder where **BOEProDatabaseSetup.exe** is extracted (for example, **C:\inetput\BOEPro\DatabaseSetup**).
2. Run the tool with the `create` command depending on the SQL authentication method.
  - To use SQL authentication, run the tool with the `create` command and follow the prompts:  
`BOEProDatabaseSetup create`
  - To use Windows authentication, run the tool with the `create` command, add the `-w` parameter, and follow the prompts:  
`BOEProDatabaseSetup create -w`

---

*See the [BOE Pro Database Setup reference section](#) for further guidance.*

---

## Windows authentication for database connection

To use Windows authentication to connect to the BOE Pro database:

1. Create the BOE Pro database (using Windows or SQL Server authentication).
2. Create a Windows service account.
3. Configure the Windows service account as WebAPI Application Pool's Identity.
4. Configure BOE Pro WebAPI to use Windows authentication.

The Windows service account must be set as Identity for BOE Pro Web API and Authorization Server Application Pools at IIS. It must also be configured with the correct permissions before attempting to connect to the BOE Pro database. To correctly configure the Windows service account:

1. Add the service account to the BOE Pro database with the following permissions.
  - **Default schema:** dbo
  - **Database role membership:** db\_owner
2. Add the service account to the Windows server where BOE Pro is installed.
  - Set **Read & execute** permissions as a minimum on the **BOE Pro Web API** folder.
  - Set the **Full Control** permission on the folder you want to generate log files.
  - Set the **Read** permission on the certificate used to encrypt tokens.
  - Alternatively, you can add the service account to the local Administrators group. If the service account is not intended to be in the local Administrators group, make sure the service account permissions are properly configured for BOE Pro. It must have minimum **Read & execute** permissions at BOE WebAPI site folders.

---

*If log files are stored in a different folder, Full Control permission must be granted for the service account to that other folder.*

---

# Create BOE Pro Reports Server

## Prerequisites

Follow all [prerequisites](#) before continuing.

## Installation

1. Open **Internet Information Service (IIS) Manager**.
2. Create a new application pool. To create a new pool:
  - Right-click **Application Pools**, then select **Add Application Pool**.
  - In the **Name** field, enter **BOE Pro Reports App Pool**.
  - In the **.NET CLR version** field, select **No Managed Code**.
  - In the **Managed pipeline mode** field, select **Integrated**.
  - Select **Start application pool immediately**.
  - Click **OK** to create the application pool.

3. Create the BOE Pro Reports website.
  - Right-click the **Sites** folder, then select **Add Website**.
  - In the **Site name** field, enter **BOE Pro Reports**.
  - In the **Application pool** field, select the pool created in previous steps.
  - In the **Physical path** field, enter or select the path where the files will be located. For example, **C:\inetpub\BOEPro\Reports**.
  - In the **Type** field of the **Binding** section, select **https**.
  - In the **IP address** field, select **All Unassigned**.
  - In the **Port** field, enter a valid port number.

---

*When installing all BOE Pro websites on the same server and under the same domain, use a different port for each website. 44370 is the recommended port for Reports.*

*Ensure the ports are accessible to the BOE Pro users.*

---

4. In the **Host name** field, enter a domain (all letter characters must be lowercase).
5. Select **Require Server Name Indication**.
6. Select a valid SSL certificate for the domain.
7. Click **OK** to create the website.

# Create BOE Pro WebAPI Server

If you experience any errors during installation, check the [Troubleshoot](#) information in this guide for a solution.

## Prerequisites

Follow all [prerequisites](#) before continuing.

## Installation

1. Open **Internet Information Service (IIS) Manager**.
2. Create a new application pool. To create a new pool:
  - Right-click **Application Pools**, then select **Add Application Pool**.
  - In the **Name** field, enter **BOE Pro WebAPI App Pool**.
  - In the **.NET CLR version** field, select **No Managed Code**.
  - In the **Managed pipeline mode** field, select **Integrated**.
  - Select **Start application pool immediately**.
  - Click **OK** to create the application pool.
  - Right-click **BOE Pro WebAPI App Pool**, then select **Advanced Settings**.
  - Set **Load User Profile** to **True**.
  - Click **OK** to save the change.
  - Right-click **BOE Pro WebAPI App Pool**, then select **Recycle**.

3. Verify that the process model identity has the proper permissions. If the default identity of the application pool (**Process Model > Identity**) was changed from **ApplicationPoolIdentity** to something else, then the new identity needs permission to access the application's folder, database (when using Trusted Connection for the database connection string), and other required resources. For example, the pool needs Read and Write access to folders where the application reads and writes files.
4. Create the BOE Pro WebAPI website.
  - Right-click the **Sites** folder, then select **Add Website**.
  - In the **Site name** field, enter **BOE Pro WebAPI**.
  - In the **Application pool** field, select the pool created in previous steps.
  - In the **Physical path** field, enter or select the path where the files will be located. For example, **C:\inetpub\BOEPro\WebAPI**.
  - In the **Type** field of the **Binding** section, select **https**.
  - In the **IP address** field, select **All Unassigned**.
  - In the **Port** field, enter a valid port number.

---

*When installing all BOE Pro websites on the same server and under the same domain, use a different port for each website. 44360 is the recommended port for WebAPI.*

*Ensure the ports are accessible to the BOE Pro users.*

---

5. In the **Host name** field, enter a domain (all letter characters must be lowercase).
6. Select the box **Require Server Name Indication**.
7. Select a valid SSL certificate for the domain.
8. Click **OK** to create the website.

## Firewall

Your firewall must allow inbound connections to ProPricer 9 Server from the computer running BOE Pro WebAPI.

# Install WebSpellChecker (Optional)

Download the WebSpellChecker Windows installer from the [Deltek Software Manager \(DSM\)](#).

## Prerequisites

WebSpellChecker license. Contact [Deltek Customer Support](#) to obtain it.

## Hardware requirements

You can install a self-hosted WebSpellChecker Server on a:

- Dedicated server.
- Virtual machine (you can enable VMWare virtualization when installing WebSpellChecker) .
  - \*AI-based engine is not supported under VM VirtualBox.
- Docker container.

Alternatively, you can install it using a cloud computing platform, such as Amazon Web Services, Google Cloud, or Microsoft Azure.

Following are the minimum hardware requirements for WebSpellChecker Server with an AI-based engine:

- HDD: 2 GB
- RAM: 4 GB
- CPU: 2 CPU cores with AVX2/AVX512\* instructions support
  - \*AVX stands for Advanced Vector Extensions. [Read more](#).

The preceding minimum requirements vary depending on:

- Number of end users who will be proofreading with WebSpellChecker features.
- Amount of text to be proofread.
- Type and size of the language.
- Percentage of text errors.

## Software requirements

- Operating system: Windows Server 2008 R2 or newer with a 64-bit architecture only.
- Internet Information Services (IIS) version 7.0 or newer.
- Java Runtime Environment (JRE) or Java Development Kit (JDK) with Java Virtual Machine (JVM) version 1.8 or newer, 64-bit.

### Install the Application Request Routing (ARR) 3.0 IIS extension

Download the extension at:

[https://www.microsoft.com/web/handlers/webpi.ashx?command=getinstallerredirect&appid=ARRv3\\_0](https://www.microsoft.com/web/handlers/webpi.ashx?command=getinstallerredirect&appid=ARRv3_0)

## Installation

1. Open **Internet Information Service (IIS) Manager**.
2. Create a new application pool. To create a new pool:
  - Right-click **Application Pools**, then select **Add Application Pool**.
  - In the **Name** field, enter **BOE Pro Spell Pool**.
  - In the **.NET CLR version** field, select **No Managed Code**.
  - In the **Managed pipeline mode** field, select **Integrated**.
  - Select **Start application pool immediately**.
  - Click **OK** to create the application pool.
  - Verify that the process model identity has the proper permissions. If the default identity of the application pool (**Process Model > Identity**) was changed from **ApplicationPoolIdentity** to something else, then the new identity needs permission to access the application's folder. For example, the pool needs Read and Write access to folders where the application reads and writes files.
3. Create the BOE Pro Spell website.
  - Right-click the **Sites** folder, then select **Add Website**.
  - In the **Site name** field, enter **BOE Pro Spell**.
  - In the **Application pool** field, select the pool created in previous steps.
  - In the **Physical path** field, enter or select the path where the files will be located. For example, **C:\inetpub\BOEPro\Spell**.
  - In the **Type** field of the **Binding** section, select **https**.
  - In the **IP address** field, select **All Unassigned**.
  - In the **Port** field, enter a valid port number.

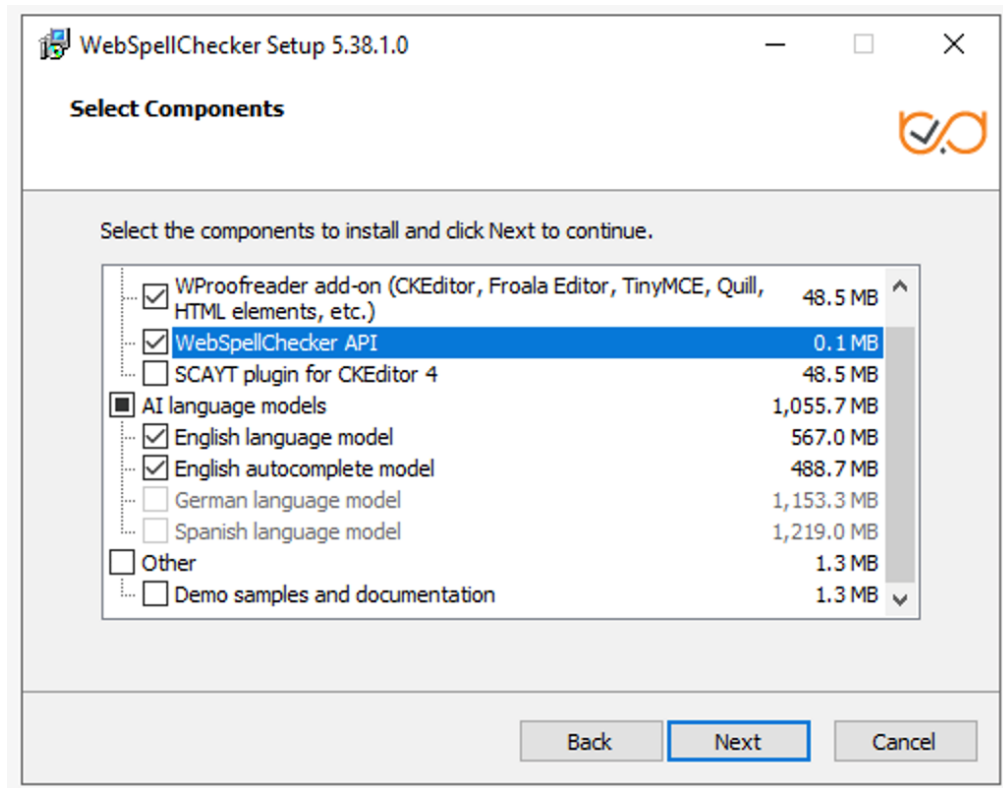
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When installing all BOE Pro websites on the same server and under the same domain, use a different port for each website.

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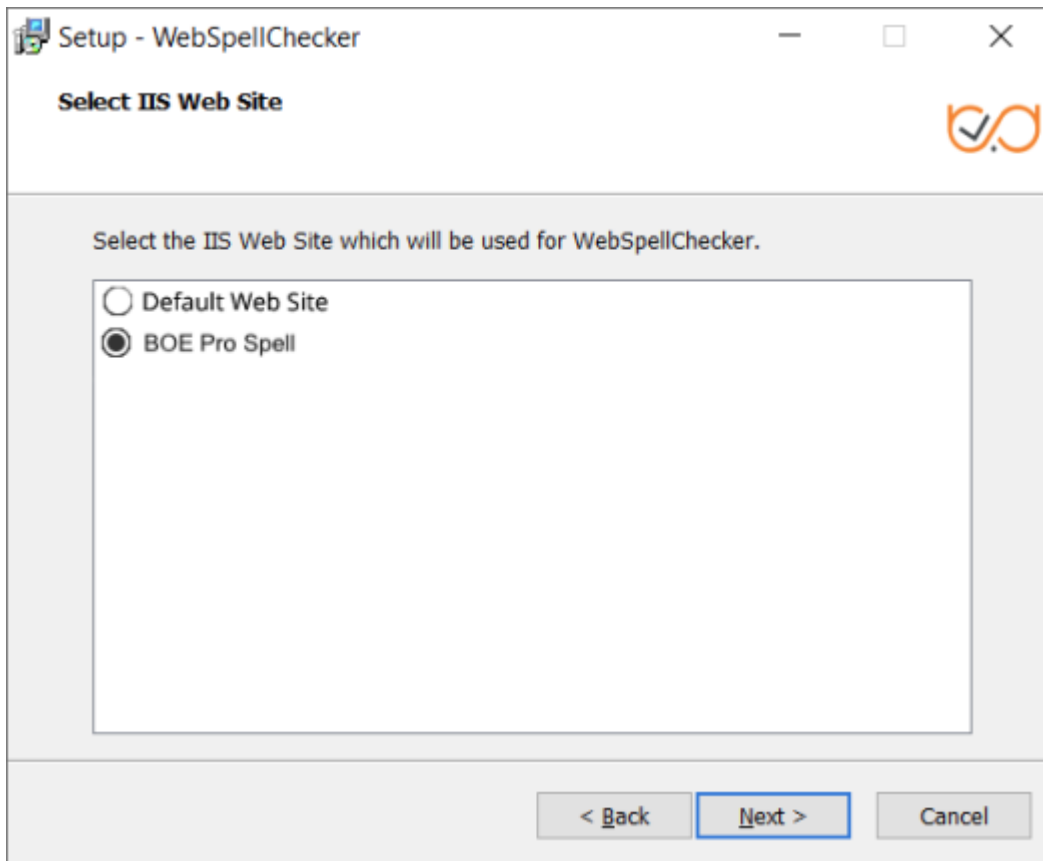
4. In the **Host name** field, enter a domain.
5. Select the box **Require Server Name Indication**.
6. Select a valid SSL certificate for the domain.
7. Click **OK** to create the website.
8. Install the WebSpellChecker component.
  - Run the installation package (for example, **wsc\_app\_win\_x64\_release\_5.x.x.x\_xx.exe**).
  - Before proceeding with the installation, read and confirm **WebSpellChecker Software License Agreement**.
9. Select the WebSpellChecker installation location. The default WebSpellChecker installation folder is **C:\Program Files\WebSpellChecker**. To specify a different installation location, click **Browse**.
10. Select the English language for installation. Enter **en\_US** as the language ID, then click **Add**.
11. Select the following components to install.
  - **WProofreader add-on**
  - **WebSpellChecker API**
  - **English language model**
  - **English autocomplete model**
12. Do not select **SCAYT plugin for CKEditor 4**.

13. If **Other** and **Demo samples and documentation** are selected, clear the options.



14. Select the type of protocol to use for communication with the WebSpellChecker service and a web server or Java application server. The default protocol is **HTTPS**.
15. Select **Internet Information Services (IIS)** as a web server and configure its settings.

16. Select the website created previously (for example, **BOE Pro Spell**).



17. Define the settings of the selected web server.

- Enter a domain name (for example, **boepro-spell.mycompany.com**).
- Enter a port number. The installer will suggest a port number based on the specified protocol and selected web server. The default port for web servers is **443** for HTTPS protocols.
- Enter the name of the virtual directory for the WebSpellChecker service. The default is **wscservice**.

18. If you previously selected HTTPS as the protocol type, you will be asked to configure an SSL connection.

- Select the second option. Later, instead of configuring an SSL certificate for AppSever directly, set up a reverse proxy on Windows IIS, and use an SSL certificate configured for IIS.

WebSpellChecker Setup

### Configure Service SSL Certificate

Select one of the options below to configure the SSL connection:

- Export your SSL certificate from Windows Certificate Store (recommended).
- Skip now and configure later manually in the SSL tag of the AppServerX.xml configuration file.
- Apply a SSL certificate that is used by your Web or Java Application Server (not recommended). In this case the connection with the service will be configured via the FastCGI protocol.

Enter the Certificate Common Name (the fully qualified HostName):

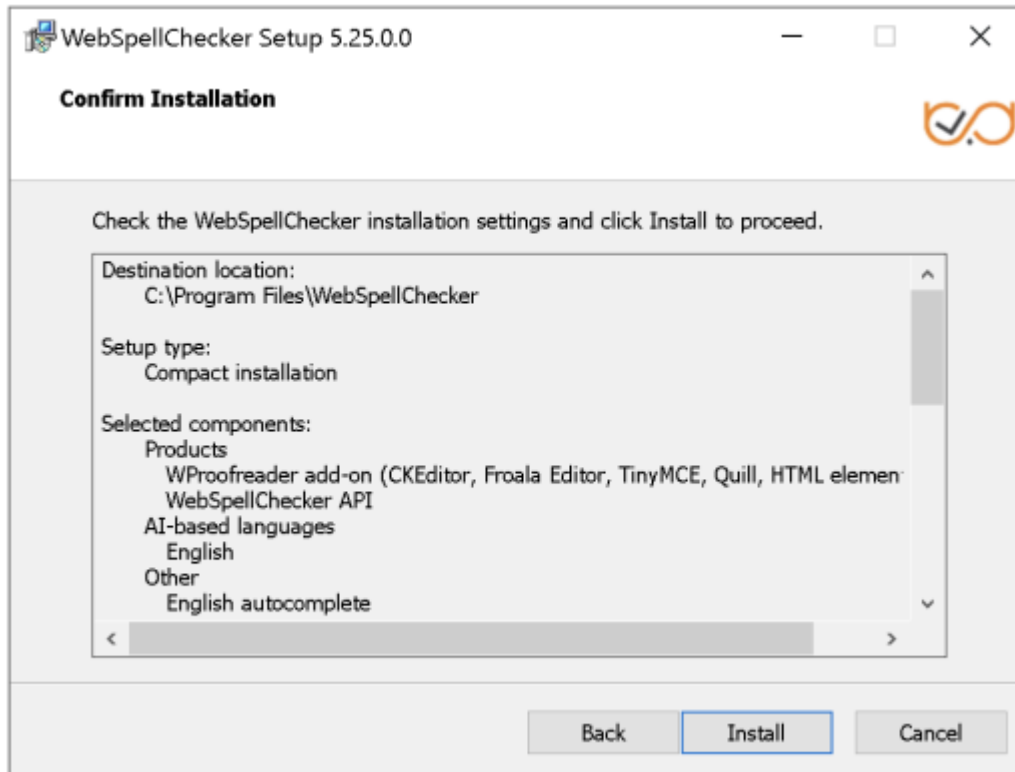
Choose the Certificate Store Name:

My

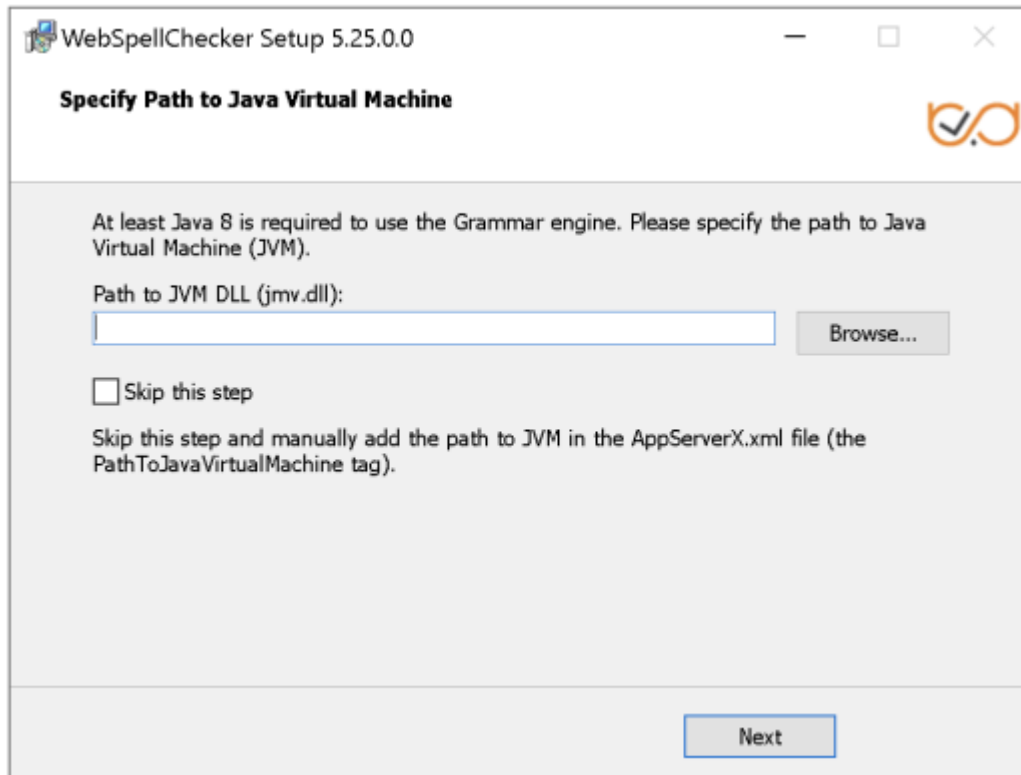
< Back   Next >   Cancel

19. Select the WebSpellChecker Start Menu folder, and enter the program name that will appear as a Start Menu item.

20. The installer summarizes the information you entered previously. Click **Install** to proceed or return to previous steps if you want to make changes. When the installation starts, libraries will be downloaded.



21. The Grammar engine requires the 64-bit version of Java 8 or newer. The installation wizard will try to auto-detect a path to an existing Java Virtual Machine (JVM). If no path is found, you will be asked to specify the JVM path:

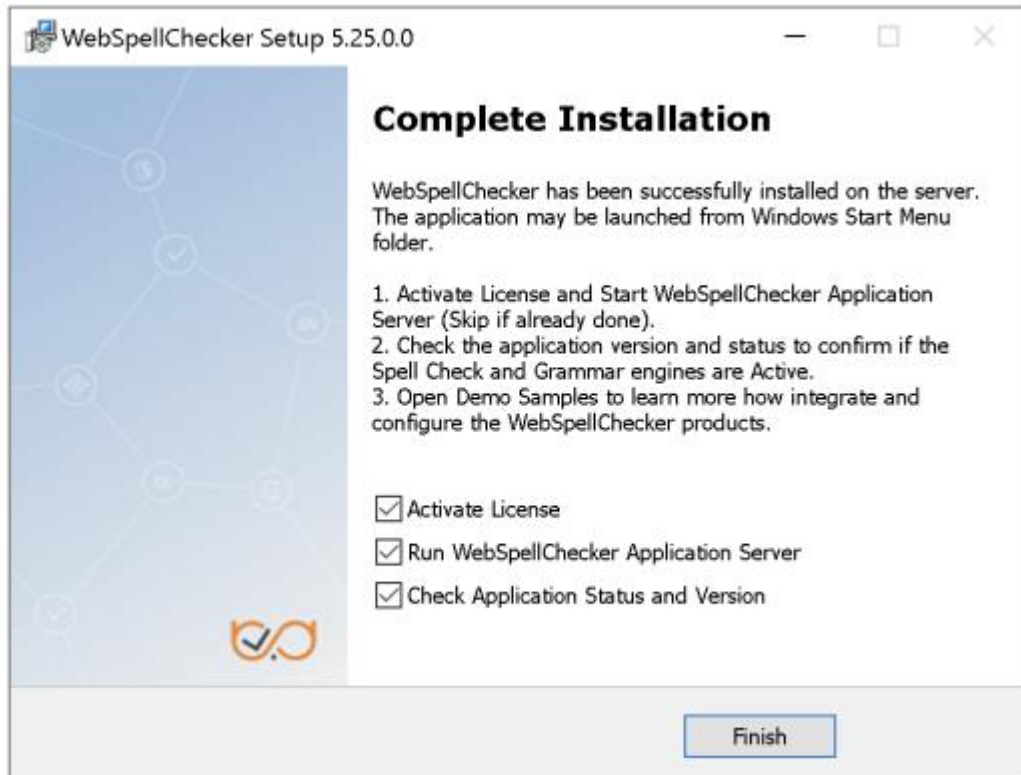


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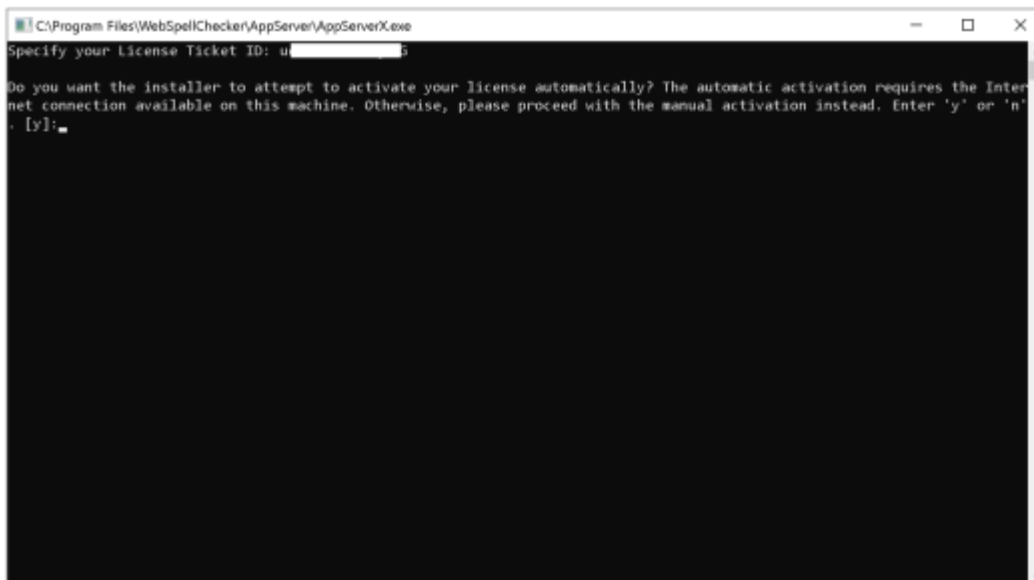
*You must specify a path to JVM 64-bit.  
For example, C:\Program Files\Java\jre1.8.0\_351\bin\server.*

---

22. When the installation is complete, select **Activate License** if you are installing WebSpellChecker Server for the first time. Then click **Finish** to close the installation dialog. You can view the samples and verify application operability in newly opened web browser tabs, namely the samples page, a page with status check, and a page with version check.



23. When prompted, enter your WebSpellChecker license to activate it.



## Verify operability

Check the status and version of AppServer to verify if WebSpellChecker Server works properly. To do so, use the following links to go to the detailed command and response descriptions:

Check AppServer version: <https://localhost/wscservice/api/?cmd=ver> or <https://boepro-spell.mycompany.com/wscservice/api/?cmd=ver>

Check AppServer status: <https://localhost/wscservice/api/?cmd=status> or <https://boepro-spell.mycompany.com/wscservice/api/?cmd=status>

# Create BOE Pro WebApp

## Prerequisites

Follow all [prerequisites](#) before continuing.

## Installation

1. Open **Internet Information Service (IIS) Manager**.
2. Create a new application pool. To create a new pool:
  - Right-click **Application Pools**, then select **Add Application Pool**.
  - In the **Name** field, enter **BOE Pro WebApp App Pool**.
  - In the **.NET CLR version** field, select **No Managed Code**.
  - In the **Managed pipeline mode** field, select **Integrated**.
  - Select **Start application pool immediately**.
  - Click **OK** to create the application pool.

3. Create the BOE Pro WebApp website.
  - Right-click the **Sites** folder, then select **Add Website**.
  - In the **Site name** field, enter **BOE Pro WebApp**.
  - In the **Application pool** field, select the pool created in previous steps.
  - In the **Physical path** field, enter or select the path where the files will be located. For example, **C:\inetpub\BOEPro\WebApp**.
  - In the **Type** field of the **Binding** section, select **https**.
  - In the **IP address** field, select **All Unassigned**.
  - In the **Port** field, enter a valid port number.

---

*When installing all BOE Pro websites on the same server and under the same domain, use a different port for each website. 443 is the recommended port for WebApp.*

*Ensure the ports are accessible to the BOE Pro users.*

---

4. In the **Host** name field, enter a domain (all letter characters must be lowercase).
5. Select the box **Require Server Name Indication**.
6. Select a valid SSL certificate for the domain.
7. Click **OK** to create the website.

# Configure your installation

The BOE Pro Manger tool helps you configure all sites with a single command line. **BOEProManager.exe** is in your site's location path (for example, **C:\inetpub\BOEPro**).

```
Administrator: Command Prompt
C:\inetpub\BOEPro>BOEProManager.exe
BOE Pro Manager. 3.6.100.1

This tool allows you to manage BOE Pro.

Usage: BOEProManager [command] [options]

Options:
  -v|--version      Shows the version information.
  -?|-h|--help     Shows this help information.

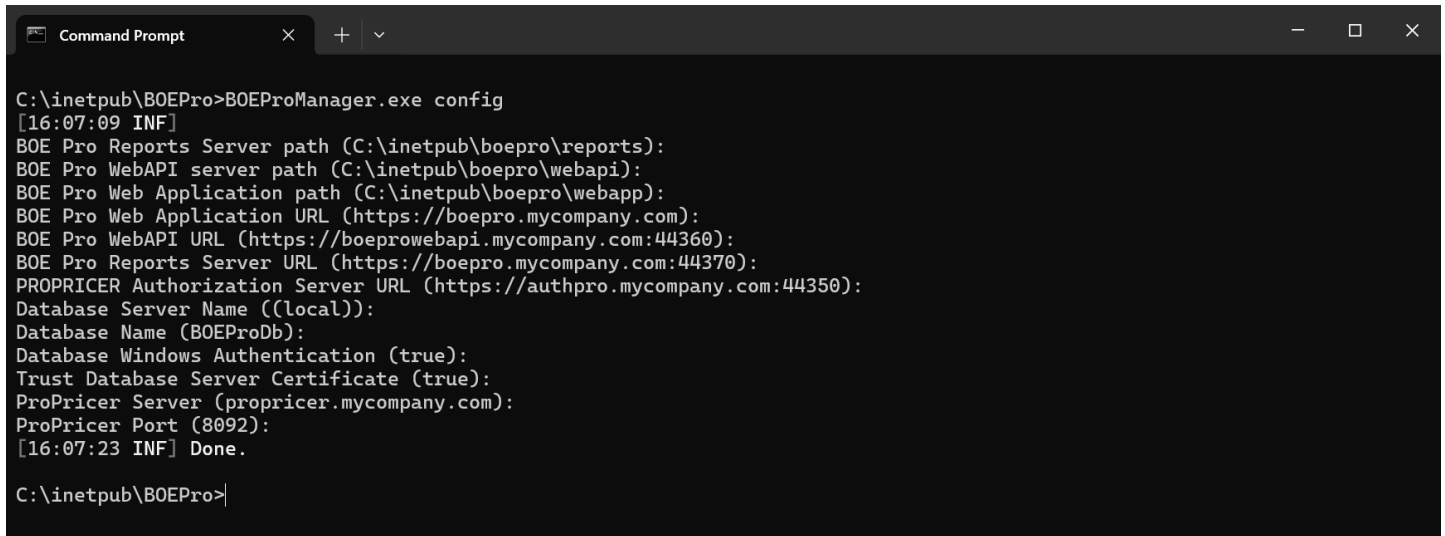
Commands:
  config           Configures BOE Pro.
  configai        Configures AI settings related to BOE Pro.
  configemail     Configures all the settings related for sending emails from BOE Pro.
  configesi       Configures all the settings related for ESI.
  disableai       Disables AI settings related to BOE Pro.
  enablefilelogger Configures BOE Pro Log.
  testemail       Sends an email using the settings from the appsettings.json.

Run 'BOEProManager [command] -?|-h|--help' for more information about a command.

C:\inetpub\BOEPro>_
```

1. Open a command prompt where the BOE Pro Manger tool is located.
2. At the command prompt, enter: `BOEProManager.exe config`

- For each parameter required, the value shown between parentheses is the current value. You can press **Enter** to accept and continue, or you can set a new value. Once all values are set, they are stored in a file named **config.json**. This file is in the same folder as the BOE Pro Manager tool. The next time you run the tool, it will show the information in **config.json** as default values. This is useful anytime reconfiguration is required, such as applying an upgrade.



```
C:\inetpub\BOEPro>BOEProManager.exe config
[16:07:09 INF]
BOE Pro Reports Server path (C:\inetpub\boepro\reports):
BOE Pro WebAPI server path (C:\inetpub\boepro\webapi):
BOE Pro Web Application path (C:\inetpub\boepro\webapp):
BOE Pro Web Application URL (https://boepro.mycompany.com):
BOE Pro WebAPI URL (https://boeprowebapi.mycompany.com:44360):
BOE Pro Reports Server URL (https://boepro.mycompany.com:44370):
PROPRICER Authorization Server URL (https://authpro.mycompany.com:44350):
Database Server Name ((local)):
Database Name (BOEProDb):
Database Windows Authentication (true):
Trust Database Server Certificate (true):
ProPricer Server (propricer.mycompany.com):
ProPricer Port (8092):
[16:07:23 INF] Done.

C:\inetpub\BOEPro>
```

## Microsoft Clarity (Optional)

Microsoft Clarity is a user behavior analytics tool that helps you understand how users are interacting with your website through features such as session replays and heatmaps.

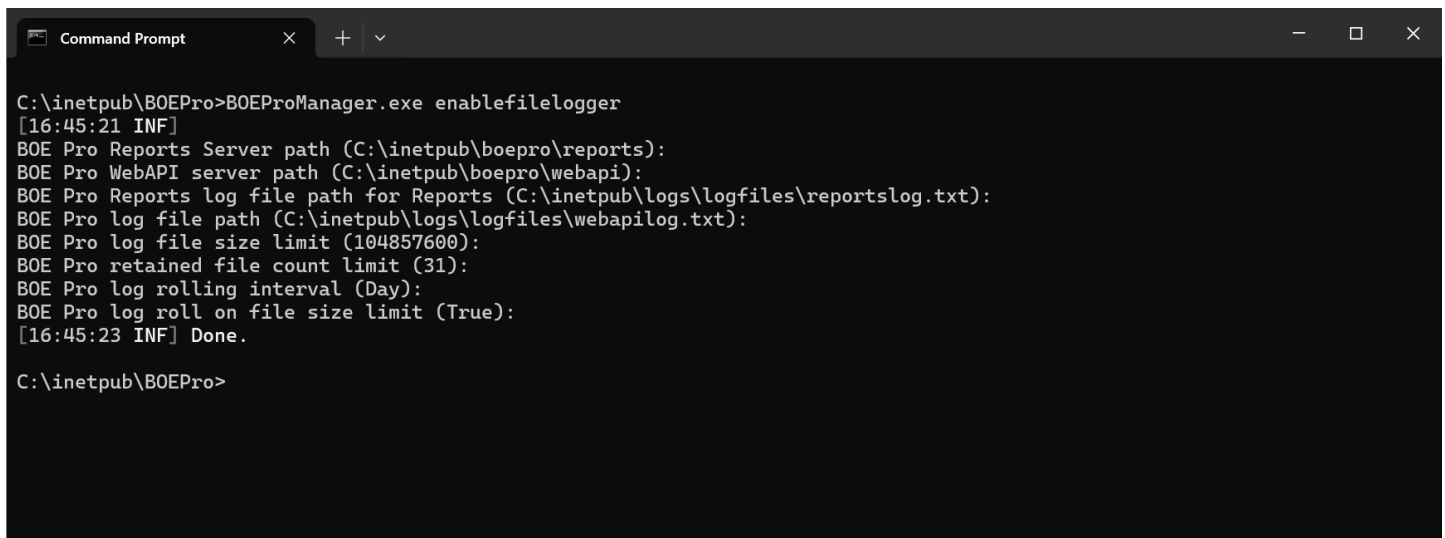
Enabling Microsoft Clarity is completely optional. Be aware that BOE Pro and Deltek, Inc. receive no data from Clarity, and that Microsoft collects all Clarity data. Before enabling, ensure that this is not a security problem for your organization.

To enable Microsoft Clarity in BOE Pro:

1. Sign into <https://clarity.microsoft.com>.
2. Create a new Clarity project for BOE Pro.
3. Go to **Settings** > **Overview** and copy the Project ID.
4. At the command prompt, enter: `BOEProWebAppManager.exe EnableClarity`
5. When prompted, enter the Project ID.

## Enable logging

1. Open a command prompt where the BOE Pro Manager tool is located.
2. At the command prompt, enter: `BOEProManager.exe enablefilelogger`
3. For each parameter required, the value shown between parentheses is the current value. You can press **Enter** to accept and continue, or you can set a new value. Once all values are set, they are stored in a file named **config.json**. This file is in the same folder as the BOE Pro Manager tool. The next time you run the tool, it will show the information in **config.json** as default values. This is useful anytime reconfiguration is required, such as applying an upgrade.



```
Command Prompt
C:\inetpub\BOEPro>BOEProManager.exe enablefilelogger
[16:45:21 INF]
BOE Pro Reports Server path (C:\inetpub\boepro\reports):
BOE Pro WebAPI server path (C:\inetpub\boepro\webapi):
BOE Pro Reports log file path for Reports (C:\inetpub\logs\logfiles\reportslog.txt):
BOE Pro log file path (C:\inetpub\logs\logfiles\webapilog.txt):
BOE Pro log file size limit (104857600):
BOE Pro retained file count limit (31):
BOE Pro log rolling interval (Day):
BOE Pro log roll on file size limit (True):
[16:45:23 INF] Done.

C:\inetpub\BOEPro>
```

## Add BOE Pro to Authorization Server Pro

After creating a BOE Pro database and installing and configuring the websites, it needs to be linked with Authorization Server Pro. Then users and licenses can be added.

## Link BOE Pro to Authorization Server Pro

To link BOE Pro with Authorization Server Pro, use the Authorization Server Pro WebAPI Manager tool in the **AuthorizationServerProWebAPI** folder.

1. Open a command prompt window with Administrator permissions.
2. Go to the folder where Authorization Server Pro WebAPI is installed.
3. At the command prompt, enter: `AuthorizationServerProWebAPIManager.exe config-boepro-url`
4. Enter the information requested.
5. To apply your changes, restart the Authorization Server Pro WebAPI application pool and the website.

## Add a BOE Pro license

To add a BOE Pro license, log in to Authorization Server Pro as an Administrator user.

1. In a web browser, go to the Authorization Server Pro WebApp URL.
2. On the Log In page, enter the Administrator user credentials.
3. Click **MENU > Licensing**.
4. Click **Add License**, then enter you BOE Pro license.
5. Activate your license.
6. Click **MENU > Users**.
7. At a minimum, select an Administrator user, select **Manage Licenses**, then select **BOE Pro** in the products. The Administrator user is required to set BOE Pro roles for users.

## Add BOE Pro users

To add BOE Pro users, log in to Authorization Server Pro as an Administrator user.

1. In a web browser, go to the Authorization Server Pro WebApp URL.
2. On the Log In page, enter the Administrator user credentials.
3. Click **MENU > Users**.
4. Click **Add User**, enter the user information, then select **BOE Pro** in the products.

To assign BOE Pro roles to users, log in to BOE Pro as an Administrator user.

1. In a web browser, go to the BOE Pro WebApp URL.
2. On the Log In page, enter the Administrator user credentials.
3. Click **MENU > Administration > Users**.
4. Users with a BOE Pro license will appear with an empty role.
5. Edit the users to assign a proper BOE Pro role.

# Test your installation

After creating a BOE Pro database and completing all required installation procedures, log in to and test BOE Pro. Testing is highly recommended before attempting to enable Windows authentication.

1. In your browser, go to your BOE Pro web application URL (for example, **https://boepro.mycompany.com**).
2. Enter the BOE Pro admin credentials used during the database setup.
3. Enter your registration key.
4. In BOE Pro, test your connection to ProPricer Contractor Edition by adding a CE proposal.
  - At the top of the application, click **MENU > Proposals**.
  - On the Proposals page, click **Add > Add Proposal From CE**.
  - Select and log in to your CE data server.
  - Enter ProPricer login type credentials.

---

*Make sure ProPricer CE allows ProPricer logins. In the System Options, go to **Login Type** and select **Choose or ProPricer**.*

---

5. If the connection is successful, all available CE proposals will appear. Select a proposal to add.
6. In the **Build Proposal Breakdown Structure From** menu, select the summary field in the CE proposal that will become the PBS in BOE Pro.
7. Select **Include Estimates** to retain the resource and travel estimates entered in the CE proposal's tasks.
8. Click **Process**. The proposal will appear in BOE Pro.
9. Test the BOE Pro reports.
  - On the Proposals page, hover over the proposal added from CE, click **More > Reports**, then select a report.
  - Set the report parameters, then click **Submit**. The report will appear on your screen.

10. Continue testing other application features, such as Active Sessions, Sync, and Submit, to verify that your installation was successful.

---

*If you experience issues installing BOE Pro, check the [Troubleshoot section](#) of this guide for a solution. For further assistance, contact [Deltek Customer Support](#).*

---

## Enable AI configuration (Optional)

BOE Pro has an agentive artificial intelligence (AI) scoring feature that helps users measure the quality of their text in BOE sections. To enable it after installing BOE Pro, complete the following procedure.

---

*Warning: If enabled, BOE text is sent to the service you specify to get a narrative score. For confidentiality and security reasons, a local service is highly recommended. The score is provided subject to the ProPricer Product terms, and Deltek does not independently verify the accuracy of each score. Users should independently review and verify the accuracy of the score.*

---

```

Administrator: Command Prompt
C:\inetpub\BOEPro>BOEProManager.exe ConfigAI -h
Configures AI settings related to BOE Pro.

Usage: BOEProManager configai [options]

Options:
  -?|-h|--help           Shows this help information.
  -sp|--spwebapi <Path>  The BOE Pro WebAPI server path (Required).
  -at|--aitype <type>    AI Service Type (Azure/openai/ollama).
  -ae|--aiendpoint <endpoint> AI Service Endpoint.
  -ak|--aikey <apikey>   AI Service Api Key.
  -ad|--aideployment <name> AI Service Deployment Name (only for azure).
  -am|--aimodel <id>    AI Service Model Id.

C:\inetpub\BOEPro>_

```

1. Open a command prompt where the BOE Pro Manger tool is located.
2. At the command prompt, enter: `BOEProManager.exe configai`
3. Enter values in the parameters that appear. Some parameters depend on the AI type you enter.
  - `BOE Pro WebAPI server path`: The folder where the WebAPI server is installed. The value shown between parentheses is the current value. You can press **Enter** to accept and continue, or you can set a new value.
  - `AI Type`: The AI service type. You can enter `azure`, `openai`, or `ollama`.
  - `AI Endpoint`: The AI service endpoint.
  - `AI Api Key`: The AI service API key.
  - `AI Deployment Name`: The AI service deployment name. Only required for the Azure AI type.
  - `AI Model`: The AI service model ID.

```
Administrator: Command Prompt
C:\inetpub\BOEPro>BOEProManager.exe ConfigAI
[13:26:22 INF]
BOE Pro WebAPI server path (C:\inetpub\BOEPro\webapi):
AI Type: Azure
AI Endpoint: https://your-endpoint.openai.azure.com
AI Api Key: Enter-Your-API-Key
AI Deployment Name: Enter-Your-Azure-Deployment-Name
[13:28:46 INF] Done.

C:\inetpub\BOEPro>
```

```
Administrator: Command Prompt
C:\inetpub\BOEPro>BOEProManager.exe ConfigAI
[13:30:19 INF]
BOE Pro WebAPI server path (C:\inetpub\BOEPro\webapi):
AI Type (openai): ollama
AI Endpoint: https://local-llm.mycompany.com
AI Model Id (model-id): Enter-Your-Model-Id
[13:30:57 INF] Done.

C:\inetpub\BOEPro>
```

# Enable Windows authentication (Optional)

BOE Pro allows Windows authentication as a login option. To enable it after installing BOE Pro, complete the following prerequisites and configurations.

## Prerequisites

- All sites must be hosted in a reverse proxy configuration with Internet Information Service (IIS) on Windows Server 2016 or later and joined to your Active Directory.
- Using the **Add Roles and Features** wizard, go to the **Server Roles** page > **Web Server (IIS)** > **Web Server** > **Security**, select **Windows authentication**, then click **Next**.
- Enable Windows authentication for Authorization Server Pro.
- Add BOE Pro Windows type users in Authorization Server Pro. The Windows Log In value must be entered in the following format: **DomainName\UserName**

---

*For more information, see the [References](#) at the end of this section of the guide.*

---

## BOE Pro settings

1. In your browser, go to your BOE Pro web application URL (for example, **https://boepro.mycompany.com**).
2. Enter the BOE Pro admin credentials provided during the database setup.
3. Assign a BOE Pro role to Windows users.
  - At the top of the application, click **MENU** > **Administration** > **Users**.
  - Hover over the email address of a Windows user, click **Edit**, then select a role.
4. Change the ProPricer login type to Windows.
  - At the top of the application, click **MENU** > **Administration** > **Settings**.
  - In **Login Type**, select **Windows (Active Directory)** or **Windows (Interactive)**.
5. Log in to BOE Pro again to test the settings.
  - Log out of BOE Pro, then log in again as a Windows user.
  - At the top of the application, click **MENU** > **Proposals**.
  - On the Proposals page, click **Add** > **Add Proposal From CE**.
  - Select and log in to your ProPricer CE data server.
  - If the connection is successful, all available CE proposals will appear.

## BOE Pro WebAPI configuration (Optional)

1. Open **Internet Information Service (IIS) Manager**.
2. Open the **Authentication** feature for the BOE Pro WebAPI site.
3. Enable anonymous authentication.
4. Enable Windows authentication. This is required to support ProPricer Contractor Edition logins.

The Windows account of each BOE Pro user can connect to ProPricer CE through BOE Pro. To set this up, grant **Full Control** permissions to the following two folders:

- **Temp** folder of the BOE Pro WebAPI application pool user (for example, **C:\Users\BOE Pro WebAPI App Pool\AppData\Local\Temp**). It handles file attachments during the submit process.
- **Deltak, Inc** folder where BOE Pro WebAPI is installed (for example, **C:\inetpub\BOEPro\WebAPI\Deltak, Inc**). It handles license management.

You can assign the permissions individually, use an existing Windows group for your BOE Pro users, or create a Windows group for your BOE Pro users and grant the permissions to it.

## References

- Learn more about Windows authentication and installing it for IIS. <https://docs.microsoft.com/en-us/iis/configuration/system.webServer/security/authentication/windowsAuthentication/>
- Configure Windows authentication in an ASP.NET Core app. <https://learn.microsoft.com/en-us/aspnet/core/security/authentication/windowsauth?tabs=visual-studio&view=aspnetcore-6.0>

# Enable Azure AD authentication (Optional)

BOE Pro allows Azure AD as a login option. To enable it after installing BOE Pro, complete the following prerequisites and configurations. Azure AD can be used as well to connect to ProPricer Contractor Edition through BOE Pro (optional).

## Prerequisites

- Your Authorization Server Pro installation has network connectivity to Microsoft services. This is required to validate login tokens.
- App registration in your Azure Active Directory.
- [App registration creation](#) for Authorization Server Pro.
- [Client/Desktop platform added to the app registration](#) for Authorization Server Pro.
- (Optional) [Azure AD logins enabled](#) to allow BOE Pro to connect to ProPricer CE using Azure AD.
- (Optional) If Azure AD will be used to communicate with ProPricer CE through BOE Pro, the users that will communicate with ProPricer CE must also exist in ProPricer CE with Login Type set to Azure AD.

## BOE Pro settings

1. In your browser, go to your BOE Pro WebApp URL (for example, <https://boepro.mycompany.com>).
2. Enter the BOE Pro admin credentials provided during the database setup.
3. Assign a BOE Pro role to Azure AD users.
  - At the top of the application, click **MENU > Administration > Users**.
  - Hover over the email address of an Azure AD user, click **Edit**, then select a role.
4. Change the ProPricer login type to Azure AD.
  - At the top of the application, click **MENU > Administration > Settings**.
  - In **Login Type**, select **Azure (Active Directory)**.
5. Log in to BOE Pro again to test the settings.
  - Log out of BOE Pro, then log in again as an Azure AD user.
  - At the top of the application, click **MENU > Proposals**.
  - On the Proposals page, click **Add > Add Proposal From CE**.
  - Select and log in to your ProPricer CE data server.
  - If the connection is successful, all available CE proposals will appear.

## References

- Register an application with the Microsoft identity platform. <https://learn.microsoft.com/en-us/azure/active-directory/develop/quickstart-register-app>
- Grant tenant-wide admin consent to an application. <https://learn.microsoft.com/en-us/azure/active-directory/manage-apps/grant-admin-consent>

## Remove ProPricer 9 WebAPI

BOE Pro v3.5.100.3 and later implements communication with ProPricer 9 Server in the BOE Pro WebAPI. This makes the ProPricer 9 WebAPI site no longer necessary. If you have BOE Pro v3.5.100.2 or earlier, delete the ProPricer 9 WebAPI website, application pool, and the website's folder in **C:\inetpub**. (For example, **C:\inetpub\BOEPro\ProPricer9WebAPI**)

---

*ProPricer 9 Server Host Name and ProPricer 9 Server Port settings are now required on BOE Pro WebAPI configuration settings.*

---

# Remove BOE Pro Authorization Server

BOE Pro version 3.5.105.1 and later use the new Authorization Server Pro website to authenticate user logins. This makes the BOE Pro Authorization Server website unnecessary. If you have BOE Pro version 3.5.105.0 or earlier, delete the BOE Pro Authorization Server website, application pool, and the website's folder in **C:\inetpub**. (For example, **C:\inetpub\BOEPro\AuthorizationServer**)

# Upgrade BOE Pro

To upgrade BOE Pro, download the new version package, upgrade the database, and upgrade all BOE Pro websites.

## Upgrade recommendations

- Plan for some downtime because BOE Pro sites stop during the process.
- Back up a copy of your sites before upgrading them.
- Back up your database before upgrading it.
- Go to the [Deltek Software Manager \(DSM\)](#) to download the ZIP package for the new version you want to upgrade to.
- [Download](#) and [install the latest .NET 8 Hosting Bundle](#).
- For versions 3.5.105.0 and earlier: Log in to BOE Pro as an Administrator and deactivate the license.

## Upgrade instructions

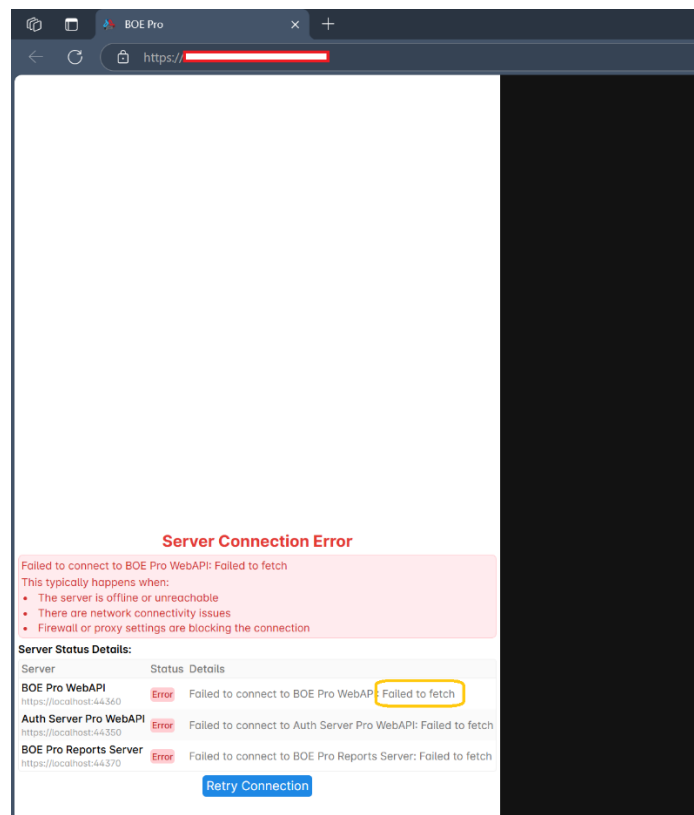
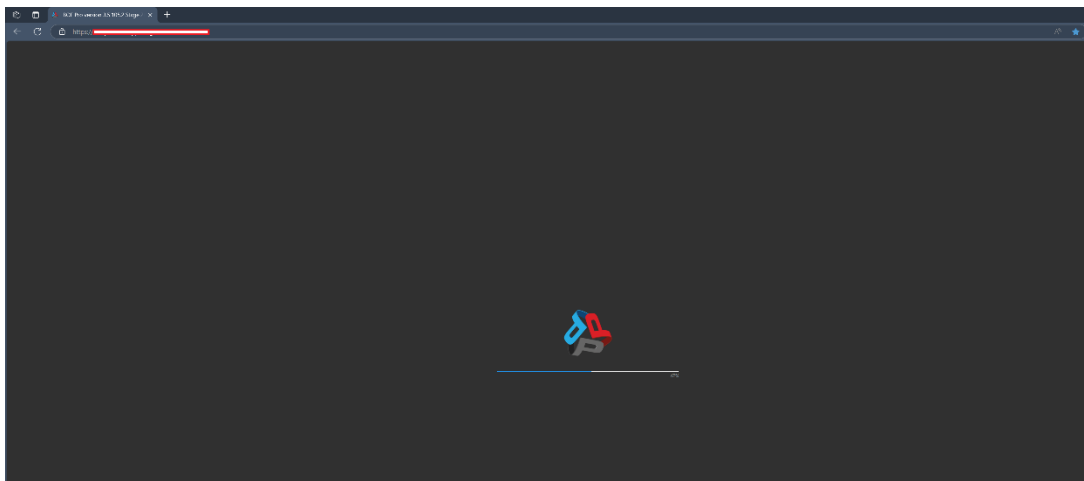
1. Download and extract the BOE Pro package **DeltekProPricerBOEPro\_[version]\_win-x64.zip**.
2. In IIS Manager, stop all sites and application pools.
  - Stop the BOE Pro WebAPI website.
  - Stop the BOE Pro WebAPI application pool.
  - Stop the BOE Pro WebApp website.
  - Stop the BOE Pro WebApp application pool.
  - Stop the BOE Pro Reports website.
  - Stop the BOE Pro Reports application pool.
3. For versions 3.5.105.0 and earlier, migrate existing BOE Pro users to the Authorization Server Pro system.
  - Open a command prompt window.
  - Go to the folder where **BOEProDatabaseSetup.exe** is extracted.
  - At the command prompt, enter: `BOEProDatabaseSetup.exe migrate-users`
  - To connect using Windows authentication, enter:  
`BOEProDatabaseSetup.exe migrate-users -w`
  - Enter the information requested.

4. Upgrade your database.
  - Open a command prompt window.
  - Go to the folder where **BOEProDatabaseSetup.exe** is extracted.
  - At the command prompt, enter: `BOEProDatabaseSetup.exe upgrade`
  - To connect using Windows authentication, enter:  
`BOEProDatabaseSetup.exe upgrade -w`
  - Enter the information requested.
5. Upgrade the BOE Pro WebAPI site.
  - In Windows Explorer, delete the BOE Pro WebAPI site folder.
  - Copy the extracted WebAPI folder to the BOE Pro site folder inside **C:\inetpub**. For example, **C:\inetpub\BOEPro**.
6. Upgrade the BOE Pro Reports site.
  - In Windows Explorer, delete the BOE Pro Reports site folder.
  - Copy the extracted Reports folder to the BOE Pro site folder inside **C:\inetpub**. For example, **C:\inetpub\BOEPro**.
7. Upgrade the BOE Pro WebApp site.
  - In Windows Explorer, delete the BOE Pro WebApp site folder.
  - Copy the extracted WebApp folder to the BOE Pro site folder inside **C:\inetpub**. For example, **C:\inetpub\BOEPro**.
8. Reconfigure all sites.
  - Open a command prompt with Administrator permissions.
  - Go to the folder where BOE Pro is installed.
  - At the command prompt, enter `BOEProManager.exe config`
  - Enter the information requested, or press **Enter** to accept the existing values.
9. In IIS Manager:
  - Start the BOE Pro WebAPI application pool.
  - Start the BOE Pro WebAPI website.
  - Start the BOE Pro Reports application pool.
  - Start the BOE Pro Reports website.
  - Start the BOE Pro WebApp application pool.
  - Start the BOE Pro WebApp website.

# Troubleshoot

## Authorization Server Pro, BOE Pro WebAPI Server, and BOE Pro Reports Server – Fetch error

At the BOE Pro WebApp startup, there is a status check for all required servers. You might receive the **Failed to fetch** error message after entering the WebApp URL in your browser (for example, <https://boepro.mycompany.com>).



## Solution 1

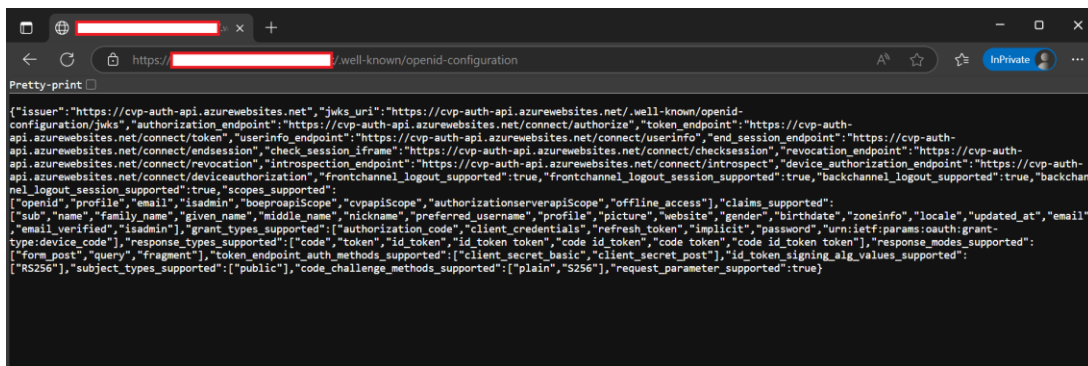
Check your networking. Verify that your firewall is not blocking the authorization server port.

## Solution 2

Restart the server website.

## Solution 3

1. For Authorization Server Pro, in your browser enter your server URL followed by **/well-known/openid-configuration** (for example, **https://authserverpro.mycompany.com/well-known/openid-configuration**). The resulting .json file should look like:



```

{"issuer":"https://cvp-auth-api.azurewebsites.net","jwks_uri":"https://cvp-auth-api.azurewebsites.net/.well-known/openid-configuration/jwks","authorization_endpoint":"https://cvp-auth-api.azurewebsites.net/connect/authorize","token_endpoint":"https://cvp-auth-api.azurewebsites.net/connect/token","userinfo_endpoint":"https://cvp-auth-api.azurewebsites.net/connect/userinfo","end_session_endpoint":"https://cvp-auth-api.azurewebsites.net/connect/endsession","check_session_iframe":"https://cvp-auth-api.azurewebsites.net/connect/checksession","revocation_endpoint":"https://cvp-auth-api.azurewebsites.net/connect/revocation","introspection_endpoint":"https://cvp-auth-api.azurewebsites.net/connect/introspect","device_authorization_endpoint":"https://cvp-auth-api.azurewebsites.net/connect/deviceauthorization","frontchannel_logout_supported":true,"frontchannel_logout_session_supported":true,"backchannel_logout_supported":true,"backchannel_logout_session_supported":true,"scopes_supported":["openid","profile","email","isadmin","boeproapiScope","cvpapiScope","authorizationserverapiScope","offline_access"],"claims_supported":["sub","name","family_name","given_name","middle_name","nickname","preferred_username","profile","picture","website","gender","birthdate","zoneinfo","locale","updated_at","email","email_verified","isadmin"],"grant_types_supported":["authorization_code","client_credentials","refresh_token","implicit","password","urn:ietf:params:oauth:grant-type:device_code"],"response_types_supported":["code","token","id_token","id_token token","code id_token","code token","code id token token"],"response_modes_supported":["form_post","query","fragment"],"token_endpoint_auth_methods_supported":["client_secret_basic","client_secret_post"],"id_token_signing_alg_values_supported":["RS256"],"subject_types_supported":["public"],"code_challenge_methods_supported":["plain","S256"],"request_parameter_supported":true}

```

2. If you receive an error instead of the .json file, go to the **Authorization Server Pro WebAPI** folder and find the file **appsettings.json**. Verify that it is a valid .json file containing the correct configuration.
3. Install or repair .NET Core hosting bundle and restart IIS service.
4. If you made updates in **appsettings.json**, recycle the application pool to apply the changes.

## Solution 4

1. [Enable logging in affected server.](#)
2. Recycle the application pool to apply the changes.
3. Try logging into BOE Pro again and check the log for the error.
4. If the log was not created, make sure the application pool has full access to the folder where the log file is configured to be created. The folder must exist to create the file.

## Solution 5

If there is no log file, open Windows Event Viewer, and look for errors with starting your authorization server.

## BOE Pro WebAPI – Common errors

### HTTP Error 500.31 - Failed to load ASP.NET Core runtime

Install or repair .NET Core hosting bundle and restart IIS service.

### 500.119

The application pool identity cannot read **appsettings.json**. To fix this, assign permissions to the folder where the website files are located (for example, **C:\inetpub\BOEPro\WebAPI**).

### HTTP Error 503 – The service is unavailable

The service is unavailable when the application pool of the corresponding web application is stopped, disabled, or paused. It may also be unavailable when the given user identity of the application pool is invalid due to an expired password or is locked.

<https://blogs.msdn.microsoft.com/webtopics/2010/02/17/a-not-so-common-root-cause-for-503-service-unavailable/>

<https://stackoverflow.com/questions/13322937/http-error-503-the-service-is-unavailable>

### Bad Request – Request header too long

“HTTP Error 400. The size of the request header is too long.”

While using Windows authentication, this error may appear instead of the BOE Pro application. It is the result of the user being a member of many Active Directory user groups.

To fix this:

1. Open **Windows Registry Editor** and go to:  
`HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\HTTP\Parameters`
2. Increase the settings for the `MaxFieldLength` and the `MaxRequestBytes` registry entries on the server so that the user's request headers do not exceed these values. For example:  
`"MaxRequestBytes"=dword:01000000`  
`"MaxFieldLength"=dword:0000fffe`

<https://docs.microsoft.com/en-us/troubleshoot/iis/http-bad-request-response-kerberos>

<https://www.grouppolicy.biz/2013/06/how-to-configure-iis-to-support-large-ad-token-with-group-policy>

### Cannot access path 'Deltek, Inc\PROPRICER\9'

You will receive this error if the BOE Pro WebAPI Application Pool **Load User Profile** is set to **False**.

To fix this:

1. Right-click **BOE Pro WebAPI App Pool**, then select **Advanced Settings**.
2. Set **Load User Profile** to **True**.
3. Click **OK** to save the change.
4. Right-click **BOE Pro WebAPI App Pool**, then select **Recycle**.

# Database Setup reference

BOE Pro Database Setup is a command line tool that allows the database administrators to create and upgrade BOE Pro databases.

## Usage

```
BOEProDatabaseSetup [options] [command]
```

## Options

`-v|--version` Show version information.

`-?|-h|--help` Show help information.

## Commands

`addsysadmin` Add a system administrator account to a BOE Pro database.

`create` Create a new BOE Pro database.

`upgrade` Upgrade a BOE Pro database to the current version.

## create command

`create` Create a BOE Pro database.

### Usage

```
BOEProDatabaseSetup create [options]
```

### Options

- `-?|-h|--help` Show help information.
- `-f|--scripttofile <fileName>` Output the script to a file.
- `-s|--server <servername>` Name of the database server.
- `-w|--windowsauth` Use Windows authentication.
- `-d|--dbname <databasename>` Name of the database. Default value is `BOEPro`.
- `-al|--adminlogin <login>` BOE Pro admin user email. Default value is `sysadmin@propricer.com`.
- `-ap|--adminpass <password>` BOE Pro admin user password. Default value is `sysadmin`.
- `-an|--adminname <name>` BOE Pro admin username. Default value is `System Administrator`.
- `-u|--dbauser <dbalogin>` Database user login.
- `-p|--dbapass <dbapassword>` Database user password.
- `-e|--useexistingdb` Use an existing database (for example, when using Azure SQL Database).

### Examples

Create a BOE Pro database on a on-premises SQL server using Windows authentication:

```
BOEProDatabaseSetup create -s sqlserver.mycompany.com -d BOEPro -al  
sysadmin@mycompany.com -ap SysAdmin@BOEPro -an "System Administrator" -w
```

Create a BOE Pro database on an Azure SQL database using SQL authentication:

```
BOEProDatabaseSetup create -s mycompany.database.windows.net -u myazureuser -p  
MyAzurePassword -d BOEPro -al sysadmin@mycompany.com -ap MyStrongPassword4BOEPro  
-an "System Administrator" -e
```

## upgrade command

upgrade Upgrade an existing BOE Pro database.

### Usage

```
BOEProDatabaseSetup upgrade [options]
```

### Options

- ?|-h|--help Show help information.
- s|--server <servername> Name of the database server.
- w|--windowsauth Use Windows authentication.
- u|--dbauser <dbalogin> Database user login.
- p|--dbapass <dbapassword> Database user password.
- d|--dbname <databasename> Name of the database. Default value is BOEPro.
- f|--scripttofile <fileName> Output the script to a file.

### Examples

Upgrade a database named **BOEPro** on a on-premises SQL server using Windows authentication :

```
BOEProDatabaseSetup upgrade -s sqlserver.mycompany.com -d BOEPro -w
```

Upgrade a database named **BOEPro** on an Azure SQL database using SQL authentication:

```
BOEProDatabaseSetup upgrade -s mycompany.database.windows.net -u myazureuser -p MyAzurePassword -d BOEPro
```

## addsysadmin command

`addsysadmin` Create an administrator-type user in a previously created BOE Pro database. This command is helpful when there is no access to the BOE Pro system due to forgotten passwords. The command creates a user with the Admin-only role assigned to it, providing it with access to the BOE Pro system, but only to the administrative section where Users data can be viewed and modified. Keep in mind that there can only be one Admin-only user in the system.

### Usage

```
BOEProDatabaseSetup addsysadmin [options]
```

### Options

- ?|-h|--help Show help information.
- s|--server <servername> Name of the database server.
- w|--windowsauth Use Windows authentication.
- d|--dbname <databasename> Name of the database. Default value is BOEPro.
- al|--adminlogin <login> BOE Pro admin user email. Default value is sysadmin@propricer.com.
- ap|--adminpass <password> BOE Pro admin user password. Default value is sysadmin.
- an|--adminname <name> BOE Pro admin username. Default value is System Administrator.
- u|--dbauser <dbalogin> Database user login.
- p|--dbapass <dbapassword> Database user password.