EL4J

FrequentlyAskedQuestions

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1 FrequentlyAskedQuestions

1.1 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.

1.2 EL4J FAQ

1.2.1 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.

1.2.2 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 secion (I) of 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 .

- **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 secion (II) of 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 el4j Module*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.

1.2.3 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%2F). 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>
    ...
    <properties>
       <cargo.jvmargs>-XX:PermSize=256m -XX:MaxPermSize=256m</cargo.jvmargs>
    </properties>
      </configuration>
   </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 `tomcat6x`. If you permanently activate `oracle` you have also to activate `tomcat6x`!**

- **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.

1.2.4 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/ , 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/ , 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 an 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).

1.2.5 More advanced EL4J FAQ

- **Q** How do you resolve circular dependencies in the spring config file?
- **A** Please refer to BasicSpringGuidelines#Circular_references_0
- **Q** With EL4J/ Spring you can easily exchange your remoting protocol. But how to chose 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?

1.2.6 Troubleshooting Maven and EL4J

Please refer to TroubleshootingMavenAndEl4j.

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.