easyrec 0.97 Installation & Migration Guide

WELCOME

Thank you for downloading and using easyrec. This document will guide you through the installation and/or migration process of easyrec.

The latest installation guidelines can be found online under:

http://sourceforge.net/apps/mediawiki/easyrec

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REQUIREMENTS

To install easyrec you need the following prerequisites installed:

Java 5 SE or later

Application Server **Tomcat 6.0** or later recommended (tested on Tomcat 7)

Database Server **MySQL 5.1** or later (5.1.33 or later recommended)

easyrec 0.97 has been developed and tested on machines running Windows XP/7 and servers running Solaris 10, Tomcat 7.0.16 and MySQL 5.1.43. The easyrec team recommends you use Tomcat as an application server but you might use a different application server of your choice (Servlet API >=2.4 must be installed) like:

Glassfish V3

JBoss

Weblogic

Caucho Resin

CONFIGURING MYSQL

From version 0.95 on easyrec uses the MySQL InnoDB storage engine to store its data. InnoDB was selected as the future default engine by MySQL and most development efforts concentrate on it while MyISAM loses focus. Hence easyrec switched to InnoDB to be on the safe side for the future. Also - based on popular opinion - InnoDB performs better than or at least equal to MyISAM for some time now, especially with regards to scalability, and the performance delta is likely to grow in favor of InnoDB as development progresses.

Unfortunately, InnoDB needs some additional configuration work to perform well. The default settings after a fresh MySQL installation perform poor and are not suitable for the kind of workload easyrec puts on the database backend.

INNODB CONFIGURATION

BASIC SETTINGS

We **STRONGLY ENCOURAGE** easyrec users to use the following settings for InnoDB. Internal tests have shown ~10x performance improvements of the easyrec backend compared to the defaults. You can change the configuration values by editing your my.ini(Windows) or my.cnf (Linux/Solaris) files in your MySQL root directory and restarting the database server afterwards.

make sure to **remove** the **`skip-innodb`** entry
innodb_flush_log_at_trx_commit=**0**
innodb_buffer_pool_size=**1024M**
innodb_log_file_size=**250M**
innodb_log_buffer_size=**16M**
innodb_additional_mem_pool_size=**8M**

Note: When changing the innodb_log_file_size the MySQL server usually refuses to restart and complains about an incorrect log file size. To fix this problem move the old log files (usually named ib_logfile0 and ib_logfile1) from the root of your MySQL data folder to a backup folder of your choice so that the MySQL data folder does not contain any log files. Try starting the MySQL server again. It should now initialize the new log files with the proper size. Once you made

sure everything is up and running you can delete the old log files from your backup folder.

Note 2: We suggest an innodb_buffer_pool_size of 1024MB above. Depending on your needs and environment you may specify a higher value. Official MySQL documentation suggests you can specify up to 1/4 to 1/3 of your total physical memory to the buffer pool.

INNODB PLUGIN

MySQL comes with the InnoDB plugin included since version 5.1.xx and is stable since version 5.1.34. MySQL comes with a built in InnoDB engine that only gets updated with major revisions of MySQL releases (e.g. 5.0, 5.1, 5.5). The plugin gets updated more frequently along with minor release versions. Hence it is recommended to use the InnoDB plugin and disable the built in engine. To do this simply add the following lines to your

my.ini (Windows) [mysqld] section

```
ignore_builtin_innodb
plugin-
load=innodb=ha_innodb_plugin.dll;innodb_trx=ha_innodb_plugin.dll;innodb_locks=ha_innodb_plugin.dll;innodb_lock_waits=ha_innodb_plugin.dll;innodb_cmp=ha_innodb_plugin.dll;innodb_cmp_reset=ha_innodb_plugin.dll;innodb_cmpmem=ha_innodb_plugin.dll;innodb_cmpmem_reset=ha_innodb_plugin.dll
```

my.cnf (Linux/Solaris) [mysqld] section

```
ignore_builtin_innodb
plugin-
load=innodb=ha_innodb_plugin.so;innodb_trx=ha_innodb_plugin.so;innodb_locks=ha_innodb_plugin.so;innodb_lock_waits=ha_innodb_plugin.so;innodb_cmp=ha_innodb_plugin.so;innodb_cmp_reset=ha_innodb_plugin.so;innodb_cmpmem=ha_innodb_plugin.so;innodb_cmpmem_reset=ha_innodb_plugin.so
```

You can find more details about the plugin installation and general information at the official MySQL documentation.

This is a crucial step to ensure good performance of easyrec!

INSTALLATION

easyrec comes with an interactive, web-based installer that is run automatically when you start easyrec for the first time. Before you can run easyrec, make sure your deployment environment meets the prerequisites outlined above (Tomcat 6, MySQL 5.1 or later and JAVA 5 SE or later). Once you have established an environment with Tomcat 6 running and a MySQL server reachable acquire the latest **easyrec_xx.zip** from the download section of the easyrec sourceforge project page. Extract the .zip file to find the **easyrec_web.war** of the latest version of easyrec. Should you already have an older version of easyrec installed on your system and simply want to update to the latest version you can skip this section and proceed to the chapter 'MIGRATION'.

CREATING THE DATABASE

easyrec requires a MySQL database for operation. For help on installing a MySQL database server and creating database users please refer to the MySQL documentation at http://dev.mysql.com/doc/. Following we describe the procedure for creating a database using the MySQL console. However, you may also perform the required steps using the MySQL admin tool/client of your choice, e.g. PhpMyAdmin, SQLYog, HeidiSQL or similar as long as it provides the necessary user and database management options.

Navigate to the MySQL folder and run the MySQL console using the following command:

```
{Path to MySQL}/bin/mysql -u root -p mysql
```

This starts up the MySQL console.

Next, create a database and a user that has all privileges for that database:

```
create database easyrec;
```

Create a user and grant all privileges to it for the database you just created.

For environments where the MySQL server and the web server (i. e. Tomcat) are hosted on the same machine this is done by issuing the following command (Please replace 'easyrecuser' and 'password' with appropriate values of your choice):

```
grant index, create, select, insert, update, drop, delete, alter, lock tables on easyrec.* to 'easyrecuser'@'localhost'
identified by 'password';
```

If your MySQL server is NOT running on the same machine as your web server, you need to specify the hostname of the web server from which the database will be accessed (e.g. my.easyrec.org):

```
grant index, create, select, insert, update, drop, delete, alter, lock tables on easyrec.* to
'easyrecuser'@'my.easyrec.org' identified by 'password';
```

Finally leave the MySQL console:

```
exit;
```

This is all the preparation needed for the database. easyrec will create the required tables during the easyrec install process automatically.

DEPLOYING THE WEB APPLICATION

Once you completed the database setup, take the easyrec .war file you downloaded from sourceforge and deploy it on your web server. Using tomcat this can be done by either

- using the Tomcat manager application, which should be accessible on your web server running Tomcat at the URL `http://{hostname}:{port}/manager/html` where you replace {hostname} and {port} with the appropriate values for your machine (For further details please refer to the Tomcat documentation)

or

- by simply copying the file to the Tomcat webapps folder (located at `{Path to Tomcat}/webapps`) given that Tomcat is configuered for auto-deployment (which it is by default).

If you deployed the easyrec web application successfully, it is accessible using the URL `http://{hostname}:{port}/easyrec-web`.

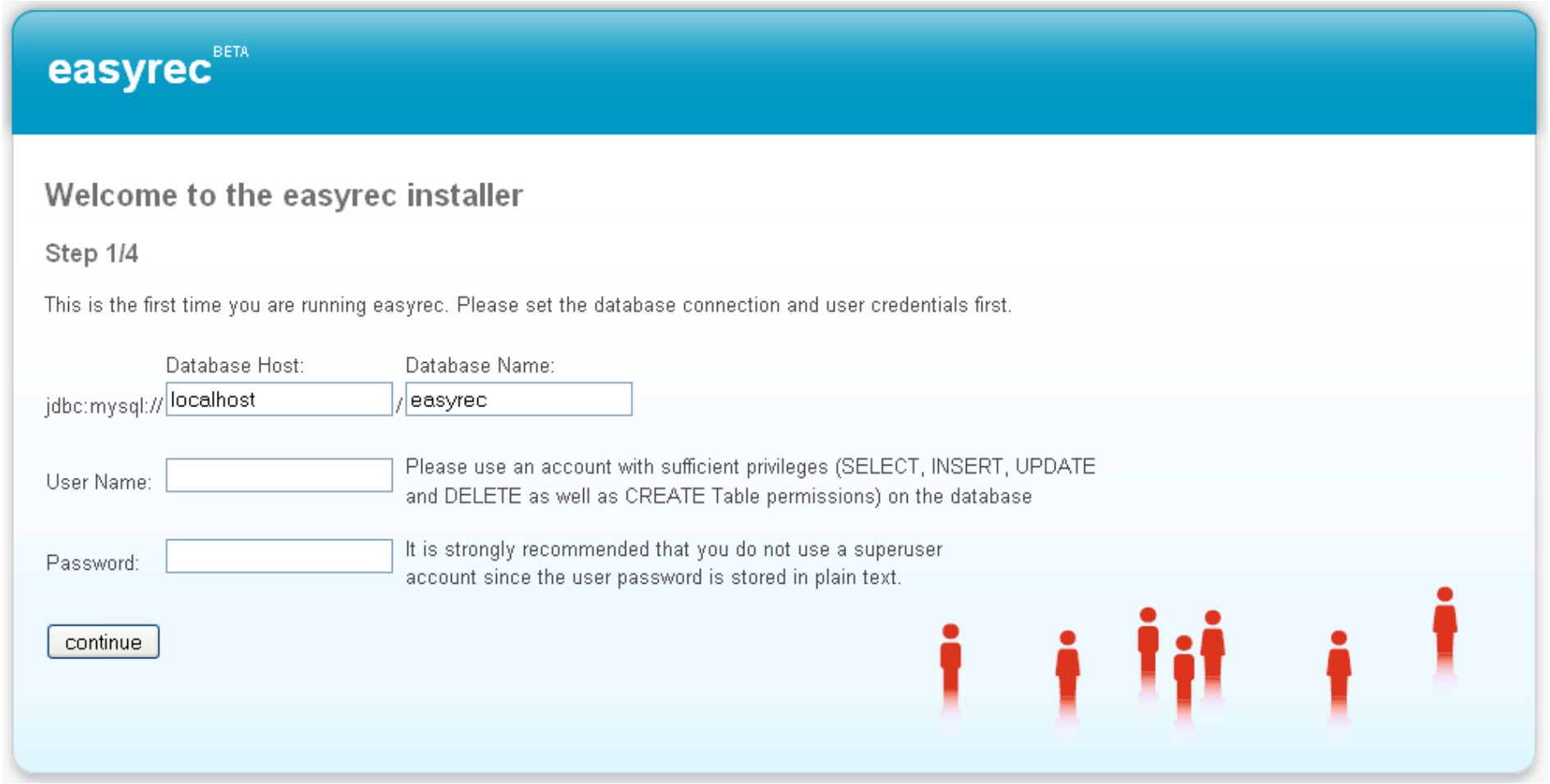
CONFIGURATION

FIRST STARTUP/INITIAL CONFIGURATION

Once all of the above steps are completed, you can continue with the installation and configuration of easyrec using a web browser. When accessing the URL where easyrec was deployed e.g.`http://myserver.com/easyrec-web` for the first time after you deployed the web application, you will be guided through the final steps of the easyrec setup and configuration.

DATABASE CONNECTION SETUP

As a first step you will be welcomed by a page that allows you to set up the database connection as pictured below.



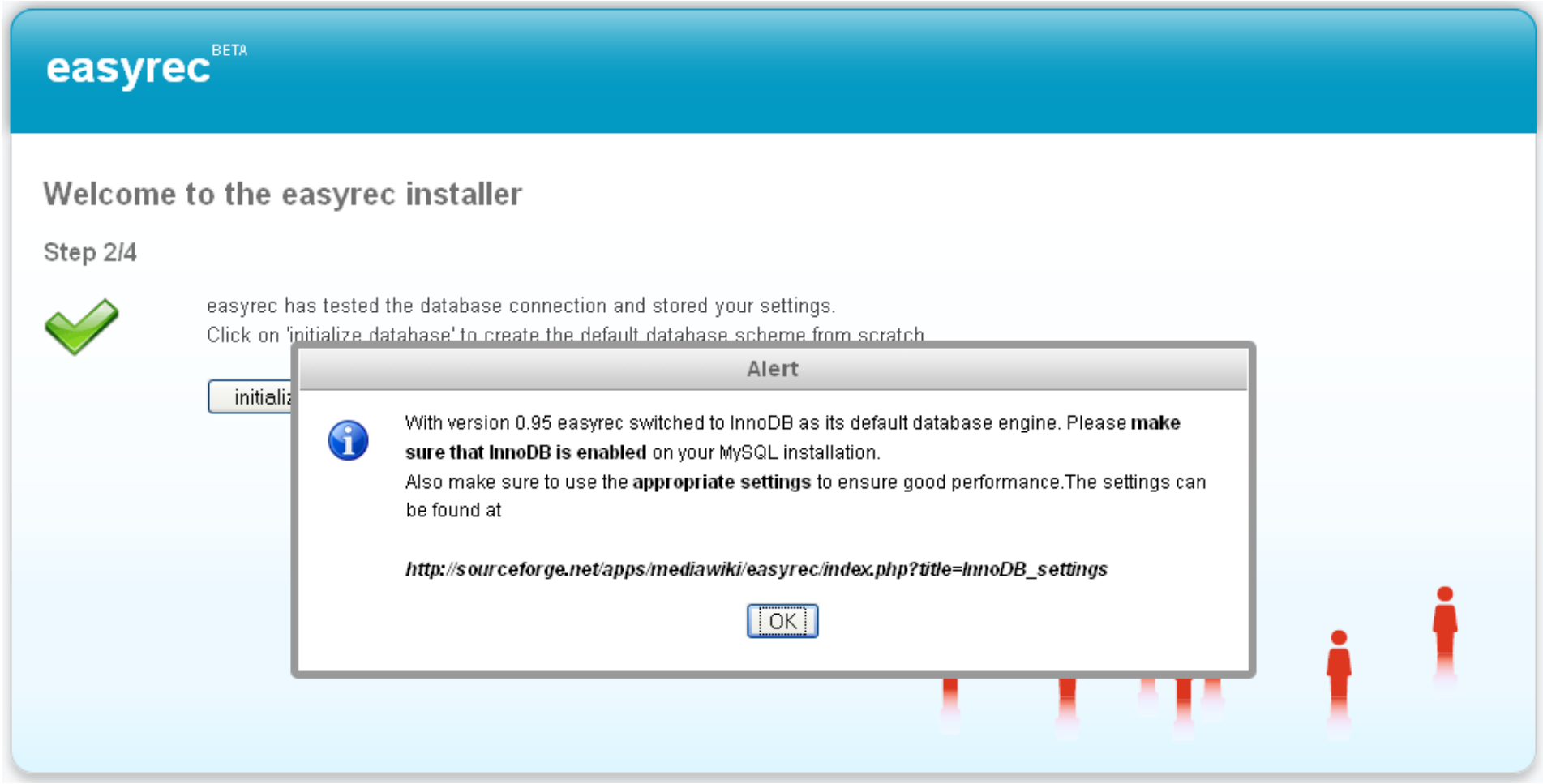
Simply enter the details about your database connection and the username/password created in the previous section of this installation guide.

Field	Explanation
Database Host	The host the database is located on. If the database is located on the same host as the web server use "**localhost**".
Database Name	The name of the MySQL database you created. **Note:** If the MySQL server is configured to listen a port other than the MySQL default port (3306), add the port to the hostname, separated by a colon (e.g. 'myserver:4711').
Username	The username used to access the easyrec database. Ensure that the user has SELECT, INSERT, UPDATE, DROP and DELETE permissions on the easyrec database. For security reasons it is strongly suggested that you do not use a database superuser account.
Password	The user password for accessing the easyrec database.

Once you have entered appropriate values in each field click the 'continue' button. easyrec will try to establish a connection to the database server using the information you provided in the form. If any problems should arise, an error message hinting at the cause of the problem will be displayed. If the connection attempt was successful you will progress to the next step.

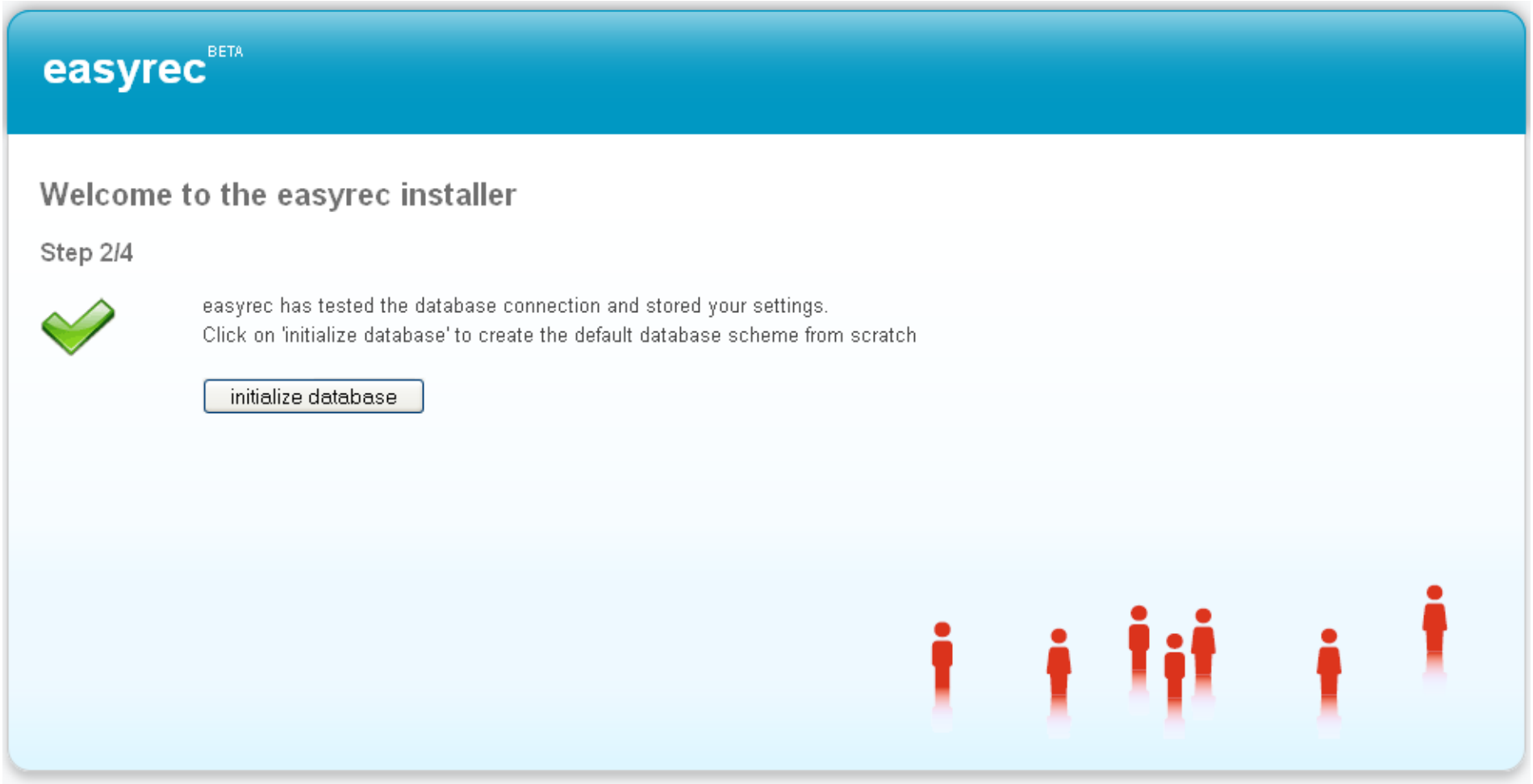
DATABASE INITIALIZATION

The next page is just a short status update that a database connection could be established and the settings have been stored in the easyrec configuration. Since easyrec switched to the MySQL InnoDB database engine with version 0.95 you will see an alert message to remind you of properly configuring your MySQL database settings. This is a crucial step since unfortunately InnoDB as configured out of the box performs very poorly.



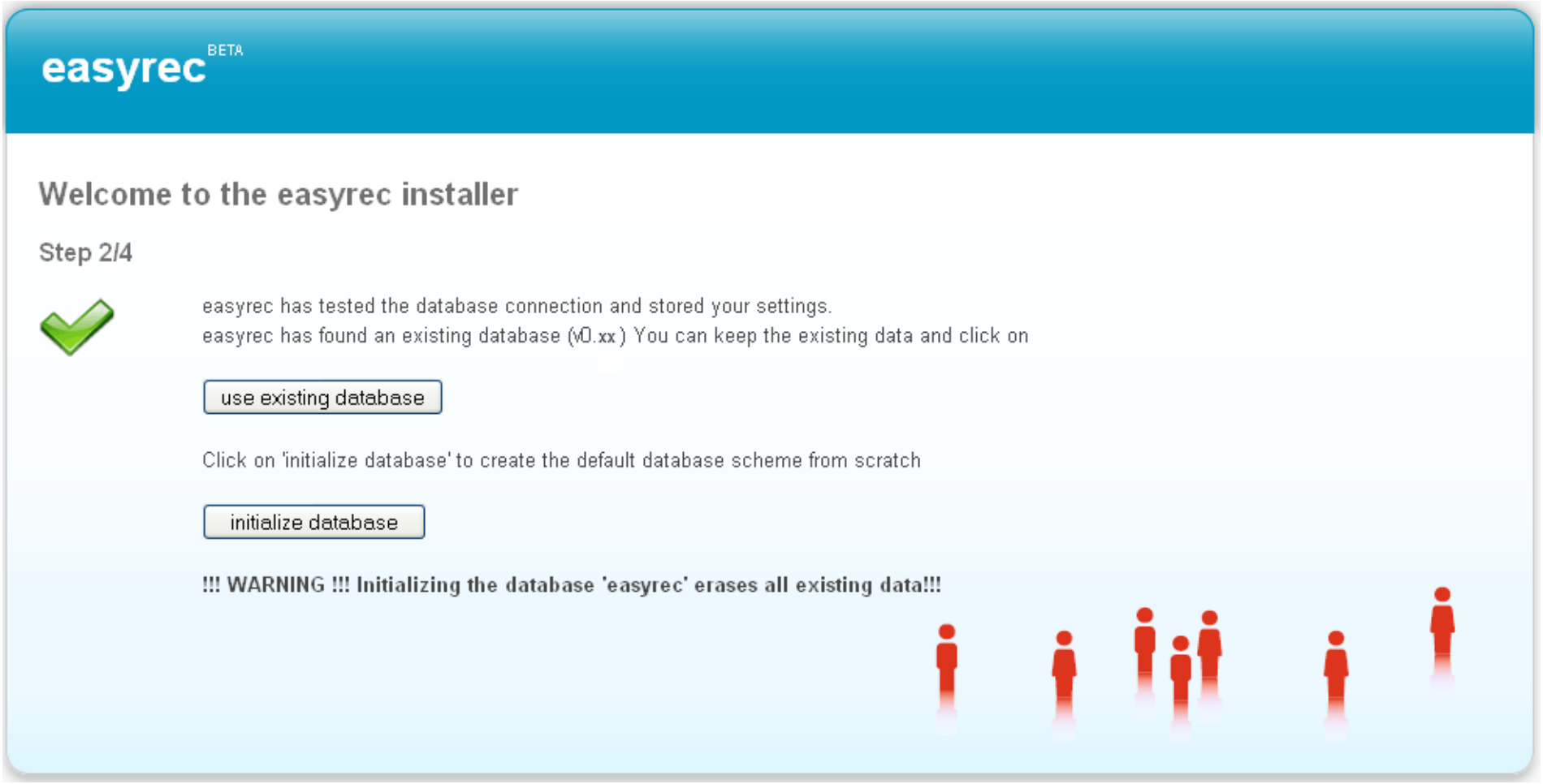
Once you have made sure that your MySQL configuration is correct, click away the alert message box and continue.

Hint: You can edit your database settings and restart MySQL right at this moment. There is no need to stop the easyrec installer. Just configure your database and when you are done return to the browser window and continue with easyrec setup.



Click the 'initialize database' button to continue.

In case you are redeploying the `easyrec-web.war` file and the database has already been created, you are presented with a slightly different screen:

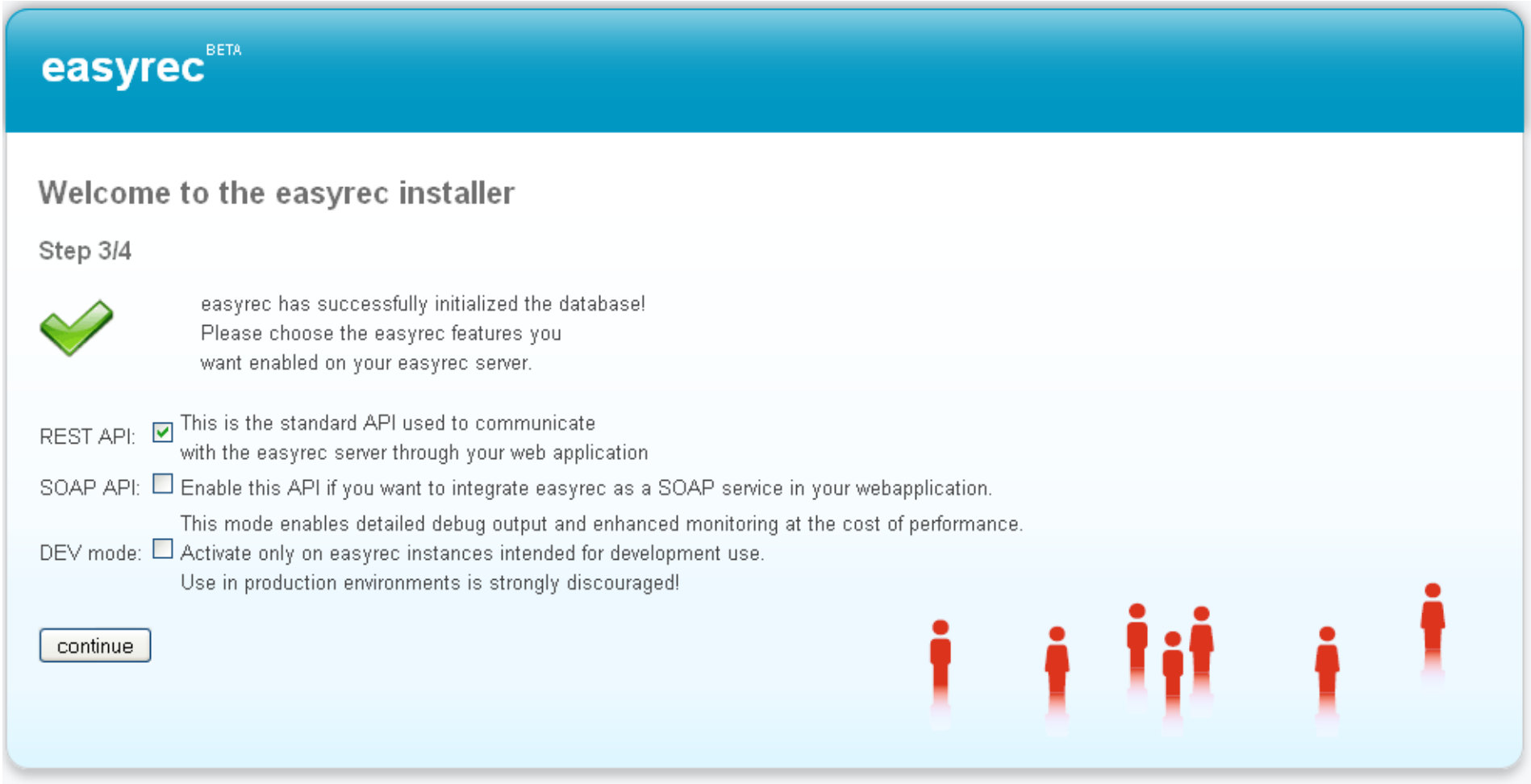


You can either choose between 'initialize database' and 'use existing database'. When using the second option, no tables will be created or altered and all existing data is kept in the database.

WARNING: Be aware that all easyrec tables will be deleted from the database specified in case you click on 'initialize database'

EASYREC FEATURE SELECTION

If database initialization was successful you will be directed to the easyrec feature selection page.



Field	Explanation
Use REST	enable easyrec REST API. This is the default way to communicate with easyrec.
Use SOAP	enable easyrec SOAP API if you want to access the easyrec API using the SOAP protocol.
Developer Mode	This mode enables detailed debug output and enhanced monitoring at the cost of performance. Activate this option only on easyrec instances intended for development use. The use of this feature in production environments is strongly discouraged!

The default way to communicate with easyrec is a REST-like API. If this is not a viable option for your usage scenario you can also choose to integrate easyrec into your application environment using the SOAP protocol. Parallel operation of both interface technologies at the same time is possible.

Developer mode just enables detailed log output about internal method calls and response values as well as more detailed performance profiling information. Unless you are a developer without direct debug access to the machine running easyrec you will want to leave this feature OFF.

By clicking the 'continue' button, easyrec will proceed to load and initialize all the services necessary for providing the selected features. This operation may take some time (usually several seconds up to 1 minute) to complete. If everything loaded according to plan you will be forwarded to the final step of the easyrec installation process.

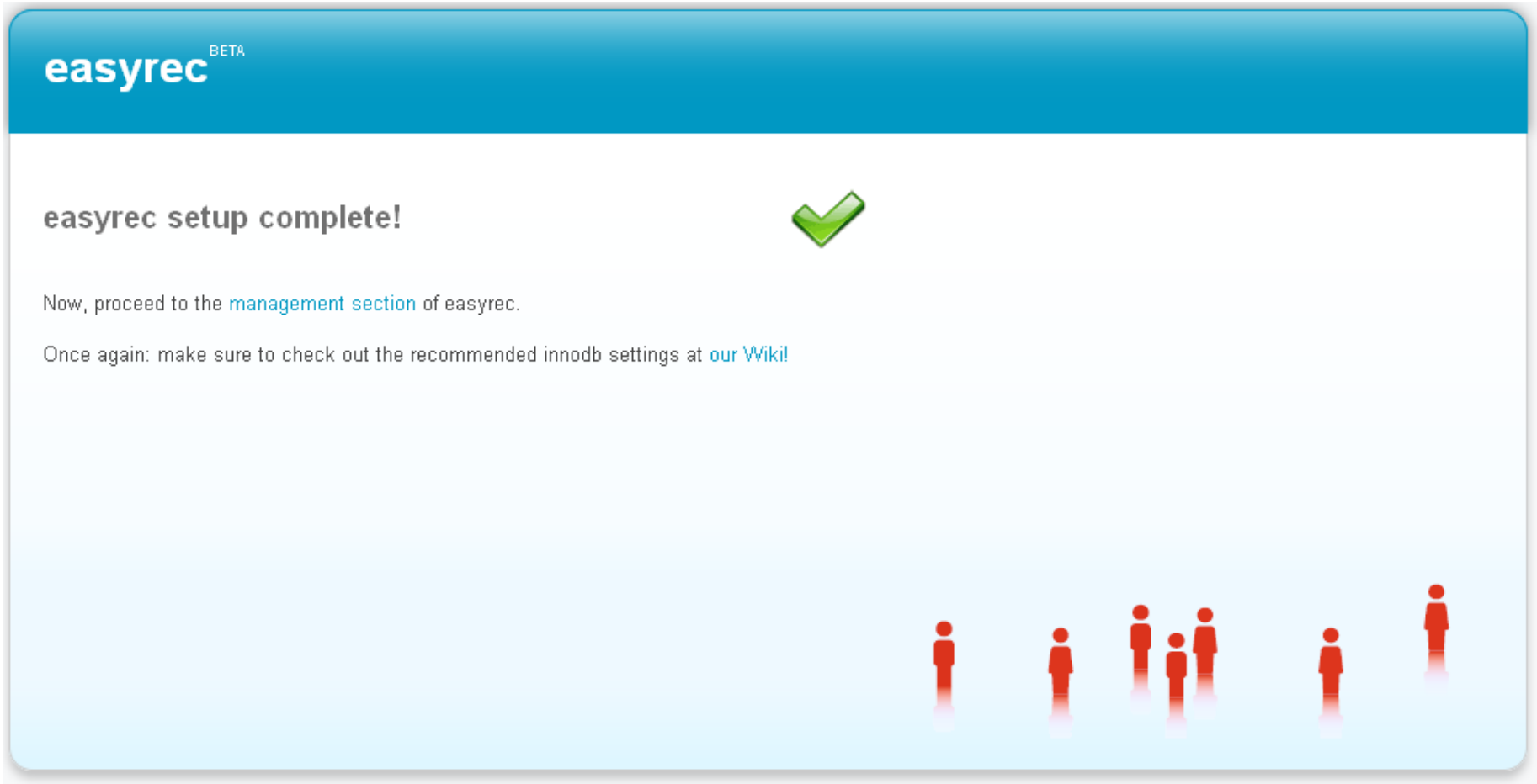
USER ACCOUNT CREATION

The final step before you can start using easyrec is to create user account, which is required to log in to the easyrec admin tool. The tool provides you with a basic overview about the easyrec status and allows you to perform some administrative operations. Most importantly it is the place to obtain your API key that needs to be passed along with every request to the easyrec API.

The user registration form should be self-explanatory. Simply provide a username and a password you want to use to log in to the easyrec admin tool. If you want you can supply some personal information as well. The personal information can be altered later on from within the admin tool. However, for the time being be aware that there is no easy way to change the username and password afterwards.

READY TO GO

Congratulations! You have installed and configured easyrec successfully. You are now ready to start using easyrec and integrate it into your web applications.



The final screen informs you of the successful completion of the easyrec setup process. By clicking the 'management section' link you will be forwarded to the easyrec admin tool and logged in with the credentials provided in the previous step

MIGRATION GUIDE

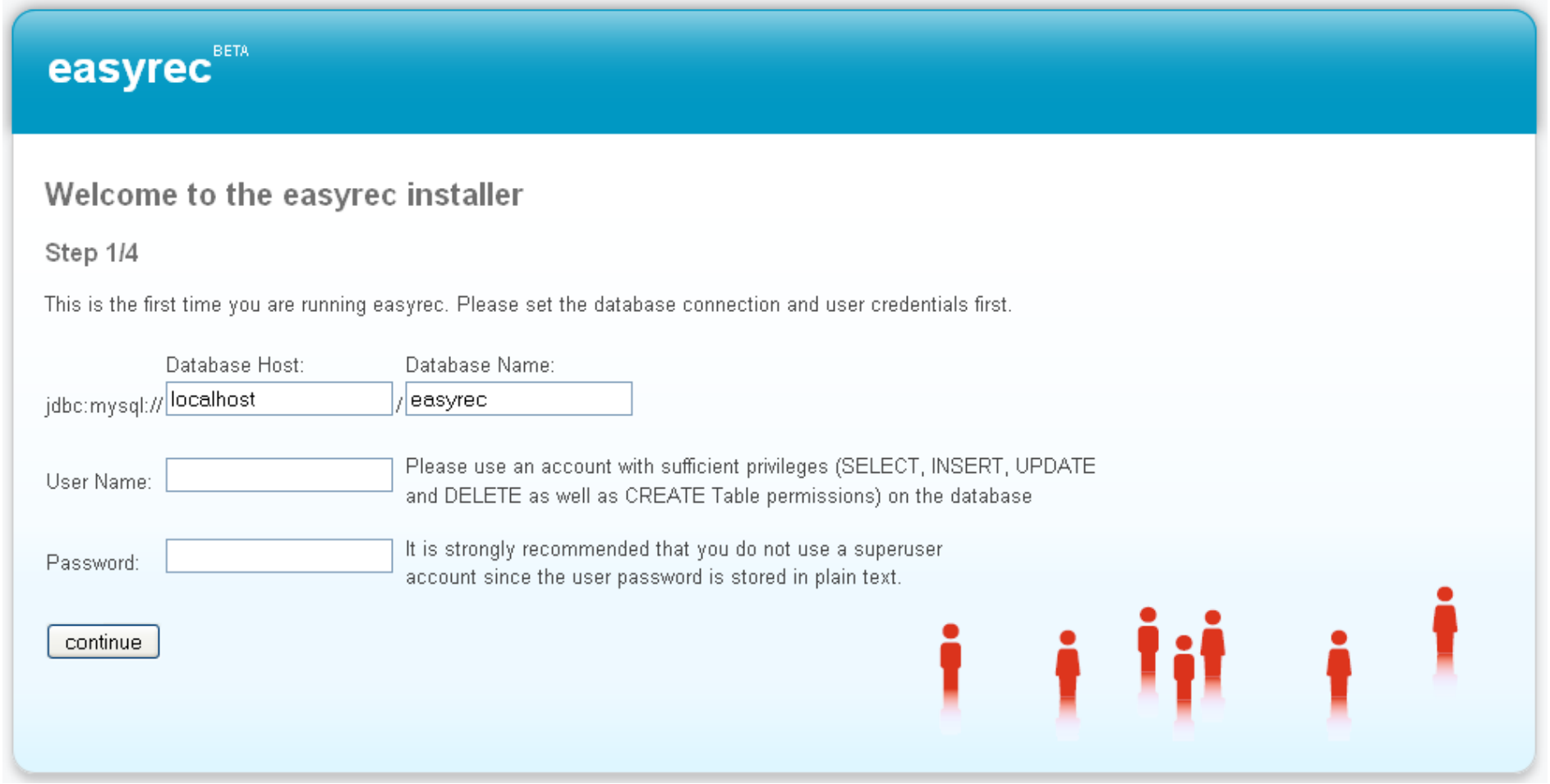
If you are already running easyrec and you want to upgrade to a newer version, download and deploy the latest version of easyrec to your webserver..

!!! Always make sure to backup your database before updating to a newer version of easyrec !!!

When accessing the URL where the latest version of easyrec was deployed e.g. `http://myserver.com/easyrec-web` for the first time, you will be guided through the migration.

DATABASE CONNECTION SETUP

As a first step you will have to setup the database connection before you can start to migrate.



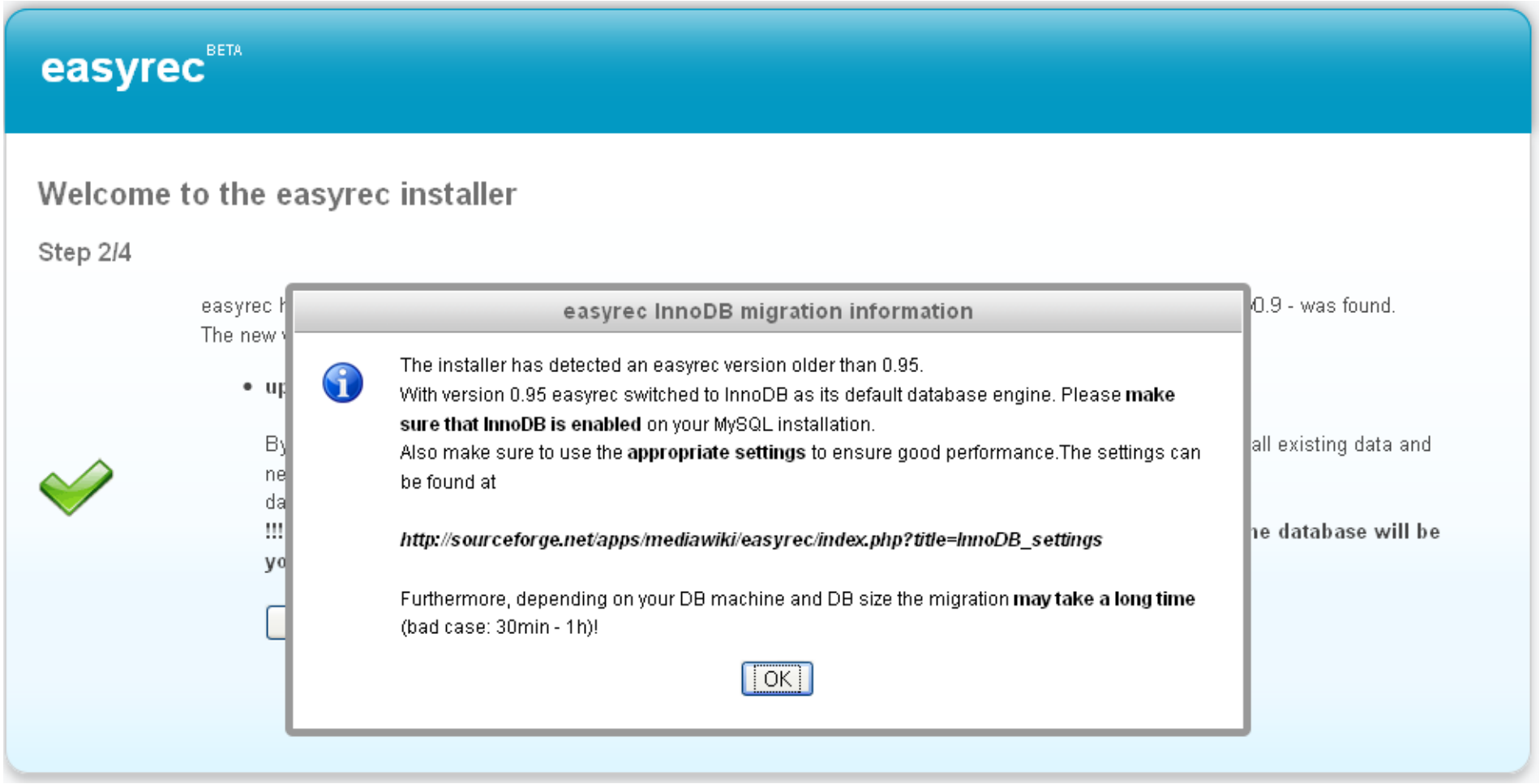
Simply enter the details about your database connection and the username/password created when installing easyrec for the first time.

Field	Explanation
Database Host	The host the database is located on. If the database is located on the same host as the web server use "**localhost**".
Database Name	The name of the MySQL database you created. **Note:** If the MySQL server is configured to listen an a port other than the MySQL default port (3306), add the port to the hostname, separated by a colon (e.g. 'myserver:4711').
Username	The username used to access the easyrec database. Ensure that the user has SELECT, INSERT, UPDATE, DROP and DELETE permissions on the easyrec database. For security reasons it is strongly suggested that you do not use a database superuser account.
Password	The user password for accessing the easyrec database.

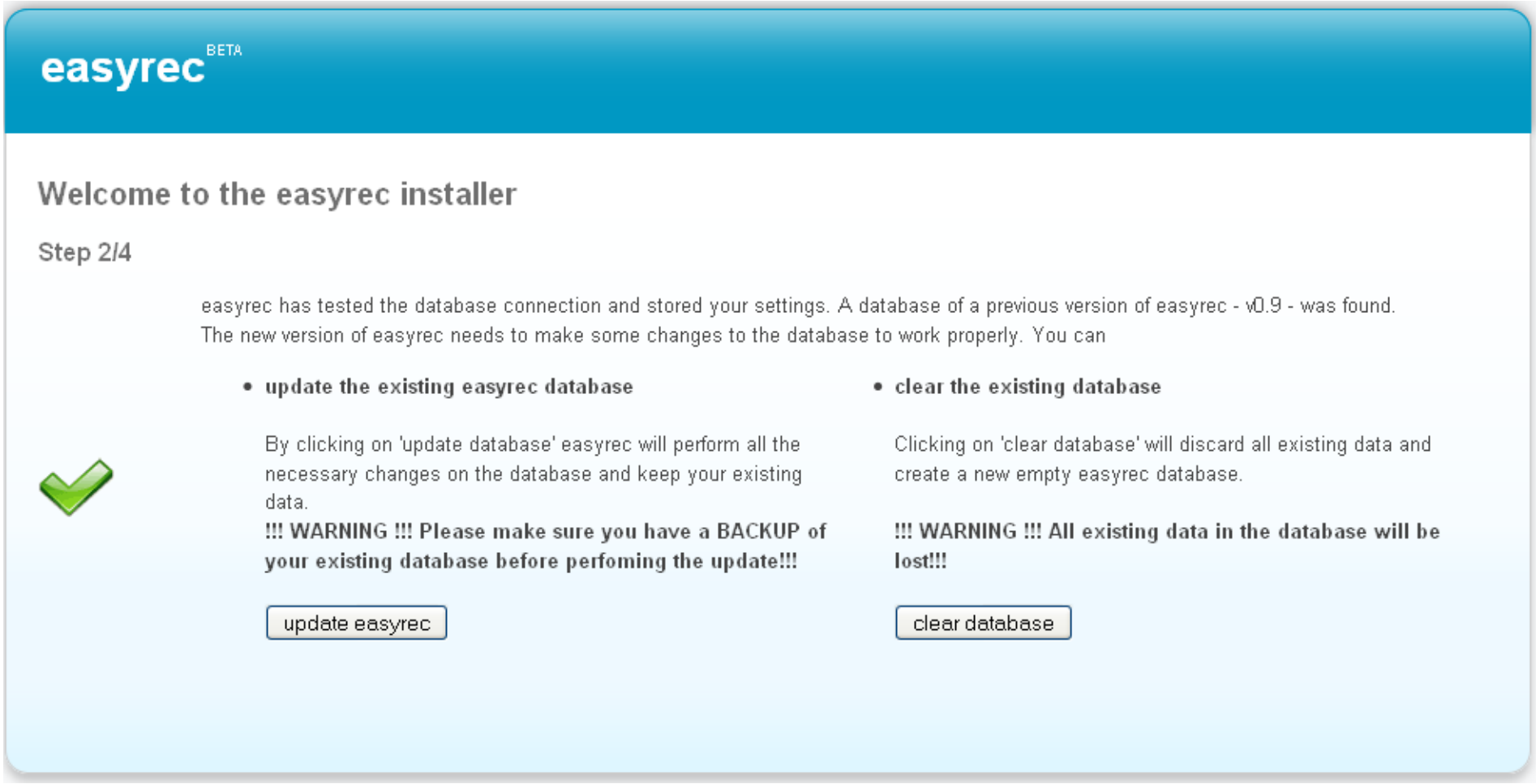
Once you have entered appropriate values in each field click the 'continue' button. easyrec will try to establish a connection to the database server using the information you provided in the form. If any problems should arise, an error message hinting at the cause of the problem will be displayed. If the connection attempt was successful you will progress to the next step.

DATABASE MIGRATION

The next step allows you to migrate the easyrec database to the latest version. You can also rebuild the database from scratch. Since easyrec switched to the MySQL InnoDB database engine with version 0.95 you will see an alert message to remind you of properly configuring your MySQL database settings if an easyrec version older than 0.95 is found by the installer. This is a crucial step since unfortunately InnoDB as configured out of the box performs very poorly.



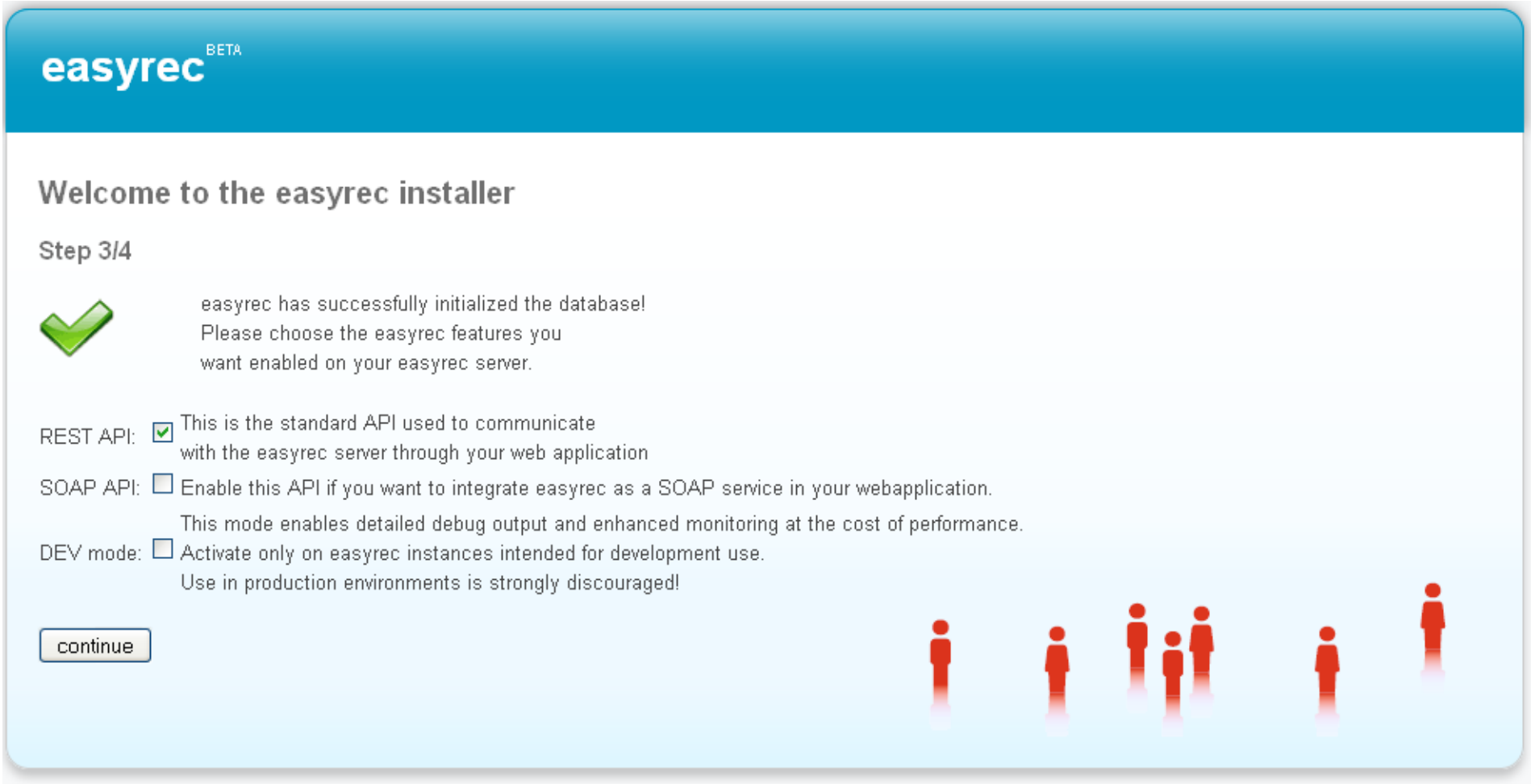
Additionally the alert message points out that depending on the size of your database, the migration process may take a long time in case you choose to keep your existing data - especially if you did not configure MySQL correctly (see chapter MySQL configuration at the beginning of this document). If you are sure that your database configuration is correct click 'OK' to proceed.



WARNING: Be aware that all easyrec tables will be deleted from the database specified in case you click on 'clear database'

EASYREC FEATURE SELECTION

If database initialization was successful you will be directed to the easyrec feature selection page.



Field	Explanation
Use REST	enable easyrec REST API. This is the default way to communicate with easyrec.
Use SOAP	enable easyrec SOAP API if you want to access the easyrec API using the SOAP protocol.
Developer Mode	This mode enables detailed debug output and enhanced monitoring at the cost of performance. Activate this option only on easyrec instances intended for development use. The use of this feature in production environments is strongly discouraged!

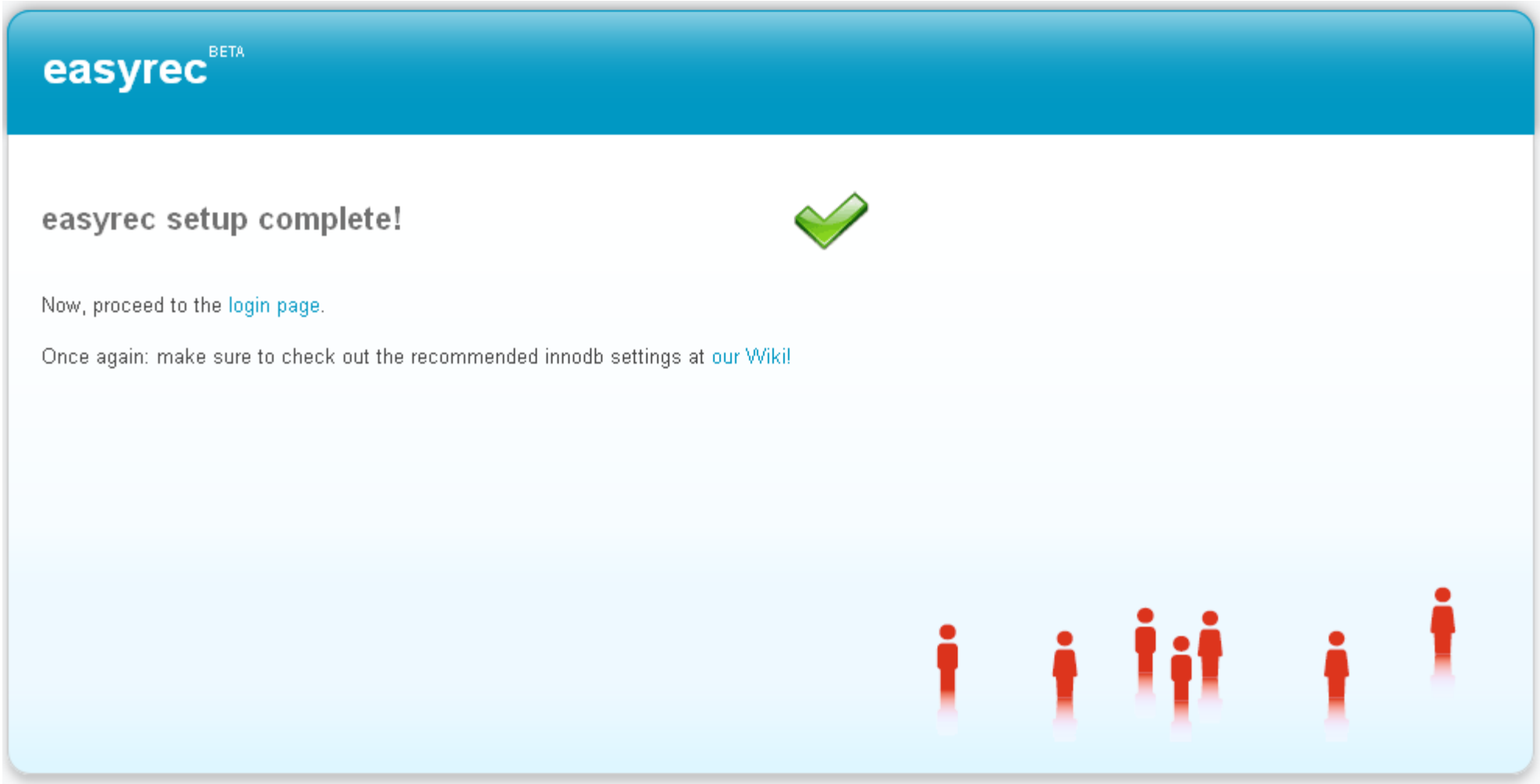
The default way to communicate with easyrec is a REST-like API. If this is not a viable option for your usage scenario you can also choose to integrate easyrec into your application environment using the SOAP protocol. Parallel operation of both interface technologies at the same time is possible.

Developer mode just enables detailed log output about internal method calls and response values as well as more detailed performance profiling information. Unless you are a developer without direct debug access to the machine running easyrec you will want to leave this feature OFF.

By clicking the 'continue' button, easyrec will proceed to load and initialize all the services necessary for providing the selected features. This operation may take some time (usually several seconds up to 1 minute) to complete. If everything loaded according to plan you will be forwarded to the final step of the easyrec installation process.

READY TO GO

Congratulations! You have migrated easyrec successfully. You are now ready to start using the latest version of easyrec.



The final screen informs you of the successful completion of the easyrec setup process. By clicking the 'login page' link you will be forwarded to the login page.