System Requirements

ⓘ BellaDati is a web application. It is available as a cloud-based service or can be deployed on a central server in your organization. End users access BellaDati using a web browser from any client computer.

This page describes the supported platforms for **BellaDati 2.x**.

Client

You can access BellaDati from a variety of platforms without having to install any specific software. Only a web browser is necessary.

Requirements:

- Supported browser (see table on the right).
- JavaScript and cookies need to be enabled in the browser.
- Adobe Flash 9+ (only required for Internet Explorer 8 and older).
- Display width of 1024 pixels or larger.
- Broadband internet access (intranet access for on-premise installation).
- Applications for viewing exported files (PDF, XLS, PPT, PNG).

For an optimal user experience, we recommend using at least Internet Explorer 9 or any other supported browser.

Browser	Supported Versions
Google Chrome	any
Mozilla Firefox	3+
Internet Explorer	8+ (version 7 support is limited)
Safari	5+
Opera	15+

Server

This section lists the requirements for an on-premise installation of BellaDati. If you are using BellaDati Cloud, these requirements do not apply to you.

Hardware

In an on-premise environment, a BellaDati installation consists of an application server and a database. These can run on the same computer or on different machines. For evaluation purposes, it is usually sufficient to run both server and database on the same computer, e.g. a developer workstation.

BellaDati hardware requirements mainly depend on the amount of data being processed and the number of concurrent requests during peak hours. To ensure optimal performance under any circumstances, we group our hardware requirements in 3 tiers depending on usage characteristics. Please note that even so, these configurations can only be guidelines and actual performance can heavily depend on your usage pattern.

✓ We would appreciate if you could let us know what hardware configuration works in your environment. Please create a ticket in our support system, describing your hardware configuration as well as the number of users and data records in your BellaDati installation.

Minimal Configuration

This configuration is recommended for a **less than 10 users** analyzing **thousands of records**.

CPU	2x 2 GHz 64-bit Intel Xeon or comparable
RAM	4 GB

Disk	20 GB, 7,200 rpm, IDE / SCSI
Network	10 Mbps

Medium-load Configuration

This configuration is recommended for a **10-100 users** analyzing **millions of records**. We recommend running the application server and database on different machines for this configuration.

Application Server

CPU	4x 2 GHz 64-bit Intel Xeon or comparable
RAM	8 GB
Disk	100 GB, 10,000 rpm
Network	100 Mbps

Database Server

CPU	4x 2 GHz 64-bit Intel Xeon or comparable
RAM	18 GB
Disk	200 GB, 10,000 rpm, SSD
Network	100 Mbps

High-load Configuration

This configuration is recommended for a **100+ users** analyzing **hundreds millions of records**. We strongly recommend running the application server and database on different machines for this configuration.

2 x Application Server

CPU	8x 2.4 GHz 64-bit Intel Xeon or comparable
RAM	12 GB
Disk	100 GB, 10,000 rpm, IDE / SCSI
Network	1 Gbps

2 x Database Server

CPU	8x 2.4 GHz 64-bit Intel Xeon or comparable
RAM	32 GB
Disk	500 GB SSD
Network	1 Gbps

Operating System

BellaDati can run on any operating system for which a supported Java application server is available. Such operating systems include:

- Microsoft Windows Server 2012
- Microsoft Windows Server 2008
- Microsoft Windows Server 2003

- Microsoft Windows 8
- Microsoft Windows 7
- Microsoft Windows Vista
- Microsoft Windows XP
- Linux distributions (SuSE Linux, RedHat, CentOS, Ubuntu)
- Solaris
- Mac OS X

If you are evaluating BellaDati on Windows or Mac OS X, you can use the Windows and Mac installers. This way, you don't need to manually install Java, an application server, or a database. You can skip the rest of this document when using the Windows or Mac installer.

Java Application Server

BellaDati is distributed in a WAR archive that runs on a Java application server. The following application servers have been verified to work with BellaDati:

Server	Supported Versions
GlassFish	3.1.2 or higher (4 web profile is recommended)
Jetty	7 or higher
Apache Tomcat	7.0 or higher

BellaDati is a pure Java application and should run on any platform and application server that supports Java 7 or 8.

ⓘ BellaDati officially supports **Oracle Java** distributions

Database

BellaDati creates its own data warehouse structure. The following database servers have been verified to work with BellaDati:

Database	Supported Versions
PostgreSQL	8.4 or higher (9.3 is recommended)

⚠ Please note that **MySQL** and **Oracle** databases are not supported by BellaDati.

Installation and Update Guide

Getting BellaDati

1. Check the BellaDati Download Page for information about the current version and for downloading instructions.
2. This Installation Guide applies if you are installing BellaDati for the first time or if you are updating BellaDati.
3. In case you deploy BellaDati into the GlassFish basic environment, checkout video below (check detailed guidelines below the video tutorial)

The pages listed below contain information on installing and updating BellaDati:

- Installing BellaDati on Windows
- Installing BellaDati on Mac OS X
- Installing BellaDati WAR
  - Installing Java
  - Setting up the PostgreSQL Database
  - Installing BellaDati Standalone
  - Installing BellaDati on GlassFish
  - Installing BellaDati on Jetty
  - Installing BellaDati on Tomcat
  - Recommended JVM Options
  - BellaDati WAR Configuration Overview
  - Configure logging
  - Files location
- BellaDati Setup Wizard
- Upgrading BellaDati
  - Updating BellaDati on Windows
  - Updating BellaDati on Mac OS X
  - Updating BellaDati Standalone
  - Updating BellaDati WAR
  - Upgrading to 2.7.4.1 or higher
  - Upgrading to 2.7.13.2
- Migrating BellaDati
- BellaDati Backup and Restore
- Running BellaDati in Cluster

Installing BellaDati on Windows

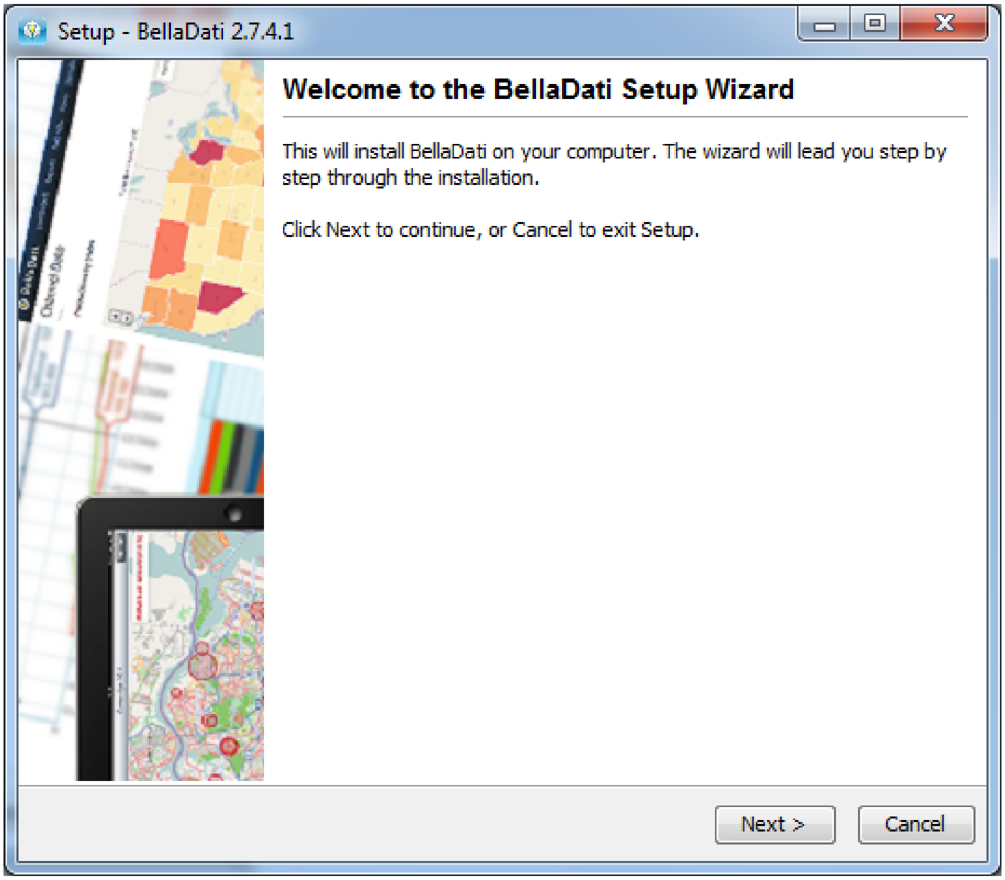
ⓘ This page will show you step by step how to install BellaDati on 32 or 64-bit Windows.

To use this document, you need to have:

- Successfully downloaded the BellaDati Windows installer from the BellaDati website.
- Your machine meets the minimal system requirements.

1. Welcome and Information

This window will check your machine against the minimal system requirements. Upgrade to a higher-performance machine in case your configuration does not meet the criteria, to avoid experiencing a decreased performance of BellaDati.



Setup - BellaDati 2.7.4.1

Welcome to the BellaDati Setup Wizard

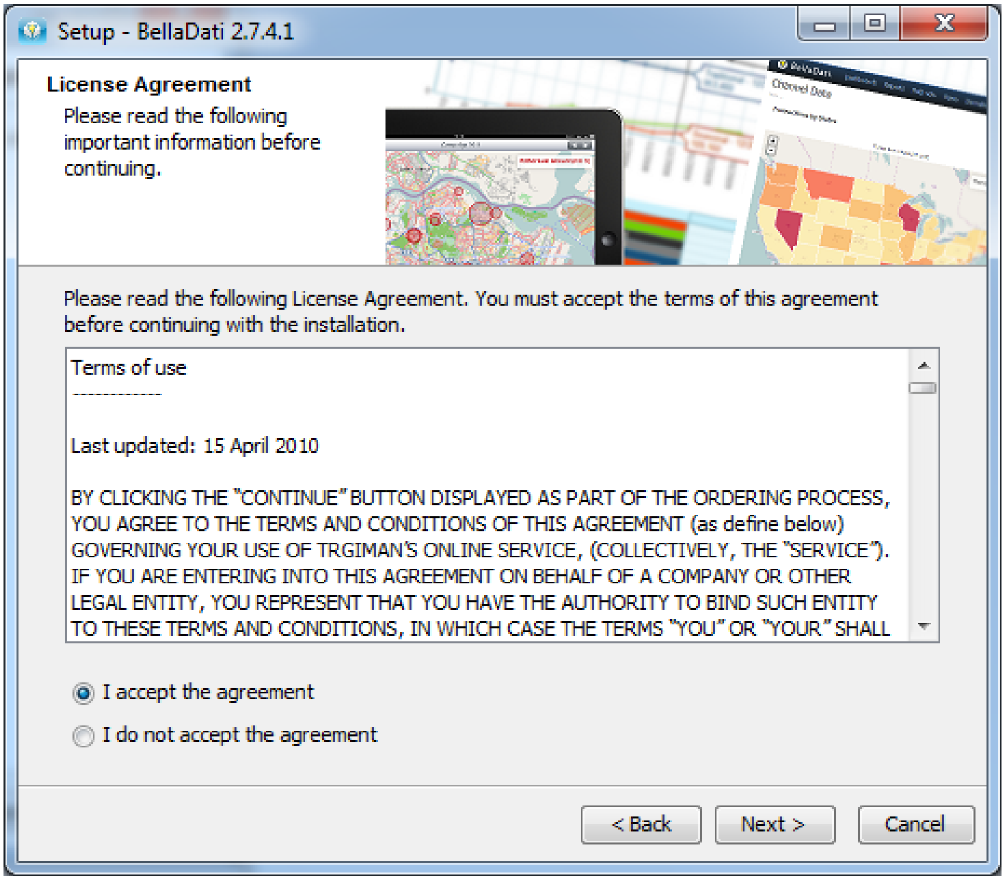
This will install BellaDati on your computer. The wizard will lead you step by step through the installation.

Click Next to continue, or Cancel to exit Setup.

Click **Next** to proceed with the installation.

2. License Terms

Read and **Accept the license agreement**.



License Agreement

Please read the following important information before continuing.

Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.

Terms of use

Last updated: 15 April 2010

BY CLICKING THE "CONTINUE" BUTTON DISPLAYED AS PART OF THE ORDERING PROCESS, YOU AGREE TO THE TERMS AND CONDITIONS OF THIS AGREEMENT (as define below) GOVERNING YOUR USE OF TRGIMAN'S ONLINE SERVICE, (COLLECTIVELY, THE "SERVICE"). IF YOU ARE ENTERING INTO THIS AGREEMENT ON BEHALF OF A COMPANY OR OTHER LEGAL ENTITY, YOU REPRESENT THAT YOU HAVE THE AUTHORITY TO BIND SUCH ENTITY TO THESE TERMS AND CONDITIONS, IN WHICH CASE THE TERMS "YOU" OR "YOUR" SHALL

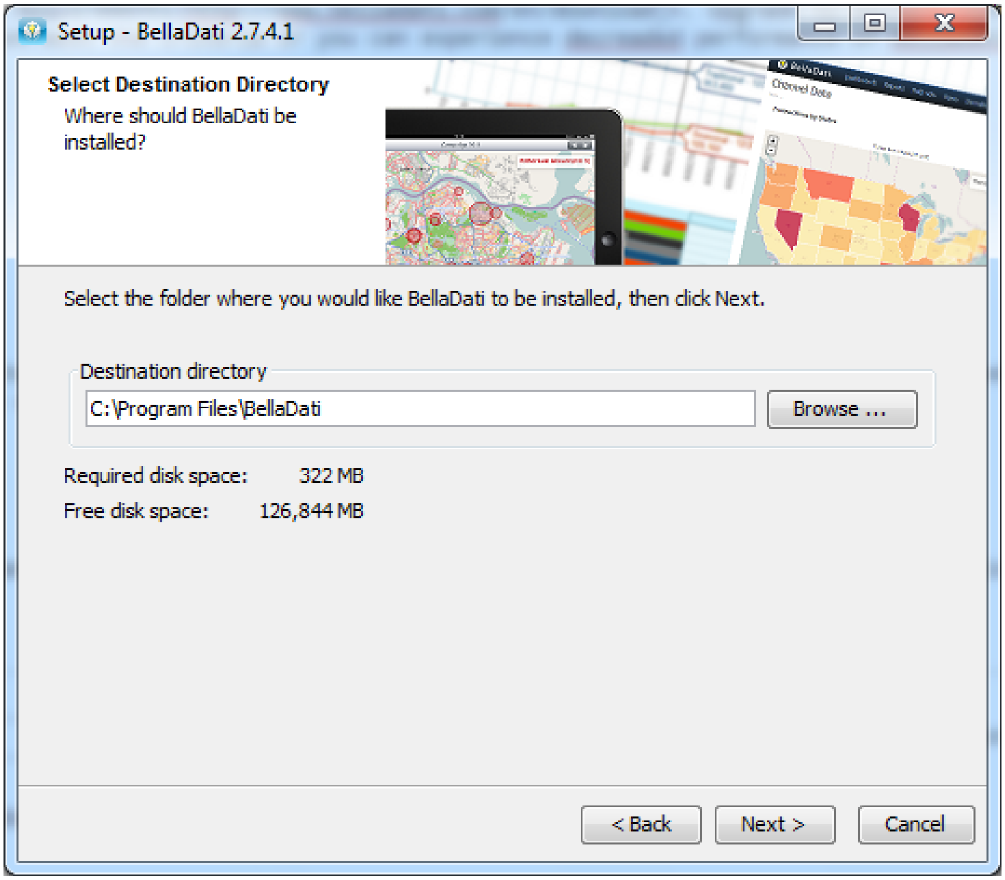
● I accept the agreement

○ I do not accept the agreement

Click **Next** to proceed with the installation.

3. Select Destination Directory

By default, BellaDati is installed into a predefined installation directory. Click browse to navigate to different folder if you want to modify these settings. BellaDati will check your free disk capacity to ensure enough space is available.



Setup - BellaDati 2.7.4.1

Select Destination Directory

Where should BellaDati be installed?

Select the folder where you would like BellaDati to be installed, then click Next.

Destination directory

C:\Program Files\BellaDati

Required disk space: 322 MB

Free disk space: 126,844 MB

Click **Next** to proceed with the installation.

4. Select Installation Type

Check **Advanced Installation** if you want to specify custom settings. Leave it blank to perform installation with default settings.

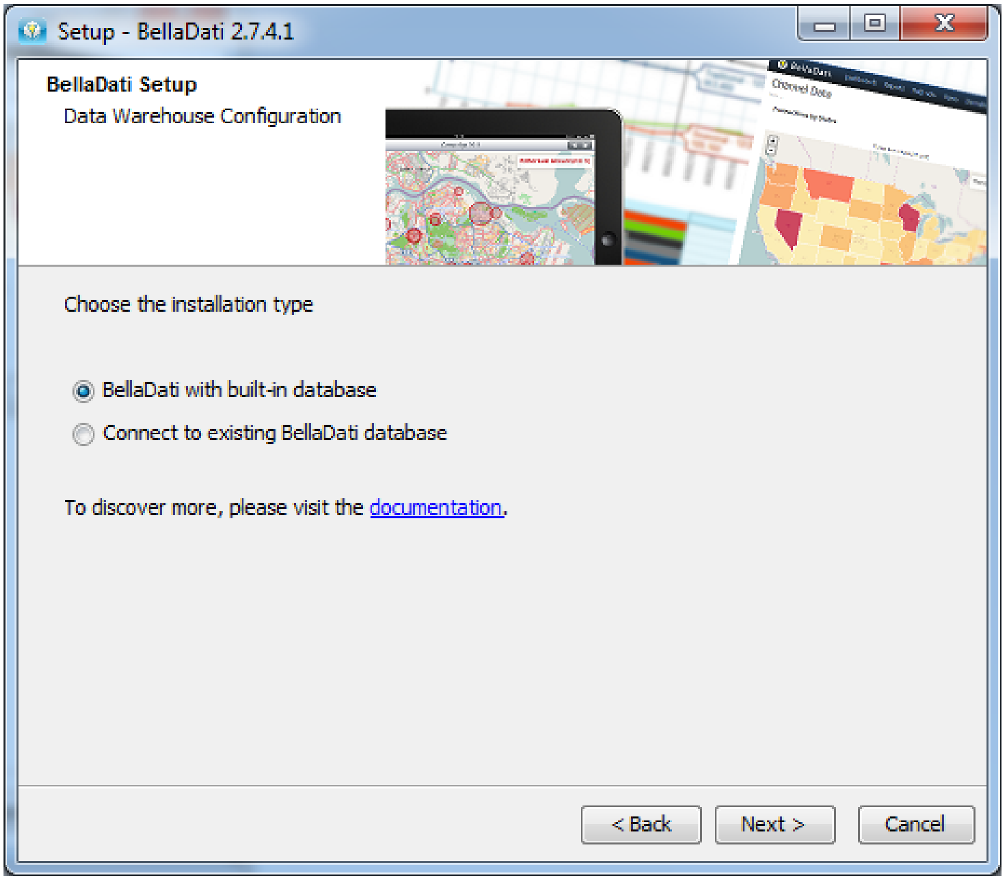
Click **Next** to proceed with the installation.

⚠ Proceed with the following steps only if you checked **Advanced Installation**. Otherwise jump to step 8.

5. Database Setup

BellaDati allows you to connect to existing database or create one for you automatically. Choose the desired action and continue to:

- 5.1 Installing with a built-in database
- 5.2 Connecting to an existing database. Select only if you already have a PostgreSQL database installed.



Setup - BellaDati 2.7.4.1

BellaDati Setup

Data Warehouse Configuration

Choose the installation type

● BellaDati with built-in database

○ Connect to existing BellaDati database

To discover more, please visit the documentation.

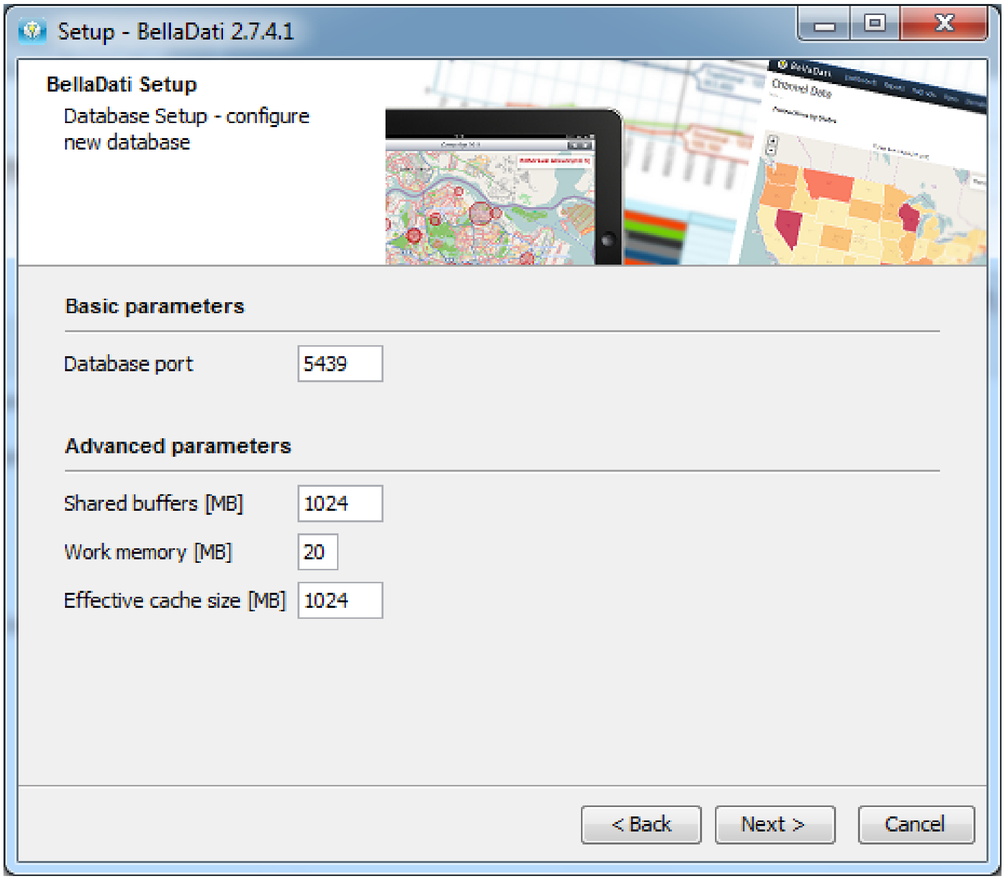
Click **Next** to proceed with the installation.

5.1. Installing with a Built-in Database

Approve or edit the following default settings:

- **Database port**. Make sure this port is not used by other applications or services.
- **Shared buffers**
- **Work memory**
- **Effective cache size**

✓ Leave the default values if you are unsure about the configuration.


Setup - BellaDati 2.7.4.1
BellaDati Setup
Database Setup - configure new database

Basic parameters

Database port: 5439

Advanced parameters

Shared buffers [MB]: 1024

Work memory [MB]: 20

Effective cache size [MB]: 1024

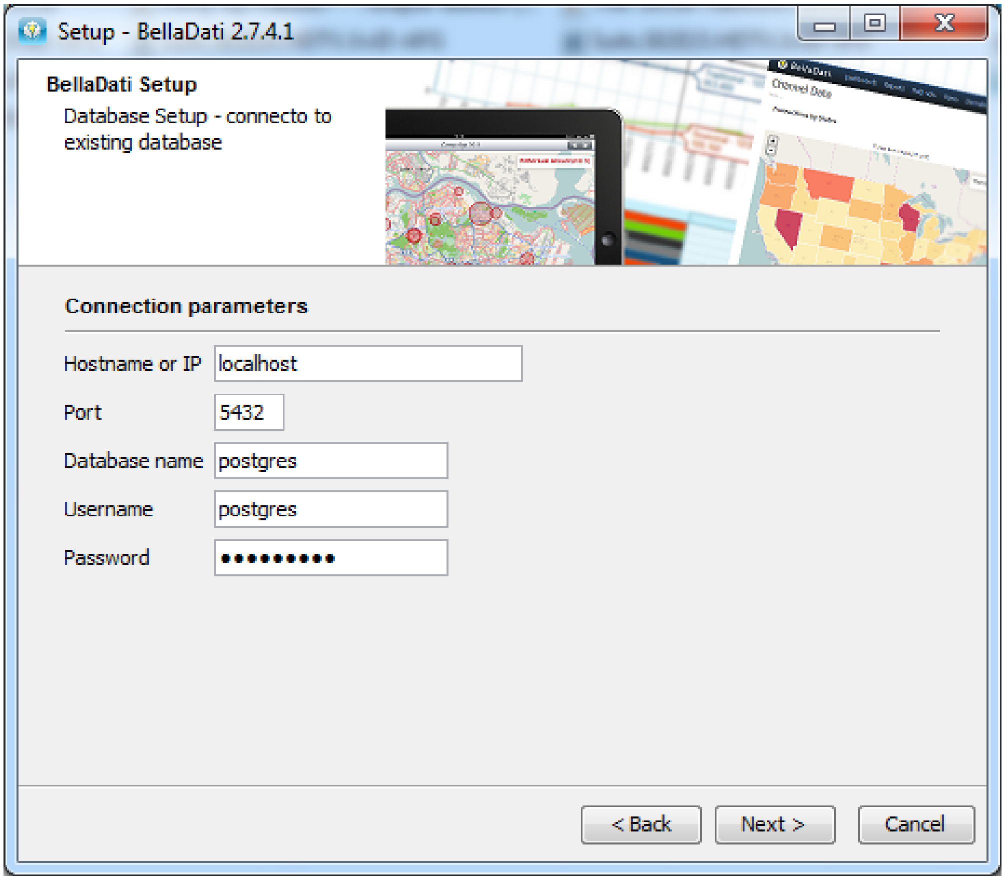
Click **Next** to proceed with the installation.

5.2. Connecting to an Existing Database

Specify the following connection parameters:

- **Hostname or IP**
- **Port**
- **Database name**
- **Username**
- **Password**

✓ Ask you database administrator if you are unsure about these settings.



BellaDati Setup

Database Setup - connecto to existing database

Connection parameters

Hostname or IP: localhost

Port: 5432

Database name: postgres

Username: postgres

Password: ●●●●●●●●●

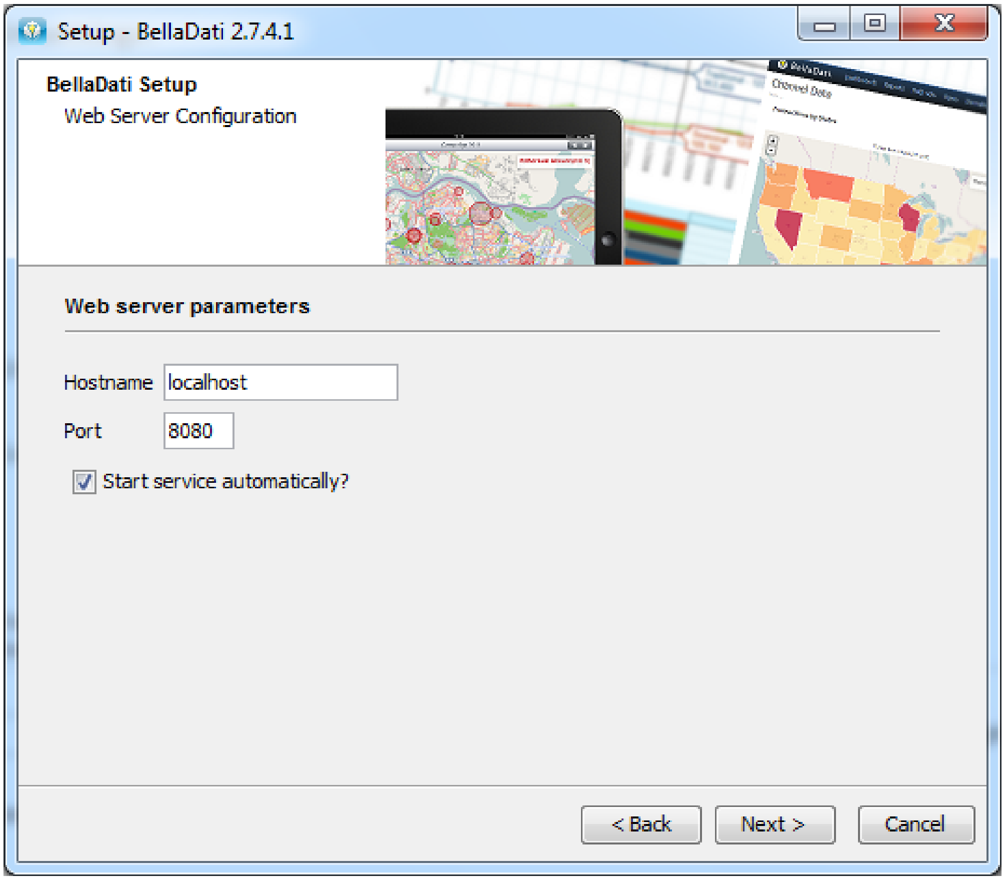
Click **Next** to proceed with the installation.

6. Web Server Parameters

Approve or edit the following default settings:

- **Hostname**
- **Port**. Make sure this port is not being used by other applications or services.

✓ Check **Start service automatically** to have BellaDati up and running right after the installation.



Setup - BellaDati 2.7.4.1

BellaDati Setup

Web Server Configuration

Web server parameters

Hostname localhost

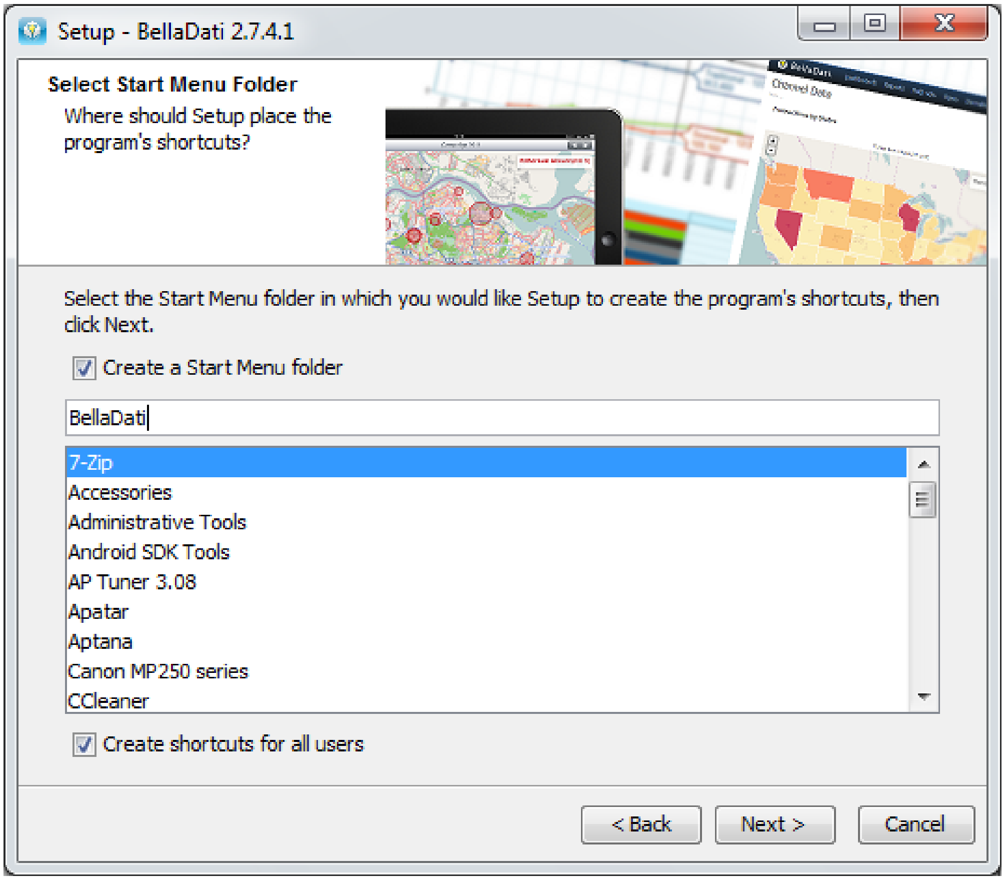
Port 8080

☑ Start service automatically?

Click **Next** to proceed with the installation.

7. Start Menu Folder

Approve or edit the name of the start menu folder.



Setup - BellaDati 2.7.4.1

Select Start Menu Folder

Where should Setup place the program's shortcuts?

Select the Start Menu folder in which you would like Setup to create the program's shortcuts, then click Next.

☑ Create a Start Menu folder

BellaDati

7-Zip
Accessories
Administrative Tools
Android SDK Tools
AP Tuner 3.08
Apatar
Aptana
Canon MP250 series
CCleaner

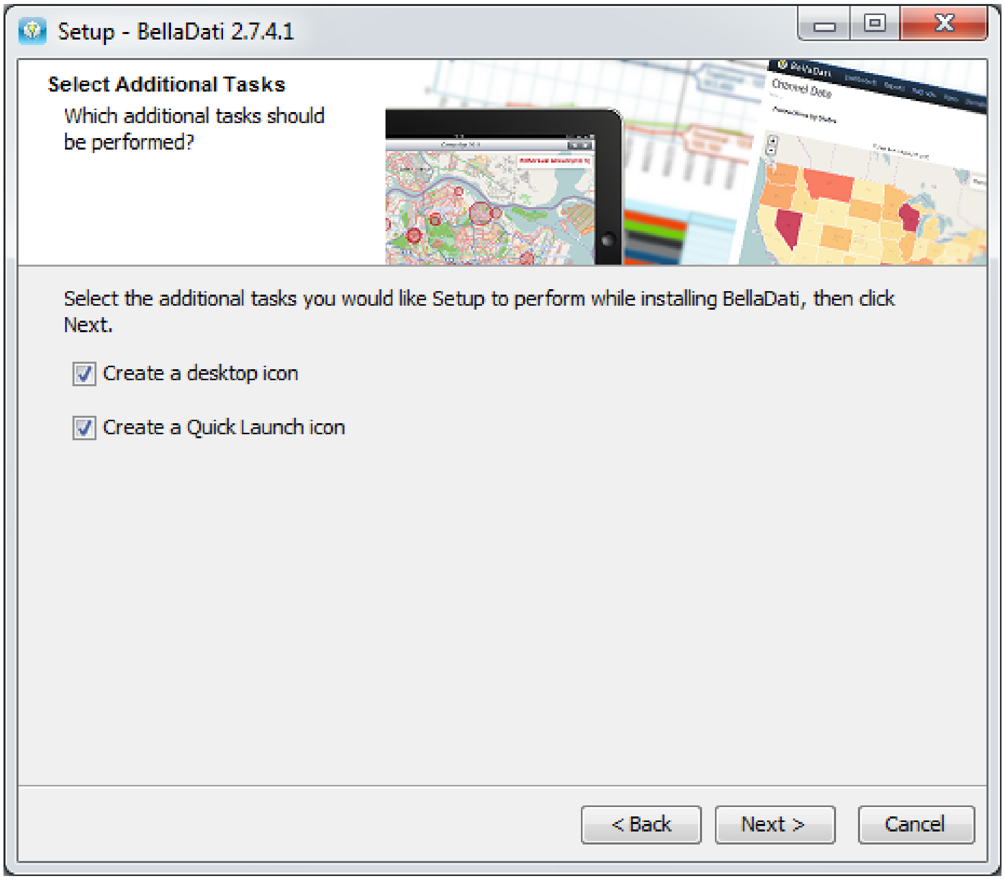
☑ Create shortcuts for all users

Click **Next** to proceed with the installation.

8. Additional Tasks

Select additional options:

- **Create a desktop icon**
- **Create a Quick Launch icon**



Setup - BellaDati 2.7.4.1

Select Additional Tasks

Which additional tasks should be performed?

Select the additional tasks you would like Setup to perform while installing BellaDati, then click Next.

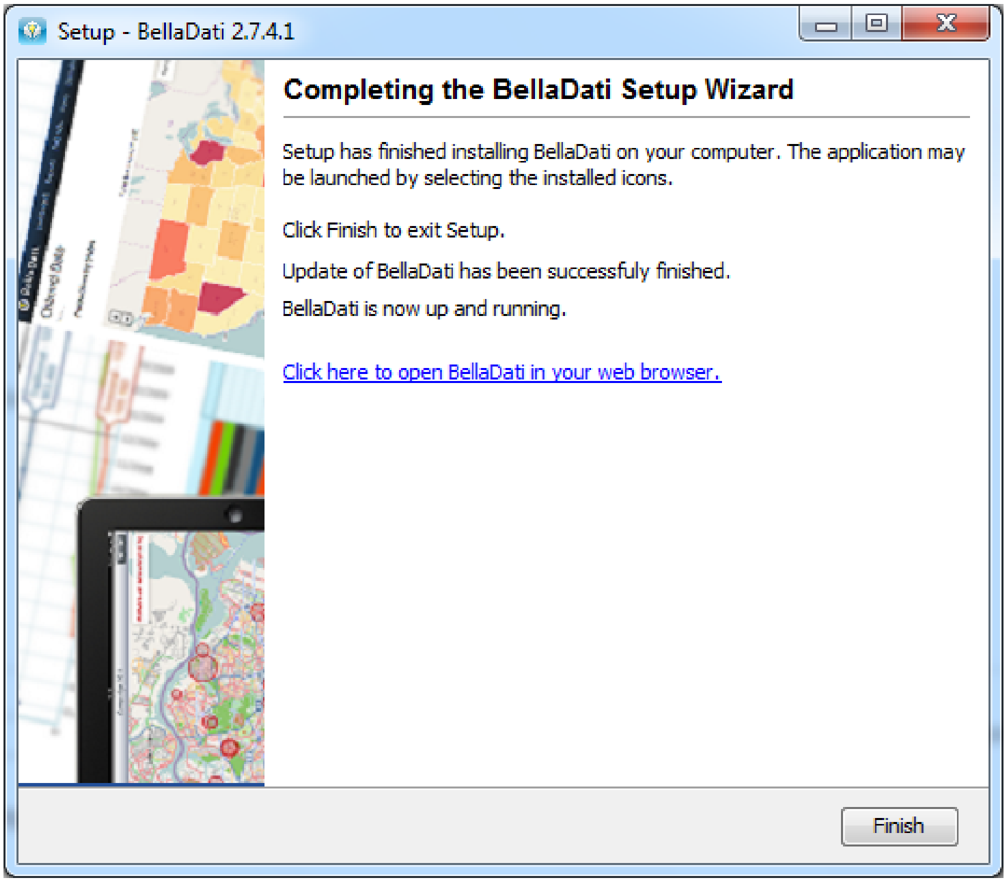
☑ Create a desktop icon

☑ Create a Quick Launch icon

Click **Next** and wait while BellaDati is installed on your computer.

9. Finishing Installation

The installation is complete. Close the window or click the link to open BellaDati in your web browser.



Completing the BellaDati Setup Wizard

Setup has finished installing BellaDati on your computer. The application may be launched by selecting the installed icons.

Click Finish to exit Setup.

Update of BellaDati has been successfuly finished.

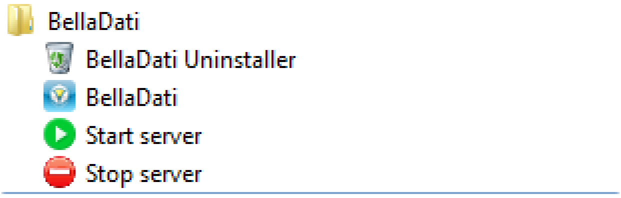
BellaDati is now up and running.

Click here to open BellaDati in your web browser.

Continue with the BellaDati Setup Wizard.

10. Troubleshooting

- If you have disabled automatically starting the server in the web server configuration, or starting the server failed, run it manually from Windows Start Menu.



- To open BellaDati after the installation is complete, point your browser to `http://localhost:8080`. This is the default URL, which may differ depending on the data you entered in step 6 of the installation.

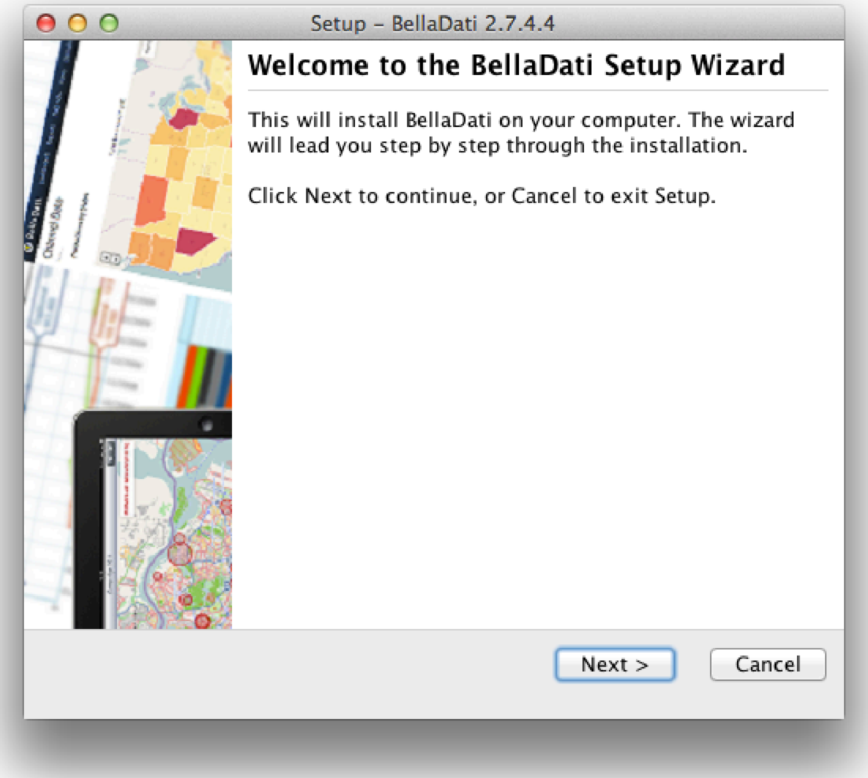
Installing BellaDati on Mac OS X

ⓘ This page will show you step by step how to install BellaDati on Mac OS X.

To use this document, you need to have:

- Successfully downloaded BellaDati Mac installer from the BellaDati website
- Your machine meets the minimal system requirements.

1. Welcome and Information



Setup – BellaDati 2.7.4.4

Welcome to the BellaDati Setup Wizard

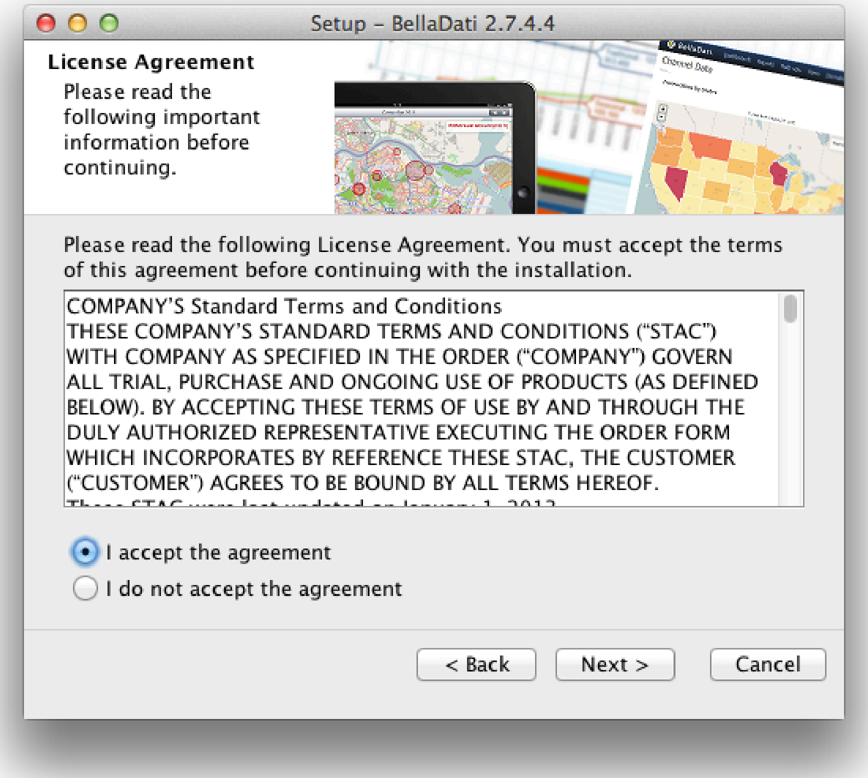
This will install BellaDati on your computer. The wizard will lead you step by step through the installation.

Click Next to continue, or Cancel to exit Setup.

Click **Next** to proceed with the installation.

2. License Terms

Read and **Accept the license agreement**.



License Agreement

Please read the following important information before continuing.

Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.

COMPANY'S Standard Terms and Conditions
THESE COMPANY'S STANDARD TERMS AND CONDITIONS ("STAC") WITH COMPANY AS SPECIFIED IN THE ORDER ("COMPANY") GOVERN ALL TRIAL, PURCHASE AND ONGOING USE OF PRODUCTS (AS DEFINED BELOW). BY ACCEPTING THESE TERMS OF USE BY AND THROUGH THE DULY AUTHORIZED REPRESENTATIVE EXECUTING THE ORDER FORM WHICH INCORPORATES BY REFERENCE THESE STAC, THE CUSTOMER ("CUSTOMER") AGREES TO BE BOUND BY ALL TERMS HEREOF.
These STAC were last updated on January 1, 2013

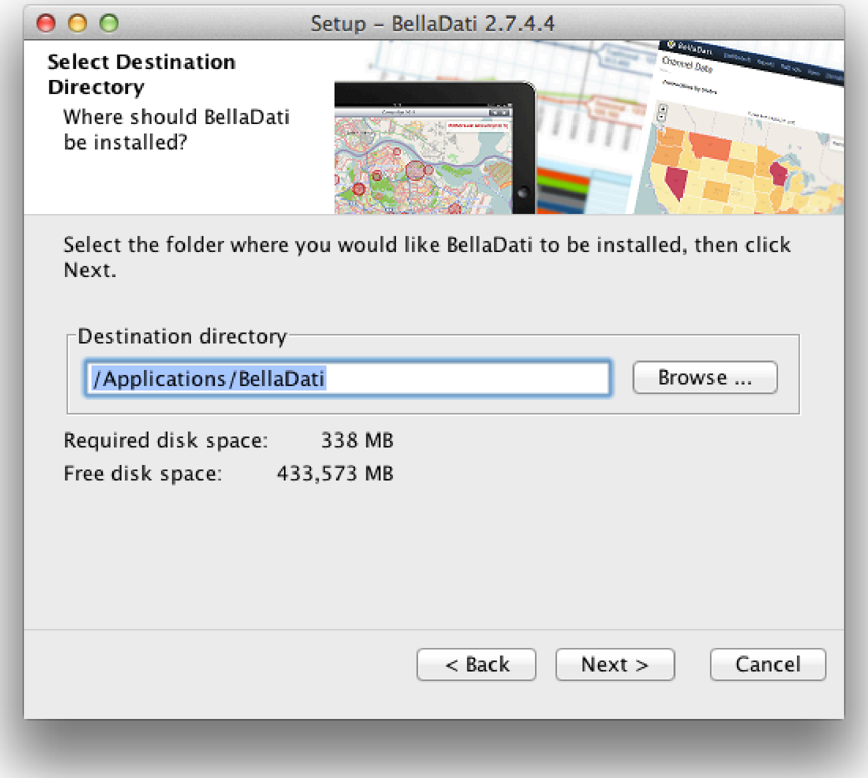
● I accept the agreement

○ I do not accept the agreement

Click **Next** to proceed with the installation.

3. Select Destination Directory

By default, BellaDati is installed into a predefined installation directory. Click browse to navigate to different folder if you want to modify these settings. BellaDati will check your free disk capacity to ensure enough space is available.



Setup - BellaDati 2.7.4.4

Select Destination Directory

Where should BellaDati be installed?

Select the folder where you would like BellaDati to be installed, then click Next.

Destination directory

/Applications/BellaDati

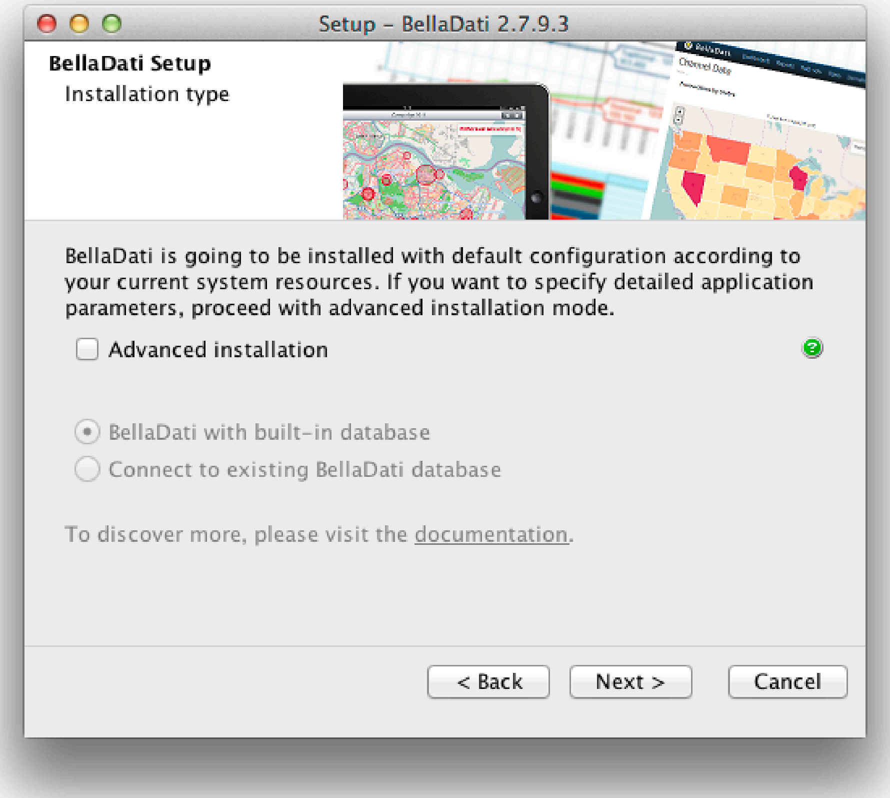
Required disk space: 338 MB

Free disk space: 433,573 MB

Click **Next** to proceed with the installation.

4. Select Installation Type

Check **Advanced Installation** if you want to specify custom settings. Leave it blank to perform installation with default settings.



BellaDati Setup

Installation type

BellaDati is going to be installed with default configuration according to your current system resources. If you want to specify detailed application parameters, proceed with advanced installation mode.

□ Advanced installation

● BellaDati with built-in database

○ Connect to existing BellaDati database

To discover more, please visit the documentation.

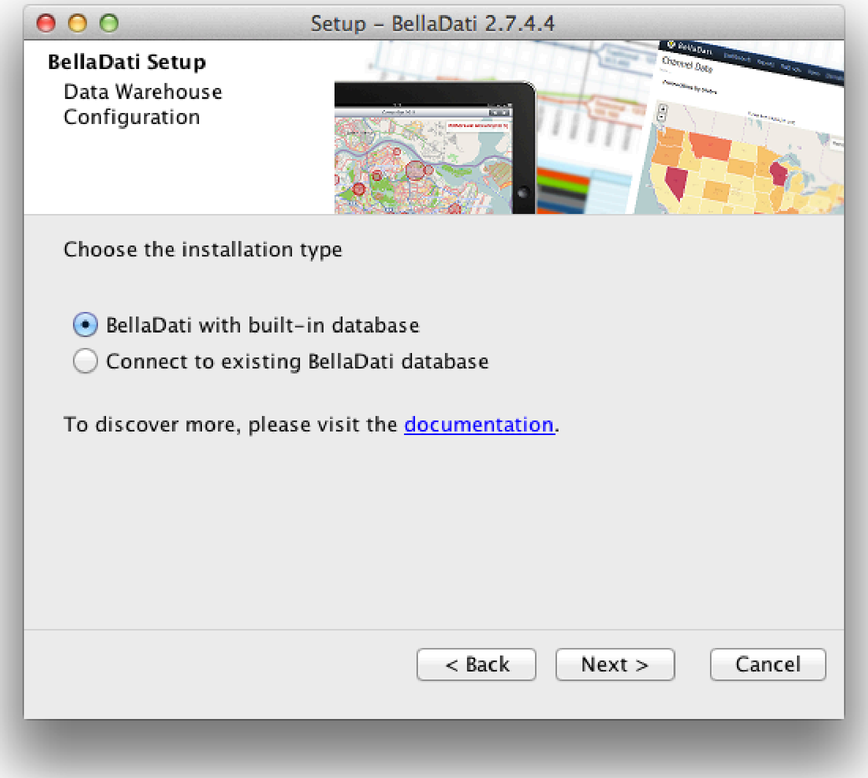
Click **Next** to proceed with the installation.

Proceed with the following steps only if you checked **Advanced Installation**. Otherwise jump to step 8.

5. Database Setup

BellaDati allows you to connect to existing database or create one for you automatically. Choose the desired action and continue to:

- 5.1. Installing with a built-in database.
- 5.2. Connecting to an existing database. Select only if you already have a PostgreSQL database installed.


Setup – BellaDati 2.7.4.4

BellaDati Setup

Data Warehouse Configuration

Choose the installation type

● BellaDati with built-in database

○ Connect to existing BellaDati database

To discover more, please visit the documentation.

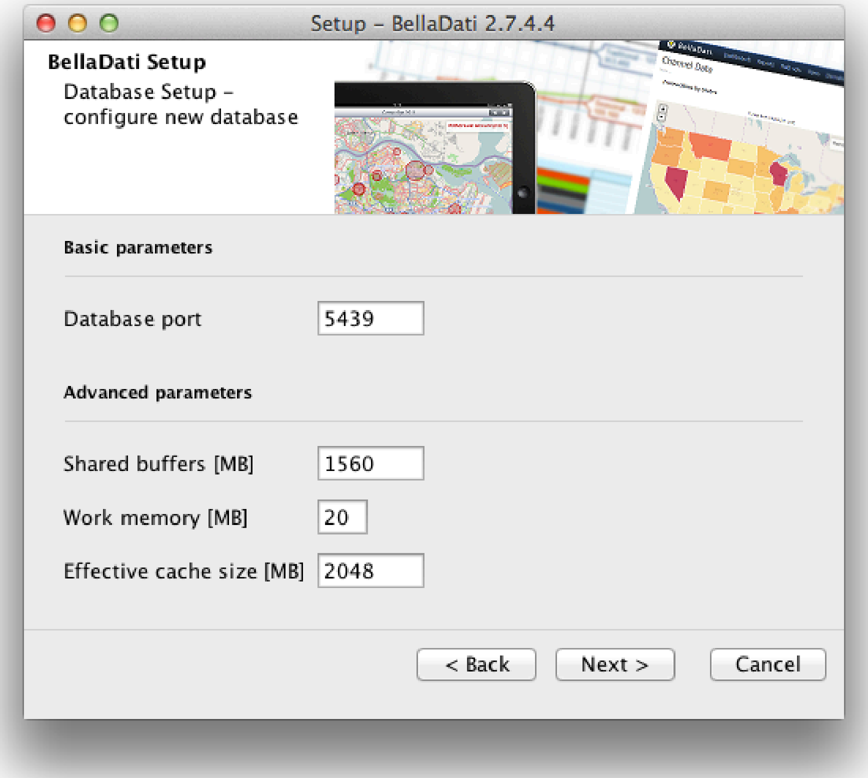
Click **Next** to proceed with the installation.

5.1. Installing with a Built-in Database.

Approve or edit the following default settings:

- **Database port**. Make sure this port is not used by other applications or services.
- **Shared buffers**
- **Work memory**
- **Effective cache size**

✓ Leave the default values if you are unsure about the configuration.



Basic parameters

Database port: 5439

Advanced parameters

Shared buffers [MB]: 1560

Work memory [MB]: 20

Effective cache size [MB]: 2048

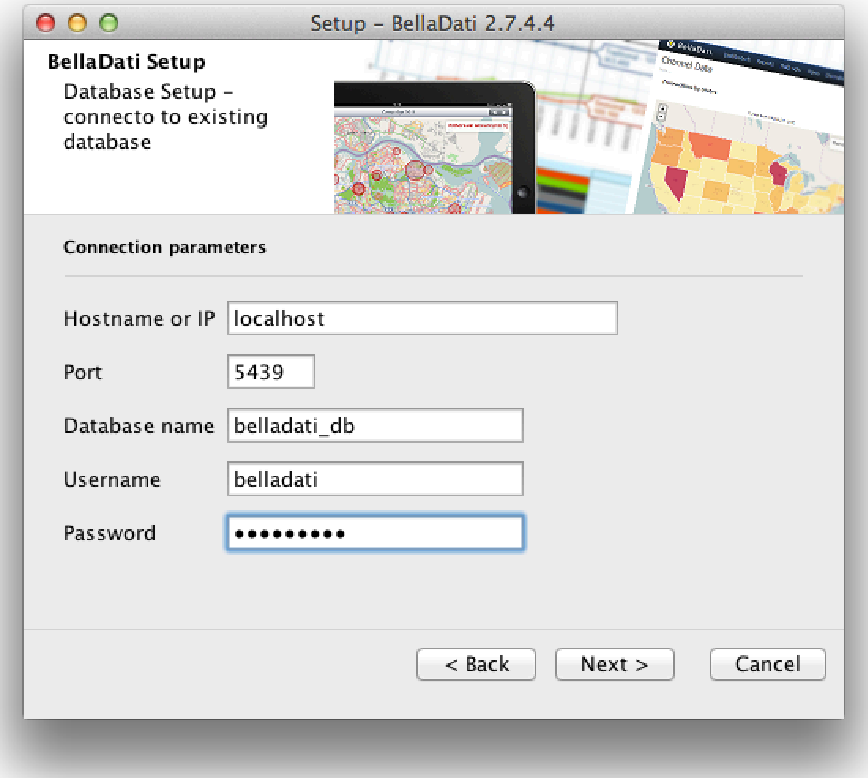
Click **Next** to proceed with the installation.

5.2. Connecting to an Existing Database

Specify the following connection parameters:

- **Hostname or IP**
- **Port**
- **Database name**
- **Username**
- **Password**

✓ Ask you database administrator if you are unsure about these settings.


Setup – BellaDati 2.7.4.4
BellaDati Setup
Database Setup – connecto to existing database

Connection parameters

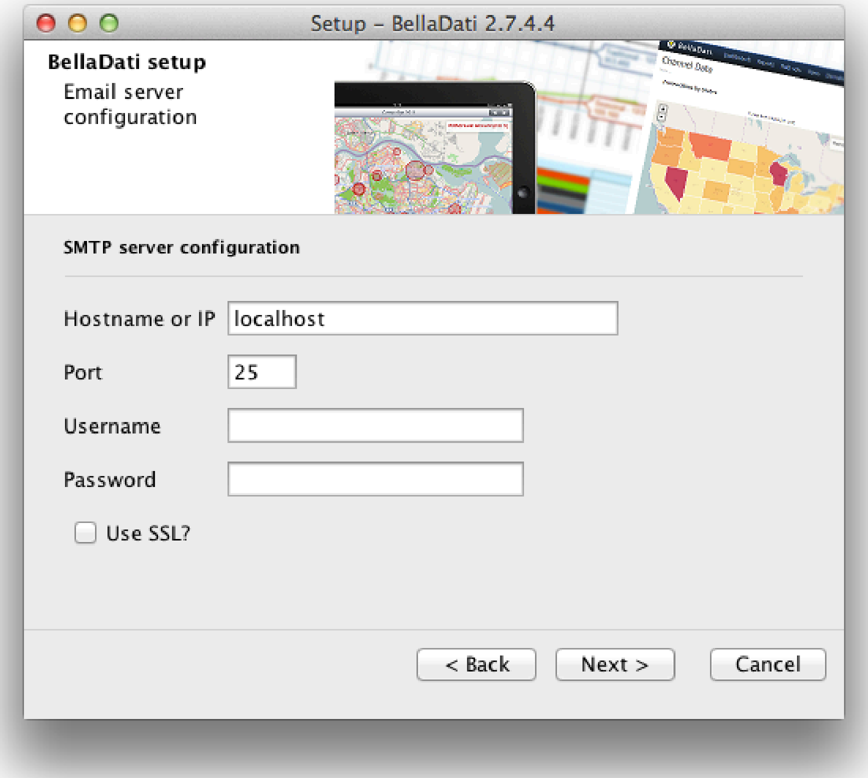
Hostname or IP: localhost
Port: 5439
Database name: belladati_db
Username: belladati
Password: ••••••••••

Click **Next** to proceed with the installation.

6. Email Server Configuration

Approve or edit the following default settings:

- **Hostname or IP**
- **Port**
- **Username**
- **Password**
- **SSL**



BellaDati setup

Email server configuration

SMTP server configuration

Hostname or IP: localhost

Port: 25

Username:

Password:

□ Use SSL?

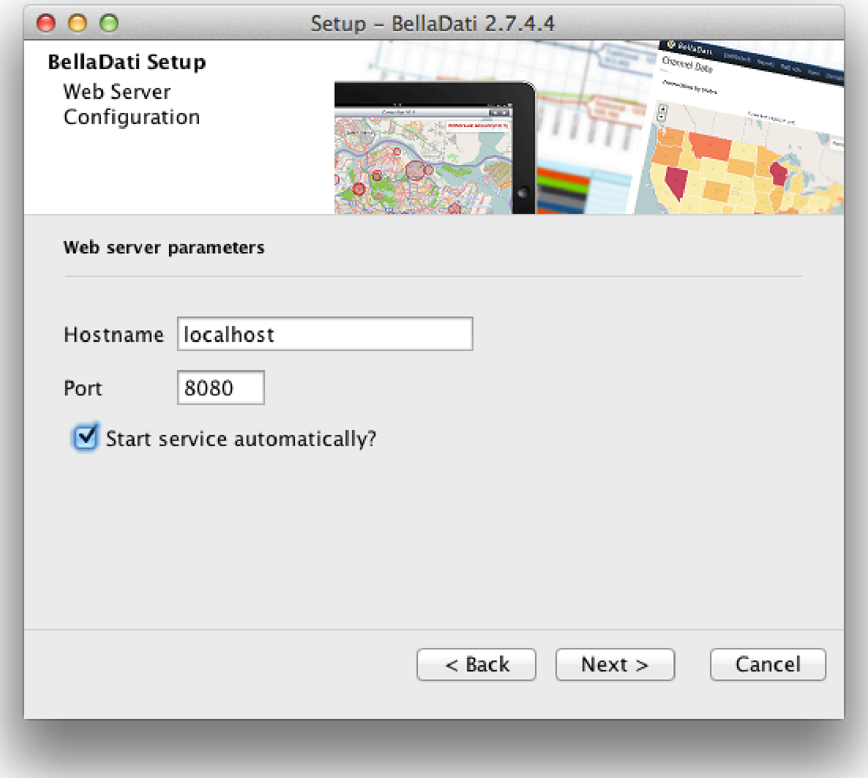
Click **Next** to proceed with the installation.

7. Web Server Parameters

Approve or edit the following default settings:

- **Hostname**
- **Port**. Make sure this port is not being used by other applications or services.

Check **Start service automatically** to have BellaDati up and running right after the installation.



Setup – BellaDati 2.7.4.4

BellaDati Setup

Web Server Configuration

Web server parameters

Hostname: localhost

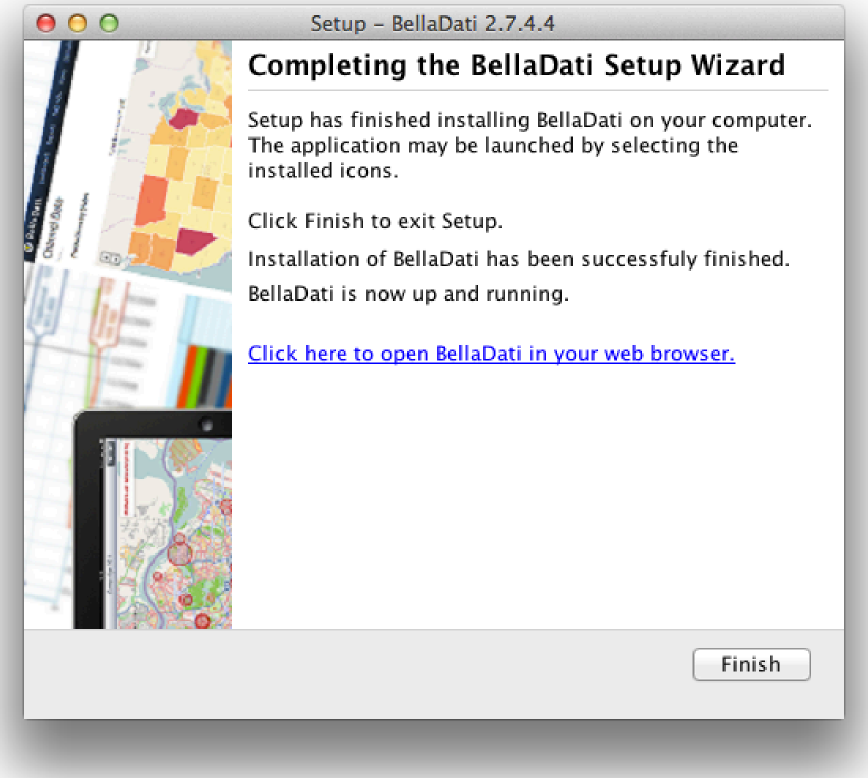
Port: 8080

☑ Start service automatically?

Click **Next** and wait while BellaDati is installed on your computer.

8. Finishing Installation

The installation is complete. Close the window or click the link to open BellaDati in your web browser.



Setup - BellaDati 2.7.4.4

Completing the BellaDati Setup Wizard

Setup has finished installing BellaDati on your computer. The application may be launched by selecting the installed icons.

Click Finish to exit Setup.

Installation of BellaDati has been successfuly finished.

BellaDati is now up and running.

Click here to open BellaDati in your web browser.

Continue with the BellaDati Setup Wizard.

Troubleshooting

- If you have disabled automatically starting the server in the web server configuration, or starting the server failed, run it manually via belladati-start_mac (default path: Applications/BellaDati).
- To open BellaDati after the installation is complete, point your browser to http://localhost:8080. This is the default URL, which may differ depending on the data you entered in step 6 of the installation.

Installing BellaDati WAR

ⓘ This document describes deploying BellaDati on an existing application server or running it in standalone mode. Alternatively, you can use the Windows or Mac installers.

ⓘ The same procedure applies to installing the BellaDati REST API war, the only difference is, that it is connecting to already created and initiated database. REST API node could be downloaded here.

To install BellaDati WAR or BellaDati REST API WARon an existing application server, follow the instructions below:

- Installing BellaDati Standalone
- Installing BellaDati on GlassFish
- Installing BellaDati on Tomcat
- Installing BellaDati on Jetty

Additional Notes

- To find out which system configurations are supported by BellaDati, check the System Requirements page.
- For more details on how to configure BellaDati, check the BellaDati WAR Configuration Overview.
- We recommend deploying only a single BellaDati application in each application server. If you are running multiple BellaDati instances, set up a separate container for each of them.

Installing Java

You can skip this page if you are using the BellaDati Windows installer or Mac installer.

1. Installing Java

BellaDati requires Oracle's **Java SE 7 or 8** platform to run. Refer to Supported Platforms for details on the Java platform versions that BellaDati supports.

Oracle's JDK can be downloaded from Oracle's website.

⚠ Linux distributions frequently have an open-source implementation of Java called GCJ installed. **Do not use** this Java platform — it is incomplete and BellaDati will not run successfully on it.

You can test whether you have the correct Java platform by running `java -version`:

On recent Linux distributions, Oracle's JDK can be installed through a package manager, e.g. apt-get on Ubuntu.

2. Setting JAVA_HOME

Once the JDK is installed you need to set the `JAVA_HOME` environment variable pointing to the root directory of your JDK installation.

Some JDK installers set this automatically. You can type `echo %JAVA_HOME%` in a Windows command prompt or `echo $JAVA_HOME` in a Linux/UNIX console to verify. If the property hasn't been set, follow the steps below.

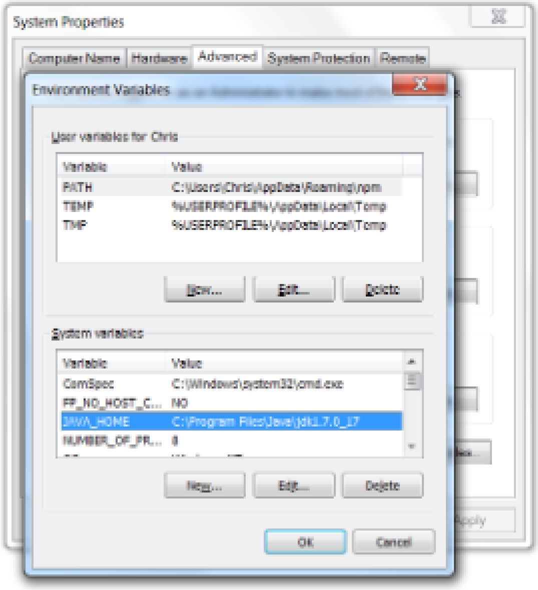
2.1 For Linux/Solaris

You can set the `JAVA_HOME` variable with the following command:

Make sure this variable is automatically set after system starts (append it to the `.profile`).

2.2 For Windows

Windows users can specify environment variables in the `System Properties->Environment Variables` window.



Variable	Value
PATH	C:\Users\Chris\AppData\Roaming\npm
TEMP	%USERPROFILE%\AppData\Local\Temp
TMP	%USERPROFILE%\AppData\Local\Temp

Variable	Value
ComSpec	C:\Windows\system32\cmd.exe
FP_NO_HOST_C...	NO
JAVA_HOME	C:\Program Files\Java\jdk1.7.0_17
NUMBER_OF_PR...	8

Setting up the PostgreSQL Database

> ⓘ These instructions will help you connect BellaDati to a **PostgreSQL 8.4+** database. We recommend using version **9.2 or higher**. This document is intended for **BellaDati WAR** installations.

Before You Begin

Migrating BellaDati to a Different Server

If you are migrating BellaDati to a different server, create an export of your data as an XML backup. You will then be able to transfer data from your old database to your new database.

Create and Configure the PostgreSQL Database

> **Setup the pg_hba.conf file to allow accessing the database via TCP socket. Here is an example:**

1. Create a database user which BellaDati will connect as (e.g. **`belladati_dbuser`**). Remember this database user name, as it will be used to configure BellaDati's connection to this database in subsequent steps. Do not forget to configure the `pg_hba.conf` file, which controls the database access.

2. Create a database for BellaDati to be used as data warehouse (e.g. **`belladati_db`**) with Unicode collation.

   Or from the command-line:

3. Ensure that the user has permissions to connect to the database, and to create and write to tables in the database.
4. Check if your database has the plpgsql language. If not, you can define it using this command:

   Or from the command line:

> ⚠ When using the default PostgreSQL configuration file `pg_hba.conf`, you have to execute this command by connecting via TCP socket:
>
> ```
> createlang -h 127.0.0.1 -U belladati_dbuser plpgsql belladati_db
> ```

> ⓘ Remember the database name; it will be used to configure BellaDati's connection to the database in subsequent steps.

PostgreSQL configuration

We strongly recommend performing the following PostgreSQL configuration changes in `$POSTGRES_HOME/data/postgresql.conf`. This example specifies parameters when you run the BellaDati application and database on a single server with 4GB memory. 2GB are allocated for the BellaDati application server running on Java (using the -Xmx parameter). The rest should be available for the operating system and database server.

This configuration may change according to real usage needs.

Example below shows the minimal configuration for single server installation.

Name	Value	Note
max_connections	50	
shared_buffers	512MB	min 1/4 RAM
temp_buffers	2MB	per session
work_mem	10MB	per client connection
maintenance_work_mem	64MB	
max_stack_depth	2MB	
wal_buffers	512kB	
effective_cache_size	512MB	
log_statement	none	

We recommend set the `archive_mode` parameter to `off`, using the `pg_dump` command instead.

Backup and restore

You can backup the BellaDati database using the PostgreSQL dump command:

To restore a backup, use the `pg_restore` command:

Continue installing the BellaDati WAR on your application server as described in:

- Installing BellaDati Standalone
- Installing BellaDati on GlassFish
- Installing BellaDati on Tomcat
- Installing BellaDati on Jetty

Installing BellaDati Standalone

This guide describes how to install **BellaDati WAR** using its built-in application server.

Before you begin, make sure you have the right version of Java. See Installing Java for more details.

1. Set up the Data Warehouse

Please follow the instructions on the Setting up the PostgreSQL Database page.

2. Download and extract the BellaDati WAR distribution

- Download the regular BellaDati WAR distribution from the download page.
- Extract the content of the archive. The archive contains these files:

`belladati.war`	BellaDati application files in form of an web archive
`belladati.bat`	BellaDati Windows startup script.
`belladati`	BellaDati Linux startup script.
`application.properties`	The application properties file that lets you specify the database connection and other settings.
`server.properties`	The server configuration file that lets you set basic server settings.

3. Start BellaDati standalone

On Windows, BellaDati must be run using an administrator account.

To start BellaDati on Windows, run the `belladati.bat` script. On Linux, run the `belladati` script.

4. Run the Setup Wizard

Point your browser to `http://localhost:8080/belladati`. This starts the Setup Wizard, which will take you through BellaDati's setup procedure.

Configuring SSL

If you want to use HTTPS in your BellaDati instance You have to:

- Prepare and load private key and the certificate into a keystore
- Configure SSL in server.properties
- Configure SSL in application.properties
- Restart server
- Configure application URL

Prepare and load private key and the certificate into a keystore

You can follow these instructions to prepare JSSE *keystore* with private key and the signed certificate.

Configure SSL in server.properties

Open the server configuration file server.properties and set following SSL parameters for BellaDati and Jetty's `SslContextFactory`:

Parameter name	Description	Example
server.ssl	Boolean flag if the SSL should be used	true
server.ssl.port	SSL port	8443
server.ssl.keystore.path	Full path to your *keystore* file. Note that as a keystore is vital security information, it can be desirable to locate the file in a directory with very restricted access.	/Applications/BellaDati/keystore
server.ssl.keystore.password	The KeyStore password may be set here in plain text	
server.ssl.keymanagerpassword	The KeyManager password may be set here in plain text	
server.ssl.truststore.path	Full path to your trust store	/Applications/BellaDati/keystore
server.ssl.truststore.password	The TrustStore password may be set here in plain text	
server.ssl.certalias	Alias of a certificate to use. Please be sure you are using PrivateKeyEntry alias from keystore. You can use keytool to list entries: *keytool -list -keystore path/to/my/keystore*	my_alias

Configure SSL in application.properties

(Optional) If you want to enforce all pages to be opened using SSL, then open the application configuration file application.properties and set following parameter for BellaDati:

Parameter name	Description	Example
application.secure-mode	Determines whether BellaDati is running in SSL/TLS mode. If set to `true`, the application enforces all pages to be opened using SSL.	true

Restart server

Restart server and point your browser to https://localhost:8443/ to access your BellaDati instance.

Configure **application URL**

(Optional) Login as admin to BellaDati and go to Settings page. Please set value of general property called Application URL to https://localhost:8443

Installing BellaDati on GlassFish

This guide describes how to install **BellaDati WAR** on **GlassFish**. You can download it from the GlassFish download page. Please refer to the GlassFish quick start guide or the GlassFish documentation for more information about how to install GlassFish.

BellaDati supports **GlassFish 3.1.2** and above. The instructions in this document refer to GlassFish 4 but apply similarly to older versions.

When you are using **GlassFish 4.1**, download the **Java EE Web** Profile.

The BellaDati WAR file is the BellaDati application packaged in a WAR archive. It must be deployed into an existing application server and needs to be connected to a data warehouse running on an existing database server.

Before You Begin

Please read the following important notes before you begin installing BellaDati on GlassFish:

- Make sure you have the right version of **Java**. See Installing Java for more details.
- Install GlassFish application server
- Deploying multiple BellaDati WAR application in a single GlassFish application server is **not supported**. We do not test this configuration and updating any of the applications (even for point releases) is likely to break it.
- We recommend not deploying any other applications in the same GlassFish container that runs BellaDati, especially if these other applications have large memory requirements or require additional libraries in GlassFish's lib sub-directory. Multiple applications in a container can impact stability as a crash in one application could make the entire container inaccessible. Additionally, in order to update or reconfigure any of the applications, you'll need to restart the whole container.

Watch the video tutorial and or follow guidelines below

1. Setup data warehouse

Please follow the instructions on the Setting up the PostgreSQL Database page.

2. Download and extract BellaDati WAR Archive

Download the **BellaDati WAR** distribution as a ZIP archive from the BellaDati download page and extract its content using a tool such as 7-Zip for Windows or Linux's GNU tar tools. Only one of the files in the ZIP archive is used for this setup - `belladati.war`.

⚠ Avoid using Windows' built-in file extraction tool! This tool silently fails to extract files with long names. Other users have also reported problems with WinRAR.

⚠ Avoid using Solaris' default tar utility! Please use GNU tar on this operating system to extract BellaDati, as GNU tar handles long file names better.

3. Configure BellaDati WAR

Since version 2.7.14 there is no special configuration change needed, however, there are several advanced settings (e.g. enforcing the SSL), which are configurable in *application.properties* only.

Configuration settings are explained in detail in the BellaDati WAR Configuration Overview.

4. Update Your GlassFish Installation's Libraries for BellaDati

Your GlassFish installation requires a JDBC driver allowing BellaDati to communicate with the database. To add this JDBC driver to GlassFish:

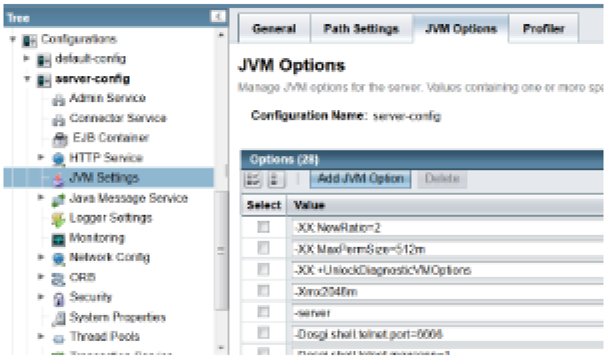
1. Download the PostgreSQL JDBC driver (obtain version 9.0 or later of the **JDBC 4** driver).
2. Copy the PostgreSQL JDBC driver jar to the `lib/` directory of your GlassFish server.

5. Configure GlassFish

5.1 Configure Memory Settings in GlassFish

BellaDati requires more memory than what GlassFish provides by default. This may lead to `OutOfMemory` errors when running BellaDati if these memory settings are not increased.

To increase the available memory, log in into the GlassFish Administration console (by default available at port 4848). Open the Application server's JVM Settings menu and click on JVM Options. Change the setting for **-XX:MaxPermSize** to **512m** and **-Xmx** to **2048m** and change -client to **-server** as shown in the screenshot below. If any of these options doesn't exist yet, create it. Please make sure you don't have set a -server and -client option at the same time.



JVM Options

Manage JVM options for the server. Values containing one or more sp

Configuration Name: server-config

Options (28)

Select	Value
□	-XX:NewRatio=2
□	-XX:MaxPermSize=512m
□	-XX:+UnlockDiagnosticVMOptions
□	-Xmx2048m
□	-server
□	-Dosgi.shell.telnet.port=6666

If you are using the command line, execute the following commands instead:

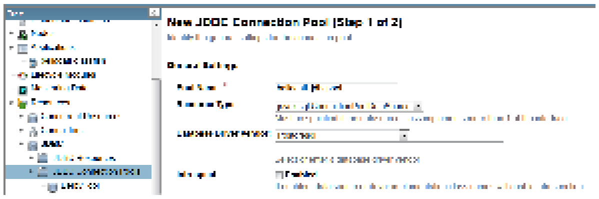
For other environments and more information on memory settings, see the System Requirements and Recommended JVM Options.

5.2 Configure the GlassFish's JDBC resource

BellaDati uses JDBC resources which connect to the database subsystem. Although BellaDati can connect to the database directly using its own JDBC setup, we recommend using GlassFish's JDBC resources for better performance and more control over the database transaction management. You can set up the JDBC connection pool and JDBC resource following these steps:

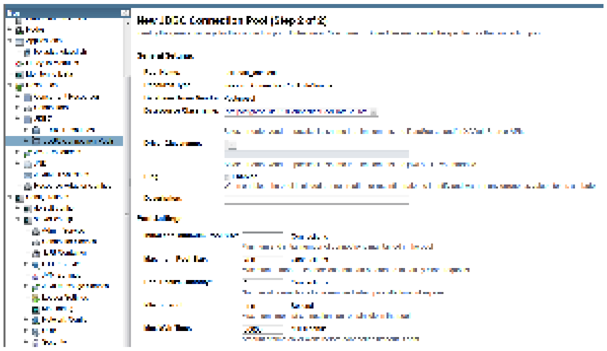
5.2.1 Using GlassFish's Administration console

You can use the GlassFish's Administration console as described in the previous step:
1. Login to Administration console.
2. Open `Resources->JDBC->Connection Pools` and click the `New` button.
3. Fill the **Name**, **Type** and **Database Vendor** fields and click Next.



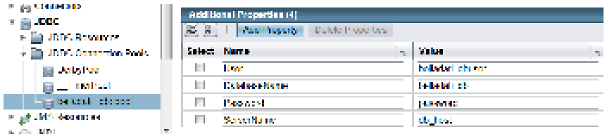
New JDBC Connection Pool (Step 1 of 2)

4. Specify the database pool settings. The defaults may be fine, but we recommend to set values as shown on the right (see table **Recommended connection parameters**).



New JDBC Connection Pool (Step 2 of 2)

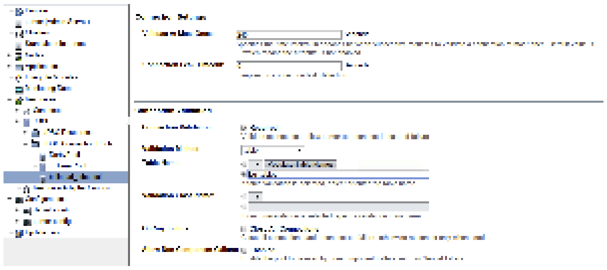
5. In the property list, enter the values matching your system configuration for **DatabaseName**, **User**, **Password** and **ServerName**. Remove all other properties.



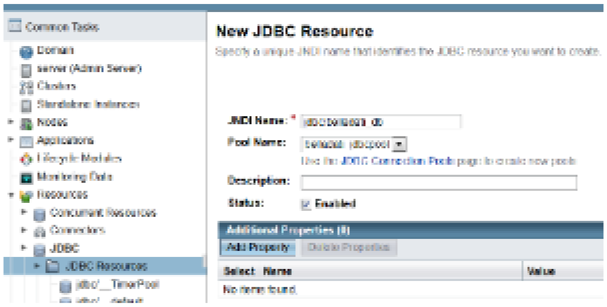
Additional Properties (4)

Select	Name	Value
□	User	belladati_user
□	DatabaseName	belladati_db
□	Password	password
□	ServerName	db_host

6. After the connection pool was created, select it on the left side and click on tab `Advanced`. Set **Connection Settings** and turn on **Connection Validation** using the settings shown on the right (see table **Recommended connection parameters**).



7. Open `Resources->JDBC->Resources` and click the `New` button.
8. For **JNDI Name**, enter the value from **jdbc.resource** in BellaDati's `application.properties`. As **Pool Name**, select the connection pool created during the previous steps.



New JDBC Resource

Specify a unique JNDI name that identifies the JDBC resource you want to create.

JNDI Name: * jdbc/belladati_db

Pool Name: belladati_jdbcpool

Use the JDBC Connection Pools page to create new pools

Description:

Status: ☑ Enabled

Additional Properties (0)

Select	Name	Value
No items found.		

9. Please test connection by **Ping** button on the top of page.

5.2.2 Using the `asadmin` command

1. Start GlassFish
2. Create a JDBC connection pool:

For **DatabaseName**, **User**, **Password** and **ServerName**, enter the values matching your system configuration.

3. Create a JDBC resource:

The **jdbc/belladati_db** corresponds to the parameter **jdbc.resource** from BellaDati's `application.properties`.

6. Deploying BellaDati into GlassFish

6.1 Using GlassFish's Administration console

You can use the Admin Console to deploy BellaDati into GlassFish.

1. Log in to `Administration console`.
2. Open `Applications`.
3. Click on the `Deploy` button.
4. Click `Browse` and select the `belladati.war` file.

6.2 Using the `asadmin` command

In order to deploy BellaDati, execute this command:

This command deploys the BellaDati WAR file under the `/belladati` context.

7. Run the Setup Wizard

Point your browser to `http://localhost:8080/belladati`. This starts the Setup Wizard, which will take you through BellaDati's setup procedure.

Installing BellaDati on Jetty

This guide describes how to install **BellaDati WAR** on **Jetty 7 and above**.

The BellaDati WAR file is the BellaDati application packaged in a WAR archive. It must be deployed into an existing application server and needs to be connected to a data warehouse running on an existing database server.

Before You Begin

Please read the following important notes before you begin installing BellaDati on Jetty 7 or higher:

- Make sure you have the right version of **Java**. See Installing Java for more details.
- Deploying multiple BellaDati WAR application in a single Jetty container is **not supported**. We do not test this configuration and updating any of the applications (even for point releases) is likely to break it.
- We recommend not deploying any other applications in the same Jetty container that runs BellaDati, especially if these other applications have large memory requirements or require additional libraries in Jetty's lib sub-directory. Multiple applications in a container can impact stability as a crash in one application could make the entire container inaccessible. Additionally, in order to update or reconfigure any of the applications, you'll need to restart the whole container.

1. Setup data warehouse

Please follow the instructions on the Setting up the PostgreSQL Database page.

2. Download and extract BellaDati WAR Archive

Download the **BellaDati WAR** distribution as a ZIP archive from the BellaDati download page and extract its content using a tool such as 7-Zip for Windows or Linux's GNU tar tools. Only one of the files in the ZIP archive is used for this setup - `belladati.war`.

Avoid using Windows' built-in file extraction tool! This tool silently fails to extract files with long names. Other users have also reported problems with WinRAR.

Avoid using Solaris' default tar utility! Please use GNU tar on this operating system to extract BellaDati, as GNU tar handles long file names better.

3. Configure BellaDati WAR

You have successfully downloaded and extracted the BellaDati WAR distribution as described in the previous step. To configure Belladati, you need to extract and modify a configuration file placed inside the WAR archive by following these easy steps:

1. Extract `application.properties` file from the WAR file using a tool such as 7-Zip for Windows or Linux's unzip tool.

2. Edit extracted file `WEB-INF/classes/conf/application.properties`. Under **JDBC properties**, remove the # sign in the first line. Update **jdbc.url**, **jdbc.username** and **jdbc.password** to match your system configuration. You can remove all lines starting with # from the **JDBC properties** section. The configuration should look like:

Configuration settings are explained in detail in the BellaDati WAR Configuration Overview.

3. Save configuration file `WEB-INF/classes/conf/application.properties` and update the WAR archive. On Linux, the command looks like:

4. Copy the `belladati.war` to `$JETTY_HOME/webapps`.

4. Update Your Jetty Installation's Libraries for BellaDati

Your Jetty installation requires a JDBC driver allowing BellaDati to communicate with the database. To add this JDBC driver to Jetty:

1. Download the PostgreSQL JDBC driver (obtain version 9.0 or later of the **JDBC 4** driver).
2. Copy the PostgreSQL JDBC driver jar to the `lib/ext/` directory of your Jetty server.

5. Configure Jetty

5.1 Java environment

Before you start Jetty, make sure you have configured the JAVA_HOME variable, which points to the installed Java. You can do it in this way:

You can also add the `JAVA_HOME` parameter to `/etc/default/jetty`. This will set the `JAVA_HOME` variable whenever you start Jetty.

5.2 Configure Memory Settings in Jetty

Jetty memory settings need to be modified to avoid the following issue:

- BellaDati requires more memory than what Jetty provides by default. This may lead to `OutOfMemory` errors when running BellaDati if these memory settings are not increased.

To prevent this issue, follow the instructions below.

Set the JAVA_OPTIONS variable:

Alternatively, you can set the JAVA_OPTIONS parameter in the `/etc/default/jetty` file:

If you are using the **Java Service Wrapper**, follow these instructions:

Edit Jetty's `bin/jetty-service.conf` file (or create this file if it does not exist) and add the following to this file:

For other environments and more information on memory settings, see the System Requirements.

> ⚠ Please note, that the value `2048MB` for -Xmx (max heap size) is dedicated for evaluation purposes only. Please refer to Recommended JVM Options article to find suggested settings for production deployments.

> ⓘ You can download the Java Service Wrapper for many different platforms.

6. Start or Restart Jetty

BellaDati is now ready to run in Jetty. You can start (or restart) the Jetty server with Jetty's `bin/jetty.sh run` or `bin/Jetty-Service.exe` scripts.

7. Run the Setup Wizard

Point your browser to `http://localhost:8080/belladati`. This starts the Setup Wizard, which will take you through BellaDati's setup procedure.

Installing BellaDati on Tomcat

This guide describes how to install **BellaDati WAR** on **Tomcat 7.0** and higher.

Tip for Windows users:
We recommend using the **32-bit/64-bit Windows Service Installer**, which allows you to run BellaDati as a Windows service.

The BellaDati WAR file is the BellaDati application packaged in a WAR archive. It must be deployed into an existing application server and needs to be connected to a data warehouse running on an existing database server.

Before You Begin

Please read the following important notes before you begin installing BellaDati on Tomcat 7.0:

- Make sure you have the right version of **Java**. See Installing Java for more details.
- Deploying multiple BellaDati WAR application in a single Tomcat container is **not supported**. We do not test this configuration and updating any of the applications (even for point releases) is likely to break it.
- We recommend not deploying any other applications in the same Tomcat container that runs BellaDati, especially if these other applications have large memory requirements or require additional libraries in Tomcat's lib sub-directory. Multiple applications in a container can impact stability as a crash in one application could make the entire container inaccessible. Additionally, in order to update or reconfigure any of the applications, you'll need to restart the whole container.

1. Setup data warehouse

Please follow the instructions on the Setting up the PostgreSQL Database page.

2. Download and extract BellaDati WAR Archive

Download the **BellaDati WAR** distribution as a ZIP archive from the BellaDati download page and extract its content using a tool such as 7-Zip for Windows or Linux's GNU tar tools. Only one of the files in the ZIP archive is used for this setup - `belladati.war`.

⚠ Avoid using Windows' built-in file extraction tool! This tool silently fails to extract files with long names. Other users have also reported problems with WinRAR.

⚠ Avoid using Solaris' default tar utility! Please use GNU tar on this operating system to extract BellaDati, as GNU tar handles long file names better.

3. Configure BellaDati WAR

You have successfully downloaded and extracted the BellaDati WAR distribution as described in the previous step. To configure BellaDati, you need to extract and modify a configuration file placed inside the WAR archive by following these easy steps:

1. Extract `application.properties` file from the WAR file using a tool such as 7-Zip for Windows or Linux's unzip tool.

2. Edit extracted file `WEB-INF/classes/conf/application.properties`. Under **JDBC properties**, remove the # sign in the line below **when running on Tomcat**. Remove all other lines from the **JDBC properties** section. The configuration should look like:

Configuration settings are explained in detail in the BellaDati WAR Configuration Overview.

3. Save configuration file `WEB-INF/classes/conf/application.properties` and update the WAR archive. On Linux, the command looks like:

4. Update Your Tomcat Installation's Libraries for BellaDati

Your Tomcat installation requires a JDBC driver allowing BellaDati to communicate with the database. To add this JDBC driver to Tomcat:

1. Download the PostgreSQL JDBC driver (obtain version 9.0 or later of the **JDBC 4** driver).
2. Copy the PostgreSQL JDBC driver jar to the `lib/` directory of your Tomcat server.

5. Configure Tomcat

5.1 Set JAVA Environment

If you have installed the Tomcat Windows Service, you can skip this step.

5.1.1 For Linux/Solaris

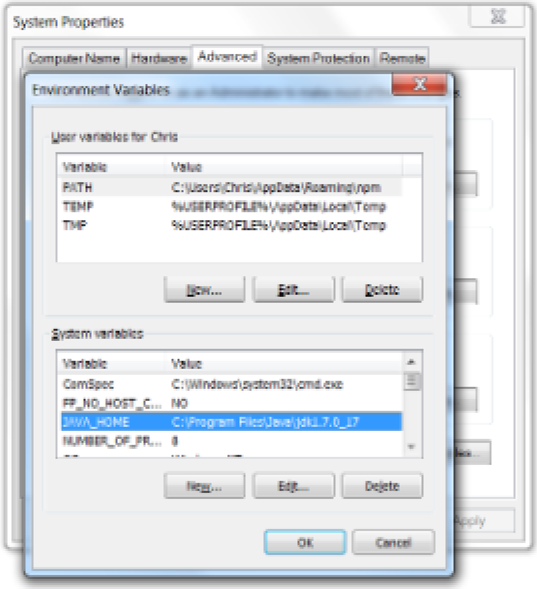
Before you start Tomcat, make sure you have configured the JAVA_HOME variable, which points to the installed Java SDK. You can do it in this way:

Make sure this variable is automatically set after system starts (append it to the `.profile`).

You can also specify it in the file `$TOMCAT_HOME/conf/tomcat7.conf` file. :

5.1.2 For Windows

Windows users can specify the environment parameters in the Environment Variables window.



Variable	Value
PATH	C:\Users\Chris\AppData\Roaming\npm
TEMP	%USERPROFILE%\AppData\Local\Temp
TMP	%USERPROFILE%\AppData\Local\Temp

Variable	Value
ComSpec	C:\Windows\system32\cmd.exe
FP_NO_HOST_C...	NO
JAVA_HOME	C:\Program Files\Java\jdk1.7.0_17
NUMBER_OF_PR...	8

5.2 Configure Tomcat's Context

A BellaDati context needs to be set up in Tomcat. To do this:

1. Create the directory structure `conf/Catalina/localhost/` within your Tomcat installation directory if it doesn't already exist.
2. Create the `belladati.xml` file and copy it to `conf/Catalina/localhost` subdirectory of your Tomcat installation directory (created in the previous step).

3. Update the **docBase** attribute in the first line as well as **url**, **username** and **password** in lines 5 and 6 to match your system configuration.

Here is an example file.

If you are installing in Windows, make sure that the paths you specify for the location of the WAR file and database are full paths with drive letters (e.g. `C:\path\to\belladati.war`).

5.3 Set Tomcat Home Directory Permissions

By default BellaDati is creating several directories within the Tomcat home folder. To allow this, Tomcat needs to run as a user with read and write access to this directory.

5.4 Configure Memory Settings in Tomcat

Tomcat memory settings need to be modified to avoid the following issue:

- BellaDati requires more memory than what Tomcat provides by default. This may lead to `OutOfMemory` errors when running BellaDati if these memory settings are not increased.

To prevent this issue, follow the instructions below.

> ⚠ Please note that the value `2048MB` for -Xmx (maximum memory pool) is recommended for evaluation purposes only. Please refer to the Recommended JVM Options article to find suggested settings for production deployments.

For Linux/Solaris

Edit Tomcat's `bin/setenv.sh` file (or create this file if it does not exist) and add the following:

Alternatively, you can edit the `$TOMCAT_HOME/conf/tomcatX.conf` or `/etc/default/tomcatX.conf` file:

For Windows

> ⓘ If you are running 32 bit JVM on Windows, you can use max 1344MB (-Xmx1344)

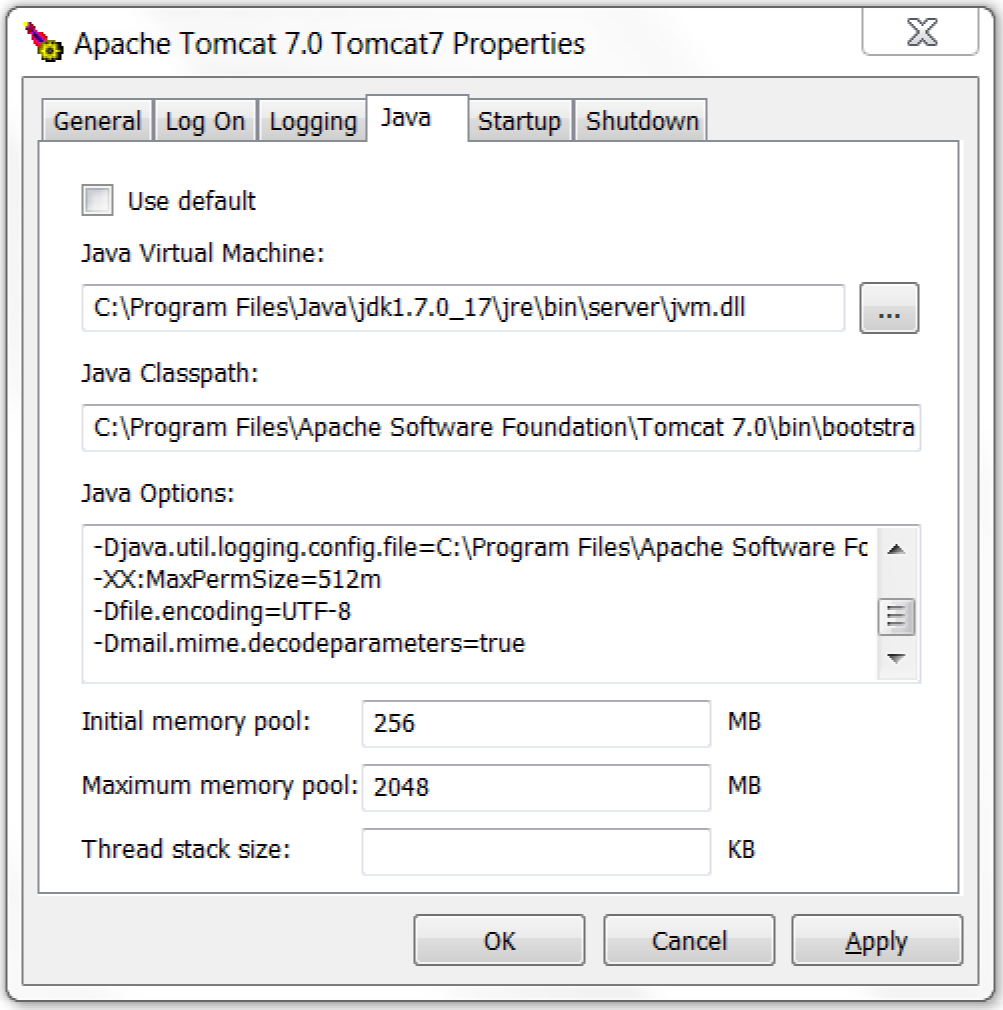
If Tomcat is not installed as a service:

- Edit Tomcat's `bin/setenv.bat` file (or create this file if it does not exist) and add the following:

If Tomcat is installed and running as a service:

1. Right-click Tomcat's system tray icon and select **Configure** from the resulting popup menu, which opens the Apache Tomcat Properties dialog box.
2. In this dialog box, click on the **Java** tab and specify the following values (depending on available system memory):

Field	Value
Java Options (append to the existing value)	
Initial memory pool	`256 MB`
Maximum memory pool	`2048 MB`



☐ Use default

Java Virtual Machine: C:\Program Files\Java\jdk1.7.0_17\jre\bin\server\jvm.dll

Java Classpath: C:\Program Files\Apache Software Foundation\Tomcat 7.0\bin\bootstra

Java Options:

```
-Djava.util.logging.config.file=C:\Program Files\Apache Software Fc
-XX:MaxPermSize=512m
-Dfile.encoding=UTF-8
-Dmail.mime.decodeparameters=true
```

Initial memory pool: 256 MB

Maximum memory pool: 2048 MB

Thread stack size: KB

For other environments and more information on memory settings, see the System Requirements.

5.5 Modify Tomcat's `server.xml`

In order for BellaDati to correctly display internationalized characters in user and group names, you need to modify the `conf/server.xml` file in your Tomcat installation directory by specifying the `URIEncoding="UTF-8"` property within the connector definition for your HTTP protocol.

The connector definition is specified by the following element in your `server.xml` file:

You should modify this element by specifying the `URIEncoding="UTF-8"` attribute:

Please Note:

- Since this property must be specified at the connector level for your application server, this setting will affect all other web applications deployed to the same application server installation running BellaDati. While this setting should not adversely effect these other web applications, you should be aware of this point.
- BellaDati will run fine without this property set. However, you will run into issues if a user or group is created which contains international characters. Hence, it is recommended that you set this property.

6. Start or Restart Tomcat

BellaDati is now ready to run in Tomcat.

Run as Service

Start the Tomcat service used for Belladati. Restart it if it's already running.

Run Manually

If Tomcat is not running as a service, start (or restart) the Tomcat server with Tomcat's `bin/startup.sh` or `bin/startup.bat` scripts.

7. Run the Setup Wizard

Point your browser to `http://localhost:8080/belladati`. This starts the Setup Wizard, which will take you through BellaDati's setup procedure.

Recommended JVM Options

This page contains the recommended memory settings for the Java environment. It is based on commonly used system configurations.

Common Settings

These settings should always be set in a BellaDati Java environment.

File encoding	`-Dfile.encoding=UTF8`
Temp directory	`-Djava.io.tmpdir=/tmp`

Minimal Configuration

This configuration is recommended for a **less than 10 users** analyzing **thousands of records**.

System memory	`4GB`
Heap Size	`-Xmx2048m`
Permanent Generation Space	`-XX:MaxPermSize=256m`

⚠ If you are using a 32-bit JVM on Windows, you can use at most 1344 MB of heap memory.

Medium-load Configuration

This configuration is recommended for a **10-100 users** analyzing **hundred thousands of records**.

System memory	`8GB`
Heap Size	`-Xmx6144m`
Permanent Generation Space	`-XX:MaxPermSize=512m`

High-load Configuration

This configuration is recommended for a **100+ users** analyzing **millions of records**.

System memory	`16GB`
Heap Size	`-Xmx14336m`
Permanent Generation Space	`-XX:MaxPermSize=768m`

BellaDati WAR Configuration Overview

Parameters in `application.properties`

The file `application.properties` is located in the **BellaDati WAR archive** or **in the installation directory of BellaDati standalone**. To extract the file from the BellaDati WAR, you can use tools such as 7-Zip for Windows or Linux's/GNU unzip tools.

Parameter name	Description
`application.url`	Specifies the URL on which is BellaDati running. The default value is http://localhost.
`application.production-mode`	Determines whether BellaDati is running in production mode. The default value is `true`.
`application.secure-mode`	Determines whether BellaDati is running in SSL/TLS mode. If set to `true`, the application enforces all pages to be opened using SSL. Please note that you must configure your container use SSL/TLS in order to use this parameter.
`jdbc.driverClassName`	JDBC driver used by BellaDati for database connections. Currently, only `org.postgresql.Driver` is supported.
`jdbc.url`	If you don't have a JNDI data source configured, you can use the `jdbc.url`, `jdbc.username` and `jdbc.password` parameters. BellaDati automatically creates a JNDI data source with these parameters. The URL should look like: `jdbc:postgresql://db_host:5432/belladati_db` where `db_host` is the host name of your database server. Visit Setting up the PostgreSQL Database for more information.
`jdbc.username`	Username used by BellaDati to access the database. This parameter is used only when `jdbc.url` is set.
`jdbc.password`	Password used by BellaDati to access the database. This parameter is used only when `jdbc.url` is set.
`jdbc.pool.maxActive`	Maximum number of active database connections.
`jdbc.pool.minIdle`	Minimum number of database connections in idle state.
`jdbc.pool.maxIdle`	Maximum number of database connections in idle state.
`jdbc.resource`	Name of the JNDI resource to access the database, e.g. `jdbc/belladati_db`. Specify only if you are using a JNDI data source.
`smtp.server.address`	URL of the SMTP server used for sending email. Default value is `localhost`.
`smtp.server.port`	SMTP server port. Default value is `25`.
`smtp.server.ssl`	Determines whether SSL is used for SMTP. Default value is `false`.
`smtp.server.username`	Username for accessing the SMTP server.
`smtp.server.password`	Password for accessing the SMTP server.
`email.sender`	This parameter allows you to change the email sender address. `support@belladati.com` is used by default.
`email.footer`	The value of this parameter is automatically appended to all outgoing emails. The default value is `BellaDati Inc.`.
`lucene.indexes`	Specifies the directory for report and data set indexes. Default value is `indexes`.
`facebook.applicationId`	Consumer application ID for the Facebook connector.
`facebook.applicationSecret`	Consumer application secret for the Facebook connector.
`twitter.consumerKey`	Consumer key for the Twitter connector.
`twitter.consumerSecret`	Consumer secret for the Twitter connector.

`salesForce.consumerKey`	Consumer key for the SalesForce connector.
`salesForce.consumerSecret`	Consumer secret for the SalesForce connector.

If you change the **lucene.indexes** parameter on a system that's already in use, you will need to reindex your reports and data sets. After restarting the server and logging in, move the mouse over your username and click the link to your domain. On the left side, **reindex** your **reports** and **data sets**.

ActiveDirectory/LDAP Authentication

> Since version 2.7.9.1 you can configure the ActiveDirectory authentication directly from the user interface. See Setup Active Directory Authentication.

BellaDati supports customizable authentication providers. Among the basic providers is the Active Directory and LDAP authentication provider. To enable this authentication provider, follow the instructions below:

BellaDati v2.7.4.1 and higher

`1. Unzip the WEB-INF/classes/conf/application.properties configuration file from the BellaDati WAR file or edit the WEB-INF/classes/conf/application.properties in your BellaDati installation directory.`

`application.login.domains`	List of authentication domains - names are displayed on the login page. E.g. `application.login.domains=domain1,domain2`.
`adauth.createNotExistingAccounts`	Determines whether accounts that don't exist are automatically created.
`adauth.domainId`	Specifies the `id` of the destination domain if `adauth.createNotExistingAccounts=true`.
`adauth.domain1.spec.url`	Specifies the search URL, e.g. LDAP://adhost:389/OU=Unit,OU=test,DC=company,DC=com
`adauth.domain1.spec.bindDN`	The `DN` of the user with search permission.
`adauth.domain1.spec.bindPassword`	The password of the user with search permission.
`adauth.domain1.spec.loginAttribute`	The login attribute, e.g. `sAMAccountName`.

2. If you have extracted the application.properties file from `belladati.war` archive, update this archive.

BellaDati v2.7.4 and below

1. Unzip the `WEB-INF/classes/conf/beans-common.xml` configuration file from the BellaDati WAR file.
2. Replace the `bean` element with `id="userAuthenticityProvider"` with this content:

3. Add the following parameter to the `WEB-INF/classes/conf/application.properties` file:

4. Update the `belladati.war` archive.

Configure logging

Logging Services

Logging in BellaDati is provided by the LogBack framework. The location of the system's log files containing diagnostic messages can be managed by changing the `WEB-INF/classes/logback.xml` configuration file contained in `belladati.war`.

BellaDati uses 3 appenders: `web`, `core` and `queries`. To change the log files storage path, you can unzip the mentioned file and edit the `<file>` tag. For example, the configuration might look like:

If you encounter any issues using BellaDati or anything doesn't behave the way you were expecting, please append these log files to any issue you create at http://support.belladati.com.

Files location

There are several important files present in every BellaDati installation. Find these files in the table below:

Name	Default location	Description
Main log	`installation_dir/logs/belladati/belladati.log`	Main application log file. Log levels can be configured, see Configure logging
REST API log	`installation_dir/logs/belladati/rest.log`	Logging of REST API interface
Indexes directory	`installation_dir/indexes`	Folder containing fulltext indexes, refer to lucene.indexes parameter in BellaDati WAR Configuration Overview
Temporary directory	`tmp_directory/BELLADATI`	Directory used for storing temporary files, e.g. file uploads. May be configured using the JVM runtime parameter -Djava.io.tmpdir

Location of installation_dir depends on the type of the installation:

Installation type	Location example
GlassFish	`glassfish_home/glassfish/domains/domain1/config`
Jetty	`jetty_home/webapps`
Tomcat	`tomcat_home/conf/Catalina/localhost`
Windows exe installation	`C:\Program Files\BellaDati`
MacOS dmg installation	`/Applications/BellaDati`

BellaDati Setup Wizard

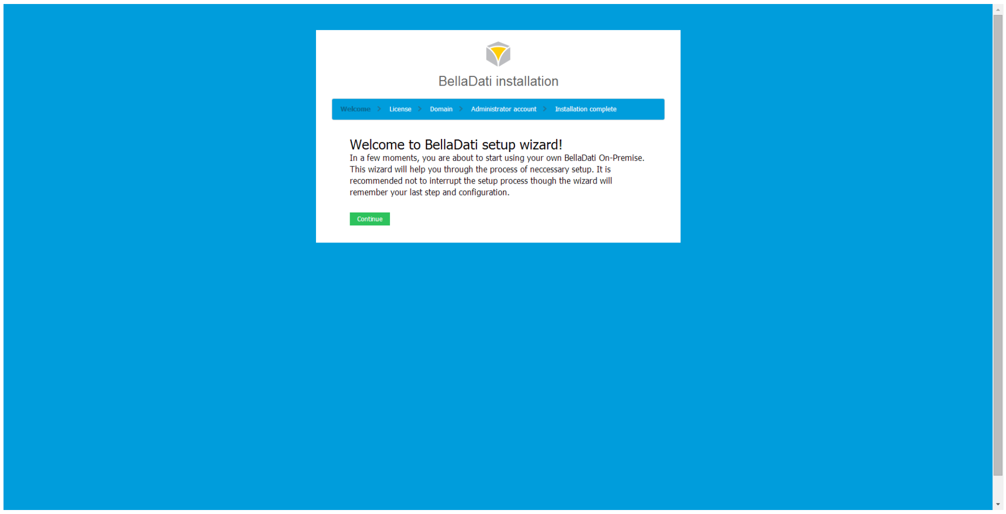
This page will show you step by step how to configure your newly installed BellaDati.

Documentation supposes that you have already successfully installed BellaDati on your machine.

1. Welcome and Information

If you have successfully installed BellaDati and your server is running, you should be able to see following screen in your browser.

Click **Continue** to proceed with configuration.



BellaDati installation
Welcome > License > Domain > Administrator account > Installation complete

Welcome to BellaDati setup wizard!

In a few moments, you are about to start using your own BellaDati On-Premise. This wizard will help you through the process of neccessary setup. It is recommended not to interrupt the setup process though the wizard will remember your last step and configuration.

2. Obtaining License Key

BellaDati now shows your unique **server ID**. You need to generate a **license key** for this server ID to use BellaDati.

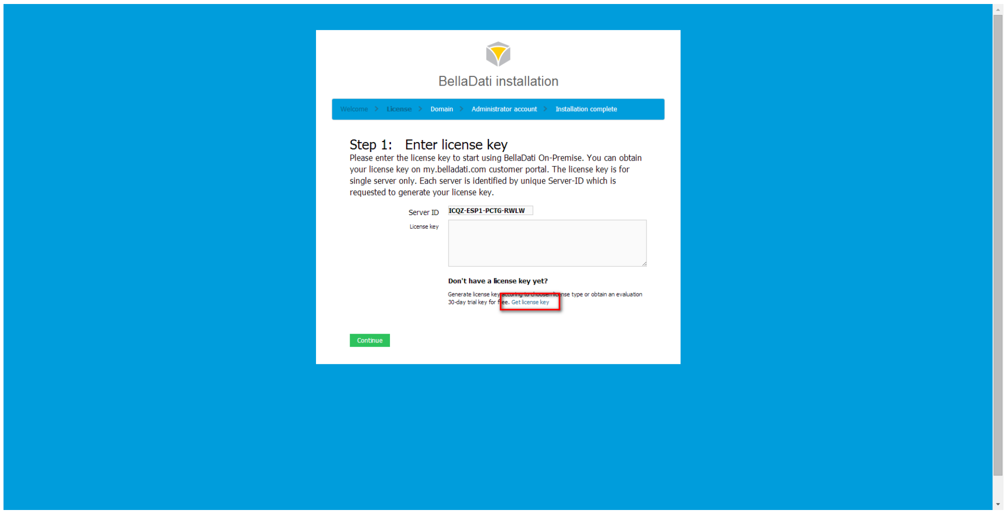
There are three options how to obtain license key:

- 2.1. I have license key from BellaDati Support
- 2.2. I have account in my.belladati customer portal
- 2.3. I don't have license key or account in my.belladati

2.1 I have license key from BellaDati support

Use this option if you are in direct contact with BellaDati support and have a special configuration requests. BellaDati support will provide configured license key.

Paste received license key into text input and click **Continue**.



Step 1: Enter license key

Please enter the license key to start using BellaDati On-Premise. You can obtain your license key on my.belladati.com customer portal. The license key is for single server only. Each server is identified by unique Server-ID which is requested to generate your license key.

Server ID ICQZ-ESP1-PCTG-RWLW

License key

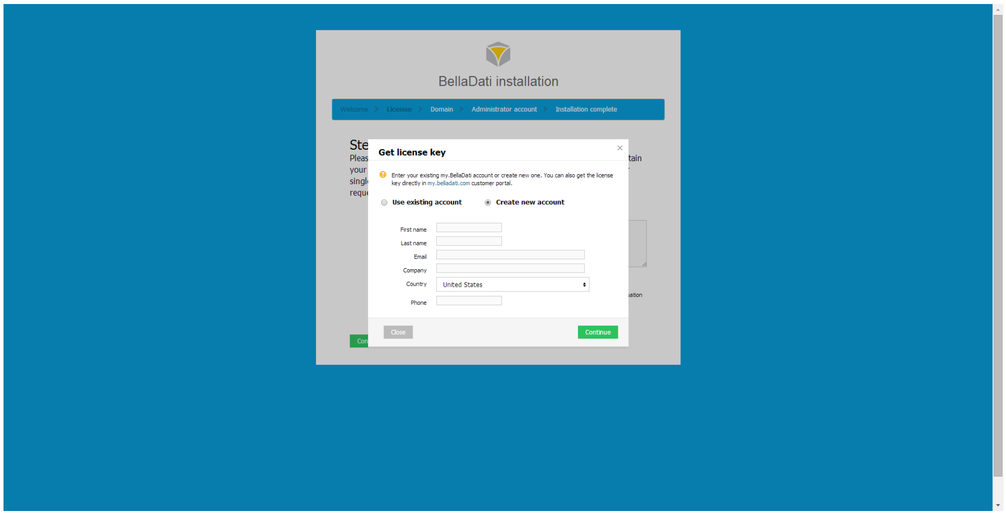
Don't have a license key yet?

Generate license key accoring to choosen license type or obtain an evaluation 30-day trial key for free. Get license key

2.2 I have account in my.belladati customer portal

From *License window* click **Get license key** and select **Use existing account**.

Login to customer portal and generate the license key by providing **server ID**. Copy and paste received license key into text input and click **Continue**.



Get license key

Enter your existing my.BellaDati account or create new one. You can also get the license key directly in my.belladati.com customer portal.

○ Use existing account ● Create new account

First name

Last name

Email

Company

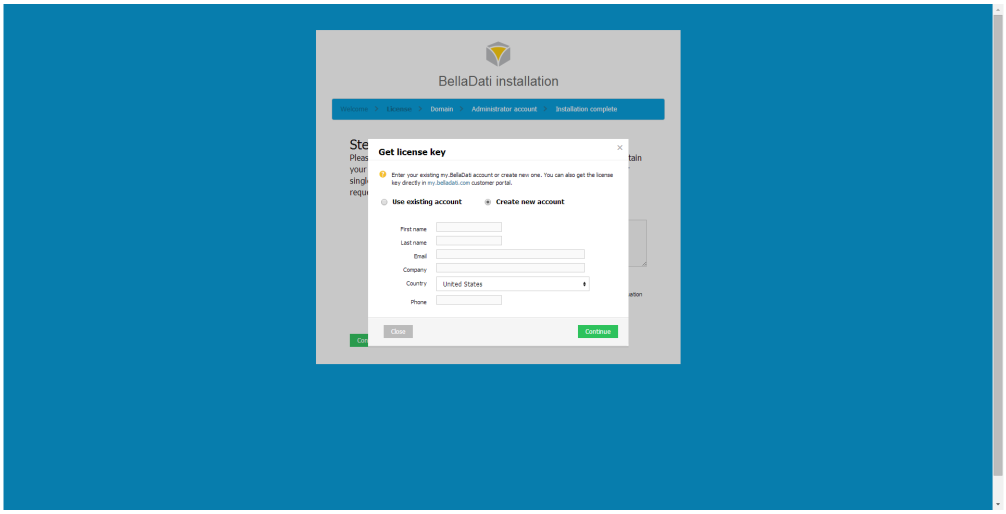
Country United States

Phone

2.3 I don't have license key or account in my.belladati

From *License window* click **Get license key** and select **Create new account**.

Fill in registration form. License key will be automatically obtained and passed into BellaDati. Click **Continue**.


BellaDati installation
Welcome > License > Domain > Administrator account > Installation complete

Get license key

Enter your existing my.BellaDati account or create new one. You can also get the license key directly in my.belladati.com customer portal.

○ Use existing account ● Create new account

First name

Last name

Email

Company

Country: United States

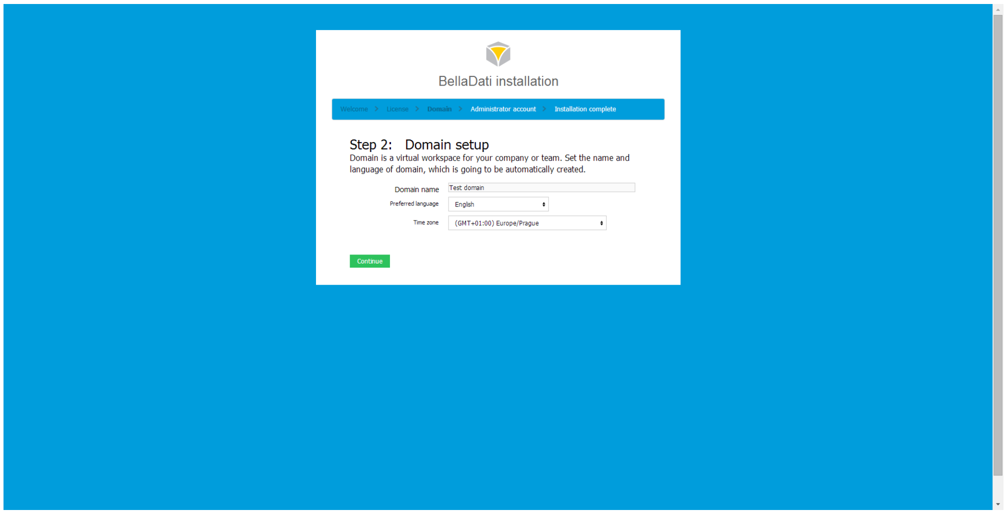
Phone

3. Domain Definition

In domain definition, specify:

- **Domain name**
- **Preferred language**
- **Time zone**

Click **Continue** to proceed with configuration.


BellaDati installation
Welcome > License > Domain > Administrator account > Installation complete

Step 2: Domain setup

Domain is a virtual workspace for your company or team. Set the name and language of domain, which is going to be automatically created.

Domain name: Test domain

Preferred language: English

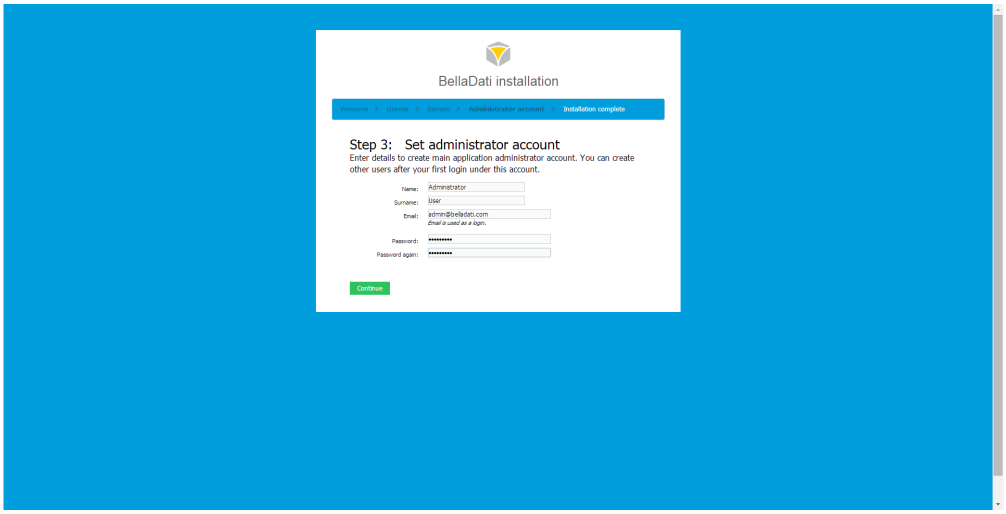
Time zone: (GMT+01:00) Europe/Prague

4. Admin Account

Set admin account. Define:

- **Admin name**
- **Admin surname**
- **Login email**
- **Password**

Click **Continue** to proceed with configuration.


BellaDati installation
Welcome > License > Domain > Administrator account > Installation complete

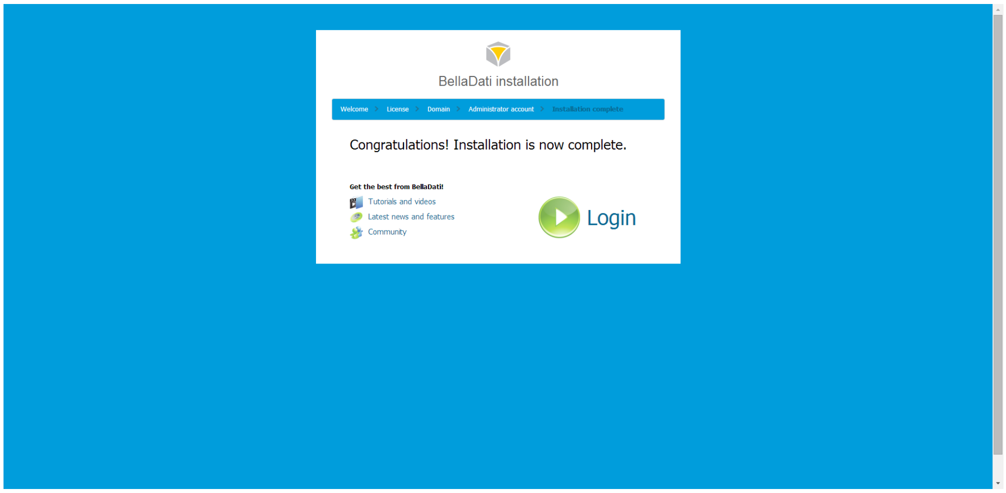
Step 3: Set administrator account

Enter details to create main application administrator account. You can create other users after your first login under this account.

Name: Administrator
Surname: User
Email: admin@belladati.com
Email is used as a login.
Password: ••••••••••
Password again: ••••••••••

5. Installation Complete

Installation is now complete!. Login to BellaDati or watch tutorials and videos.


BellaDati installation
Welcome > License > Domain > Administrator account > Installation complete

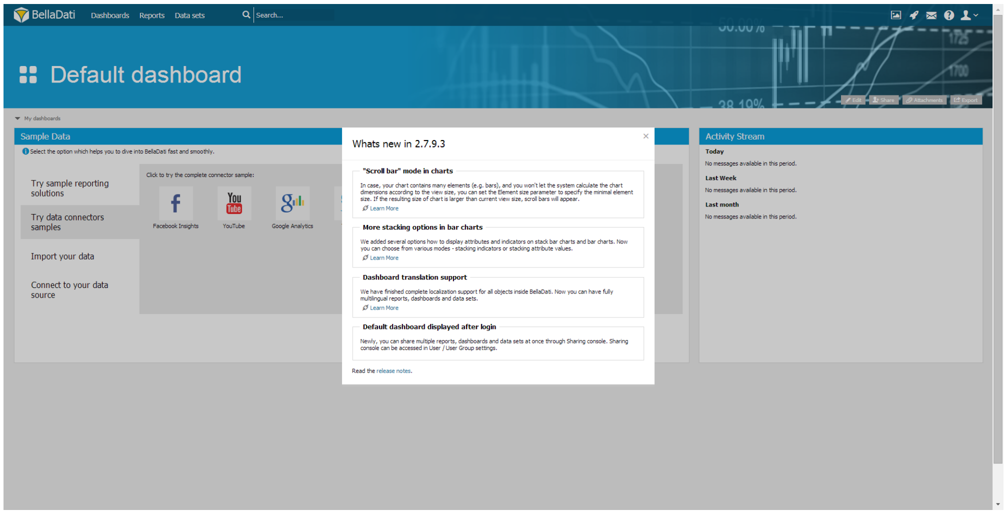
Congratulations! Installation is now complete.

Get the best from BellaDati!

- Tutorials and videos
- Latest news and features
- Community

6. Welcome in BellaDati.

Now, you are logged in. Continue with BellaDati tutorials and documentation. **Enjoy!**



Select the option which helps you to dive into BellaDati fast and smoothly.

Try sample reporting solutions

Try data connectors samples

Import your data

Connect to your data source

Click to try the complete connector sample:

Whats new in 2.7.9.3

"Scroll bar" mode in charts

In case, your chart contains many elements (e.g. bars), and you won't let the system calculate the chart dimensions according to the view size, you can set the Element size parameter to specify the minimal element size. If the resulting size of chart is larger than current view size, scroll bars will appear.

Learn More

More stacking options in bar charts

We added several options how to display attributes and indicators on stack bar charts and bar charts. Now you can choose from various modes - stacking indicators or stacking attribute values.

Learn More

Dashboard translation support

We have finished complete localization support for all objects inside BellaDati. Now you can have fully multilingual reports, dashboards and data sets.

Learn More

Default dashboard displayed after login

Newly, you can share multiple reports, dashboards and data sets at once through Sharing console. Sharing console can be accessed in User / User Group settings.

Read the release notes.

Today

No messages available in this period.

Last Week

No messages available in this period.

Last month

No messages available in this period.

Upgrading BellaDati

ⓘ This document describes the recommended procedure for updating BellaDati to a newer version.

If any of the following applies to your situation, follow the Migration Guide instead:

- You are **moving to a different server**.
- You are **moving to a different database.**

The pages listed below contain detailed information on updating BellaDati:

- Updating BellaDati on Windows
- Updating BellaDati on Mac OS X
- Updating BellaDati Standalone
- Updating BellaDati WAR
- Upgrading to 2.7.4.1 or higher
- Upgrading to 2.7.13.2

Updating BellaDati on Windows

ⓘ This page will show you step by step how to update an existing BellaDati installation on Windows.

To use this document, you need to have:

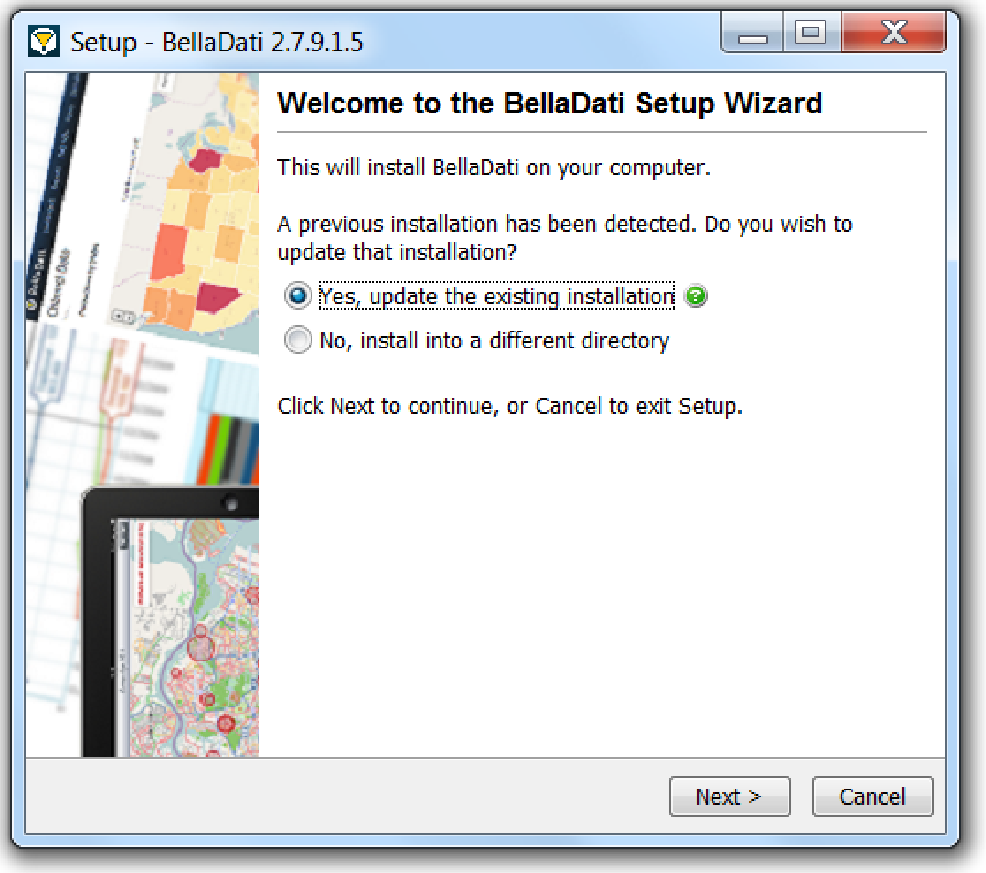
- BellaDati already installed on your Windows machine.
- Successfully downloaded a newer version of the BellaDati installer from the BellaDati website.

1. Start Update

This page allows you to:

- Update an existing BellaDati installation.
- Install BellaDati into a different directory.

Select **Update** and click **Next**. BellaDati will start to update itself.



Setup - BellaDati 2.7.9.1.5

Welcome to the BellaDati Setup Wizard

This will install BellaDati on your computer.

A previous installation has been detected. Do you wish to update that installation?

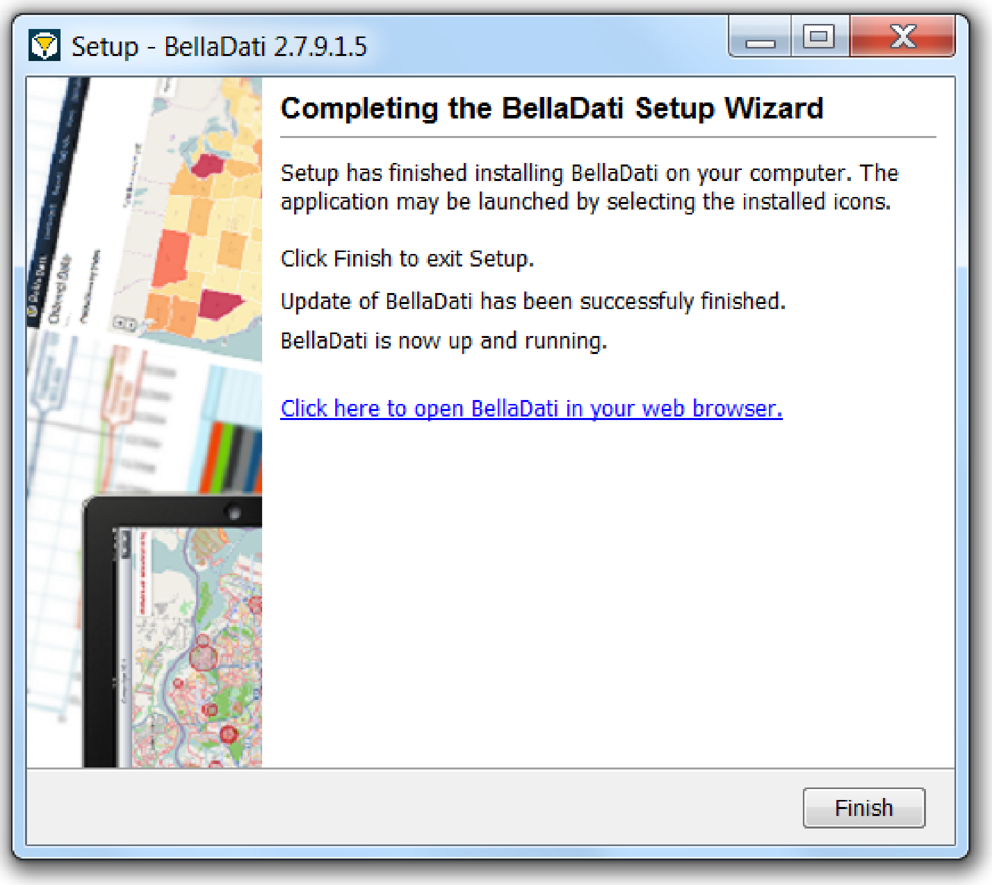
● Yes, update the existing installation

○ No, install into a different directory

Click Next to continue, or Cancel to exit Setup.

2. Update Completed

The update is complete. Close the window or click the link to open BellaDati in your web browser.



Completing the BellaDati Setup Wizard

Setup has finished installing BellaDati on your computer. The application may be launched by selecting the installed icons.

Click Finish to exit Setup.

Update of BellaDati has been successfuly finished.

BellaDati is now up and running.

Click here to open BellaDati in your web browser.

Updating BellaDati on Mac OS X

This page will show you step by step how to update an existing BellaDati installation on Mac OS X.

To use this document, you need to have:

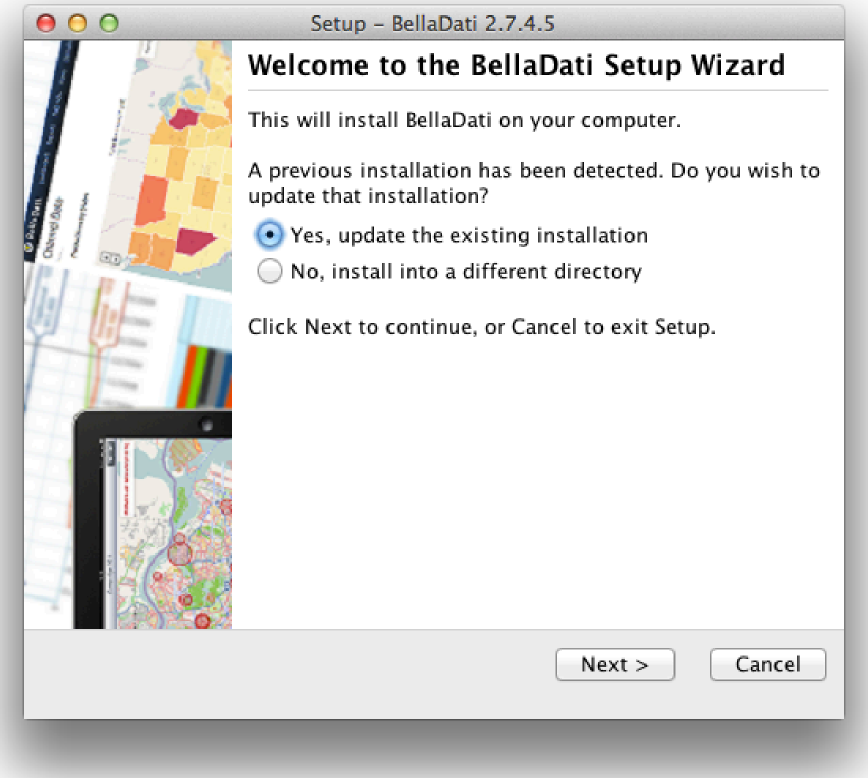
- BellaDati already installed on your Mac OS X machine.
- Successfully downloaded a newer version of the BellaDati installer from the BellaDati website.

1. Start Update

This page allows you to:

- Update an existing BellaDati installation.
- Install BellaDati into a different directory.

Select **Update** and click **Next**. BellaDati will start to update itself.



Setup – BellaDati 2.7.4.5

Welcome to the BellaDati Setup Wizard

This will install BellaDati on your computer.

A previous installation has been detected. Do you wish to update that installation?

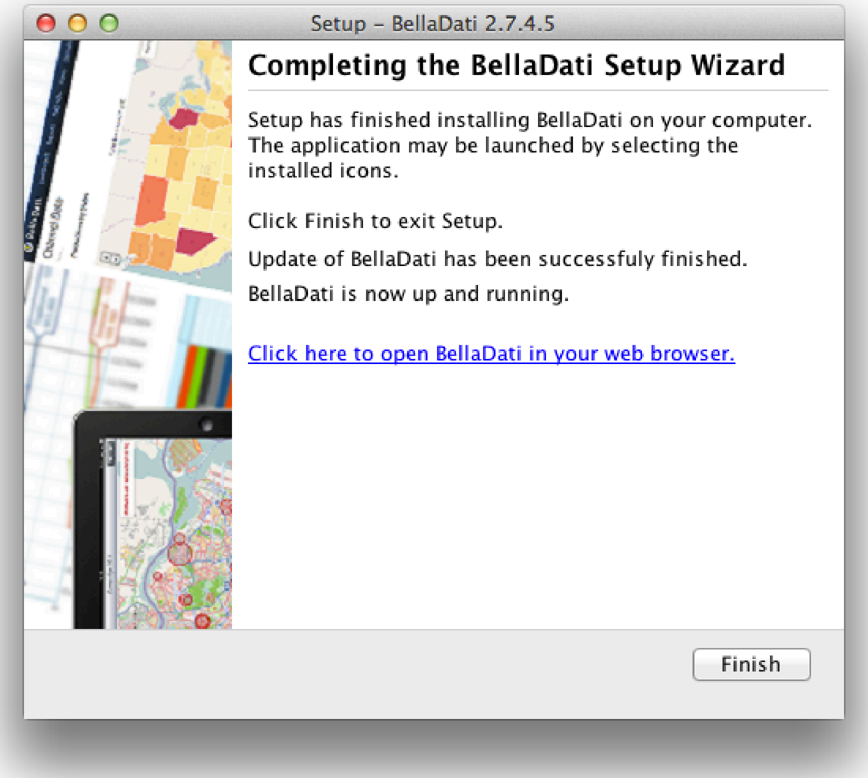
● Yes, update the existing installation

○ No, install into a different directory

Click Next to continue, or Cancel to exit Setup.

2. Update Completed

The update is complete. Close the window or click the link to open BellaDati in your web browser.



Setup - BellaDati 2.7.4.5

Completing the BellaDati Setup Wizard

Setup has finished installing BellaDati on your computer. The application may be launched by selecting the installed icons.

Click Finish to exit Setup.

Update of BellaDati has been successfuly finished.

BellaDati is now up and running.

Click here to open BellaDati in your web browser.

Updating BellaDati Standalone

To update your BellaDati Standalone instance you just need to do the following:

1. Terminate the running instance.
2. Replace the existing `belladati.war` file with the updated one.
3. Start the instance.

Updating BellaDati WAR

> This document describes the procedure for updating BellaDati running on **Tomcat**, **GlassFish** or **Jetty** application servers. If you are trying to install BellaDati on these servers, please follow the instructions on Installing BellaDati WAR pages instead.

Configure BellaDati WAR

The downloaded WAR archive contains an `application.properties` file with default settings. Before you start updating, please follow these easy steps to modify this configuration file:

1. Extract `application.properties` file from the WAR file using a tool such as 7-Zip for Windows or Linux's unzip tool.

2. Edit the settings in the extracted `application.properties` file. You can refer to the `application.properties` file from your existing installation to find out your current settings.

> Configuration settings are explained in detail in the BellaDati WAR Configuration Overview.

3. Save the configuration file `WEB-INF/classes/conf/application.properties` and update the WAR archive. On Linux, the command looks like:

Deploying BellaDati WAR

> We strongly recommend to perform a database backup before deploying the BellaDati update.

To deploy the updated `belladati.war`, simply copy the WAR archive into the appropriate directory, replacing the existing file.

Deploying the update depends on the type of application server you are using:

Tomcat users have to stop the running server instance and replace the old `belladati.war` file with the new one. We recommend to cleanup the working directory `$TOMCAT_HOME/work`.

Jetty users have to stop the running server instance and replace the old `belladati.war` file with the new one.

GlassFish users have several options how to deploy the new `belladati.war`. The simplest way is to use the administration console (by default at port 4848). Click **Applications** on the left side, then the action **Redeploy** next to your BellaDati deployment. Select the new WAR file to update your installation.

Upgrading to 2.7.4.1 or higher

This document describes updating to **BellaDati 2.7.4.1 or higher** when you are using **LDAP authentication** with **BellaDati 2.7.4 or lower**.

In 2.7.4.1 the `beans-common.xml` configuration file has been removed. LDAP-related configuration has been moved to the `application.properties`. As a result, you need to move the parameter values to `application.properties` as part of the update.

XML Tag / Attribute	Properties Attribute
key	application.login.domains (separate multiple domains by comma)
url	adauth.<domain>.spec.url
bindDN	adauth.<domain>.spec.bindDN
bindPassword	adauth.<domain>.spec.bindPassword
loginAttribute	adauth.<domain>.spec.loginAttribute

Additionally, you can specify these properties:

- adauth.createNotExistingAccounts
- adauth.domainId

Please refer to the BellaDati WAR Configuration Overview for more information.

Example

Consider following `beans-common.xml`:

The appropriate `application.properties` configuration should look like:

Upgrading to 2.7.13.2

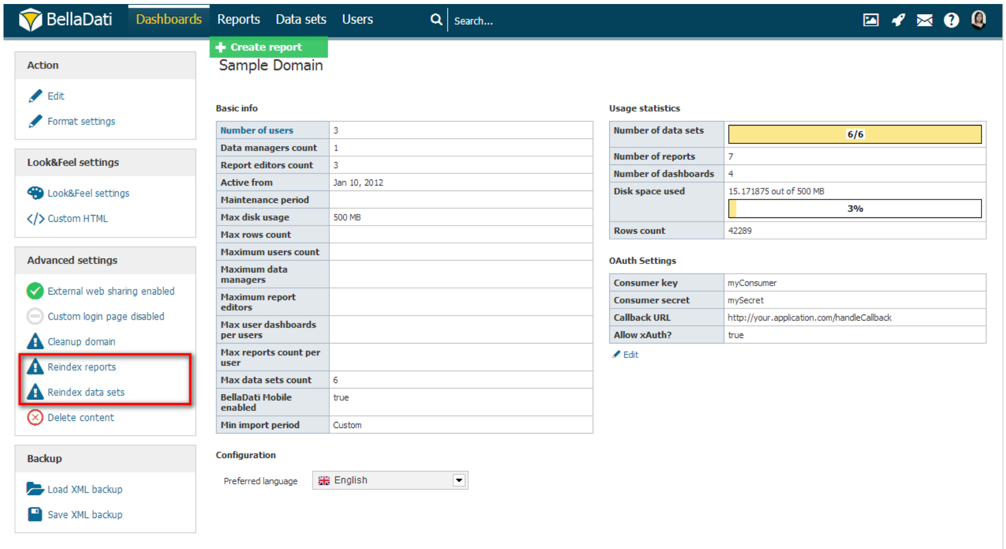
Important note for on-premise installations
PostgreSQL users has to upgrade the JDBC driver to **9.3-1103** or higher.

Migrating BellaDati

This document describes how to **migrate** the BellaDati **application server** or **database** to a different system.

Application Server

To migrate only the application server without changing the database, follow the appropriate installation instructions to set up your new application server. Configure it to connect to your existing database. After starting the server and logging in, move the mouse over your username and click the link to your domain. On the left side, **reindex** your **reports** and **data sets**.



Sample Domain

Basic info

Number of users	3
Data managers count	1
Report editors count	3
Active from	Jan 10, 2012
Maintenance period	
Max disk usage	500 MB
Max rows count	
Maximum users count	
Maximum data managers	
Maximum report editors	
Max user dashboards per users	
Max reports count per user	
Max data sets count	6
BellaDati Mobile enabled	true
Min import period	Custom

Configuration

Preferred language: English

Usage statistics

Number of data sets	6/6
Number of reports	7
Number of dashboards	4
Disk space used	15.171875 out of 500 MB 3%
Rows count	42289

OAuth Settings

Consumer key	myConsumer
Consumer secret	mySecret
Callback URL	http://your.application.com/handleCallback
Allow xAuth?	true

Database

To migrate BellaDati to a different database installation, backup the database contents using the PostgreSQL dump command:

Copy the backup file to your new system and restore it in the target database:

Different Application Server

To migrate both your database and application server:

1. Set up the new database as described above.
2. Install a new application server following the appropriate installation instructions, using your new database.
3. Delete the current indexes directory from the file system.
4. Re-index your reports and data sets in the new installation.
5. Restart BellaDati

Existing Application Server

If you continue using your existing application server, configure it to use the new database.

Installer or Standalone

If you used the Windows installer, Mac installer or BellaDati Standalone, update the `application.properties` file in your BellaDati installation directory and set new database connection parameters.

GlassFish

Use the GlassFish administration console as described in Installing BellaDati on GlassFish.

1. Login to the administration console.
2. Open `Resources->JDBC->Connection Pools` and click on the connection pool you configured for BellaDati.
3. On the right side, click `Additional Properties`.
4. Update the **ServerName**, **DatabaseName**, **User** and **Password** to match your new database and click **Save**.

Jetty

When running in a custom Jetty instance, you can find the configuration inside the WAR archive at the path `WEB-INF/classes/conf/application.properties`. Follow the instructions from Installing BellaDati on Jetty for detailed steps to update the configuration file.

Tomcat

Configure the BellaDati context defined in your Tomcat installation.

1. Open the file `conf/Catalina/localhost/belladati.xml`.
2. In the Resource tag, update the **url**, **username** and **password** to match your new database.
3. Restart Tomcat.

BellaDati Backup and Restore

Application level backup

See Domain Backup guide or use video tutorial below

Database level backup

There are three fundamentally different approaches to backing up PostgreSQL data:

- SQL dump
- File system level backup
- Continuous archiving

Each has its own strengths and weaknesses; each is discussed on the PostgreSQL documentation pages.

> ⓘ All settings, meta-data and raw data are stored within the PostgreSQL database server. Database backup is sufficient to preserve the entire BellaDati application.

The most common is the SQL dump, which backups the database contents using the dump command:

Copy the backup file to your new system and restore it in the target database:

Running BellaDati in Cluster

BellaDati is enterprise scale application with extended support to run in **clustered environment** to achieve HA or another desired operation levels.

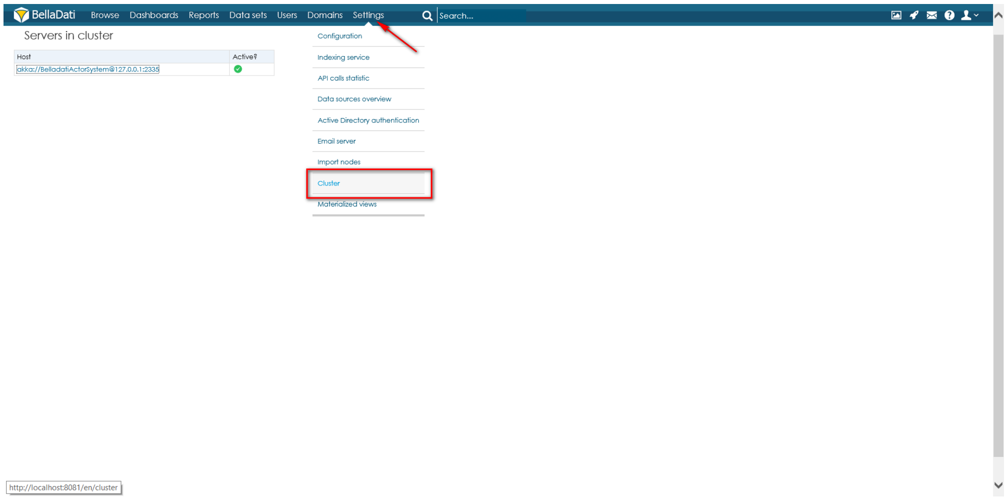
BellaDati is not depending on selected cluster environment, you can run it on GlassFish, Websphere or JBoss, but there are several parameters contained in application.properties (see BellaDati WAR Configuration) which needs to be change in order to run BellaDati in cluster):

Example for 2 servers cluster

Example above defines parameters for 2 servers in cluster, running on 192.168.1.10 and 192.168.1.11.

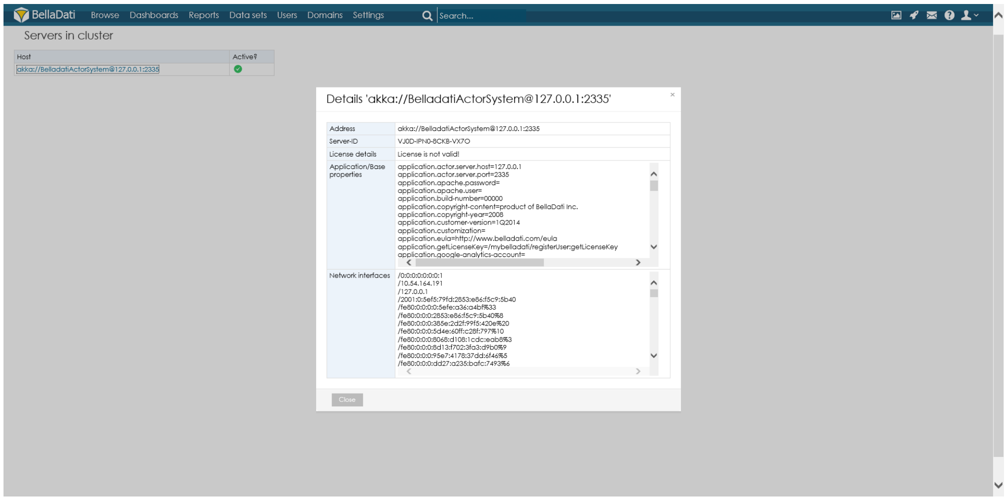
Cluster overview page

Administrators have access to cluster overview pages, which shows useful information about the servers in the cluster.



Servers in cluster

Host	Active?
akka://BelladatiActorSystem@127.0.0.1:2335	✓



Servers in cluster

Host	Active?
akka://BelladatiActorSystem@127.0.0.1:2335	✓

Details 'akka://BelladatiActorSystem@127.0.0.1:2335'

Address	akka://BelladatiActorSystem@127.0.0.1:2335
Server-ID	VJ0D-IPN0-8CKB-VX7O
License details	License is not valid!

Application/Base properties	application.actor.server.host=127.0.0.1
	application.actor.server.port=2335
	application.apache.password=
	application.apache.user=
	application.build-number=00000
	application.copyright-content=product of BellaDati Inc.
	application.copyright-year=2008
	application.customer-version=1Q2014
	application.customization=
	application.eula=http://www.belladati.com/eula
	application.getLicenseKey=/mybelladati/registerUser:getLicenseKey
	application.google-analytics-account=

Network interfaces	/0:0:0:0:0:0:0:1 /10.54.164.191 /127.0.0.1 /2001:0:5ef5:79fd:2853:e86:f5c9:5b40 /fe80:0:0:0:0:5efe:a36:a4bf%33 /fe80:0:0:0:2853:e86:f5c9:5b40%8 /fe80:0:0:0:385e:2d2f:99f5:420e%20 /fe80:0:0:0:5d4e:60ff:c28f:797%10 /fe80:0:0:0:8068:d108:1cdc:eab8%3 /fe80:0:0:0:8d13:f702:3fa3:d9b0%9 /fe80:0:0:0:95e7:4178:37dd:6f46%5 /fe80:0:0:0:dd27:a235:bafc:7493%6