Getting Started with BrightXpress

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1.0. Introduction

BrightXpress is the latest addition to the Bright Software product set. It is a lightweight-easy-to-use server solution to manage the mobile application and data flow between client devices and back end offices.

BrightXpress™ is a flexible mobile data gateway designed to handle business mobility requirements. BrightXpress™ enables BrightForms™ powered mobile devices to connect with server-side data sources including powerful relational databases or files based data sources at the backend.

BrightXpress™ is an easy-to-use mobility enabling platform solution that allows mobile workers to connect to the organisations back-end information systems. It provides simple and efficient ways to transform paper-based systems and manage data flow to and from the field. BrightXpress™ provides a hassle free environment without the complexity needed to integrate with enterprise infrastructure environments.
BrightXpress ™ exchanges data through the use of embedded BrightIntegrator™ integration engine, allowing BrightXpress™ synchronisation engine to detect and send the data changes to field devices.

BrightXpress™ can reach the data sources, whether they are databases or flat files, via its synchronisation engine, and can detect the changes in the data and send the new changes to BrightForms™ based remote field clients.

BrightXpress™ does not require a store-and-forward database. Your mobile solution data sources can be a simple flat CSV file based solution or a Microsoft Access database, or even a large relational database such as Microsoft SQL Server, Oracle or DB2.

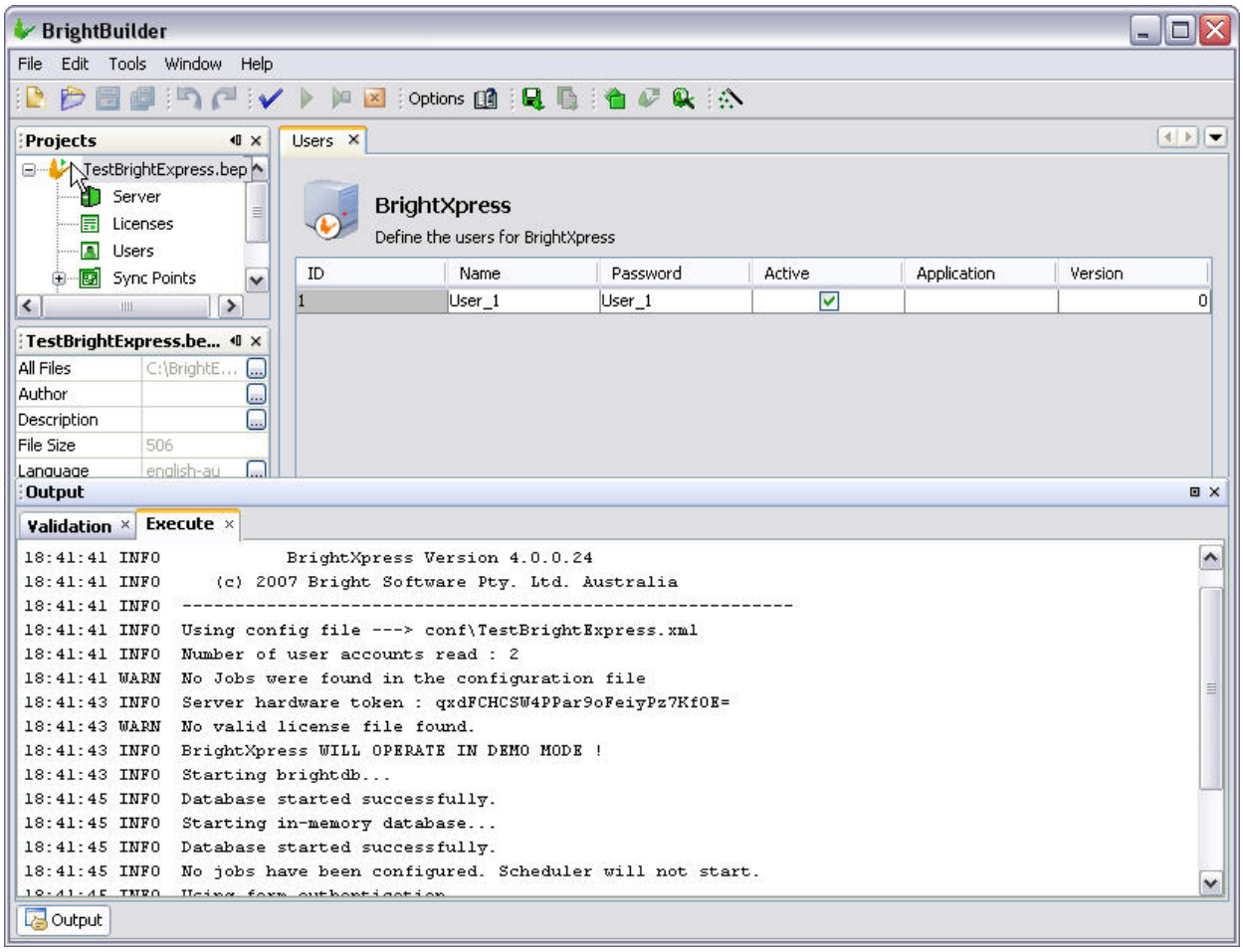
2.0. Installation

BrightXpress comes with BrightBuilder installation. This is very advantagenous especially for development because you can start and stop BrightXpress within the BrightBuilder IDE and fix any issues with the configuration before production.

3.0. User Interface

BrightXpress user interface is incorporated into BrightBuilder. This allows you to create BrightXpress xml configuration files without the need to delve into xml concepts.

Below is the image of BrightBuilder IDE for BrightXpress which is divided into several windows namely, Project, Properties, Editor and Output.



4.0. Concepts

BrightXpress consists of 6 elements, namely, (1) Server, (2) Licenses, (3) Users, (4) Sync Points, (5) Mappings and (6) Tables.

4.1. Server

The server element allows users to configure the BrightXpress server settings.

Server settings for new projects are set to default values, which runs smoothly out-of-the-box.

The following are the configuration settings that need to be setup,

Property	Description	Default Value
HTTP Port	The standard port number used to listen to incoming client messages.	8080
HTTPS Port	The secured encrypted channel for incoming client messages.	8443
Authentication Type	There are two types of authentication: • Basic – standard HTTP authentication • Form – a more secure authentication method.	Form
Compress messages sent to clients	Flag whether to use compression when sending data to client devices.	Unticked
Send server system clock	Flag whether to send server clock to clients to synchronise their system clock with the server.	Unticked
Session timeout (seconds)	Specifies the number of minutes that a session can remain idle before the server terminates it automatically.	300
Maximum number of records in single packet sent to clients	Specifies the limit on the number of records that will be sent out in a single packet.	64
Maximum size of a single packet sent to clients (Kbytes)	Specifies the actual amount of data, in Kbytes, for a single packet.	256
Application distribution – Deployment Directory	Specifies the directory where the application definition files are exported to.	-

4.2. Licenses

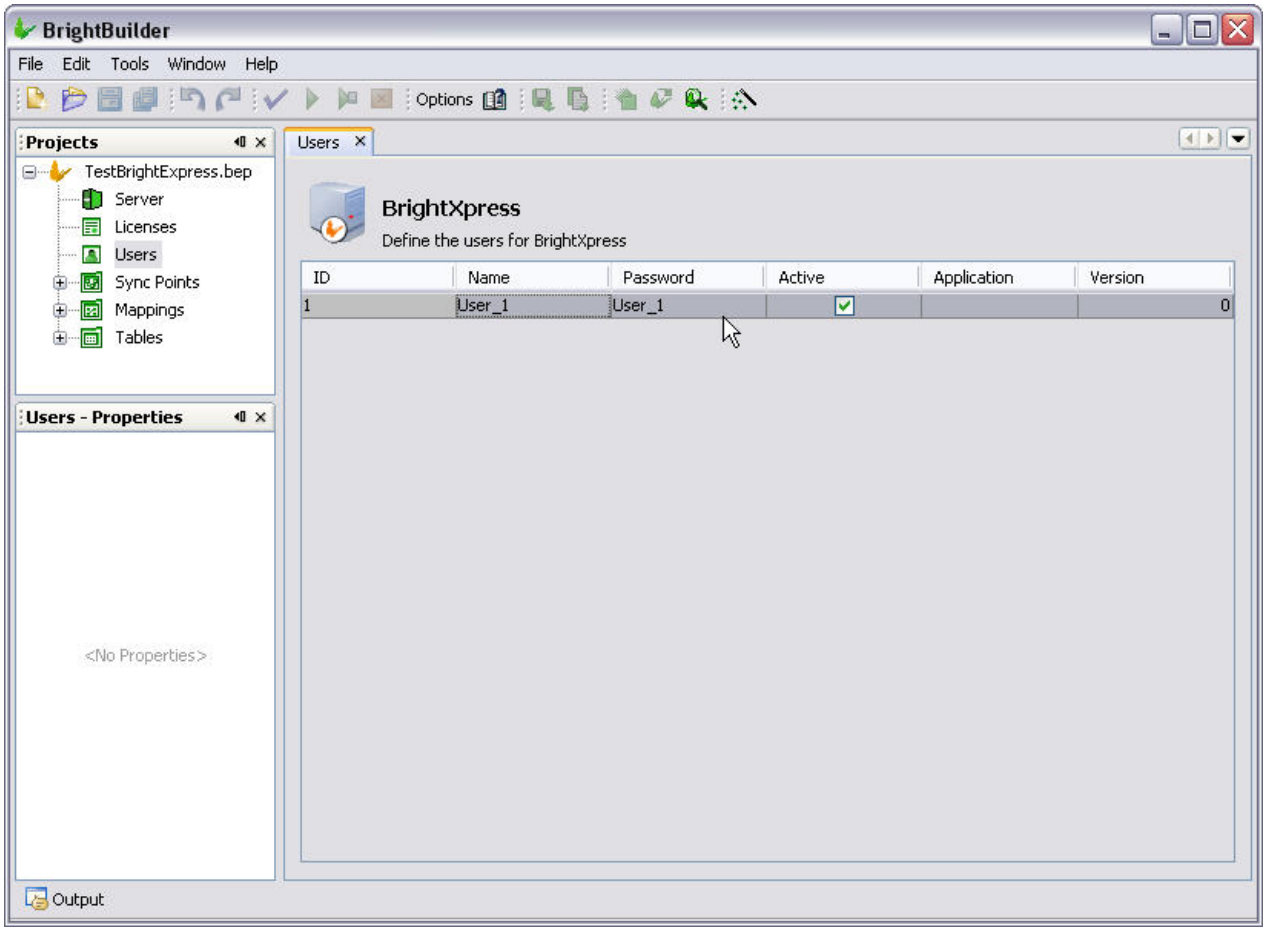
The licenses element allows license details to be entered i.e. a serial number and a license file. It is possible to have multiple serial number and license file combinations for license upgrades when the project grows over time.

If there are no valid license specified, then BrightXpress will operate in demo mode. BrightXpress operates in demo mode for only 30 days and will only allow a single client connection.

4.3. Users

The users element provides the interface to create and manage users and the application distribution process. Because BrightXpress only permits access to the backend data for authorised users.

The minimum requirement for BrightXpress to run on default settings is to have at least one user as show below,



4.4. Sync Points

Sync Point elements defines the data flow between BrightXpress and BrightForms. Each Sync Point element is a workspace to graphically layout the data flow components. The following are the different components in the Sync Points element.

SyncPoint – Defines a table which BrightForms sychronises to or from BrightXpress. A table must be selected for each syncpoint control dragged to the workspace.

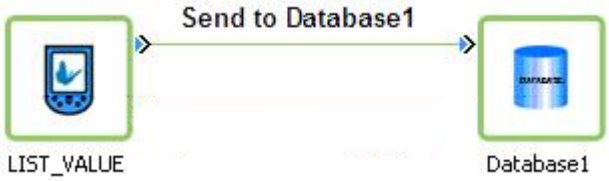
File – Represents the physical file to read or write data. This has a Sets properties that defines the path and file name and also the mapping between the Bright table and how it will be written or read to/from the file.

Database – Represents the actual physical database that BrightXpress will connect to and interact with. There are two properties that need to be setup, namely Database and Sets. The Database property defines the connection settings for the data source. And Sets defines the mapping between the Bright tables and the actual tables on the data source.

The direction between a SyncPoint and a Data Source determines whether the SyncPoint is a Sync Source or a Sync Destination.

A Sync Source represents a table which BrightForms can synchronise data FROM. A Sync Source is defined when a Data Source (either a file or an database) is connected to a Sync Point.

A Sync Destination represents a table which BrightForms can synchronise data TO. A Sync Destination is defined when a Sync Point is connected to a Data Source (either a file or an database).



4.5. Mappings

The purpose of a mapping is to map data from a data source to a table defined in BrightXpress which in turn maps to a table BrightForms. Mappings define how data is arranged in a data source and how it represents records that BrightForms consumes.

In other words, mappings are used to take the raw data from data sources such as files, and convert that data into a structured format, so that it can be made available to BrightForms to synchronize.

A mapping can be one of three types:

- Query Mapping - Maps a BrightForms table to a table in a relational database
- CSV File Mapping - Maps a BrightForms table to a file containing character separated values.
- Fixed Length File Mapping - Maps a BrightForms table to a file containing fixed length values.

4.6. Tables

The Tables element is where all the table definitions are managed.

A table is composed of columns and rows and is defined by the column names, data types and table constraints.

There are six (6) data types available, namely:

- **String** – an ordered sequence of characters, maximum length up to 4096 characters.
- **Boolean** – provides True (1) or False (0) values
- **Int** – Provides integer values between -2147483647 and +2147483647. Integers are whole numbers and do not have a decimal point.
- **Double** – provides real numbers, both positive and negative; with values between –1.79769313486231E308 and –4.94065645841247E–324
- **DateTime** – Date and Time values
- **Base64Binary** – objects such as MS Word documents, MS Excel spreadsheets, pictures, sounds, or other binary data

The following figure is a sample table created in BrightBuilder:

Name	Primary Key	Description	Type	Length	Allow Nulls
ID	☑		int	0	☐
NAME	☐		string	60	☑
ADDRESS	☐		string	120	☑
SUBURB	☐		string	60	☑
POSTCODE	☐		string	15	☑
PHONE	☐		string	15	☑
FAX	☐		string	15	☑
CSTATE	☐		string	20	☑
CONTACT_NAME	☐		string	60	☑

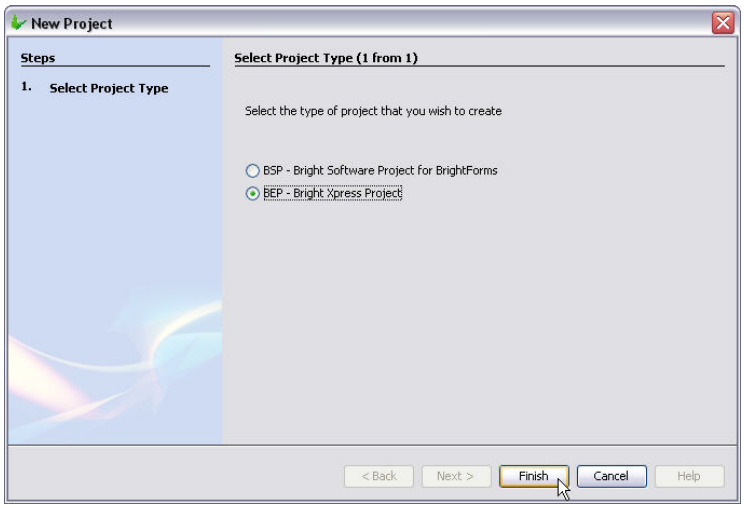
5.0. Starting and Stopping BrightXpress

To begin using BrightXpress, install and run BrightBuilder 4.0. Then perform the following steps to create a BrightXpress project, and to start and stop BrightXpress.

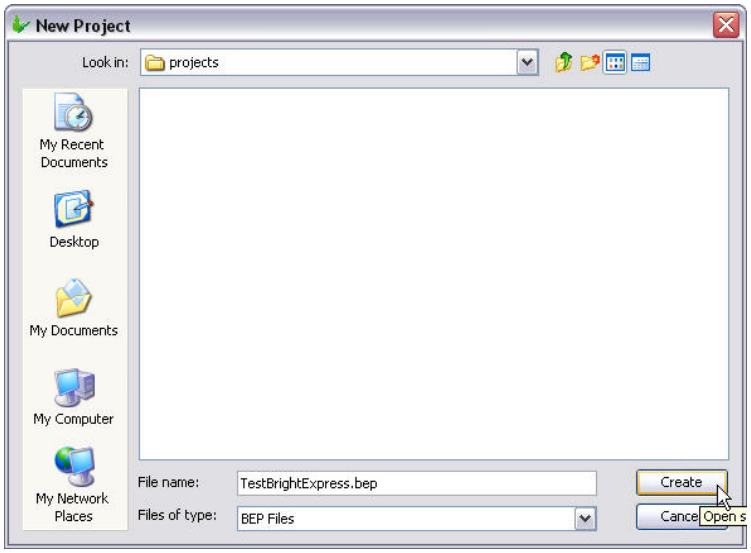
5.1. Create a BEP project

To create a BEP project:

1. Click  to create a new BrightXpress project.
2. Select “BEP – Bright Xpress Project” from the New Project dialog and click [Finish] button.

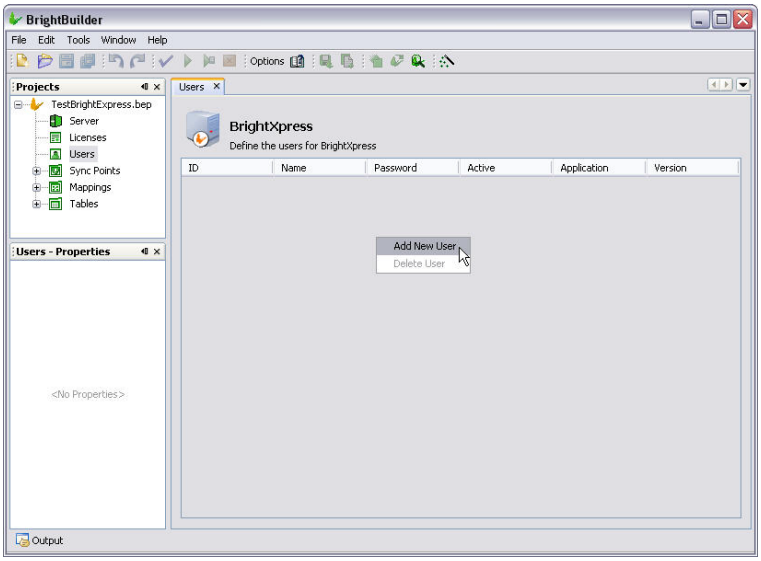


3. Enter the BrightXpress project name “TestBrightXpress.bep” and click [Create] button as shown below:

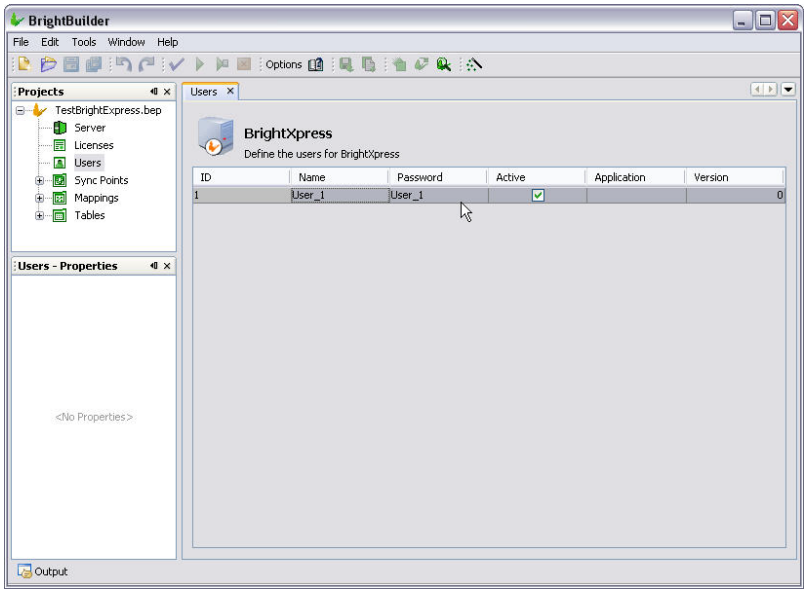


5.2. Add a user account

1. Double-click the Users tree, this will open the Users editor window
2. Right-click inside the Users editor window, a pop-up menu will appear.

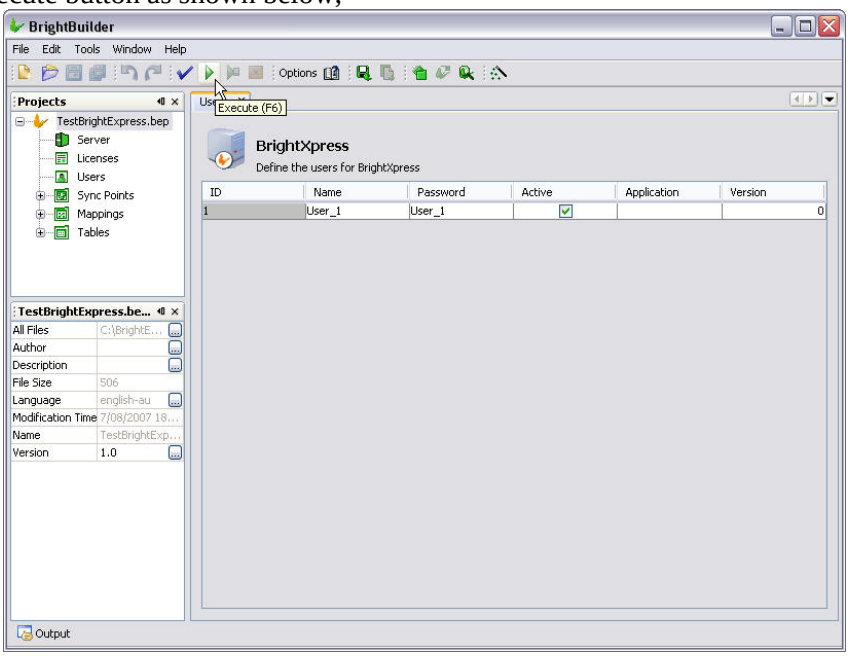


3. Select Add New User from the pop-up menu. This will create a new user row on the editor window.



5.3. Starting BrightXpress

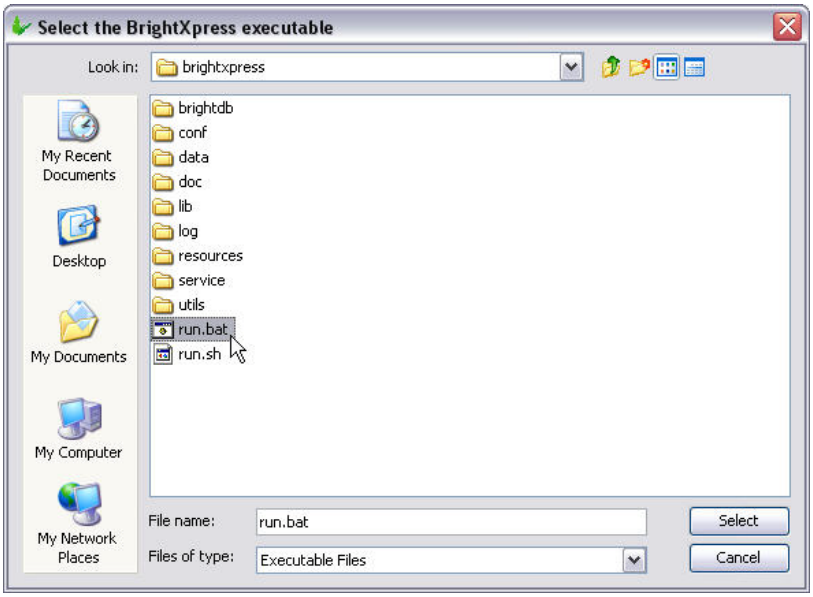
1. Select TestBrightXpress.bep
2. Click the Execute button as shown below,



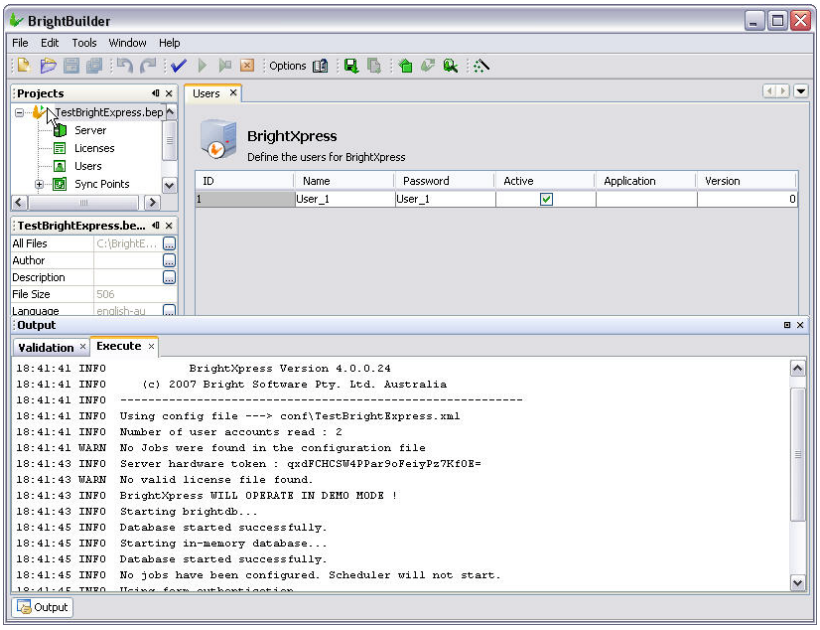
The project will first be validated and if there are no errors found, then BrightBuilder will try to execute the project.

Selecting BrightXpress executable

If you did not install BrightBuilder on the default directory then on first execution, BrightBuilder will ask you to select the BrightXpress executable. In the Select the BrightXpress executable dialog, select run.bat under brightxpress folder of your BrightBuilder4 installation directory.



The Output-Execute window will appear to show that trace for BrightXpress, and TestBrightXpress.bep icon will now contain a play icon, as shown below:



BrightXpress will now be running on the localhost IP address with default port 8080.

5.4. Stopping BrightXpress

To stop BrightXpress, simply select the Project name and click on the STOP  icon.