



Java™ Platform, Enterprise Edition 8 (Java EE 8) Web Profile Specification

Please post comments to: users@javaee-spec.java.net

Early Draft- 10/8/15 Linda DeMichiel, Bill Shannon

Specification: JSR-366 Java Platform, Enterprise Edition 8 Web Profile ("Specification")

Version: 8.0

Status: Early Draft Review

Release: October 2015

Copyright 2015 Oracle America, Inc.

All rights reserved.

NOTICE

The Specification is protected by copyright and the information described therein may be protected by one or more U.S. patents, foreign patents, or pending applications. Except as provided under the following license, no part of the Specification may be reproduced in any form by any means without the prior written authorization of Oracle America, Inc. ("Oracle") and its licensors, if any. Any use of the Specification and the information described therein will be governed by the terms and conditions of this Agreement.

Subject to the terms and conditions of this license, including your compliance with Paragraphs 1 and 2 below, Oracle hereby grants you a fully-paid, non-exclusive, non-transferable, limited license (without the right to sublicense) under Oracle's intellectual property rights to:

1. Review the Specification for the purposes of evaluation. This includes: (i) developing implementations of the Specification for your internal, non-commercial use; (ii) discussing the Specification with any third party; and (iii) excerpting brief portions of the Specification in oral or written communications which discuss the Specification provided that such excerpts do not in the aggregate constitute a significant portion of the Technology.

2. Distribute implementations of the Specification to third parties for their testing and evaluation use, provided that any such implementation:

- (i) does not modify, subset, superset or otherwise extend the Licensor Name Space, or include any public or protected packages, classes, Java interfaces, fields or methods within the Licensor Name Space other than those required/authorized by the Specification or Specifications being implemented;
- (ii) is clearly and prominently marked with the word "UNTESTED" or "EARLY ACCESS" or "INCOMPATIBLE" or "UNSTABLE" or "BETA" in any list of available builds and in proximity to every link initiating its download, where the list or link is under Licensee's control; and
- (iii) includes the following notice: "This is an implementation of an early-draft specification developed under the Java Community Process (JCP) and is made available for testing and evaluation purposes only. The code is not compatible with any specification of the JCP."

The grant set forth above concerning your distribution of implementations of the specification is contingent upon your agreement to terminate development and distribution of your "early draft" implementation as soon as feasible following final completion of the specification. If you fail to do so, the foregoing grant shall be considered null and void.

No provision of this Agreement shall be understood to restrict your ability to make and distribute to third parties applications written to the Specification.

Other than this limited license, you acquire no right, title or interest in or to the Specification or any other Oracle intellectual property, and the Specification may only be used in accordance with the license terms set forth herein. This license will expire on the earlier of: (a) two (2) years from the date of Release listed above; (b) the date on which the final version of the Specification is publicly released; or (c) the date on which the Java Specification Request (JSR) to which the Specification corresponds is withdrawn. In addition, this license will terminate immediately without notice from Oracle if you fail to comply with any provision of this license. Upon termination, you must cease use of or destroy the Specification.

"Licensor Name Space" means the public class or interface declarations whose names begin with "java", "javax", "com.oracle" or their equivalents in any subsequent naming convention adopted by Oracle through the Java Community Process, or any recognized successors or replacements thereof

TRADEMARKS

No right, title, or interest in or to any trademarks, service marks, or trade names of Oracle or Oracle's licensors is granted hereunder. Oracle, the Oracle logo, and Java are trademarks or registered trademarks of Oracle America, Inc. in the U.S. and other countries.

DISCLAIMER OF WARRANTIES

THE SPECIFICATION IS PROVIDED "AS IS" AND IS EXPERIMENTAL AND MAY CONTAIN DEFECTS OR DEFICIENCIES WHICH CANNOT OR WILL NOT BE CORRECTED BY ORACLE. ORACLE MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT THAT THE CONTENTS OF THE SPECIFICATION ARE SUITABLE FOR ANY PURPOSE OR THAT ANY PRACTICE OR IMPLEMENTATION OF SUCH CONTENTS WILL NOT INFRINGE ANY THIRD PARTY PATENTS, COPYRIGHTS, TRADE SECRETS OR OTHER RIGHTS. This document does not represent any commitment to release or implement any portion of the Specification in any product.

THE SPECIFICATION COULD INCLUDE TECHNICAL INACCURACIES OR TYPOGRAPHICAL ERRORS. CHANGES ARE PERIODICALLY ADDED TO THE INFORMATION THEREIN; THESE CHANGES WILL BE INCORPORATED INTO NEW VERSIONS OF THE SPECIFICATION, IF ANY. ORACLE MAY MAKE IMPROVEMENTS AND/OR CHANGES TO THE PRODUCT(S) AND/OR THE PROGRAM(S) DESCRIBED IN THE SPECIFICATION AT ANY TIME. Any use of such changes in the Specification will be governed by the then-current license for the applicable version of the Specification.

LIMITATION OF LIABILITY

TO THE EXTENT NOT PROHIBITED BY LAW, IN NO EVENT WILL ORACLE OR ITS LICENSORS BE LIABLE FOR ANY DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUE, PROFITS OR DATA, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF OR RELATED TO ANY FURNISHING, PRACTICING, MODIFYING OR ANY USE OF THE SPECIFICATION, EVEN IF ORACLE AND/OR ITS LICENSORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

You will hold Oracle (and its licensors) harmless from any claims based on your use of the Specification

for any purposes other than the limited right of evaluation as described above, and from any claims that later versions or releases of any Specification furnished to you are incompatible with the Specification provided to you under this license.

RESTRICTED RIGHTS LEGEND

If this Software is being acquired by or on behalf of the U.S. Government or by a U.S. Government prime contractor or subcontractor (at any tier), then the Government's rights in the Software and accompanying documentation shall be only as set forth in this license; this is in accordance with 48 C.F.R. 227.7201 through 227.7202-4 (for Department of Defense (DoD) acquisitions) and with 48 C.F.R. 2.101 and 12.212 (for non-DoD acquisitions).

REPORT

You may wish to report any ambiguities, inconsistencies or inaccuracies you may find in connection with your evaluation of the Specification ("Feedback"). To the extent that you provide Oracle with any Feedback, you hereby: (i) agree that such Feedback is provided on a non-proprietary and non-confidential basis, and (ii) grant Oracle a perpetual, non-exclusive, worldwide, fully paid-up, irrevocable license, with the right to sublicense through multiple levels of sublicensees, to incorporate, disclose, and use without limitation the Feedback for any purpose related to the Specification and future versions, implementations, and test suites thereof.

GENERAL TERMS

Any action related to this Agreement will be governed by California law and controlling U.S. federal law. The U.N. Convention for the International Sale of Goods and the choice of law rules of any jurisdiction will not apply.

The Specification is subject to U.S. export control laws and may be subject to export or import regulations in other countries. Licensee agrees to comply strictly with all such laws and regulations and acknowledges that it has the responsibility to obtain such licenses to export, re-export or import as may be required after delivery to Licensee.

This Agreement is the parties' entire agreement relating to its subject matter. It supersedes all prior or contemporaneous oral or written communications, proposals, conditions, representations and warranties and prevails over any conflicting or additional terms of any quote, order, acknowledgment, or other communication between the parties relating to its subject matter during the term of this Agreement. No modification to this Agreement will be binding, unless in writing and signed by an authorized representative of each party.

Contents

Java™ Platform, Enterprise Edition 8 (Java EE 8) Web Profile Specification	i
WP.1 Introduction	1
WP.1.1 Target and Rationale for the Web Profile	1
WP.1.2 Determining Applicable Requirements	2
WP.1.3 Acknowledgements for Version 6	4
WP.1.4 Acknowledgements for Version 7	4
WP.2 Web Profile Definition	7
WP.2.1 Required Components	7
WP.2.2 Optional Components	8
WP.2.3 Additional Requirements	8
Appendix WP.A: Revision History	9
WP.A.1 Changes in Early Draft	9
Appendix WP.B: Related Documents	11

Introduction

This specification defines the Java EE Web Profile (“Web Profile”), a profile of the Java Platform, Enterprise Edition specifically targeted at web applications.

WP.1.1 Target and Rationale for the Web Profile

The Web Profile is targeted at developers of modern web applications.

With the term “modern” we intend to highlight the fact that the world of web applications has made much progress since the introduction of the first Servlet specification. Inevitably, the number of technologies used to create even simple web applications had grown by leaps and bounds. In fact, few web applications today are written directly to the servlet API: most applications rely on standard or third-party frameworks and libraries, often developed as open source, which in turn use the services of the servlet container.

Besides managing HTTP interactions, most web applications have significant requirements in the areas of transaction management, security and persistence. Such requirements can be readily addressed by technologies that have been part of the Java EE platform for quite some time, such as the Enterprise JavaBeans (EJB) 3.x technology and the Java Persistence API, but that are rarely supported by “plain” servlet containers. By incorporating many of these APIs, the Web Profile aims at raising the bar for what should be considered a basic stack for the development of web applications using the Java platform.

Targeting “modern” web applications then implies offering a reasonably complete stack, composed of standard APIs, and capable out-of-the-box of addressing the needs of a large class of web applications. Furthermore, this stack should be easy to grow, so as to address any remaining developer needs.

Against this drive towards completeness, one wishes to balance a desire to limit the footprint of web containers, both in physical and in conceptual terms. From the point of view of developers learning the Web Profile, it is more valuable to have a small, focused profile, with as little overlap between technologies as possible, rather than a more powerful but overly complex one, with redundant APIs.

In defining the Web Profile we strove to find a middle ground between these two sets of requirements.

In terms of completeness, the Web Profile offers a complete stack, with technologies addressing presentation and state management (JavaServer Faces, JavaServer Pages), core web container functionality (Servlet), business logic (Enterprise JavaBeans Lite), transactions (Java Transaction API), persistence (Java Persistence API) and more.

As for simplicity, it leaves out many of the enterprise backend APIs that are part of the Java EE platform. It also relies on the pluggability features in the Servlet specification to allow applications to use libraries that extend the servlet container with minimal configuration overhead.

Finally, it is worth reminding that Web Profile products are allowed to ship with more technologies than the required ones. It is conceivable that products will offer a choice at installation time between different configurations, some richer in extensions, or even allow for complete customization beyond the required core (“à la carte” installation).

WP.1.2 Determining Applicable Requirements

Note – Profile definitions can be quite terse, amounting to little more than a list of required technologies and a (possibly empty) set of additional requirements, beyond those entailed by all the referenced specifications. Being the first profile of the Java EE 6 Platform to be defined, we expect the Web Profile specification to be used as a model for future profiles. It will also be seen as a starting point for understanding how the requirements defined in the Java EE Platform specification apply to a profile that subsets the platform itself, a significant innovation in this version of the platform. (The case of a profile that is a superset of the platform is much easier to picture.) To help with this process, this section attempts to shed light on how one should go from the definition of the Web Profile to figuring out

the exact set of requirements that apply to it, and consequently to any product that implements it.

As dictated by the general rules for Java EE profiles in the Platform specification, products that implement the Web Profile must honor:

1. all requirements of the Java EE Platform specification that apply to all profiles;
2. all requirements of this specification;
3. all requirements of the individual component specifications;
4. all requirements in the Java EE Platform specification that are conditional on the presence of a specific technology or combinations of technologies.

Let's look at some examples of requirements from each grouping.

For the first one, the Java EE Platform specification mandates support for the "java:" naming context in all profiles. Consequently, Web Profile products must support it. For a similar reason, all Web Profile 8 products must support the Java Platform, Standard Edition 8 API.

In the second category one can point out the requirement to support Java EE web application modules (.war files) (see Section WP.2.3, "Additional Requirements").

The third category is hopefully self-explanatory. For example, Web Profile products must implement the Servlet API, which in turn means they need to satisfy all the requirements listed in the Servlet specification.

The fourth category is the most complex. As a first example, since a Web Profile product is required to implement the Servlet technology, it must also follow all general requirements for Java EE web containers in the Platform specification. Additionally, it must follow all security requirements in the Platform specification that pertain to Java EE web containers, all interoperability requirements for such containers, etc. Furthermore, since a Web Profile product must implement the Java Transaction API (JTA), it must also satisfy all the Platform specification's transaction management-related requirements for web components, which indeed are conditional on the presence of Servlet and JTA .

As a negative example for the fourth category of requirements, consider the Java Message Service (JMS) technology. Since it is not a required component of the Web Profile, Web Profile products are not required to include an implementation of JMS, nor do they have to support other JMS-related requirements, like the ability to inject message destination references. On the other hand, a Web Profile product that included an implementation of JMS would

be required to honor all the JMS-related requirements in the Java EE Platform specification.

Particular care should be taken when determining applicable requirements based on the presence of EJB Lite in the Web Profile. As described in the EJB specification, EJB Lite is a subset of the EJB API. When examining an EJB-related requirement in the Java EE Platform spec, one must first of all determine which API classes, component types and EJB container services are mentioned in the requirement itself. Only if all of them fall inside the EJB Lite subset that requirement is considered applicable to Web Profile products.

For example, since EJB Lite does not include any remote functionality, the EJB annotation may not be used to inject a remote reference, something that should be kept in mind when evaluating the requirements in the Platform specification section “Enterprise JavaBeans References”.

WP.1.3 Acknowledgements for Version 6

Version 6 of this specification was created under the Java Community Process as JSR-316. The spec leads for the JSR-316 Expert Group were Bill Shannon (Sun Microsystems, Inc.) and Roberto Chinnici (Sun Microsystems, Inc.). The expert group included the following members: Florent Benoit (Inria), Adam Bien (Individual), David Blevins (Individual), Bill Burke (Red Hat Middleware LLC), Larry Cable (BEA Systems), Bongjae Chan (Tmax Soft, Inc.), Rejeev Divakaran (Individual), Francois Exertier (Inria), Jeff Genender (Individual), Antonio Goncalves (Individual), Jason Greene (Red Hat Middleware LLC), Gang Huang (Peking University), Rod Johnson (SpringSource), Werner Keil (Individual), Michael Keith (Oracle), Wonseok Kim (Tmax Soft, Inc.), Jim Knutson (IBM), Erika S. Kohen (Individual), Peter Kristiansson (Ericsson AB), Changshin Lee (NCsoft Corporation), Felipe Leme (Individual), Ming Li (TongTech Ltd.), Vladimir Pavlov (SAP AG), Dhanji R. Prasanna (Google), Reza Rahman (Individual), Rajiv Shivane (Pramati Technologies), Hani Suleiman (Individual).

WP.1.4 Acknowledgements for Version 7

Version 7 of this specification was created under the Java Community Process as JSR-342. The Expert Group work for this specification was conducted by means of the <http://javaee-spec.java.net> project in order to provide transparency to the

Java community. The specification leads for the JSR-342 Expert Group were Bill Shannon (Oracle) and Linda DeMichiel (Oracle). The expert group included the following members: Deepak Anupalli (Pramati Technologies), Anton Arhipov (ZeroTurnaround), Florent Benoit (OW2), Adam Bien (Individual), David Blevins (Individual), Markus Eisele (Individual), Jeff Genender (Individual), Antonio Goncalves (Individual), Jason Greene (Red Hat, Inc.), Minehiko Iida (Fujitsu), Alex Heneveld (Individual), Jevgeni Kabanov (Individual), Ingyu Kang (Tmax Soft, Inc.), Werner Keil (Individual), Jim Knutson (IBM), Ming Li (TongTech Ltd.), Pete Muir (Red Hat, Inc.), Minoru Nitta (Fujitsu), Reza Rahman (Caucho Technology, Inc), Kristoffer Sjogren (Ericsson AB), Kevin Sutter (IBM), Spike Washburn (Individual), Kyung Koo Yoon (Tmax Soft).

Web Profile Definition

This chapter defines the contents of the Java™ Platform, Enterprise Edition 8 (Java EE™ 8) Web Profile.

WP.2.1 Required Components

The following technologies are required components of the Web Profile:

- Servlet 4.0
- JavaServer Pages (JSP) 2.3
- Expression Language (EL) 3.0
- Debugging Support for Other Languages (JSR-45) 1.0
- Standard Tag Library for JavaServer Pages (JSTL) 1.2
- JavaServer Faces (JSF) 2.3
- Model-View-Controller (MVC) 1.0
- Java API for RESTful Web Services (JAX-RS) 2.1
- Java API for WebSocket (WebSocket) 1.0
- Java API for JSON Processing (JSON-P) 1.1
- Java API for JSON Binding (JSON-B) 1.0
- Common Annotations for the Java Platform (JSR-250) 1.3
- Enterprise JavaBeans (EJB) 3.2 Lite
- Java Transaction API (JTA) 1.2
- Java Persistence API (JPA) 2.2
- Bean Validation 1.1

- Managed Beans 1.0
- Interceptors 1.2
- Contexts and Dependency Injection for the Java EE Platform 2.0
- Dependency Injection for Java 1.0

WP.2.2 Optional Components

There are no optional components in the Web Profile.

Web Profile products may support some of the technologies present in the full Java EE Platform and not already listed in Section WP.2.1, “Required Components”, consistently with their compatibility requirements.

WP.2.3 Additional Requirements

Web Profile products must support the deployment of Java EE web application modules (.war files). No other modules types are required to be supported.

Revision History

WP.A.1 Changes in Early Draft

WP.A.1.1 Additional Requirements

- Java EE 8 Web Profile requires Java SE 8.
- Updated to reflect versions of Java EE 8 technologies.
- Added JSON-B as required component.
- Added MVC as required component..

WP.A.1.2 Removed Requirements

- None

WP.A.1.3 Editorial Changes

- Updated Related Documents.

Related Documents

This specification refers to the following documents. The terms used to refer to the documents in this specification are included in parentheses.

Java™ Platform, Enterprise Edition Specification Version 8. Available at <http://jcp.org/en/jsr/detail?id=366>.

Java™ Platform, Standard Edition, v8 API Specification (Java SE specification). Available at <http://docs.oracle.com/javase/8/docs/api/index.html>.

Enterprise JavaBeans™ Specification, Version 3.2 (EJB specification). Available at <http://jcp.org/en/jsr/detail?id=345>.

JavaServer Pages™ Specification, Version 2.3 (JSP specification). Available at <http://jcp.org/en/jsr/detail?id=245>.

Expression Language Specification, Version 3.0 (EL specification). Available at <http://jcp.org/en/jsr/detail?id=341>.

Java™ Servlet Specification, Version 4.0 (Servlet specification). Available at <http://jcp.org/en/jsr/detail?id=369>.

Java™ Transaction API, Version 1.2 (JTA specification). Available at <http://jcp.org/en/jsr/detail?id=907>.

JAX-RS: The Java™ API for RESTful Web Services 2.1 (JAX-RS specification). Available at <http://jcp.org/en/jsr/summary?id=370>.

Common Annotations for the Java Platform 1.3. Available at <http://jcp.org/en/jsr/detail?id=250>.

Debugging Support for Other Languages 1.0. Available at <http://jcp.org/en/jsr/detail?id=45>.

Standard Tag Library for JavaServer Pages 1.2 (JSTL specification). Available at <http://jcp.org/en/jsr/detail?id=52>.

JavaServer Faces 2.3 (JSF specification). Available at <http://jcp.org/en/jsr/detail?id=372>.

Model-View-Controller 1.0 (MVC specification). Available at <http://jcp.org/en/jsr/detail?id=371>.

Java Persistence 2.2 (Java Persistence specification). Available at <http://jcp.org/en/jsr/detail?id=338>.

Bean Validation 1.1 (Bean Validation specification). Available at <http://jcp.org/en/jsr/detail?id=349>.

Managed Beans 1.0 (Managed Beans specification). Available at <http://jcp.org/en/jsr/detail?id=316>.

Interceptors 1.2 (Interceptors specification). Available at <http://jcp.org/en/jsr/detail?id=318>.

Contexts and Dependency Injection for the Java EE Platform 2.0 (CDI specification). Available at <http://jcp.org/en/jsr/detail?id=365>.

Dependency Injection for Java 1.0 (DI specification). Available at <http://jcp.org/en/jsr/detail?id=330>.

Java API for WebSocket 1.0 (WebSocket specification). Available at <http://jcp.org/en/jsr/detail?id=356>.

Java API for JSON Processing 1.1 (JSON-P specification). Available at <http://jcp.org/en/jsr/detail?id=353>.

Java API for JSON Binding 1.0 (JSON-B specification). Available at <http://jcp.org/en/jsr/detail?id=367>.