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e-TrustEx Installation Guide

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2.0	2014-11-05	Open E-Trustex 2.0	All pages
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1. INTRODUCTION

This document describes how to prepare the installation for the e-TrustEx application. This document is for system administrators who want to install e-TrustEx into an existing environment.

This document is divided into the following sections:

(1) *Planning*: provides a high-level planning about the installation process;

(2) *System Requirements*: describes the hardware and software required to complete the installation;

(3) *Installation*: describes the detailed steps of the installation process;

(4) System verification: describes the necessary steps in order to verify the correctness of the system installation.

In order to be familiar with the terms used in this document and before going on with the installation, read the Appendix 1 – Terms used in this document section.

2. PLANNING

This section of the document provides a first overview on the installation tasks.

The required steps for the installation are described below:

(1) Make sure you have acquired all of the required packages and software to go ahead with the installation. For more information about the required packages and software see System Requirements;

(2) Decide which database management system you want to use for e-TrustEx. E-TrustEx was tested with JBoss 7.1.1 and MySQL 5.5 database;

(3) Prepare the computer on which you want to install e-TrustEx, checking if it fulfils the requirements;

(4) Follow the steps described in the Installation chapter in order to install e-TrustEx;

(5) Check the correctness of the installation running basic tests on the application.

3. SYSTEM REQUIREMENTS

This chapter describes the hardware and software requirements that the system must satisfy in order to install e-TrustEx.

3.1. Hardware requirements

The hardware requirements for the e-TrustEx installation depend on several factors, above all on availability and scalability requirements (number of documents to be exchanged, number of concurrent users, required SLAs, etc.). Therefore, they are tightly connected to the specific context in which e-TrustEx will be used. For this reason this section describes only the minimum hardware requirements to let e-TrustEx run.

E-TrustEx can be installed and used on any operating system that supports Java JEE. For performance reasons a 64-bit operating system is preferred. The target environment must be able to support the chosen operating system, the Java JEE conformant application server and the database server.

For example, the following system specifications should be satisfactory in general:

- 2 Gb RAM;
- 1 GHz CPU;
- 2 Gb hard disk space.

3.2. Software requirements

This section describes which software is required in order to install e-TrustEx on your system.

3.2.1. Operating System

Because e-TrustEx is Java JEE based, it is cross-platform and can be installed and used on any operating system that supports Java.

3.2.2. Java Development Kit

A working installation of **JDK 1.7 or higher** is necessary to install correctly the whole environment in which e-TrustEx can run. The 32-bit or 64-bit JVM can be installed depending on requirements or availability. e-TrustEx was tested using the 64-bit Oracle JDK 1.7.

3.2.3. Application Server

In order to run e-TrustEx, a Java EE application server is required.

e-TrustEx was tested using JBoss 7.1.1 as Java EE application server.

3.2.4. Database

e-TrustEx needs an application database, used to store data directly generated by the application. That database must support XA transactions.

e-TrustEx was tested on MySQL 5.5 and database installation scripts are provided for this platform.

3.2.5. Additional software

SoapUI (Optional)

In order to check the correctness of the e-TrustEx installation, a web service testing tool is required.

e-TrustEx was tested using SoapUI web service testing tool version 5.0.0.

4. INSTALLATION

4.1. Overview

e-TrustEx is a JEE application, which runs in a customized Java application server environment. The JEE application is OS independent. e-TrustEx was developed on Ubuntu 12.04.2 LTS and Windows 7 Enterprise platforms. e-TrustEx was tested on JBoss, with a configured MySQL database. e-TrustEx is developed using Eclipse JEE. For certain database operations you would need MySQL tools. For testing the services provided by e-TrustEx you can use SoapUI. The platform have also been tested with Oracle database and Weblogic 12c application server.

4.2. Bill of Materials

This section enumerates all the files that are needed to create the development environment. Most files can be downloaded via the provided hyperlink.

For an Ubuntu Linux environment:

- Ubuntu 12.04.2 LTS Linux
  - ubuntu-12.04.2-desktop-amd64.iso
- Oracle Java JDK 7
  - jdk-7u71-linux-x64.tar.gz
- JBoss 7.1.1
  - jboss-as-7.1.1.Final.tar.gz
  - additional files provided to customize the JBoss environment for e-TrustEx can be found here
- MySQL server
  - Select the MySQL 5.5 database server metapackage from the Ubuntu Update Manager (see below for details)
- MySQL Java Connector
  - mysql-connector-java-5.1.21.tar.gz
- SoapUI
  - SoapUI 5.0.0

4.3. Installation steps

4.3.1. Install the operating system

- (optional) The default terminal profile must be modified to increase the scrollback lines from the default value of 512 to 8192 for example. This should be enough to accommodate the extensive logging.

4.3.2. Install the JDK

- Oracle Java JDK 7 is needed instead of the default OpenJDK.

4.3.3. Install MySQL Server

- There were problems installing version 5.5.25a-1 due to the different packaging. The latest MySQL 5.5 was installed using Ubuntu Update Manager.

- **Note: This step is only for Linux platforms, because on Windows it would cause errors!**
  Edit /etc/mysql/my.cnf and add the following line: lower_case_table_names=1

- Create the initial database setup by running the necessary scripts (01 through 04)

- Make sure that the dba role is granted to the mysql user etrustex.

- Make sure that trustex_user can login to MySQL. You might need to specify localhost as location instead of the default wildcard % in the connection server manager.

- Configure FILE_STORE_PATH and SERVER_URL metadata in the table "etr_tb_metadata".

4.3.4. (optional) Install Emma (or a MySQL management tool of your choice)

- Though MySQL Server installation contains MySQL Workbench, this might also be needed for convenience. Select and install it from Ubuntu Update Manager.

4.3.5. Install JBoss and copy application file

- Use/unzip all the additional files provided to customize the JBoss installation.

  - Replace the modules folder of your Jboss installation with the one included in the modules.zip file

  - Copy the Jboss config file in the standalone\configuration folder of your Jboss installation.

- Add the following JBoss user to ManagementRealm:
  username: *manager*
  password: *manage*

  JBoss offers a utility script called "add_user.bat" in the "bin" folder for this purpose.

- (optional) You may override the default 60 seconds deployment timeout in standalone-etrustex.xml in order to avoid timeout errors upon deployment for slower environments:
  <subsystem xmlns="urn:jboss:domain:deployment-scanner:1.1">
  <deployment-scanner path="deployments" relative-to="jboss.server.base.dir" scan-interval="5000" deployment-timeout="300"/>
  </subsystem>

- Copy the provided ear file and the MySQL driver mysql-connector-java-5.1.21-bin.jar (found in the archive downloaded from the MySQL website) to the folder standalone/deployments.

4.3.6. Install SoapUI

Please follow the instructions provided on the SoapUI website to proceed with the installation. Additionally, you can find a test suite and installation guide for SOAP UI here.

5. DEPLOYING E-TRUSTEX

After having configured all of the resources described in the previous chapters, you can deploy e-TrustEx into the JBoss application server.

e-TrustEx is distributed as an EAR (Enterprise Archive). An enterprise archive is a file format used for packaging one or more modules into a single archive so that the deployment of the various modules onto an application server happens simultaneously and coherently.

Please use the recent e-TrustEx build produced by the Build all Maven target.

In order to deploy e-TrustEx you must follow these steps:

- Copy the mysql-connector-java-5.1.21.jar into your configured JBoss under the *<JBOSS_HOME>/standalone/deployments* folder
- Copy the e-TrustEx EAR archive into your configured JBoss under the <JBOSS_HOME>/standalone/deployments folder.
- Start JBoss using the following command standalone –c=standalone-etrustex.xml

6. VERIFYING THE SYSTEM

After having completed the installation of the whole system, different test cases must be carried out in order to verify the correctness of the installation.

A test suite was created to reach this aim. The test suite contains a detailed documentation describing all the steps to be executed to verify the installation.

7. APPENDIX 1 – TERMS USED IN THIS DOCUMENT

EAR	An Enterprise ARchive is a file format used for packaging one or more modules into a single archive so that the deployment of the various modules onto an application server happens simultaneously and coherently.
JBOSS_HOME	JBoss installation root directory
(Java) JEE	Java Enterprise Edition
JDK	Java Development Kit