INTRODUCTION

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Hosted at GitHub in the tomcat-training repository

Pull requests welcome
Tomcat since 2003
Committer, PMC member
Commons - Daemon, Pool, DBCP, BCEL
Committer, PMC member

ASF member, ASF security team, ASF infrastructure team,
Director 2016-19, VP Brand Management since 2018

Java EE Expert Groups for Servlet, WebSocket, Expression Language

Jakarta Servlet, Pages, WebSocket and Expression Language
Committer
AGENDA

Jakarta EE 11
Jakarta Servlet
Jakarta Pages
Jakarta WebSocket
Jakarta Expression Language
Jakarta Authentication
Jakarta Annotations
Tomcat specific changes
JAKARTA EE 11

42 individual specifications - Tomcat implements 6
Platform specification - Tomcat implements relevant sections
Minimum of Java 21
No SecurityManager support
Testing and Compatibility Kits (TCKs) are being refactored
First milestones due end of November
Final release June/July 2024
JAKARTA SERVLET - 6.1

No major changes
Clarification
Clean-up
Various improvements
Calls using null for a header name will be NO-OPs

Using null when setting a header value will remove all current values

Calls using null when adding a header value will be NO-OPs

The empty string is a valid value for a header

Any method that sets a header is a NO-OP once the response is committed

Align getDateHeader() and getIntHeaderValue() with getHeader() for multiple values
dispatch() and complete() close non-blocking output streams
write(), print(), println() and flush() are "write operations"
JAKARTA SERVLET - REDIRECTS

Status code can be specified
Response body can be specified
Relative redirects are allowed
Clarify that all ServletContext methods that accept a path bypass security constraints

Remove sensitive HTTP headers from TRACE responses
JAKARTA SERVLET - PARAMETERS

Invalid parameters will always trigger an Exception
Update HTTP RFC references to latest versions

HTTPS support is now mandatory

New constants for status codes 308, 421, 422 and 426

New request attribute jakarta.servlet.error.query_string

Add ByteBuffer support to ServletInputStream and ServletOutputStream

Charset support for setCharacterEncoding()
Context root mapping occurs with or without the trailing '/'

- Clarify when leading '/' is omitted in HttpServletMapping.getMatchValue()

- Clarify multi-part config sizes are in bytes

- Clarify expected behaviour for CONNECT requests

- Deprecate and make optional support for HTTP/2 server push
JAKARTA SERVLET - IN PROGRESS

HttpSession access for WebSocket
Require error dispatches to use GET
Clarify behaviour of various methods for include / forward
Support for 1xx responses - particularly early hints
JAKARTA PAGES - 4.0

Depreacted classes and methods have been removed

Updated ErrorData to support the new request attribute
jakarta.servlet.error.query_string
JAKARTA WEBSOCKET - 2.2
Clarified the responsibility for sending Ping messages
Added getSession() method to SendResult
EXPRESSION LANGUAGE - 6.0

Remove all deprecated classes and methods

Dependency on JavaBeans API is now optional

Added support for java.util.Optional via OptionalELResolver
ANNOTATIONS - 3.0?

ManagedBean is deprecated
JAKARTA AUTHENTICATION - 3.1?

TBD
TOMCAT 11

No major changes

Specification / RFC updates

Generally stricter with invalid input

Enhancements and improvements

32-bit Windows no longer supported (no JRE)
TOMCAT 11 - SECURITY I

BASIC authentication uses UTF-8 by default

Update DIGEST auth to RFC 7616

Documentation web application is only accessible from localhost by default

Examples web application is only accessible from localhost by default
TOMCAT 11 - SECURITY II

rejectIllegalHeader hard-coded to true
allowHostHeaderMismatch hard-coded to false

Align AJP connector handling of invalid HTTP headers with HTTP connector

Added RateLimitFilter
HTTP/2

RFC 9218 - HTTP/2 priority frame support
Support for server push has been removed
VIRTUAL THREADS

Virtual thread support - useVirtualThreads on the Connector

Some internal refactoring
TLS

Log TLS cert info on startup

Dedicated loggers for detailed TLS configuration info

Added TLSCertificateReloadListener
MISCELLANEAOUS

Expose the utility executor to web applications

Tomcat no longer sets java.protocol.handler.pkgs when starting

Added PropertiesRoleMappingListener

Added ContextNamingInfoListener

Add support for loading configuration resources from the web application
QUESTIONS?
TOMCAT RESOURCES

Web site: https://tomcat.apache.org

Mailing lists: https://tomcat.apache.org/lists.html

Source code: https://github.com/apache/tomcat

Issue tracker: https://bz.apache.org/bugzilla

Stack overflow
THANK YOU