Jp Project Documentation

Release 1.0.0

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Introduction

The main goal of JP Project is to be a Management Ecosystem for IdentityServer4 and ASP.NET Identity.

Helping Startup's and Organization to Speed Up Microservices Environment. Providing tools for an OAuth2 Server and User Management.

Built with IdentityServer4. An OpenID Connect and OAuth 2.0 framework for ASP.NET Core.

Features of SSO:

- Register users
- Recover password flow
- MFA
- Federation Gateway (Login by Google, Facebook.. etc)
- Argon2 password hashing
- CSP Headers
- Event monitoring (For compliance scenarios)

Admin UI is an administrative panel where it's possible to manage the OAuth2 Server, Users and Roles.

From OAuth2 panel it's possible to manage: * *Clients* * *Identity Resources* * *Api Resources* * *Persisted Grants*

From Identity panel it's possible to manage *Users* and *Roles*

It's open source and free. From community to community.

Screenshots

CHAPTER 1

Admin UI

<img src=”https://github.com/brunohbrito/JP-Project/blob/master/docs/images/jp-adminui.gif” width=”480” />

CHAPTER 2

Login page

<img src=”https://github.com/brunohbrito/JP-Project/blob/master/docs/images/login.JPG?raw=true” width=”480” />

CHAPTER 3

Consent page

<img src="https://github.com/brunohbrito/JP-Project/blob/master/docs/images/consent-page.JPG?raw=true" width="480" />

CHAPTER 4

Profile

<img src=”https://github.com/brunohbrito/JP-Project/blob/master/docs/images/jp-usermanagement.gif” width=”480” />

CHAPTER 5

Demo online

Now we are online! See it in action

Below an intro video!

Do you love it? give us a Star!

Wanna contribute? Feel free to do that!

But remember to check the Contributing Section

Take a special place in our heart!

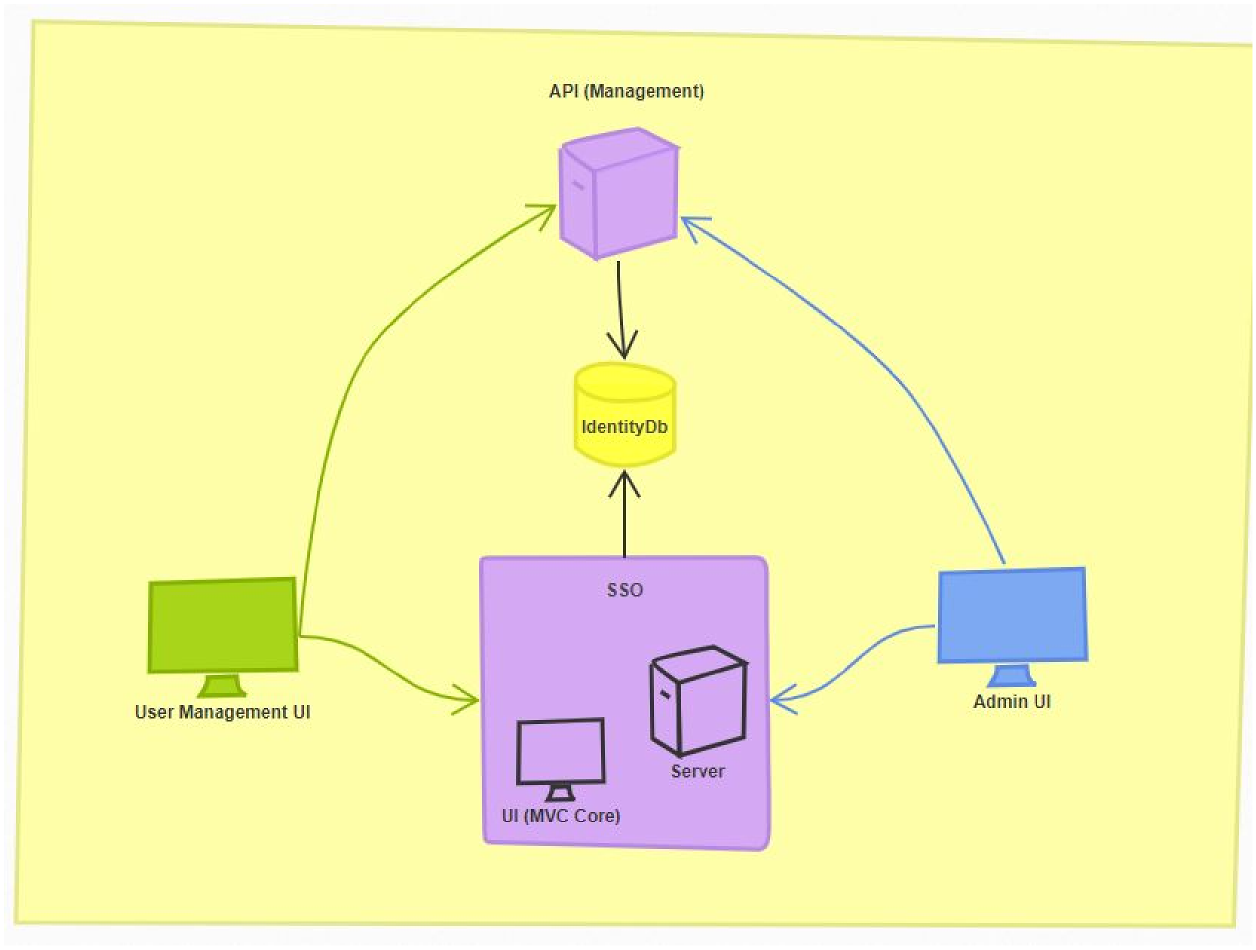
All contributors has a heart! See them in Contributor list

5.1 Free

If you need help building or running your Jp Project platform There are several ways we can help you out.

5.1.1 Overview

An overview about current devlopment



SSO

It's responsible for Authenticate users. Check it's credentials and emit Tokens for Applications. Authentication is needed when an application needs to know the identity of the current user. Typically these applications manage data on behalf of that user and need to make sure that this user can only access the data for which he is allowed.

Click here to check more details.

User Management UI

A SPA application responsible for create and manager users. Send reset links. E-mail validation. Profile validation, and so on.

Management API

API to serve UI's.

Admin UI

It's the Admin user interface to manage identity Server 4.

5.1.2 Architecture

This project was developed aiming the best practices.

Equinox Project

The ASP.NET Core Architecture was based on Equinox Project.

Angular 8

To manage existing user and new one's a SPA Angular 8 was built.

Technologies

Check below how it was developed.

Written in ASP.NET Core and Angular 8.

- Angular 8
- Rich UI interface
- ASP.NET Core 3.0
- ASP.NET MVC Core
- ASP.NET WebApi Core
- ASP.NET Identity Core
- Argon2 Password Hashing
- MySql Ready
- Sql Ready
- Postgree Ready
- SQLite Ready
- Entity Framework Core
- .NET Core Native DI
- AutoMapper
- FluentValidator
- MediatR
- Swagger UI
- High customizable
- Translation for 7 different languages

Architecture

- Architecture with responsibility separation concerns, SOLID and Clean Code
- Domain Driven Design (Layers and Domain Model Pattern)
- Domain Events
- Domain Notification
- CQRS (Imediate Consistency)
- Event Sourcing
- Unit of Work
- Repository and Generic Repository

5.1.3 Contributing

We are open to community contributions.

First, Read this: Being a good open source citizen. There are a couple of guidelines you should follow so we can handle this without too much effort.

How to contribute?

Looking to contribute something to Jp Ploject? **Here's how you can help.**

Contributing to Jp Project

Please take a moment to review this document in order to make the contribution process easy and effective for everyone involved.

Following these guidelines helps to communicate that you respect the time of the developers managing and developing this open source project. In return, we will be lovely persons that respect in addressing your issue or assessing patches and features.

The easiest way to contribute is to open an issue and start a discussion.

Using the issue tracker

The issue tracker is the preferred channel for [bug reports](#bug-reports), [features requests](#feature-requests) and [submitting pull requests](#pull-requests), but please respect the following restrictions:

- Please **do not** use the issue tracker for personal support requests.
- Please **do not** post comments consisting solely of "+1" or ":thumbsup:". Use GitHub's "reactions" feature instead.

Bug reports

A bug is a _demonstrable **problem_** that is caused by the code in the repository. Good bug reports are extremely helpful!

Guidelines for bug reports:

0. **Validate and lint your code** &mdash; to ensure your problem isn't caused by a simple error in your own code.
1. **Use the GitHub issue search** &mdash; check if the issue has already been reported.
2. **Check if the issue has been fixed** &mdash; try to reproduce it using the latest *master* or development branch in the repository.

A good bug report shouldn't leave others needing to chase you up for more information. Please try to be as detailed as possible in your report. What is your environment? What steps will reproduce the issue? Did you check the logs? All these details will help people to fix any potential bugs.

Example:

Short and descriptive example bug report title
A summary of the issue and the OS environment in which it occurs. If suitable, include the steps required to reproduce the bug.

1. This is the first step
2. This is the second step
3. Further steps, etc.

Any other information you want to share that is relevant to the issue being reported. This might include the lines of code that you have identified as causing the bug, and potential solutions (and your opinions on their merits).

Feature requests

Feature requests are welcome. Before opening a feature request, please take a moment to find out whether your idea fits with the scope and aims of the project. It's up to *you* to make a strong case to convince the project's developers of the merits of this feature. Please provide as much detail and context as possible.

Pull requests

Issue First Before even writing the first line of code raise an issue and get buy in on your proposal from the maintainers. There's several reasons for this, people might already be working on the issue, the issue might not be an issue or by design, but mainly just letting the community know your working on something, it gets "assigned" to you and you get implementation detail feedback early. All to reduce chance of redoing work or getting your contribution rejected.

Good pull requests—patches, improvements, new features—are a fantastic help. They should remain focused in scope and avoid containing unrelated commits.

Please ask first before embarking on any significant pull request (e.g. implementing features, refactoring code, porting to a different language), otherwise you risk spending a lot of time working on something that the project's developers might not want to merge into the project.

Adhering to the following process is the best way to get your work included in the project:

1. Fork the project, clone your fork, and configure the remotes:

```
# Clone your fork of the repo into the current directory
git clone https://github.com/<your-username>/JP-Project.git
# Navigate to the newly cloned directory
```

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```
cd free-bootstrap-admin-template
# Assign the original repo to a remote called "upstream"
git remote add upstream https://github.com/brunohbrito/JP-Project.git
```

2. If you cloned a while ago, get the latest changes from upstream:

```
git checkout master
git pull upstream master
```

3. Create a new topic branch (off the main project development branch) to contain your feature, change, or fix:

```
git checkout -b <topic-branch-name>
```

4. Commit your changes in logical chunks. Please adhere to these git commit message guidelines or your code is unlikely to be merged into the main project. Use Git's interactive rebase feature to tidy up your commits before making them public.

5. Locally merge (or rebase) the upstream development branch into your topic branch:

```
git pull [--rebase] upstream master
```

6. Push your topic branch up to your fork:

```
git push origin <topic-branch-name>
```

7. Open a Pull Request with a clear title and description against the *master* branch.

IMPORTANT: By submitting a patch, you agree to allow the project owners to license your work under the terms of the MIT License.

Platform

Backend of JpProject is built against ASP.NET Core and runs on .NET Framework 4.6.1 (and higher) and .NET Core 2.1 (and higher).

The Frontend SPA is built against Angular 6 and runs on Node and Angular Cli 6.

General feedback and discussions?

Please start a discussion on the issue tracker.

5.1.4 Contributor Covenant Code of Conduct

Our Pledge

In the interest of fostering an open and welcoming environment, we as contributors and maintainers pledge to making participation in our project and our community a harassment-free experience for everyone, regardless of age, body size, disability, ethnicity, sex characteristics, gender identity and expression, level of experience, education, socio-economic status, nationality, personal appearance, race, religion, or sexual identity and orientation.

Our Standards

Examples of behavior that contributes to creating a positive environment include:

- Using welcoming and inclusive language
- Being respectful of differing viewpoints and experiences
- Gracefully accepting constructive criticism
- Focusing on what is best for the community
- Showing empathy towards other community members

Examples of unacceptable behavior by participants include:

- The use of sexualized language or imagery and unwelcome sexual attention or advances
- Trolling, insulting/derogatory comments, and personal or political attacks
- Public or private harassment
- Publishing others' private information, such as a physical or electronic address, without explicit permission
- Other conduct which could reasonably be considered inappropriate in a professional setting

Our Responsibilities

Project maintainers are responsible for clarifying the standards of acceptable behavior and are expected to take appropriate and fair corrective action in response to any instances of unacceptable behavior.

Project maintainers have the right and responsibility to remove, edit, or reject comments, commits, code, wiki edits, issues, and other contributions that are not aligned to this Code of Conduct, or to ban temporarily or permanently any contributor for other behaviors that they deem inappropriate, threatening, offensive, or harmful.

Scope

This Code of Conduct applies within all project spaces, and it also applies when an individual is representing the project or its community in public spaces. Examples of representing a project or community include using an official project e-mail address, posting via an official social media account, or acting as an appointed representative at an online or offline event. Representation of a project may be further defined and clarified by project maintainers.

Enforcement

Instances of abusive, harassing, or otherwise unacceptable behavior may be reported by contacting the project team at bhdebrito@gmail.com. All complaints will be reviewed and investigated and will result in a response that is deemed necessary and appropriate to the circumstances. The project team is obligated to maintain confidentiality with regard to the reporter of an incident. Further details of specific enforcement policies may be posted separately.

Project maintainers who do not follow or enforce the Code of Conduct in good faith may face temporary or permanent repercussions as determined by other members of the project's leadership.

Attribution

This Code of Conduct is adapted from the [Contributor Covenant][homepage], version 1.4, available at https://www.contributor-covenant.org/version/1/4/code-of-conduct.html

homepage

5.1.5 Contributors

Below our lovely Contributors!

Contributors
Bruno Brito Site

5.1.6 Stress Tests Results

When running in production scenarios. Some endpoints has more requests than other. There are two that has a heavy workload in stressed scenarios.

- *connect/token*
- *connect/introspect*

Why?

- Usually developers don't carry about generate a new token at each request to some API.
- There a huge amount of stuff that donn't use Token introspect endpoint, and when it is used, don't care about send it to server to validate at each request.

In fact the most used component for token introspection for ASP.NET users is *AccessTokenValidation*. It has a default cache of 5 minutes. But when are using another component for node.js, Springboot (java). it doesn't has cache capabilities. So the stress test was base in this case.

Generate token

intro/../images/stress/connecttoken.png

Token introspect

intro/../images/stress/tokenintrospect.png

5.1.7 First Use

In this section you will learn the basics to Get Ready!

Pre-requisites

To build solution you need to certify about these components first

- .NET Core 2.2
- node 8
- npm 5
- Angular CLI 7.2

Build Files

After **|download|** here or clone the initial state of project is:

- Use MySql Server LocalDb
- Temporary Certificate
- Auto Migration enabled

Using build.bat

Open folder *build* and execute build.bat. The file will install Nuget and NPM dependencies. Then compile and run.

Using build.ps1

Sometimes there are missing parameters at Environment Path, so the build.bat can't build.

Open powershell as Admin. Navigate to build folder. Execute these commands:

- Set-ExecutionPolicy Unrestricted
- .build.ps1
- Set-ExecutionPolicy AllSigned

5.1.8 Docker

Now you can run through a docker!

Unfortunately you need to change hosts for it. Because Authority URL. I can't do anything to face it. It's security feature from OAuth2 to keep same Authority name for each Token.

Warning:

- Demo Database.
- This environment will not persist data once the containers stop running and is only suitable for basic testing.

Important: You must need to update hosts file in order to successful run.

Tutorial

If you do not already have a working IdentityServer installation up and running, or just want to demo AdminUI, then this walkthrough is for you.

The demo Docker Compose file will run Docker containers for Admin UI, plus containers test IdentityServer installation & database. It will get you up and running quickly with a full demo test environment.

This walk-through will assume you already have Docker installed on your machine.

The latest Docker compose file can be downloaded here.

1 - Download

Download or clone project.

2 - Update HOST

Before you begin, add a map within your hosts file from your local IP address to "jpproject".

As follows: `127.0.0.1 jpproject`

To do so, go to project folder > build(folder) and execute update-hosts.bat as Administrator. Or follow the steps:

- **On Windows, your hosts file is usually found at `C:\Windows\System32\Drivers\etc\hosts`**
    - Add `127.0.0.1 jpproject` at the end of file
- **On Linux, your hosts file is usually found at `/etc/hosts`**
    - Add `127.0.0.1 jpproject` at the end of file

3 - Run docker-compose

Open terminal (`cmd`) from project folder and type:

Listing 1: CMD

```
docker-compose up
```

BE HAPPY!

Authority vs Issuer name

Authority name differs from Issuer name inside the docker ambient. The Authority and Issuer url must be the same across the environment. Look at the image:

quickstarts/../images/dockerproblem.jpg

If Authority differs from Issure the authorization will fail. There are some ways to do that:

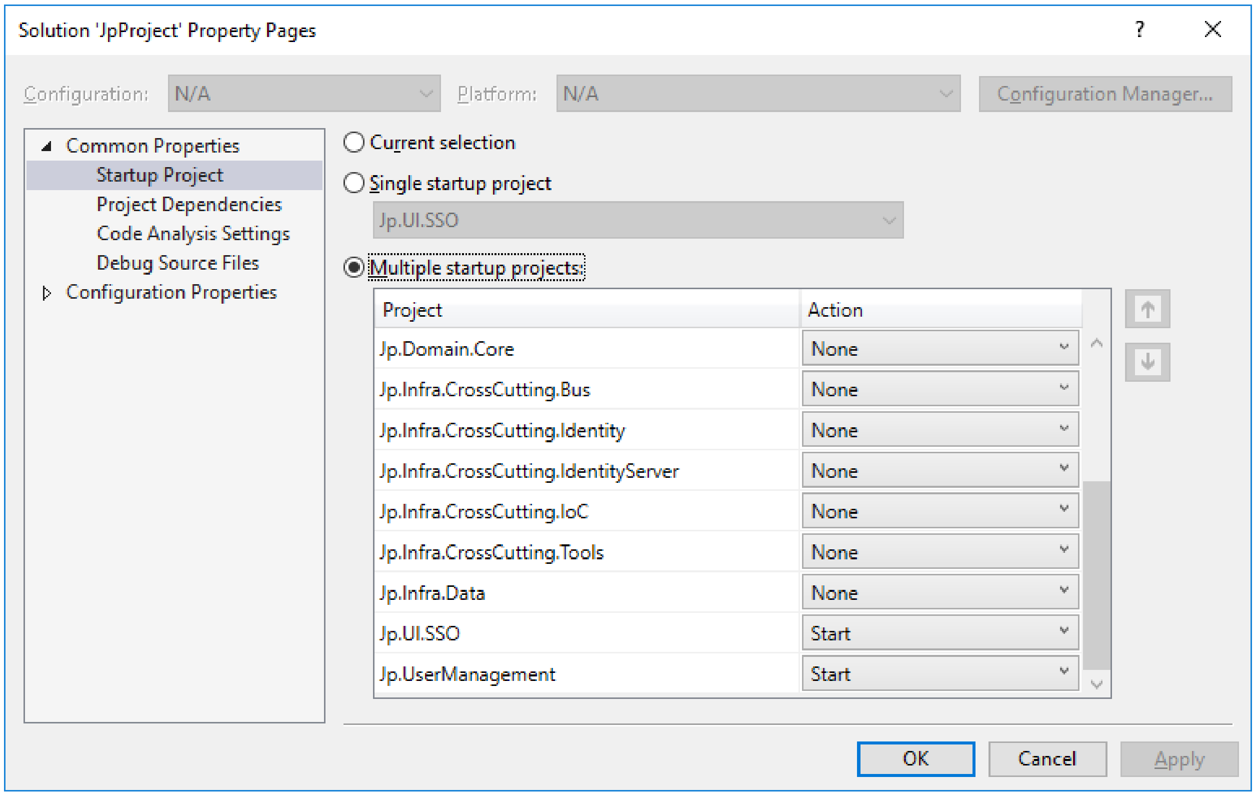
- Same DNS. Host machine and docker ambient in the same network. So it's possible to access them with the hostname, because they wil have same DNS.
- Change the Api hosts file. Change localhost with the same ip address of SSO.
- Change ID4 validation to ignore Issuer. It's not recomended, but RFC6749 do not have specific rules about it.

5.1.9 VS and VSCode

The default way to Start the project.

SSO and API

To load project open src/JpProject.sln vith Visual Studio. Now you need to set Multiple Startup Projects.



Project	Action
Jp.Domain.Core	None
Jp.Infra.CrossCutting.Bus	None
Jp.Infra.CrossCutting.Identity	None
Jp.Infra.CrossCutting.IdentityServer	None
Jp.Infra.CrossCutting.IoC	None
Jp.Infra.CrossCutting.Tools	None
Jp.Infra.Data	None
Jp.UI.SSO	Start
Jp.UserManagement	Start

Run the project

Admin UI

Open VSCode then go to File > Open Folder > Locate srcFrontendJp.AdminUI.

Open Terminal `CTRL` + `'`. Type:

- npm install
- ng serve

Wait and open Browser at http://localhost:4300

User Management

Open VSCode then go to File > Open Folder > Locate srcFrontendJp.UserManagement.

Open Terminal `CTRL` + `'`. Type:

- npm install
- ng serve

Wait and open Browser at http://localhost:4200

Expected

After a success build and run, 3 consoles app's must be open:

5.1.10 Ambient variables

Using Ambient var you can minimize efforts to change configuration after publish.

SSO Variables

Table 1: Ambient Variables

Variable	Default	Docker	Expected in prod	Description
ASPNETCORE_ENVIRONMENT	Development	Devlopment	Production	For more info access the default docs
ASPNETCORE_URLS	https://+:5001;http://+:5000	http://+:5000	https://+:443;http://+:80	Set the ports for Https and Http. For more info docs
APPINSIGHTS_INSTRUMENTATIONKEY	<YOUR KEY>	<YOUR KEY>	Something like 762FAF25-9480-4AF7-8821-06875ED9266C	To create an Application Insights on Azure go to docs
CERTIFICATE_TYPE	Temporary	Temporary	File	Can be Temporary / File / Store / Environment
USER_MANAGEMENT_URI	http://localhost:4200	http://localhost:4200		Url of User Management UI after published
IS4_ADMIN_UI	http://localhost:4300	http://localhost:4300		The path Url of Admin UI
RESOURCE_SERVER_URI	https://localhost:5002	http://localhost:5003		The path Url of Management API
CUSTOMCONNSTR_DATABASE_CONNECTION	<YOUR CONNECTION STRING>	check at docker.compose		Database Connection String Specially made for Azure App Service
DATABASE_TYPE	`MySql` or `SqlServer`	`MySql`		Which database will be used.

User Management API Variables

Table 2: Ambient Variables

Variable	Default	Docker	Expected in prod	Description
ASPNETCORE_ENVIRONMENT	Development	Devlopment	Production	For more info access the default docs
ASPNETCORE_URLS	https://+:5002;http://+:5003	http://+:5003	https://+:443;http://+:80	Set the ports for Https and Http. For more info docs
APPINSIGHTS_INSTRUMENTATIONKEY	<YOUR KEY>	<YOUR KEY>	Something like 762FAF25-9480-4AF7-8821-06875ED9266C	To create an Application Insights on Azure go to docs
AUTHORITY	https://localhost:5001	http://jpproject:5000		Authority URL
CUSTOMCONNSTR_DATABASE_CONNECTION	<YOUR CONN STRING>	check at docker.compose		Database Connection String Specially made for Azure App Service
DATABASE_TYPE	`MySql` or `SqlServer`	`MySql`		Which database will be used.

5.1.11 App Settings

Here you can find detailed explanation about App Settings

There are Ambient Variables, such as Database Connection, that are equivalent in App Settings. In case that both of them are set. The project will respect the Ambient Variables first.

SSO Settings

Connection

The project use only one Database and all projects use the same Connection String name **"SSOConnection"**

CertificateOptions

There are two options to provide CertificateOptions.

- **File - You need to provide**
  - FileName: Entire path of certificate
  - FilePassword: Password of certificate
- **Store** - You need to provide KeyStoreIssuer. The certificate is search by X509FindType.FindByIssuerName. (Good option for Azure SSL)
- **Environment** - Will look into Env Var ASPNETCORE_Kestrel__Certificates__Default__Path and ASPNETCORE_Kestrel__Certificates__Default__Password to locate the certificate and it pass.
- **Temporary** - It will create an auto signed Certificate. Use only on dev's environment.

EmailConfiguration

E-mail settings to provide the capabilities to send e-mail after a new user and reset link.

ExternalLogin

With these settings the SSO can provide External login.

To take token settings from Google, get docs here

To take from Facebook, see docs here

ApplicationSettings

These settings will be overrided by Environment Variables, if set.

Table 3: Ambient Variables

Variable	Value	Description
Authority	https://localhost:5000	The path Url of SSO
UserManagementURL	http://localhost:4200	The path Url of User Management UI after published
IS4AdminUi	http://localhost:4300	The path Url of Admin UI
ResourceServerURL	https://localhost:5003	The path Url of Management API
CUSTOMCONNSTR_[illegible]	<YOUR_DATABASE_CONNECTION STRING>	Database Connection String
DatabaseType	`MySql` or `SqlServer`	Which database will be used.

User Management API

Connection

The project use only one Database and all projects use the same Connection String name **"SSOConnection"**

Storage

If user send his profile picture, then the project will upload it to Azure Blob container, so these options must be set.

To get more info how to take Key, see docs here

EmailConfiguration

E-mail settings to provide the capabilities to send e-mail after a new user and reset link.

ApplicationSettings

Need to provide the **DatabaseType**.

This settings will be override by Environment Variables if set.

User Management UI

environment files

To change settings from UI, you need to open environment file. Located at src/environment.

Table 4: UI Variables

Variable	Description
GoogleClientId	Same from ApplicationSettings, the UI use this to take user info while is registering himself.
FacebookClientId	Same from ApplicationSettings, the UI use this to take user info while is registering himself.
ResourceServer	Base Url from User Management API
IssuerUri	Base Url from SSO
RequireHttps	True if IsuerUri has a HTTPS.
Uri	Final URL of App.

Admin UI

environment files

To change settings from UI, you need to open environment file. Located at src/environment.

Table 5: UI Variables

Variable	Description
ResourceServer	Base Url from User Management API
IssuerUri	Base Url from SSO
RequireHttps	True if IsuerUri has a HTTPS.
Uri	Final URL of App.

5.1.12 Database Type

By default the project come with MySql, to change is very simple. You just need to change the `appsettings.json`.

The file `appsettings.json` of **Jp.UI.SSO** and **Jp.UserManagement** has a DatabaseType property. Change it to `MySql` or `SqlServer`

Warning: Both of them must point to the same config Database. You just need to config **Connection String** at Environment or at `appsettings.json`. For Environment see docs here

SQL on Docker

Don't have the SQL Server on you local machine? Use it from Docker

```
docker run -e 'ACCEPT_EULA=Y' -e 'SA_PASSWORD=@Password1' -e 'MSSQL_PID=Express' -p␣
↪1433:1433 -d microsoft/mssql-server-linux:latest
```

As simple as that!

5.1.13 Serilog

To log the project uses Serilog. There are several kinds of Configuration, you can see them at Serilog homepage

The file `Program.cs` of **Jp.UI.SSO** and **Jp.UserManagement** has the configuration of logs.

```
public static void Main(string[] args)
{
    ...
    Log.Logger = new LoggerConfiguration()
        .MinimumLevel.Debug()
        .MinimumLevel.Override("Microsoft", LogEventLevel.Warning)
        .MinimumLevel.Override("System", LogEventLevel.Warning)
        .MinimumLevel.Override("Microsoft.AspNetCore.Authentication", LogEventLevel.
↪Information)
        .Enrich.FromLogContext()
        .WriteTo.ApplicationInsightsEvents(Environment.GetEnvironmentVariable(
↪"APPINSIGHTS_INSTRUMENTATIONKEY"))
        .WriteTo.File(@"jpProject_sso_log.txt")
        .WriteTo.Console(outputTemplate: "[{Timestamp:HH:mm:ss} {Level}]
↪{SourceContext}{NewLine}{Message:lj}{NewLine}{Exception}{NewLine}", theme:␣
↪AnsiConsoleTheme.Literate)
        .CreateLogger();
    ...
}

public static IWebHostBuilder CreateWebHostBuilder(string[] args) =>
        WebHost.CreateDefaultBuilder(args)
            .UseApplicationInsights(Environment.GetEnvironmentVariable("APPINSIGHTS_
↪INSTRUMENTATIONKEY"))
            .ConfigureLogging(builder =>
            {
                builder.ClearProviders();
                builder.AddSerilog();
            })
            .UseStartup<Startup>();
```

5.1.14 Application Insights

The project has the basis config of Application Insights. You can change it at `Program.cs`. There is a Component of Serilog too.

```
public static void Main(string[] args)
{
    ...
    // Serilog plugin
        .WriteTo.ApplicationInsightsEvents(Environment.GetEnvironmentVariable(
↪"APPINSIGHTS_INSTRUMENTATIONKEY"))
    ...
}

public static IWebHostBuilder CreateWebHostBuilder(string[] args) =>
    WebHost.CreateDefaultBuilder(args)
    // default Application Insights config
        .UseApplicationInsights(Environment.GetEnvironmentVariable("APPINSIGHTS_
↪INSTRUMENTATIONKEY"))
        ...
```

5.1.15 Certificate

Self-signed Certificate

To generate certificates, there is a Script `key\cert.ps1` that generate Self Signed Certificates. You can use it to generate certificate and user against docker, or test in your local.

Open up a PowerShell terminal and run the script. It'll ask you for a certificate name, password, and then save it for you.

Change Config file

If a certificate is generated, to use it, change the appsettings.json. See docs for more info