

## Purpose

The purpose of this topic is twofold: A) it should serve as a standard FAQ. B) its questions highlight some important points that we assume you should know. So if when you are browsing through the basic questions and are surprised, we recommend to have a closer look at the EL4J documentation.

## EL4J FAQ

### Questions about this FAQ

- **Q** Certain links do not work for me
- **A** Yes, unfortunately some links only work within ELCA (the main sponsor for EL4J). We are looking into solutions for this. We estimate that there is still interesting content for external people.

### EL4J/ Spring core FAQ

- **Q** How to find information about EL4J?
- **A** Please refer to <http://el4j.sourceforge.net/documentation.html> (ELCA-internal persons may also consult our twiki directly under <http://wiki.elca.ch/twiki/el4j/bin/view/EL4J> )
- **Q** I understand that EL4J combines many existing frameworks. What are the unique additions of EL4J?
- **A** Please refer to [FeaturesOfEl4j](#) or <http://el4j.sourceforge.net/docs/pdf/UniqueEL4JFeatures.pdf> .
- **Q** How to get started with EL4J?
- **A** [IntroductoryReadingListForEl4J](#)
- **Q** Why are there modules in EL4J? What features do they provide?
- **A** Please refer to the section (I) of [http://el4j.sourceforge.net/docs/pdf/EL4J\\_IntroductionArticle1.pdf](http://el4j.sourceforge.net/docs/pdf/EL4J_IntroductionArticle1.pdf)
- **Q** How do configuration overrides in Spring and EL4J work? Why are they there?
- **A** Configuration overrides work in the following way:
  - ◆ The content of all the different XML files is combined. Optionally you can specify that when a bean is defined twice, the second one overwrites the first one (this is a parameter of the the `El4j*ApplicationContexts`).
  - ◆ Spring allows extending the definition of a bean (please refer to section 3.5 of the spring reference manual)
  - ◆ There are the overriders of configuration of spring: `PropertyOverrideConfigurer`, `PropertyPlaceholderConfigurer`
  - ◆ There is a merge configurer of EL4J: `ListPropertyMergeConfigurer`. It allows extending existing lists in spring configuration
- **Q** Assume you have a spring bean that is proxied to allow a logging interceptor. What happens if the spring bean has the following method `m` defined: `"void m(int i) { this.n(i); }"` Does the call to `this.n(i)` go through the interceptor?
- **A** No! As the proxy does not replace the spring bean, it only *wraps* the spring bean. The `this` pointer remains on the original (=unproxied) object. If you need this behavior, look into the run time weaving

feature of Spring (we don't use it currently in EL4J).

- **Q** What Spring configuration files are used and in what order are they read?
- **A1** The easiest way to get the list of configuration files that are read by spring is to look them up in the JMX module under each application context. The EL4J ModuleApplicationContext has a complex logic to ensure the correct loading order of resources, even in special contexts that mangle the classpath (such as certain application servers do it).
- **A2** Alternative ways are described in the TracingStackEl4j document.
- **Q** How to see the currently active configuration settings, by taking into account the configuration values overridden in property files?
- **A** JmxModuleForTheImpatient. Setting this up for your application by default is actually quite practical: you can rapidly check what spring read and merged of your application configuration file(s).
- **Q** How to enable logging in your application?
- **A** DebuggingHowTo and TracingStackEl4j
- **Q** How to do debugging? Local/ remotely?
- **A** DebuggingHowTo
- **Q** How to start a new project?
- **A** We recommend to start from an existing application template or a demo application. There is a web, swing, and a JSF application template. There is also a demo applications for the daemon manager. Duplicate the chosen existing project and start coding. For more info on this please contact the EL4J team under [el4j\\_team@elca.ch](mailto:el4j_team@elca.ch) .
- **Q** What are the features of the EL4J remoting? Why is it there? Why is there implicit context passing? And how does it work?
- **A** Please refer to the section (II) of [http://el4j.sourceforge.net/docs/pdf/EL4J\\_IntroductionArticle1.pdf](http://el4j.sourceforge.net/docs/pdf/EL4J_IntroductionArticle1.pdf) For more details, please refer to ModuleRemoting.
- **Q** In what order are spring beans created?
- **A** Please consult <http://static.springframework.org/spring/docs/2.5.x/spring-reference.pdf> , chapter 3. In the JMX module under each application context you can get the list of config files that will be used in your application, together with their order.
- **Q** How do I get the classpath of a running application?
- **A** Please consult e.g. the class-path Java system property visible via the EL4J JMX module under the Root MBean. CAVEAT: this does not always work (as mvn uses a special class loader and as maven sometimes creates a separate process. Refer to TracingStackEl4j.
- **Q** What is the difference between Spring singleton beans and prototype beans?
- **A** Please consult the spring documentation under

<http://static.springframework.org/spring/docs/2.5.x/spring-reference.pdf> , section 3.4.

- **Q** How to figure out what interceptors are active on a spring bean? / My interceptor is not added to the interceptor chain as I expect it. What shall I do?
- **A** Please refer to the troubleshooting section that treats this topic
- **Q** I use the `@Transactional` annotation (`propagation = Propagation.REQUIRED`), but no transaction will be created. What could be the problem?
- **A** Check the above question to ensure that the transaction interceptor is added to the chain as expected.
- **Q** I don't like the fact that EL4J loads all configuration files from the mandatory folder automatically. What shall I do?
- **A** You have different options:
  - ◆ You can not put the recommended `classpath*:mandatory/*.xml` (it loads all files in each mandatory directory of the classpath) in the argument of the `el4jModule*ApplicationContext`. You then can enlist explicitly the configuration files you want.
  - ◆ You can explicitly exclude configuration files that you don't want Spring to load from a default list via the exclusion list.

## Maven FAQ

- **Q** How to get more information about Maven?
- **A** Please refer to `MavenBuildSystem`, in particular to `MavenCheatSheet`.
- **Q** Why do you use your own version of Maven?
- **A** We need some bug fixes and Maven is very slow to add them to the released version. Please refer to the top-level `pom.xml` (the trunk is available here: [http://el4j.svn.sourceforge.net/viewvc/\\*checkout\\*/el4j/trunk/el4j/pom.xml?revision=1839&content-type=text%2Fxml](http://el4j.svn.sourceforge.net/viewvc/*checkout*/el4j/trunk/el4j/pom.xml?revision=1839&content-type=text%2Fxml)). We list each bugfix with its JIRA link and rationale.
- **Q** I'd like to have the log4j output sent to a file instead of the console. How do I do it?
- **A** Locate the `resource/log4j.xml` file in your project (if it exists) or copy e.g. our example `log4j.xml` from `external/etc/log4j/` to your resource directory and uncomment the file logging feature.
- **Q** What do *transitive dependencies* mean? What dependencies are transitive in EL4J?
- **A** If A transitively depends on B and B transitively depends on C, it means that A also automatically depends on C. The dependencies to modules are transitive in Maven. This means that if you depend on a module X (in other words: you use the module X), you can automatically use all the modules that are used by module X. This works recursively: you can also use the modules used by the modules used by module X, etc.  
Remark: When you use a module, you have access to all its code, jar-files and configuration.
- **Q** Why are there binary modules? How do they work?
- **A** They help to deploy modules without the source code. Please refer to the doc of maven for more

details.

- **Q** How can JVM parameters be passed to the JVM of a cargo started web container like Tomcat or Weblogic?
- **A** You can set a property called `cargo.jvmargs` to the desired parameters. For a full reference see Configuration Properties e.g.

```
<plugin>
  <groupId>org.codehaus.cargo</groupId>
  <artifactId>cargo-maven2-plugin</artifactId>
  <configuration>
    ...
    <configuration>
    ...
  </configuration>
  <properties>
    <cargo.jvmargs>-XX:PermSize=256m -XX:MaxPermSize=256m</cargo.jvmargs>
  </properties>
</configuration>
</plugin>
```

- **Q** How to use the different profiles/ the environment support within eclipse?
- **A1** For a definitively changed default setting (e.g. if you want to use `oracle` by default), activate permanently the needed profile in your `settings.xml` file (in the section `activeProfiles` / `activeProfile`). **IMPORTANT: When you activate one profile permanently all profiles that would normally be active will be deactivated. The configuration in EL4J is by default `db2` and `tomcat 6x`. If you permanently activate `oracle` you have also to activate `tomcat 6x`!**
- **A2** For a quick try with another setting, you can make a change in the `target/env/env-placeholder.properties` / `target/env/env-bean-property.properties` or `target/env-test/env-placeholder.properties` / `target/env-test/env-bean-property.properties` (for tests) files.  
**Caveat:** At the next install phase of maven this file is overwritten by maven (it's just useful for a quick test). For more info please refer to the env documentation under EnvPlugin.

## Data access FAQ

- **Q** What is CRUD?
- **A** This stands for the 4 basic operations a database provides: create, read, update, delete.
- **Q** When do we recommend Hibernate, when do we recommend Ibatis?
- **A** In general we recommend Hibernate now, due to the fact that it integrates nicely with our Domain Driven Design ideas (auto-CRUD via generic DAO, validation on domain objects, declarative optimistic locking, more flexible mapping to the database, auto-support for the Query Pattern, ...) Please refer to the slides of the J2EE? architecture presentation for more information ([http://leaffy.elca.ch/java/el4j/Documentation\\_Mirror/miscellaneous/j2eeCourse/](http://leaffy.elca.ch/java/el4j/Documentation_Mirror/miscellaneous/j2eeCourse/) , the integration tier part)
- **Q** What is the purpose of the generic DAO interface?
- **A** You don't need to hand-code the basic CRUD functionality of your DAO. The idea is discussed under <http://www.hibernate.org/328.html> (we use a slightly different implementation, as the one of

hibernate is buggy). Advantages:

- ◆ you don't need to repeat boring code
  - ◆ you can cleanly extend the generic DAO for your needs (just write a subclass of the generic DAO)
  - ◆ data binding to the GUI and Web UI is simplified (as it can be made more generic)
- 
- **Q** Why does the saveOrUpdate method of the generic repository return the object?
  - **A** An insert operation can change the object (e.g. add a db-generated Primary key).
  - **Q** Why do we use optimistic locking in the generic repository or DAOs?
  - **A** Please refer to the slides of the J2EE? architecture presentation ([http://leaffy.elca.ch/java/el4j/Documentation\\_Mirror/miscellaneous/j2eeCourse/](http://leaffy.elca.ch/java/el4j/Documentation_Mirror/miscellaneous/j2eeCourse/) , the integration tier part)
  - **Q** What is the purpose of the lazy loading exception of hibernate? How to avoid it?
  - **A** Please refer to the documentation of the HibernateFramework.
  - **Q** What is the purpose of the Identity Fixer?
  - **A** Please refer to the article on this under <http://el4j.sourceforge.net/docs/pdf/IdentityFixerAnnouncement.pdf>
  - **Q** I have upgraded to new Hibernate and now I get a NoCachingEnabledException. How can I fix that?
  - **A** Since Hibernate 3.2.0-cr3 you have to set the caching provider hibernate property `hibernate.cache.provider_class` in bean sessionFactory. For EhCache, what was the default in < 3.2.0-cr3, set property's value to `org.hibernate.cache.EhCacheProvider`
  - **Q** How do I switch between ibatis and Hibernate?
  - **A** You make the maven module dependency to the corresponding EL4J module (i.e. the ibatis or the hibernate modules).

### More advanced EL4J FAQ

- **Q** How do you resolve circular dependencies in the spring config file?
- **A** Please refer to BasicSpringGuidelines#CircularReferences
- **Q** With EL4J/ Spring you can easily exchange your remoting protocol. But how to choose a remoting protocol?
- **A** Please consult <http://static.springframework.org/spring/docs/2.5.x/spring-reference.pdf> section 17.7
- **Q** How to quickly setup performance measurements for your project?
- **A** Please consult the documentation of the light statistic module. It should not take you longer than 15 minutes to set this up for your project.
- **Q** How to find out more about database accesses/ transaction management? (I.e. how to know when

and how spring gives out a connection, starts/commits/rollbacks a transaction).

- **A** There are different things you can do:
  - ◆ Please ensure first that your transaction interceptor is turned on as you expect it (look at the stacktrace of your data access code, e.g. via a `System.out.println(new Exception().printStackTrace())` or in the debugger).
  - ◆ Then try to set the logging level of the classes in the package "org.springframework.jdbc." to "DEBUG". This shows you in the log what the spring transaction management does. BTW: this only works if you have the EL4J-default, non-JTA transaction manager. Otherwise you need to adapt the package above to include your particular transaction manager.
  - ◆ Enable the hibernate or ibatis SQL log (this shows the SQL statements that are written out)
  - ◆ Look into the database (e.g. via Squirrel)
  - ◆ Compare your transactions to those of the EL4J standard example (refdb and keyword demos). What is different in the configuration/ code/ annotations?

## Troubleshooting Maven and EL4J

Please refer to [TroubleshootingGuideEl4j](#).

This list of questions will be extended. Please send other questions to add to PhilippHOser


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Legacy questions can be found in [LegacyFaq](#).

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This topic: [EL4J > FrequentlyAskedQuestions](#)

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## Maven troubleshooting

### Maven does not build

- Often maven tells you what the issue is. Maybe calling maven with `-e` or `-X` helps to figure out more.
- If an artifact is missing:
  - ◆ Is the corresponding artifact correctly named (group id, artefact id, version)?
  - ◆ Try putting the artefact in your local repository
  - ◆ Verify that maven looks in the correct repositories (maven shows you what repositories it knows). You can browse the repositories with a browser.
  - ◆ You may need to build and install `mvn install` some other maven projects in your local repository first (so that they can be found)/ Try rebuilding with `mvn clean install` in the global repository
  - ◆ Try using the option `"-o"` to have mvn work offline.
  - ◆ Try using the option `"-U"` to look for new available snapshots
  - ◆ Rename your local repository (to hide it temporarily from maven)
  - ◆ Detect what maven does with Wireshark. Sometimes the network is just too slow for maven.
  - ◆ Sometimes an artifact is not found in proximity. Try relaunching proximity.
- If there is a mistake in your pom.xml
  - ◆ Ensure the XML is syntactically correct
  - ◆ Try `mvn N help:effective-pom` and `mvn N help:effective-settings`
  - ◆ Compare your pom.xml to a working sample pom.xml
  - ◆ Does it help if you remove certain parts of your pom (e.g. definition of some plugins, some dependencies, ...)?
- There is a duplicated jar-file in the generated war or ear files or in the class path. A related question is : how do I check the sanity of all my dependencies (e.g. before a release)?
  - ◆ A useful tool to check the sanity of your dependencies is to run `mvn site` on the global level of your project. (we do this e.g., to check the sanity of EL4J). You can then go through all dependencies in the html file under `target/site/dependency-convergence.html` (under Project Information -> Dependency Convergence). If you need more info on the dependency, you can find it under the section Project Information -> Dependencies of each of your modules.
  - ◆ In the directory of the pom.xml that generates the file with the duplicated jar files, execute `mvn project-info-reports:dependencies` to get a report on the dependencies (the report is then under `target/site/dependencies.html`). In the dependency tree of this report, you will find the conflicting definition that lead to the duplicated jar files. Usually it occurs because a dependency to a same jar file is named differently. Ideas to resolve it: unify the naming or make an exclusion statement when adding the the dependency. Here is a sample exclusion statement:

```
<dependency>
  <groupId>org.codehaus.xfire</groupId>
  <artifactId>xfire-core</artifactId>
  <version>1.2.4</version>
  <exclusions>
    <exclusion>
      <groupId>commons-logging</groupId>
      <artifactId>commons-logging</artifactId>
    </exclusion>
    <exclusion>
      <groupId>jdom</groupId>
      <artifactId>jdom</artifactId>
    </exclusion>
  </exclusions>
</dependency>
```

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- ◆ To do this on a whole project, try the following:

```
cd $EL4J_ROOT/external
mvn depgraph:fullgraph -Ddepgraph.filterEmptyArtifacts=true -Ddepgraph.dotFile=el4j.dot
grep label el4j.dot | sort > DuplicateCandidates.txt
# resolve candidates manually (find in DuplicateCandidates.txt)
# determine candidates graphically (in el4j.png) or in text (in el4j.dot)
```

- ◆ If in a generated war file, you have 2 times the same file under different names, e.g. WEB-INF\lib\module-core-1.9-20080123.163316-1.jar and WEB-INF\lib\module-core-1.9-SNAPSHOT.jar. This can be a bug of the war plugin that only occurs with snapshots. The file with ending "-SNAPSHOT.jar" comes from "module-web-war" but in "module-web-war" there should be "module-core-1.9-20080123.163316-1.jar" so merging of wars would work properly. To solve this issue add the following pom-config in the pom of your war module:

```
<pluginManagement>
  <plugins>
    <plugin>
      <!--
        Ignore the SNAPSHOT libs delivered by war
        and take the "fresh" ones.
      -->
      <groupId>org.apache.maven.plugins</groupId>
      <artifactId>maven-war-plugin</artifactId>
      <configuration>
        <dependentWarExcludes>WEB-INF/lib/*-SNAPSHOT.jar</dependentWarExcludes>
      </configuration>
    </plugin>
  </plugins>
</pluginManagement>
```

- There is another strange maven error
  - ◆ Take the latest mvn version from the EL4J page (from the convenience zip).
  - ◆ Have you followed all steps of the GettingStarted guide?
  - ◆ When you interrupt the downloading of the tomcat zip file, the unzip process does not work. Delete the incomplete tomcat\*.zip file and try again.
  - ◆ Try uncommenting the mirror setting in your settings.xml file => does the problem go away?
  - ◆ Under cygwin, the ~ is sometimes set to something like c:/cygwin/home/ (via the environment variable HOME). But in general under Windows, ~ is located under C:/Documents and Settings/. Mvn and svn take the default ~ setting of Windows.
  - ◆ Do you use backslashes '\' instead of slashes '/' in your settings.xml file.
  - ◆ Under Windows only: Sometimes there are issues with paths that are interpreted by Windows or Unix (Cygwin). When a script is launched in cygwin, it uses the Unix conventions. But as soon as a call is made to Java, the (Windows) executable uses the Windows conventions. Unix conventions contain e.g. '/' as directory separator and ':' as a path separator. Windows conventions contain e.g. '\' as directory separator and ';' as a path separator.
  - ◆ It's possible that you have 2 different JVM versions in eclipse and in mvn. Use the same version (both for execution and build time).

### Tomcat issues

- Try rebuilding with mvn clean install
- Look into the log files of tomcat (under logs/).
- Try copying the file etc/tomcat/context.xml to the tomcat conf directory.
- Remove the deployed directories and the deployed war files in the webapps directory of tomcat and try again



- Sometimes if only a `xml` file is changed, the application is not reloaded. Try making a `touch` (command in `cygwin`) on another file to force a reload.
- Add a user with the role "admin" in the file "`conf/tomcat-users.xml`". This allows that you can manage the application via the tomcat manager (web user interface).
- Try deleting the zip that is used to download tomcat and try again
- You may want to make a try with Jetty

### Jar hell detection

Jar hell is when the same jar or class is included more than once on the classpath. One possible symptom is that assembly/singlejar builds do not run whereas executing with maven (`exec:java`) does; this is due to different classpath search orders.

If maven detects two different versions of the same dependency like `cglib:cglib:1.0` and `cglib:cglib:1.1` on the classpath, it will use its own strategies to pick which one to use. This is not jar hell. However, if they are not identically named like `cglib:cglib:1.0` and `cglib:cglib-full:1.0` maven considers them different artifacts and adds them all.

Add the maven duplicate finder plugin to your pom with

```
<plugin>
  <groupId>ch.elca.el4j.maven.plugins</groupId>
  <artifactId>maven-duplicatefinder-plugin</artifactId>
  <executions>
    <execution>
      <id>dup</id>
      <goals>
        <goal>inspect</goal>
      </goals>
      <phase>verify</phase>
    </execution>
  </executions>
</plugin>
```

*Unfortunately you cannot just do `mvn duplicatefinder:inspect` yet as that would not pick up dependencies.*

Your build will pause and a window appear showing all classes on the classpath and their location (click on them for more information). If the root entry (`root`) is black, all is well. If not, follow the tree down to a red `.class` file and click it to see its locations in the bottom of the window. As the full path is displayed, you can find the group/artifact/version information from the path.

Run `mvn dependency:tree` to get the full dependency tree of your build. Find the two or more conflicting artifacts from the last step and see which of your direct dependencies included them.

In your dependencies, add a manual exclusion to prevent an artifact included somewhere else from being wrongly excluded. For example,

```
<dependency>
  <groupId>joda-time</groupId>
  <artifactId>joda-time-hibernate</artifactId>
  <version>1.0</version>
  <exclusions>
    <exclusion>
      <groupId>cglib</groupId>
      <artifactId>cglib-full</artifactId>
    </exclusion>
  </exclusions>
  <groupId>commons-logging</groupId>
```

```

        <artifactId>commons-logging-api</artifactId>
    </exclusion>
</exclusions>
</dependency>

```

This excludes any version of cglib-full or commons-logging that jodatetime has declared as a dependency. The proper cglib will then be included from somewhere else.

### Smaller issues with Maven

- **Q** Since we have moved to Tomcat 6, it seems that Tomcat logs information intended to the standard output only in its file localhost.log (typically what your application writes to System.out or exceptions not handled by the application and caught by Tomcat). How can I configure again the old behavior?
- **A** If you want to see it on the console as well, which makes it easier to quickly identify a problem, add the following red part in your \$CATALINA\_HOME/conf/logging.properties file:

```

org.apache.catalina.core.ContainerBase.[Catalina].[localhost].level = INFO
org.apache.catalina.core.ContainerBase.[Catalina].[localhost].handlers =
2localhost.org.apache.juli.FileHandler, java.util.logging.ConsoleHandler

```

- **Q** I installed EL4J as described. When using eclipse, if I put my cursor on a class name, I often get the error "A Runtime Error has occurred. Do you wish to debug?". When I debug it, it points me to a line of javascript (method printFileStatus) inside the javadoc. What can I do?
- **A** This happens because the javascript function inside the javadoc can not be found. Normally this will be ignored but the Office-Suite installs a debugger which will be launched. To turn this "feature" off just disable the JIT debugging of this debugger.
- **Q** Why does JBoss AS always stop working after a few (re)deployment cycles?
- **A** JBoss supports hot re-deployment of WARs and EARs. Unfortunately, due to bugs in the JVM, repeated redeployment of an EAR eventually causes the JVM to run out of perm gen space. For this reason, we recommend running JBoss in a JVM with a large perm gen space at development time (configure this in bin/run.conf): `-Xms512m -Xmx1024m -XX:PermSize=256m -XX:MaxPermSize=512`
- **Q** The build of EL4J in the external directory fails due to jax-ws (I am using JDK 6)?
- **A** This is a known issue of jax-ws. If you want the jaxws support working, set up jaxws 2.1 like described here: [http://weblogs.java.net/blog/ramapulavarthi/archive/2007/01/problems\\_using.html](http://weblogs.java.net/blog/ramapulavarthi/archive/2007/01/problems_using.html)
- **Q** `mvn site` does not work in the external directory. What to do?
- **A** `mvn site` does only work in the external/site directory
- **Q** During a build, I receive the following error: "java.io.EOFException: Unexpected end of ZLIB input stream" during the extraction of the tomcat zip file.
- **A** Try deleting the tomcat .zip file that was incompletely downloaded and start again. (It is in the `tomcat5x.basedir` as defined in the `m2 settings.xml`).
- **Q** I get a NullPointerException in `FtpWagon.openConnection` when executing `mvn deploy`?

- **A** Try setting the correct user name and password in your settings.xml file (under `servers/server/username` and `servers/server/password`).
- **Q** A DLL file is missing. What shall I do?
- **A** There is a DLL file (only for Windows) in the internal file tool module. Put it e.g. into your jre/bin directory.
- **Q** During db:create or another database operation, the database cannot be cleared and/or created.
- **A** Remove the disturbing parts of the database tables and constraints. If you don't need to keep the database (e.g. during development) you can clear the database(s) by removing the derby database file (e.g. under `D:\Projects\EL4J\tools\derby\derby-databases`) or by calling `db:destroy` (e.g. for oracle). An oracle destroy script can be found under `external\framework\modules\database\src\main\resources\etc\sql\oracle`.

### JSF troubleshooting

Sometimes it's not easy to see what's going on. Look at the exception stack trace in the output in your shell. During the development with JSF there are 3 main sources of errors:

- Mismatch between the **database** model and your **bean entities**.
  - ◆ Check the SQL scripts if the fields match the fields of the entities.
  - ◆ Examine your DAO or hibernate configuration.
  - ◆ Check the annotations in your Java beans (e.g. `@NotNull`, `@Length(max = 32)` matches your SQL definitions)
  - ◆ Don't use database keywords in your SQL scripts for names (e.g. don't create a table with the name 'user'). Some databases can't cope with that.
- Your **'.xhtml' faces configuration files** contain some errors.
  - ◆ Check for misspellings (this happens often).
  - ◆ A method (e.g. you call as an action when clicking on a button) does not exist or exists with other parameters.
  - ◆ Check the page navigation.
- Your **Java classes** contain bugs.
  - ◆ Check the work flow.
  - ◆ Check for null values.
  - ◆ Use the debugger to see where it fails. See [DebuggingHowTo](#)
- Various
  - ◆ `FacesMessages.add()` is overloaded. When using it with many String arguments, the wrong one might be taken: `add(Severity, String, String, String, String, Object...)` instead of `add(Severity, String, Object...)`

### Troubleshooting other issues with EL4J

#### A Spring Bean is not found or is duplicated

- What spring configuration files are loaded (look at the spring output (to enable more output: refer to the `TracingStackEL4j`))?
- Ensure that you use the `ModuleApplicationContext` or the `ModuleWebApplicationContext`
- What is the classpath? => please refer to the next point
- What is the list of inclusive/ exclusive locations where you launch the `Module*ApplicationContext`?

- Is it possible that a jar file is twice in the classpath, maybe of a different version? Could it be that a configuration file exists once from a jar and once via a classed directory?

#### **Class not found exception during application runtime**

- What is your classpath? In web applications: you can easily check the jars in the exploded-war directory. In general: when you run a "mvn install" of your project you see the full list of runtime dependencies (= all modules that are included in the class path). Another alternative is to look into the dependency graph (refer to dep graph maven plugin). When launching applications in Maven, the normal classpath ( `System.getProperty("java.class.path")` ) only contains classworlds. => maybe it's easier to figure out when launching the application via eclipse?
- Often it is useful to find out in what jar the class is located (via Google or via the prefix of your classes).
- Looking at what classes are loaded and from where they are loaded gives also some indication. This can be done by adding the switch `-verbose` when launching the JVM.

#### **What interceptors are active on a Spring bean?**

- Have a look at the stack trace when a method on the bean is executed. This can be done via the debugger, via an exception (e.g. via `System.out.println(new Exception().printStackTrace())` ) or a thread dump.
- The EL4J JMX support allows to see all the interceptors on a spring bean.
- The following blog entry describes simple code to get all interceptors on a spring bean:  
<http://swik.net/Spring/Ben+Hale's+Blog/Another+Reason+to+Love+Spring+2.0:+Interceptor+Combining/die8>

#### **My interceptor is not added to the interceptor chain as I expect it. What shall I do?**

- Check the above question to ensure that your interceptor is really not added.
- A known issue is that you may have multiple proxies around the spring bean that confuses the code that adds the interceptor. E.g. when configuring the trace-interceptor and the transaction-interceptor (e.g. directly or indirectly via annotations), the transaction-interceptor may not work! We plan to provide some improvement for this "feature" (in order not to speak of a bug) of spring.
- Another issue we have encountered is that due to a circular dependency, a spring bean was not proxied (and therefore also had no interceptor around it).
- It is also possible that the support to combine JDK 1.5 annotations or commons attributes with interceptors is not turned on. Please check in the documentation of your annotation/ attribute whether the corresponding config file is loaded  
(`framework\modules\core\src\main\resources\optional\interception\transaction`)
- Sometimes the commons attribute files are not generated correctly (there is 1 class file per annotated java class). Try clean/ rebuild, and verify that commons attribute is activated in the build system.

#### **Data that you send to the DAO is not written to the database**

- Is a transaction active? Does it commit?
  - ◆ Is your transaction interceptor turned on as you expect it (check the earlier point about this topic)
  - ◆ Is the `@Transactional` annotation set (either on the DAO or on the service layer)?
  - ◆ Is a transaction manager bean defined?
  - ◆ Enable tracing in the Spring Transaction manager to see whether a start transaction/ commit is sent to the db (try to set the logging level of the classes in the package `"org.springframework.jdbc."` to `"DEBUG"`. This shows you in the log what the spring transaction management does. BTW: this only works if you have the EL4J-default, non-JTA transaction manager. Otherwise you need to adapt the package above to include your particular transaction manager.)
- Is there an exception during your call? => do you loose some exception on the way?

- Does the db receive your SQL? => enable logging of db output (in hibernate, ibatis, in the db, or via P6Spy? )
- Look into the database (e.g. via Squirrel) => does everything look ok?
- Compare your transaction code and configuration to those of the EL4J standard example (refdb and keyword demos). What is different in the configuration/ code/ annotations?

### A service call takes too long

- What is the state of your system resources (memory, cpu, file-system, network database, other servers, ...)? See TracingStackEl4j for tools to look at each of these resources.
- What happens globally in your call? Are there many remote calls?
- Use a profiler
- Use the simpleStatistics/ detailed statistics module to track down execution times.
- See also next point
- Are all your CPU cores used? => TracingStackEl4j

### The application is blocked

- Try a thread dump (Ctrl-Break, see TracingStackEl4j) => what threads are blocked? Does a `jstack -l` help?
- Try calling the deadlock detection routine of the JDK 6 (`java.lang.management.ThreadMXBean`)
- Swing applications: check in the EDT ideas of the TracingStackEl4j document.
- Can you localize what sections (threads/ processes) of the application are still running?

### Hessian / Burlap and overloading

- Hessian / Burlap does not enable method overloading by default. If you have the methods `m(A a)` and `m(A a, B b)` then it knows only 1 method. To solve this problem you can choose different names or enable overloading. If overloading is enabled this might slow your application?? because now every method is mangled. To enable overloading you can use the property `overloadEnabled` in your protocol configuration file:

```
<property name="serviceProperties">
  <map>
    <entry key="overloadEnabled" value="true" />
  </map>
</property>
```


### Resources with further help

- <http://wiki.elca.ch/twiki/el4j/bin/view/EL4J/FrequentlyAskedQuestions>
- <http://wiki.elca.ch/twiki/el4j/bin/view/EL4J/TracingStackEl4j>
- Issues that occurred in the short term:  
[http://el4j.svn.sourceforge.net/viewvc/\\*checkout\\*/el4j/trunk/el4j/etc/KnownIssues.txt](http://el4j.svn.sourceforge.net/viewvc/*checkout*/el4j/trunk/el4j/etc/KnownIssues.txt)
- The documentation of the features you are using (mainly under ModuleDocumentations).

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This topic: EL4J > TroubleshootingGuideEl4j

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