Tomcat 11 & Jakarta EE

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Bratislava, Slovakia. June 3-5, 2004
Introductions

Tomcat Committer since 2003

Security, Infrastructure, Brand Management

Day job at Broadcom - “Do what you think is best for Tomcat”

Eclipse committer since 2018
Agenda

Jakarta EE 11

Status of specification implementation in Tomcat 11

Notable changes in Tomcat 11
Jakarta EE 11
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Tomcat implements 6 Jakarta EE specifications

- Servlet
- Pages (JSP)
- Expression Language
- WebSocket
- Annotations
- Authentication (JASPIC)
General

Minimum Java version is 17
Removed references to the SecurityManager
Removed deprecated code
Servlet 6.1

Clarifications for headers, HTTPS, async writes, path canonicalization

New standard request attributes

Greater control over redirect status codes and body

getParameter() can throw an exception

Expose HttpSession for use outside of HTTP request

Added ByteBuffer support to Servlet(Input|Output)Stream

Deprecate HTTP/2 push
Minor changes only
Align with Servlet and EL
Expression Language 6.0

Dependency on java.beans.* package has been made optional

New length property for arrays

Support for java.lang.Record

Optional support for java.util.Optional
WebSocket 2.2

Add `getSession()` to `SendResult`

Ability to interact with HttpSession via Servlet API changes
Other

Annotations

Deleted @ManagedBean

Authentication

Removed SecurityManager related code and public constants
Implementation
Tomcat 11 Implementation Status

Done

TCKs pass for

Expression Language
WebSocket
Servlet
Pages

No other major changes planned
New Features
New Features

Most are not Tomcat 11 specific
Available by default unless Java > 17 is required
Tomcat 11.0.x was forked from Tomcat 10.1.1
Full list of changes is in the change log
Removed

- Security Manager support
- Connector settings
  - rejectIllegalHeader
  - allowHostHeaderMismatch
- 32-bit Windows support
- HTTP/2 Server push support
RFCs

Updated BASIC authentication to RFC 7617
Updated DIGEST authentication to RFC 7616
    Added SHA256 support
Added HTTP priority support (RFC 9218)
Logging

Added dedicated loggers for
  TLS certificates
Access log with JSON output
More time granularity options for access logs
Security

Reduced session timeout during FORM authentication

Rate limiting filter

Reduce default maxParameterCount to 1000

Add partitioned support for session cookies

Automatic reloading of TLS certificates

Easier to exclude safe resources from CSRF filter

Support custom user attributes in Realms
Miscellaneous

Translations

General support for cookie attributes without values

Error reports can redirect to external server

Expose utility executor to web applications
Performance

OpenSSL integration with FFM

Requires Java 22+

Tomcat Native not required

Virtual thread based executor
Questions?

Optionally share some contact info like email, blog or social media handles