Jubula Installation Manual

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Chapter 1

System requirements

1.1 Hardware requirements

Since Jubula is *Java*-based, it is theoretically independent of any specific hardware platform, and can run on any hardware setup for which a *Java* implementation exists. However, certain minimum resource requirements should be met, as stated below.

Minimal setup

- A 1 Ghz processor
- 512MB random access memory
- 350MB free hard drive space
- 300MB temporary space during installation

Recommended setup

- A 2 Ghz processor
- 1GB random access memory

1.2 Software requirements

1.2.1 Supported operating systems

The following operating systems are supported by Jubula:

- Microsoft Windows (tested on XP, Vista and Windows 7)

- Linux (tested on fedora 11 and centos 5 with GTK)
- Mac OSX (not for SWT AUT's)

Although the software may run on other systems, we cannot guarantee that Jubula will run properly on them; nor can we support an installation on such systems.

1.2.2 Supported *Java* environments

Jubula client component (Integrated Test Environment, ITE): JRE version 1.5 minimum

Jubula server component (AUT Agent): JRE version 1.4 minimum

AUT: JRE version 1.4 minimum

Java 1.6 is provided in the Jubula installation.

For the ITE, you will need a 32-bit Java version. The operating system you use can be 32 or 64 bit, however.

1.2.3 Database requirements

Jubula supports *Oracle 9-10* as a multi-user database. There is an embedded database which is installed with Jubula, but we only recommend using this for demo purposes.

Other databases may work, as supported by *Eclipse Link*, but we can offer neither guarantee of their proper use nor technical support.

1.2.4 Firewalls and Jubula

Jubula has to be able to perform interprocess communication in order to run tests. No information is sent to external sources during this process.

The ports required by Jubula are:

1. From the ITE to the AUT Agent: this port is defined in the Jubula preferences.
2. From the AUT to the ITE: this port is dynamically chosen, and cannot currently be defined. Therefore, any ports available on your test machine must also be open on the machine from which the test is being run.

If opening all ports in this way is not an option, we recommend using the Jubula test executor on the test machine to run the tests, so that all communication is done locally.

1.2.5 Supported Eclipse versions

Eclipse RCP AUT's must be based on version 3.1 or higher of Eclipse to be tested with Jubula.

1.3 AUT Agent requirements

The AUT Agent requires a system with a TCP/IP-capable network. To run the server, the system should have at least 16 MB free random access memory. Additional requirements for the AUT Agent depend on the application under test (AUT).

1.4 Java policies and security managers

If the AUT uses a security manager (or, in some cases, a Java Policy), please be aware that the Jubula service component requires permission to create and use ClassLoader instances. Most policies will not permit this action for security reasons. The service component uses the ClassLoader to separate the program code used to inspect the AUT from the AUT itself as much as possible.

To grant the necessary permission, please use the following policy snippet (please use a personal installation directory instead of the Jubulainstallation directory).

```
grant {
  permission java.io.FilePermission "<<ALL FILES>>",
             "read, write, delete, execute";
  permission java.lang.RuntimePermission
             "getClassLoader";
  permission java.lang.RuntimePermission
             "createClassLoader";
  permission java.lang.RuntimePermission
             "setContextClassLoader";
  permission java.lang.RuntimePermission
             "accessDeclaredMembers";
  permission java.lang.RuntimePermission
             "modifyThreadGroup";
  permission java.lang.RuntimePermission "exitVM";
  permission java.lang.reflect.ReflectPermission
             "suppressAccessChecks";
```

```
  permission java.util.logging.LoggingPermission
             "control";
  permission java.util.PropertyPermission "*",
             "read, write";
  permission java.net.SocketPermission "*",
             "accept, connect, listen, resolve";
  permission java.awt.AWTPermission
             "listenToAllAWTEvents";
  permission java.awt.AWTPermission
             "showWindowWithoutWarningBanner";
  permission java.awt.AWTPermission "createRobot";
  permission java.awt.AWTPermission "accessClipboard";
  permission java.awt.AWTPermission "accessEventQueue";
};
```

If these permissions are not granted, a SecurityException will be thrown when the AUT is started. This means that the AUT cannot be tested by Jubula.

Chapter 2

Important! Migration information

2.1 Securing projects from previous versions

If you have an older version of Jubula installed, we recommend that you follow these steps:

1. From the old version of Jubula, export and backup all the Projects from the database.

   

   Make sure you also export and back up any library Projects used in your tests, e.g. the unbound modules Projects.

2. Back up any extensions you have made to Jubula: any customized plugins and implementation classes you have written.
3. Uninstall the old version of Jubula.
4. Clear (empty) the database schema for all necessary Jubula users. You can do this via a database administration tool which will let you carry out the action *Drop Tables*.

   

   If you have an Oracle database and are upgrading from Jubula 4.3, then you can use the SQL script installed with Jubula in the *migration* directory to clear your database.

5. Install the new version of Jubula.

If you have AUT Agents running on other machines, be sure to install the new version of the AUT Agent there too.

6. Add any extension plugins you backed up from the old version.

If you are testing RCP AUT's, bear in mind that you will need to remove the old version of the RCP Remote Control plugin from your application and insert the new version in its place. We also recommend starting your application with `-clean` to ensure that the old RCP Remote Remote Control plugin is no longer used.

7. Start Jubula.

2.2 Updating to the new version of the unbound modules

We recommend that you always update the version of the unbound modules Projects to the new versions installed with Jubula. You can do this via the Project properties in the ITE. This is described in the user manual in the *Tasks* section under *Projects*.

You should also check to make sure that your current tests do not use any modules that have become deprecated.

1. In the Test Case Browser, open the category: *unbound_modules/DEPRECATED_modules*
2. For the latest version or versions, select each module marked as deprecated and press »F7«. If this module is used in your tests, the places will be shown in the search result view.
3. For any deprecated modules, look in the new unbound modules for the new version of the module, or read in the release notes for a description of the suggested new module.

4. Add the new module to your test and copy over the data and component names from the old module to the new module. Remove the old module and save the Test Case.

Chapter 3

Installation

Jubula uses a graphical installer to make installation as straightforward as possible.

You don't need administrative privileges to install Jubula, but the folder where the software will be installed must be writable and allow program execution.

See the following sections for information on installing Jubula on Windows and Unix systems. For installation on other platforms, please follow the Unix installation procedure, and adapt the instructions as necessary.

3.1 Environment variable: known problem

There is a known problem with an environment variable which is installed with certain products, including other test tools, and may not be uninstalled when these products are uninstalled.

The variable is called "_JAVA_OPTION" and causes problems for Jubula and possibly also for other Java-based software.

To see if this variable is installed on your computer, right-click on the "my computer" icon on your desktop and select "properties".

In the dialog which appears, select the "advanced" tab and, at the bottom, click on the "environment variables" button.

You will see a list of environment variables on the computer.

If the "_JAVA_OPTION" variable is present, and you have uninstalled the program which used it, then you can simply remove the variable.

3.2 Jubula components

The Integrated Test Environment (ITE): This is where test are created. Tests can also be executed from the client. You can think of this as the main application. The ITE can also run headless – the test executor.

The AUT Agent: This component is responsible for controlling the AUT during test execution. It must be installed on the machine(s) where you want your AUT and tests to run. It requires a network connection to communicate with the ITE.

During the installation process you can choose between different bundles of these programs to be installed:

- Jubula, this bundle includes
  - the ITE and test executor
- AUT Agent, this bundle includes only the AUT Agent, which handles the testing of your AUT.
- Jubula Documentation, this bundle includes the PDF Documentation.

Chapter 4

Windows installation

1. Browse to the directory where you saved the setup file when you downloaded Jubula.
2. Double-click the file "*setup.exe*".
3. A welcome screen appears (Figure 4.1 → page 15). Click "*Next*" to begin installation.

Figure 4.1: *Welcome Screen*

4. The license agreement will appear. Read it and accept it to continue. You can view and print this license later. It is saved in the Jubula installation directory and is called *license-agreement.txt*.

5. At the next dialog, choose where to install Jubula. You can search or enter a directory or use the default. Click "*Next*".

6. Choose the components to be installed. You can install the AUT Agent and the ITE on different machines if you want to. If this is the case, carry out the installation for the other component (AUT Agent or ITE) later.

   To be able to access the manual as a .pdf file, install the Jubula documentation. Click "*Next*".

7. Choose a start menu folder to create the shortcuts in. If you are installing as an administrator, there is a checkbox with the option to install the shortcuts for all users. To continue, click "*Next*".

8. The selected components will be installed.

9. Once the installation is finished, a dialog appears to confirm this (Figure 4.2 → page 16).

Figure 4.2: *Installation complete*

10. Click "*Next*" and then "*Finish*" to exit the installation wizard.

Chapter 5

Mac installation

1. Browse to the directory where you saved the setup file when you downloaded Jubula.
2. Double-click on the setup.dmg icon. The setup directory will open. This directory must later be ejected from the desktop.
3. Double-click on the "*GD Installer*" icon.
4. From this point, follow the instructions for the Unix installation (→ page 19) .

Chapter 6

Unix installation

The following instructions may vary according to the vendor, version, and specifications of the operating system being used. Please adapt them as necessary. Consult the operating system documentation for details.

1. From the command shell, navigate to the directory where you saved the setup file you downloaded.
2. Launch the installation program by starting the script:
   `./setup.sh`

   Because the files are being decompressed, this make take some time.
3. The license agreement will appear. Read it and accept it to continue. You can view and print this license later. It is saved in the Jubula installation directory and is called license-agreement.txt.
4. At the next dialog, choose where to install Jubula. You can search or enter a directory or use the default. Click "*Next*".
5. Choose the components to be installed. You can install the AUT Agent (the server component) and the ITE on different machines if you want to. If this is the case, carry out the installation for the other component (ITE or AUT Agent) later.

   To be able to access the manual as a .pdf file, install the Jubula documentation. Click "*Next*".
6. Choose the directory in which symlinks for Jubula should be created (Figure 6.1 → page 20). The directory must be writable by the user installing the program, i.e. a non-adminstrator may use his home directory. Symlinks should be created in a folder contained in the $PATH variable.

If you do not want to create symlinks, check the box for this option. Click "*Next*" to continue.

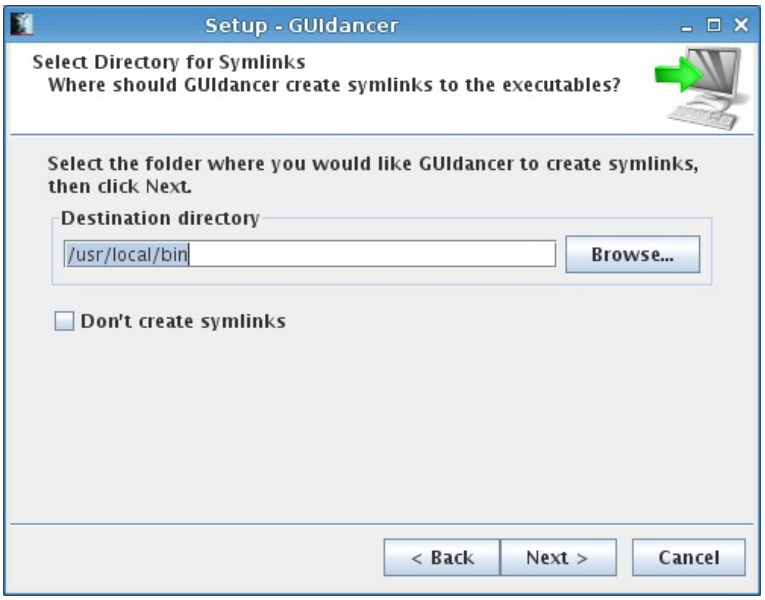

Figure 6.1: *Configuring symlinks location*

7. The selected components will be installed.
8. Once the installation is finished, a dialog appears to confirm this.
9. Click "*Finish*" to exit the installation wizard.

Chapter 7

Database configuration

Jubula uses a database to store Projects. The necessary tables for the database are created automatically by Jubula. For this reason, it is important to use a clean database with no other tables in it.

You can configure the type of database to use in the ITE via the preferences. The following sections give some advice on configuring the database setup for optimum use with Jubula.

7.1 Using the embedded database with Jubula

The embedded database is the default database. If you do not specify a different database, a connection will automatically be made to the embedded database.

The embedded database is a H2 file-based database. It is saved to:
home/.jubula/database

We recommend only using the embedded database for demo or tryout purposes.

7.2 Using an Oracle database with Jubula

Jubula is tested with Oracle and we recommend using an Oracle or Oracle Express database for working with Jubula.

7.2.1 Some tips for working with Oracle Express

Problems creating the database scheme: DBA rights

There is a known issue with Oracle Express when creating database schemes with DBA-rights. In some cases, the creation of the database scheme may fail. To avoid this problem, do not use DBA-rights when creating the database scheme.

Increasing sessions and processes

Oracle Express uses a relatively small amount of sessions. Insufficient sessions can lead to problems when working with Jubula. To combat this problem, the sessions and processes in Oracle Express should be set higher.

We recommend 100 as a suitable amount. The sql script to do this looks like this:

```
sqlpls / nolog
connect / as sysdba
alter system set sessions=100 scope=spfile;
alter system set processes=100 scope=spfile;
quit
```

You must run the script as an administrator and restart the database once the script has run.

UTF-16 support

If you want to test AUT's which run in languages such as Japanese, you will need the universal edition of Oracle Express, which supports UTF-16 character encoding. The ISO-8859 edition of Oracle Express does not support Japanese (and similar) characters.

User roles

When creating users for the database, bear in mind that each user must have the roles *connect* and *resource* to be able to work with the database.

7.3 Using a MySQL database with Jubula

Users working with a MySQL database may want to increase the maximum allowed packet size to avoid problems during the communication of large amounts of information (more than one MegaByte) between the AUT Agent and the ITE.

To change the default packet value, you must:

1. Log into the MySQL command line client.
2. Enter the following into the console:
   `SET GLOBAL max_allowed_packet=33554432`
   This sets a value of 32 MegaBytes (1048576 * 32 = 33554432).
3. Check that the value has been successfully set using:
   `SHOW VARIABLES`
4. Restart Jubula for the changes to take place.

Chapter 8

Uninstalling Jubula

1. In Unix, start `./uninstall`.
2. In Windows, select `uninstall` from the Jubula start menu.
3. A dialog box will appear to confirm this choice.
4. If you click yes, you will see a dialog which will remind you to export your Projects from the current database, and to backup any extensions of configurations you have used.
5. Select the options you have completed and then click "*Yes*" again to uninstall Jubula.
6. Once the program has been uninstalled, you will see a message to confirm this.