

Prepare for Jakarta EE 11

Performance and Developer Productivity

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Eclipse Foundation



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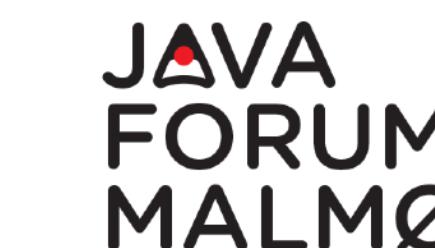
<https://www.linkedin.com/in/ivargrimstad>



https://www.threads.net/@ivargrimstad_official

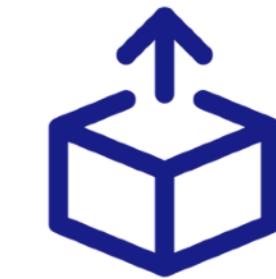


ivargrimstad_official





AKARTA EE



Jakarta EE 11
H1, 2024



`javax.* -> jakarta.*`

Jakarta EE Core Profile





JAKARTA EE

Final Specification

Specification
Document

API

TCK

Compatible
Implementation(s)

NEW RELEASE

Jakarta EE 10

Community-Driven

Modernized

Simplified

Lightweight



	Authentication 3.0	Persistence 3.1	
Authorization 2.1	Concurrency 3.0	Server Pages 3.1	RESTful Web Services 3.1
Activation 2.1	CDI 4.0	WebSocket 2.1	JSON Processing 2.1
Batch 2.1	Expression Language 5.0	Bean Validation 3.0	JSON Binding 3.0
Connectors 2.1	Faces 4.0	Debugging Support 2.0	Annotations 2.1
Mail 2.1	Security 3.0	Enterprise Beans Lite 4.0	Interceptors 2.1
Messaging 3.1	Servlet 6.0	Managed Beans 2.0	Dependency Injection 2.0
Enterprise Beans 4.0	Standard Tag Libraries 3.0	Transactions 2.0	CDI Lite 4.0

Updated
Not Updated
New



Jakarta EE 11 Platform



Authorization 3.0	Authentication 3.1	Data 1.0	RESTful Web Services 3.2
Activation 2.1	Concurrency 3.1	Persistence 3.2	JSON Processing 2.1
Batch 2.1	CDI 4.1	Pages 4.0	JSON Binding 3.0
Connectors 2.1	Expression Language 6.0	WebSocket 2.2	Annotations 3.0
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	Standard Tag Libraries 3.0	Transactions 2.0	

Updated

Not Updated

New

Jakarta EE 11 Web Profile



Authentication 3.1	Data 1.0	
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Standard Tag Libraries 3.0	Transactions 2.0	CDI Lite 4.1

Updated

Not Updated

New

Jakarta EE 11 Core Profile



RESTful Web Services 3.2

JSON Processing 2.1

JSON Binding 3.0

Annotations 3.0

Interceptors 2.2

Dependency Injection 2.0

CDI Lite 4.1

Updated

Not Updated

New



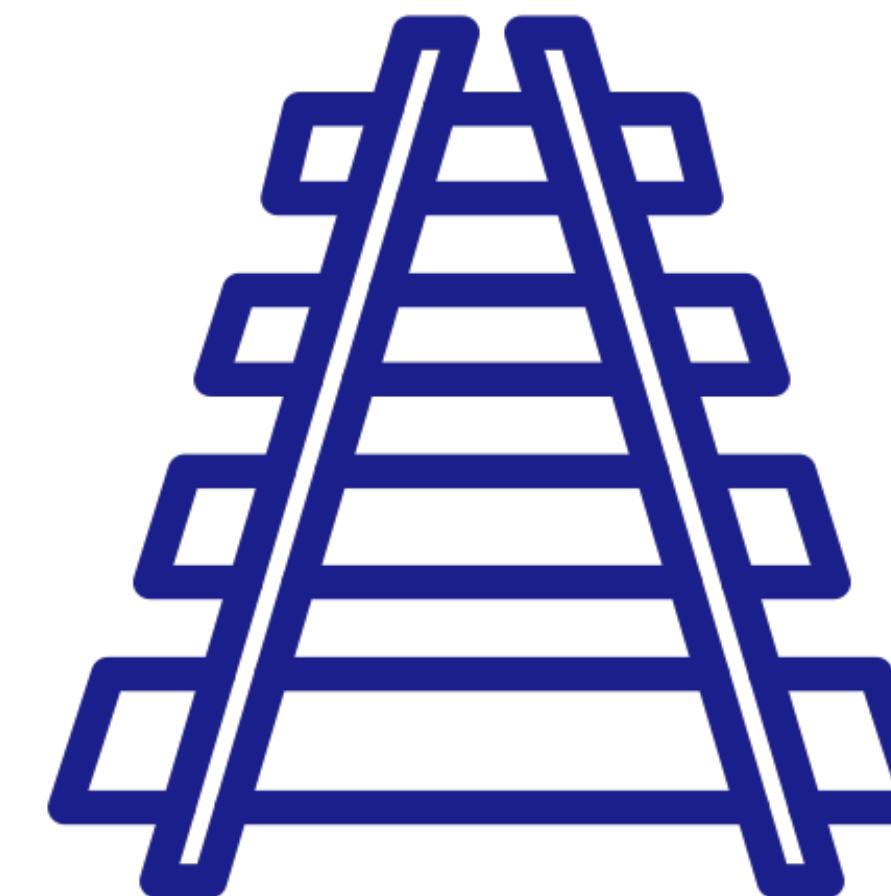
Jakarta EE 11
API source level: Java SE 17
API binary level: Java SE 17
TCK run with: Java SE 17+21



App Developers (YOU) can use Java SE 21 features if you like !!



JAKARTA EE



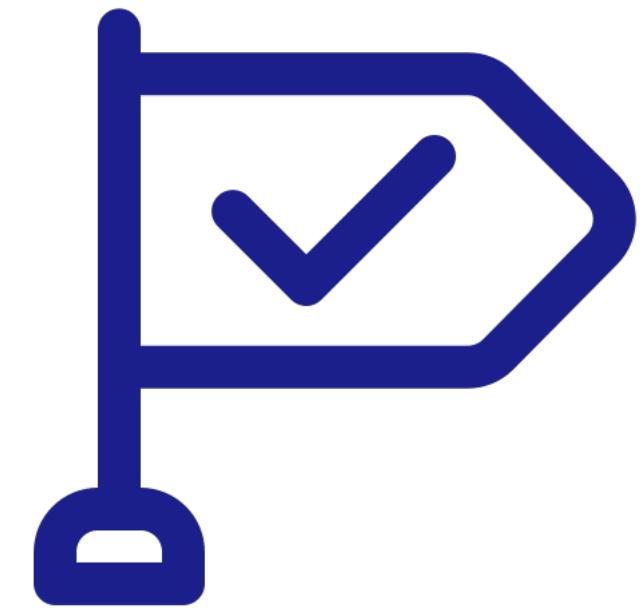
Release Cadence

~6-9 Months after the latest LTS of Java





JAKARTA EE



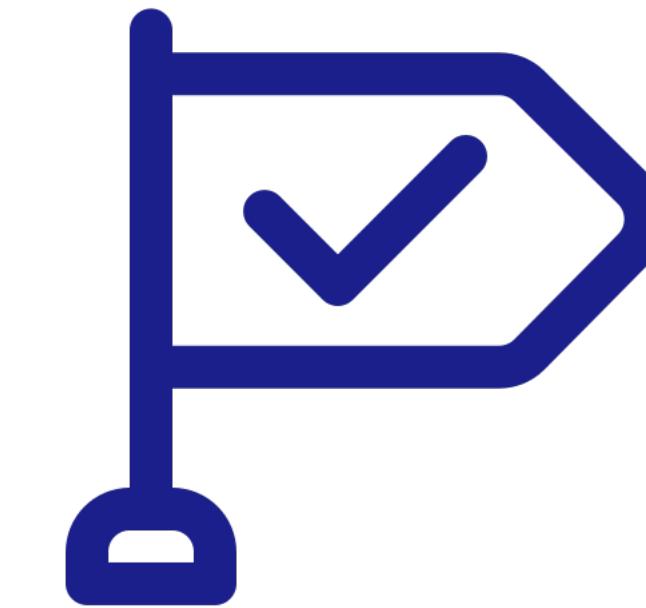
Milestone 1

December, 2023



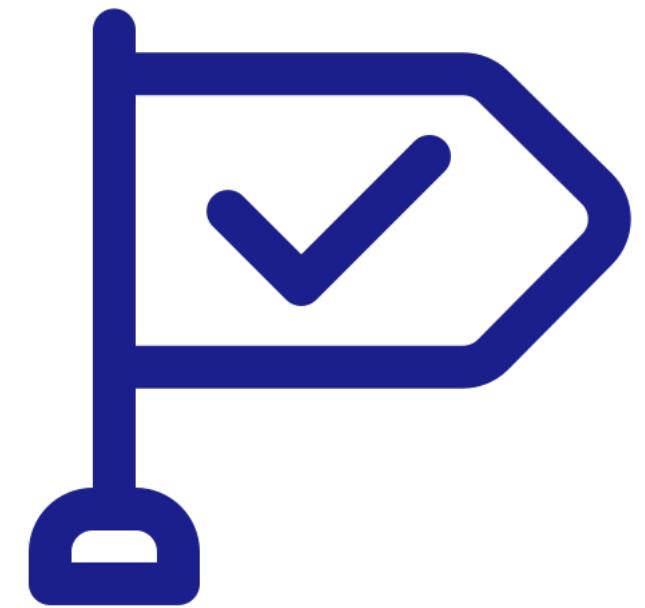
Milestone 2

March, 2024



Milestone 3

April, 2024



Milestone 4

May, 2024



Final Specification

Specification Document

API

TCK

Mx Specification

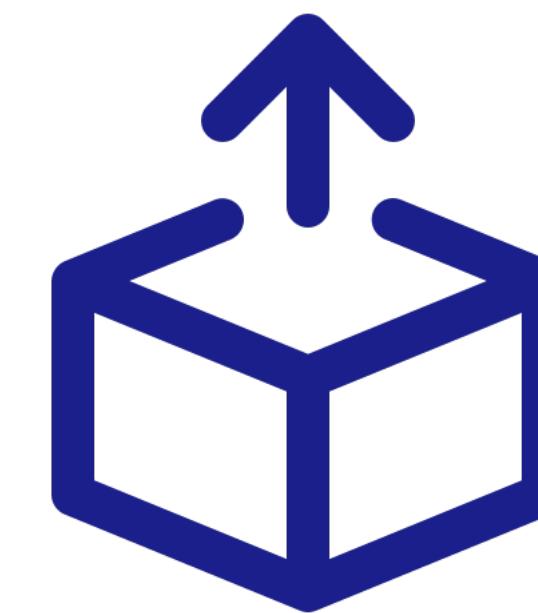
Specification Document

API

TCK

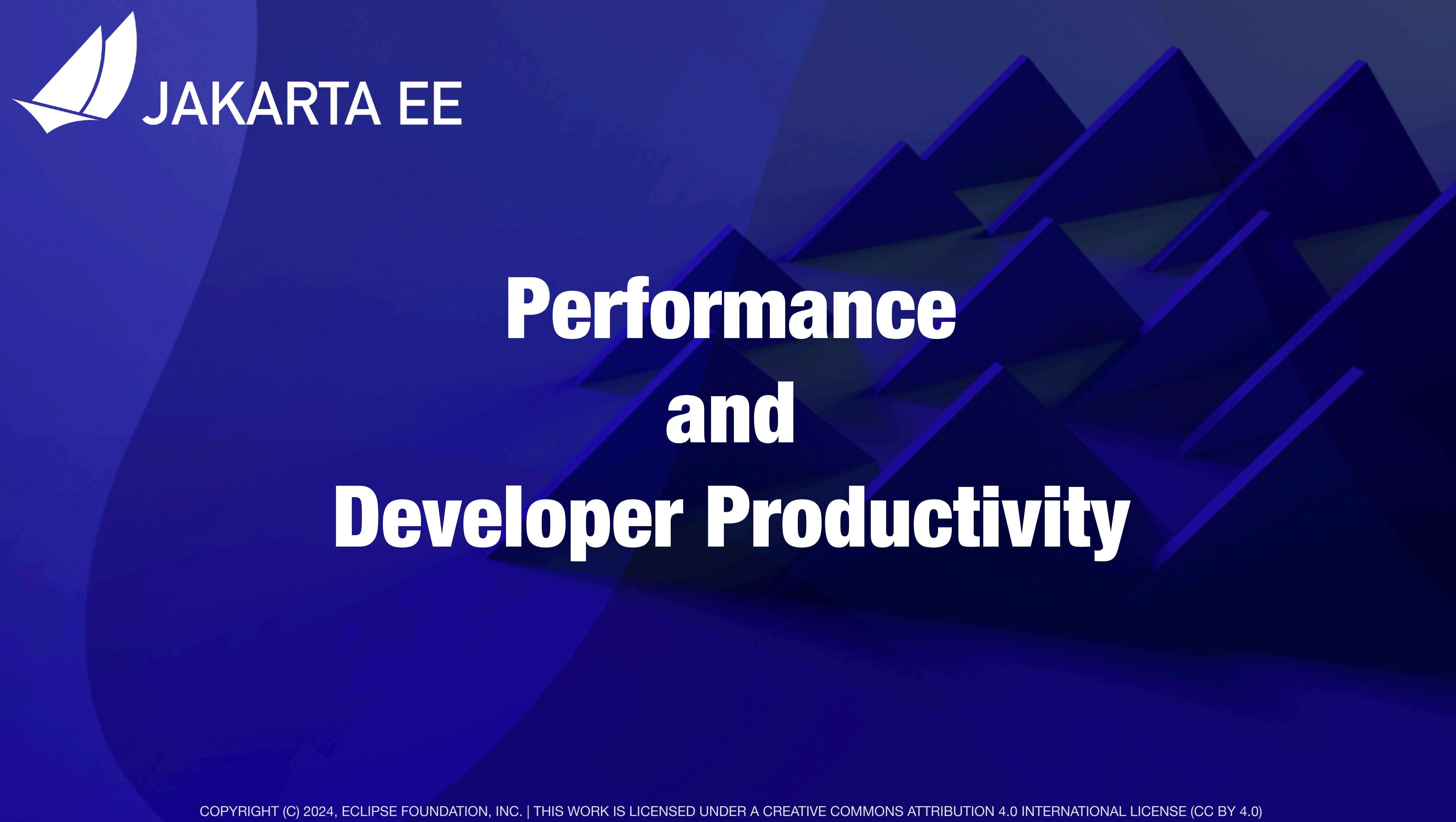
Compatible Implementation(s)

Compatible Implementation(s)



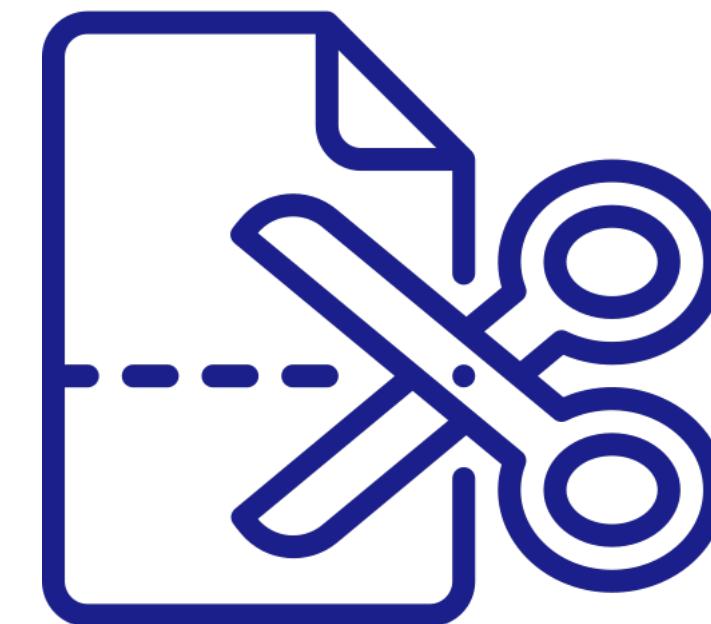
Jakarta EE 11

H1, 2024



JAKARTA EE

Performance and Developer Productivity



Cross-Cutting Concerns



Manage Beans 2.0



**Removed
Replaced by CDI**



SecurityManager Removed

JEP 411: Deprecate the
Security Manager for Removal



Optional Features

Jakarta EE Platform

Jakarta EE Web Profile

Jakarta EE Core Profile

Jakarta SOAP with Attachments 4.0

Jakarta XML Web Service 4.0

Jakarta XML Binding 4.0

Jakarta EE 11 Platform



Updated

Not Updated

New

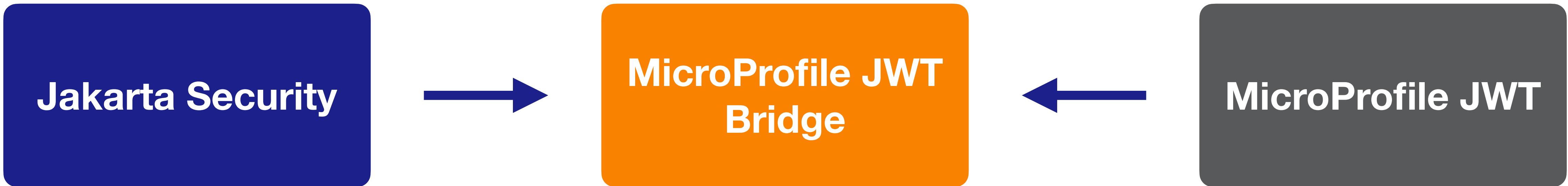


Remove SecurityManager references

Clarifications

- **Authorisation APIs**
- **Interceptors for Authorisation**
- **Abstraction for the permission store**

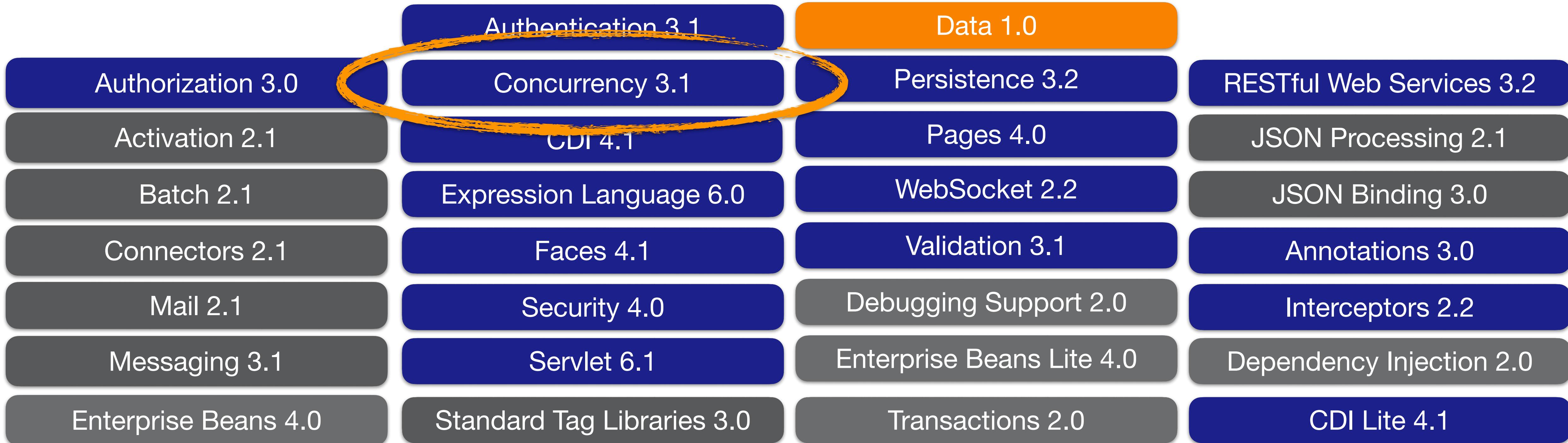
JWT Bridge



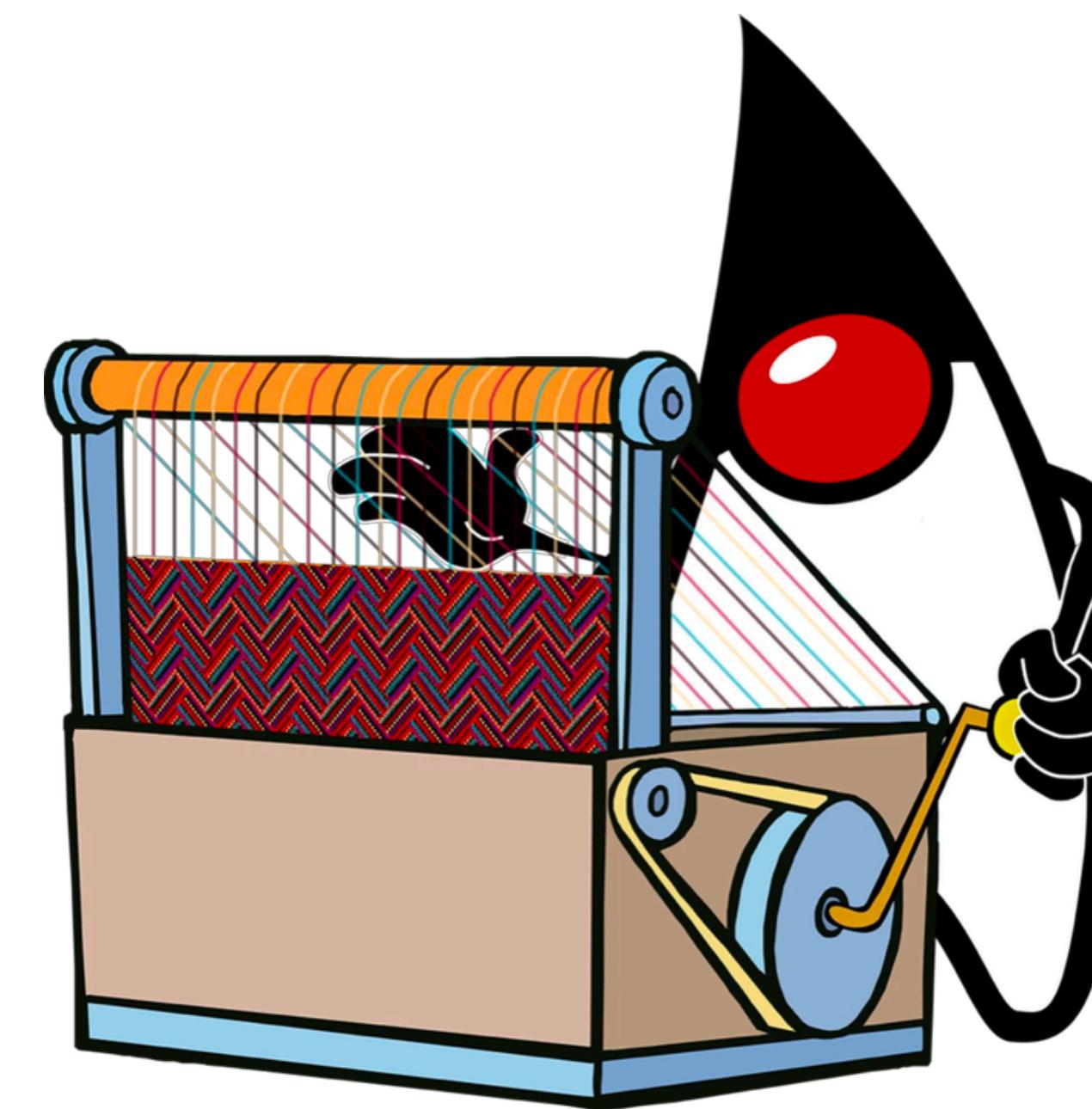
Jakarta Security

<https://jakarta.ee/specifications/authentication/3.1/>
<https://jakarta.ee/specifications/authorization/3.0/>
<https://jakarta.ee/specifications/security/4.0/>

Jakarta EE 11 Platform



Updated
Not Updated
New



Virtual Threads



ManagedExecutorService
ManagedScheduledExecutorService
ContextService
ManagedThreadFactory



Jakarta EE 11
API source level: Java SE 17
API binary level: Java SE 17
TCK run with: Java SE 17+21

?

```
@ManagedExecutorDefinition(  
    name = "java:app/concurrent/myExecutor",  
    maxAsync = 3,  
    virtual = true  
)
```

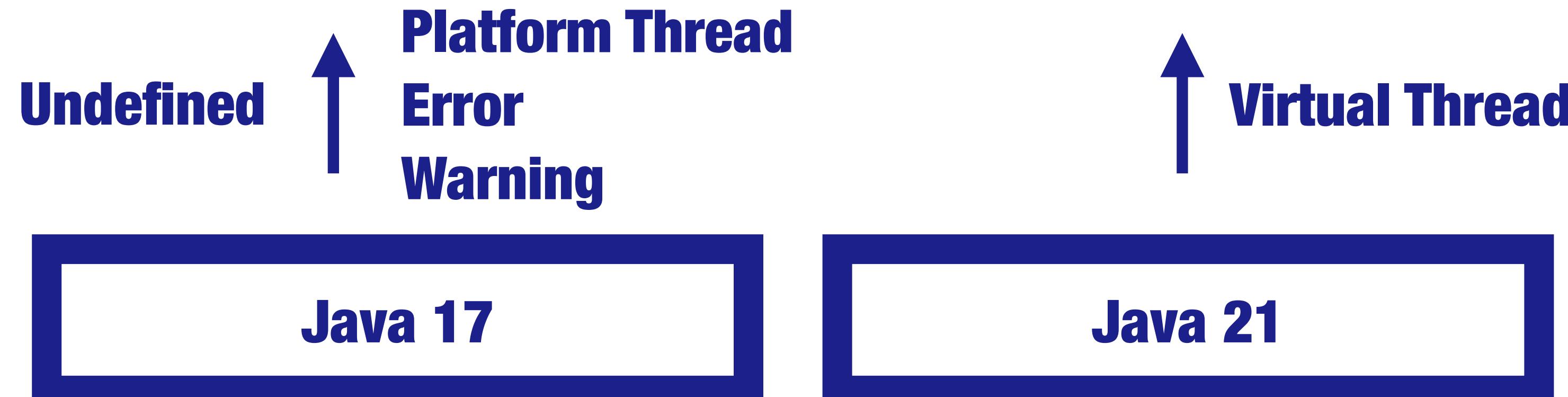


Under Development

Java SE Runtime Aware Support for Virtual Threads

`virtual = "true"`

Concurrency API

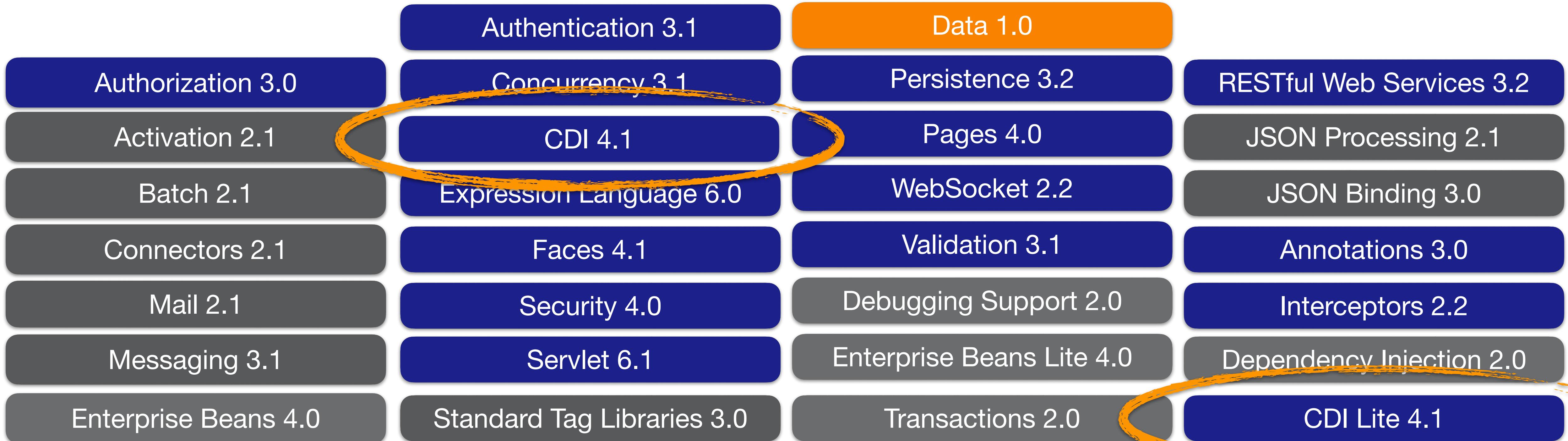




Jakarta Concurrency 3.1

<https://jakarta.ee/specifications/concurrency/3.1/>

Jakarta EE 11 Platform



Updated

Not Updated

New

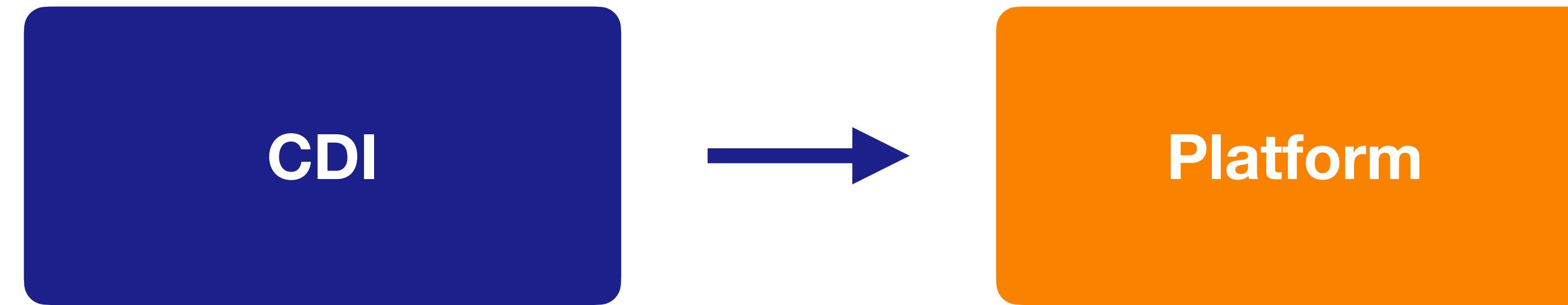


Support Records and Sealed Types

Deprecate Expression Language SPI

@Priority on producers

Move Integration Requirements

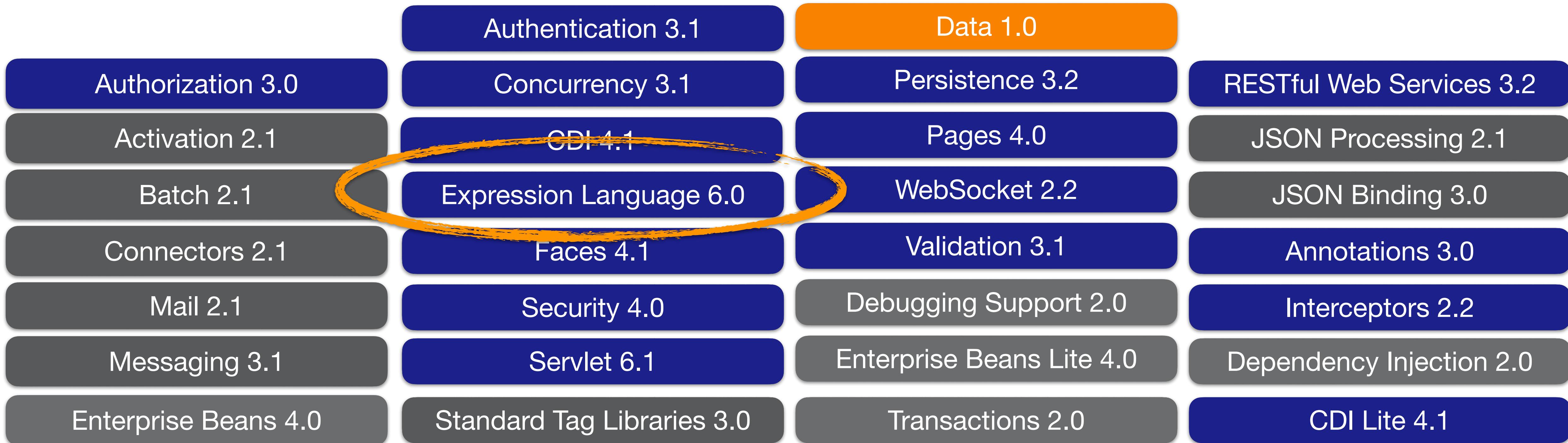




Jakarta Contexts and Dependency Injection 4.1

<https://jakarta.ee/specifications/cdi/4.1/>

Jakarta EE 11 Platform



Updated

Not Updated

New



Deprecations

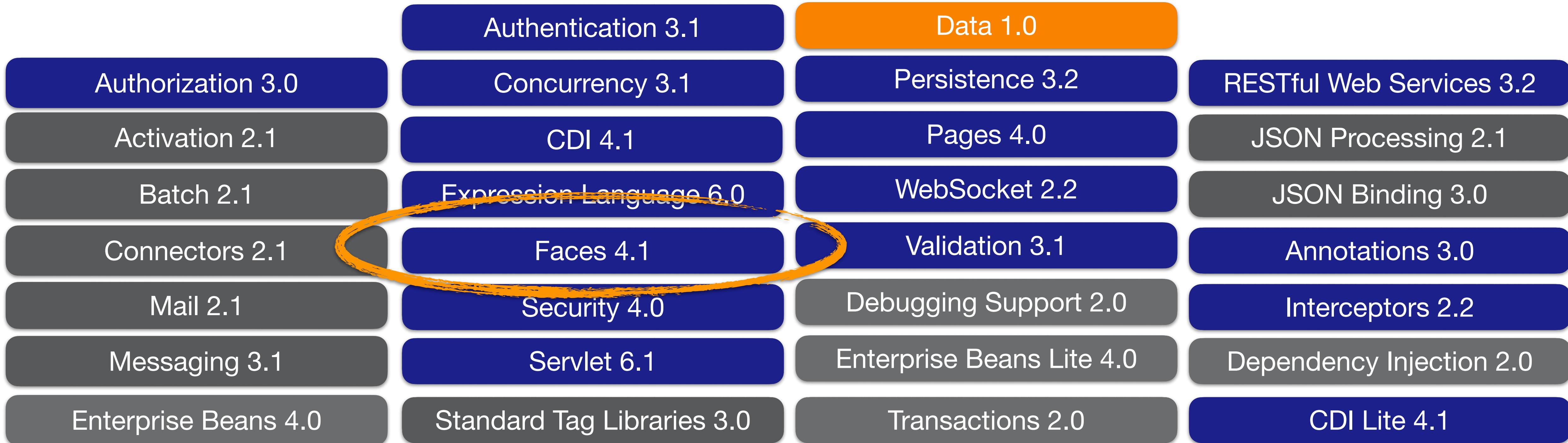
JavaBeans API **dependency Optional**
Support for Optional **via** OptionalELResolver
Add Support for Java Records



Jakarta Expression Language 6.0

<https://jakarta.ee/specifications/expression-language/6.0/>

Jakarta EE 11 Platform



Updated

Not Updated

New

Remove SecurityManager references

Remove class scanning and rely on CDI only

Remove unused PreDestroyCustomScopeEvent

and PostConstructCustomScopeEvent

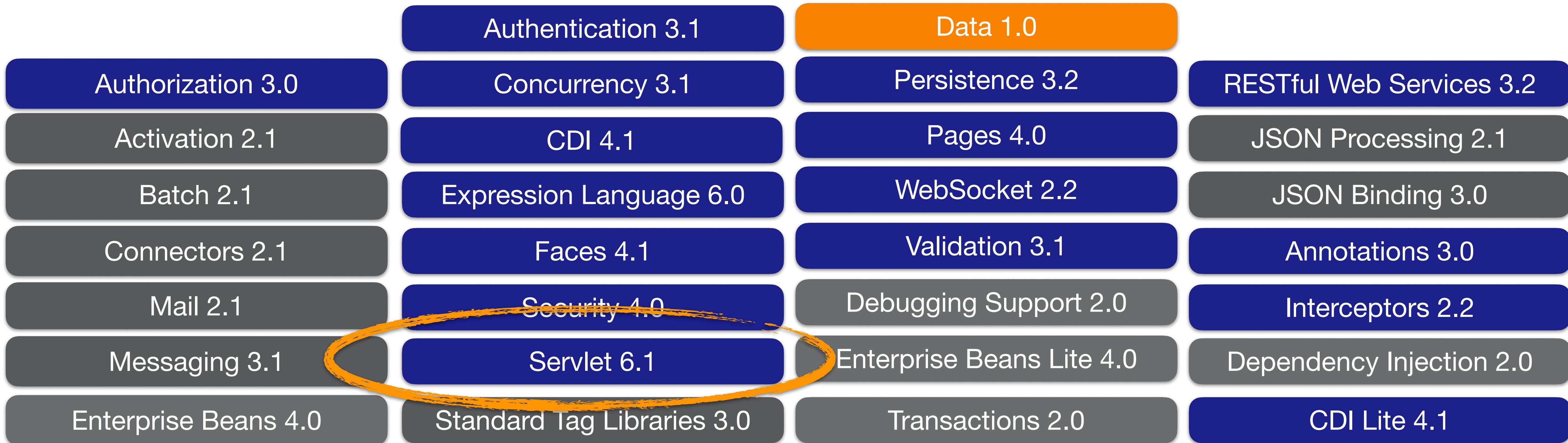
Remove unused composite:extension



Jakarta Faces 4.1

<https://jakarta.ee/specifications/faces/4.1/>

Jakarta EE 11 Platform



Updated
Not Updated
New



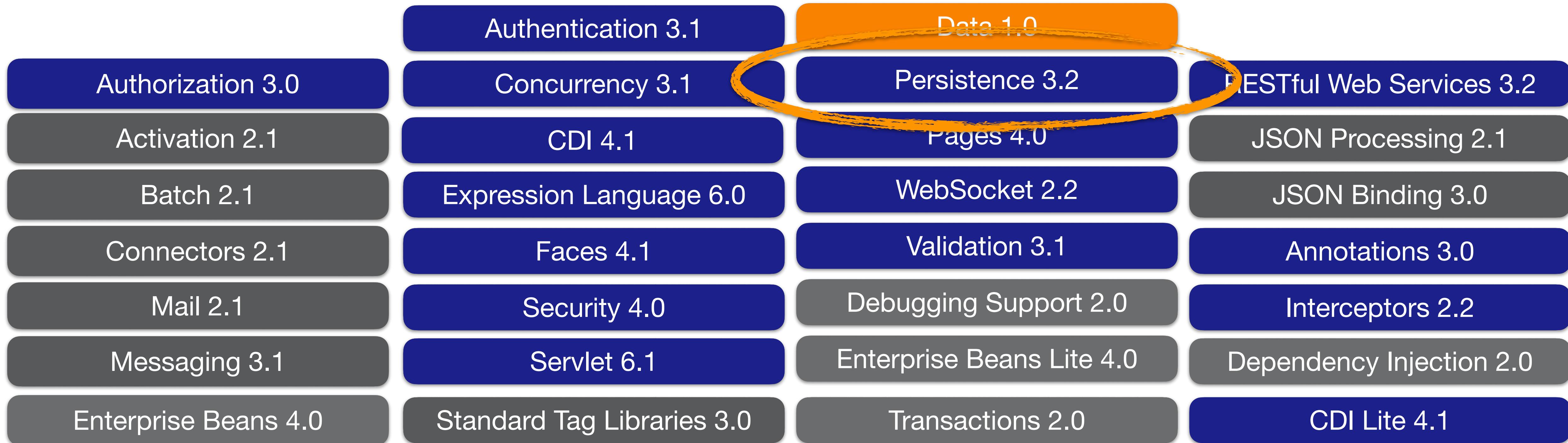
Remove SecurityManager references
Control status code and response body sending a redirect
Convenience attributes, constants, and methods
Clarifications



Jakarta Servlet 6.1

<https://jakarta.ee/specifications/servlet/6.1/>

Jakarta EE 11 Platform



Updated
Not Updated
New



Deprecate

Calendar, Date, Time, Timestamp, Temporal,
MapKeyTemporal, TemporalType

Replace with `java.time API`

Lots of New Convenience methods for Criteria Language

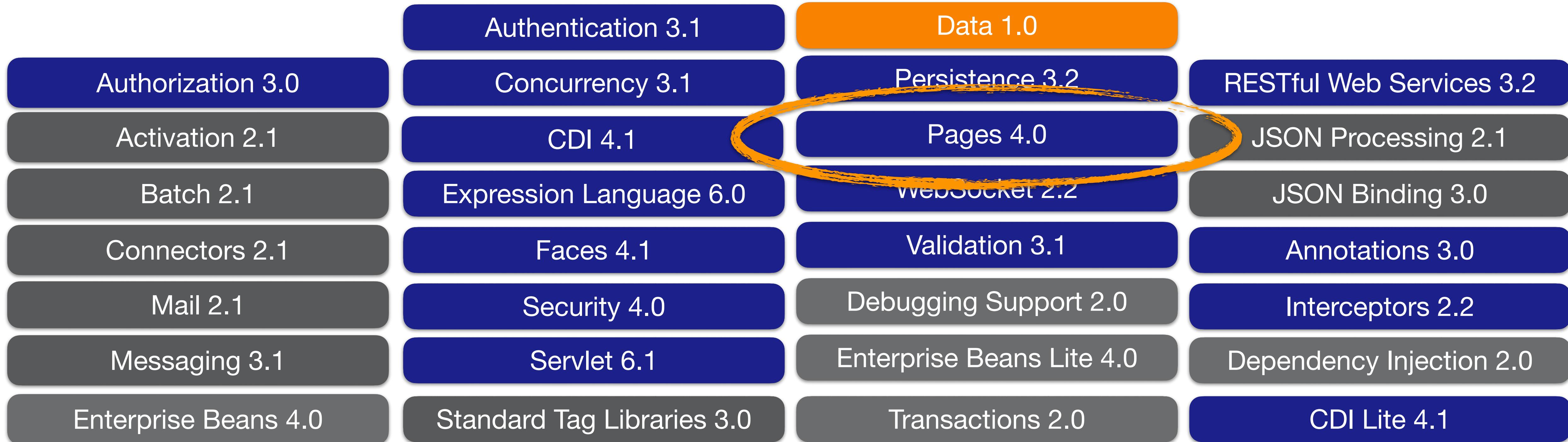


JAKARTA EE

Jakarta Persistence 3.2

<https://jakarta.ee/specifications/persistence/3.2/>

Jakarta EE 11 Platform



Updated

Not Updated

New



Align with Jakarta Servlet and Jakarta Expression Language

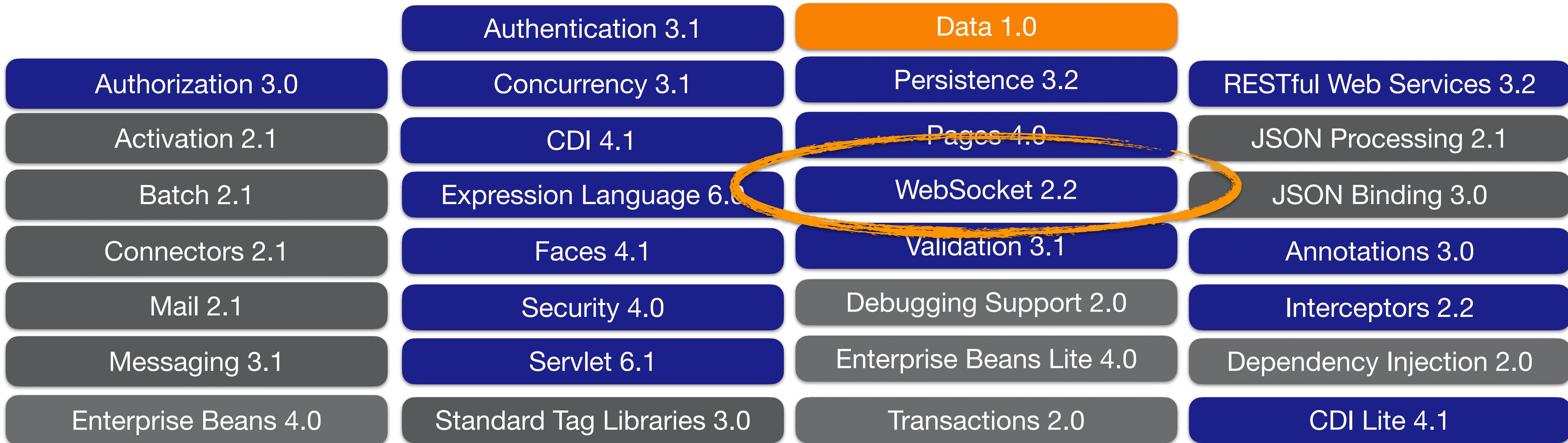
Remove all deprecated code from Jakarta Servlet 3.1



Jakarta Pages 4.0

<https://jakarta.ee/specifications/pages/4.0/>

Jakarta EE 11 Platform



Updated

Not Updated

New



Remove SecurityManager references

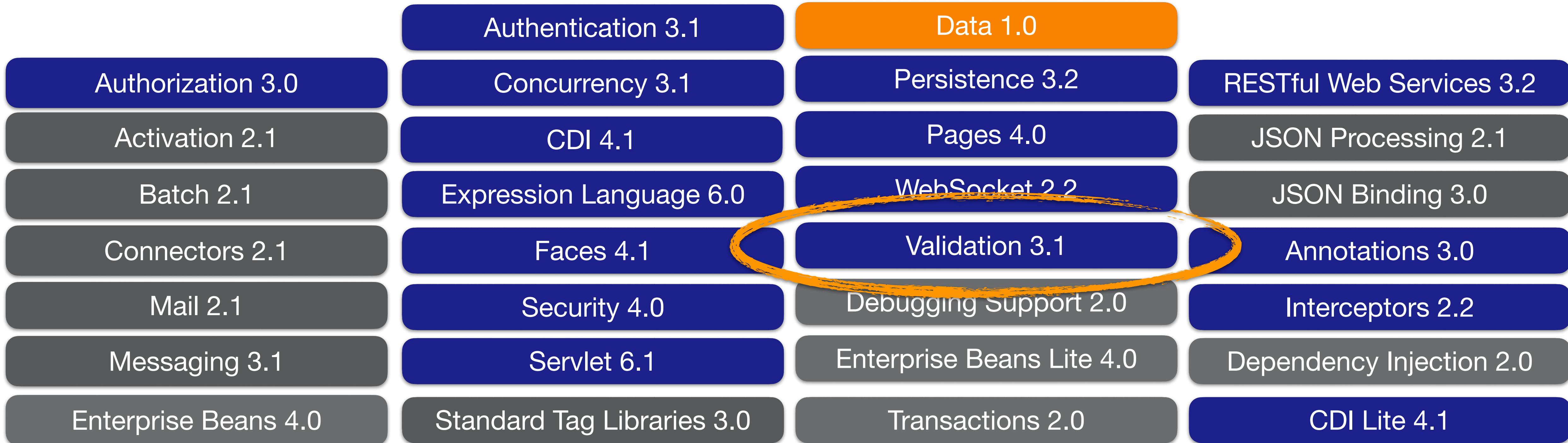
Minor updates and clarifications



Jakarta WebSocket 2.2

<https://jakarta.ee/specifications/websocket/2.2/>

Jakarta EE 11 Platform



Updated

Not Updated

New



Support Java Records



Jakarta Validation 3.1

<https://jakarta.ee/specifications/bean-validation/3.1/>

Jakarta EE 11 Platform



Updated

Not Updated

New



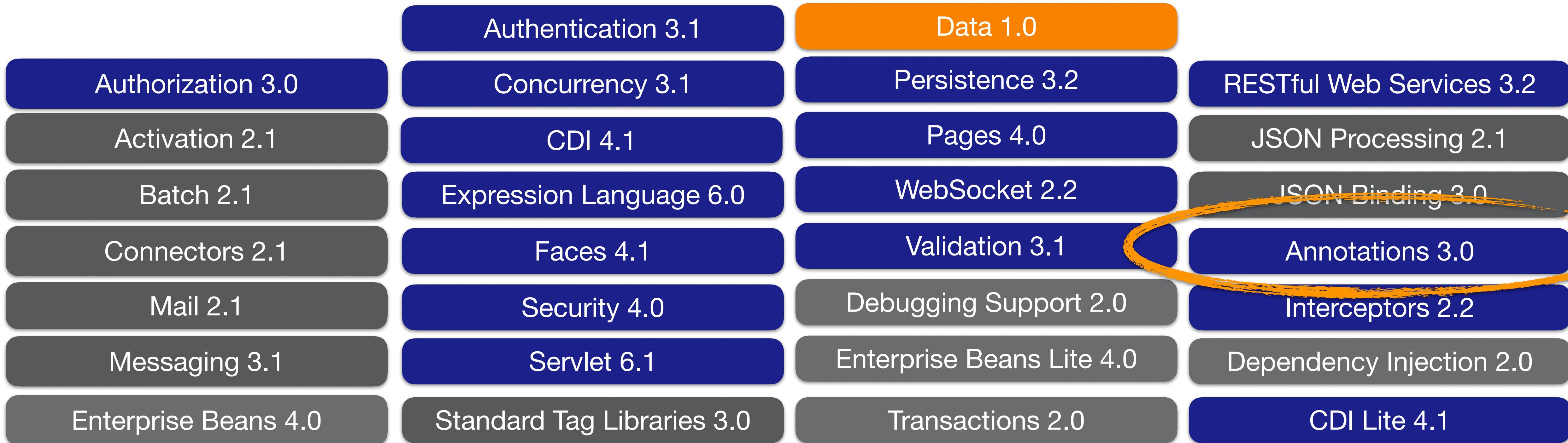
Deprecate support for @Context injection
Deprecate ContextResolver
Make Jakarta XML Binding OPTIONAL



Jakarta RESTful Web Services 3.2 4.0?

<https://jakarta.ee/specifications/restful-ws/3.2/>

Jakarta EE 11 Platform



Updated

Not Updated

New



Managed Beans 2.0

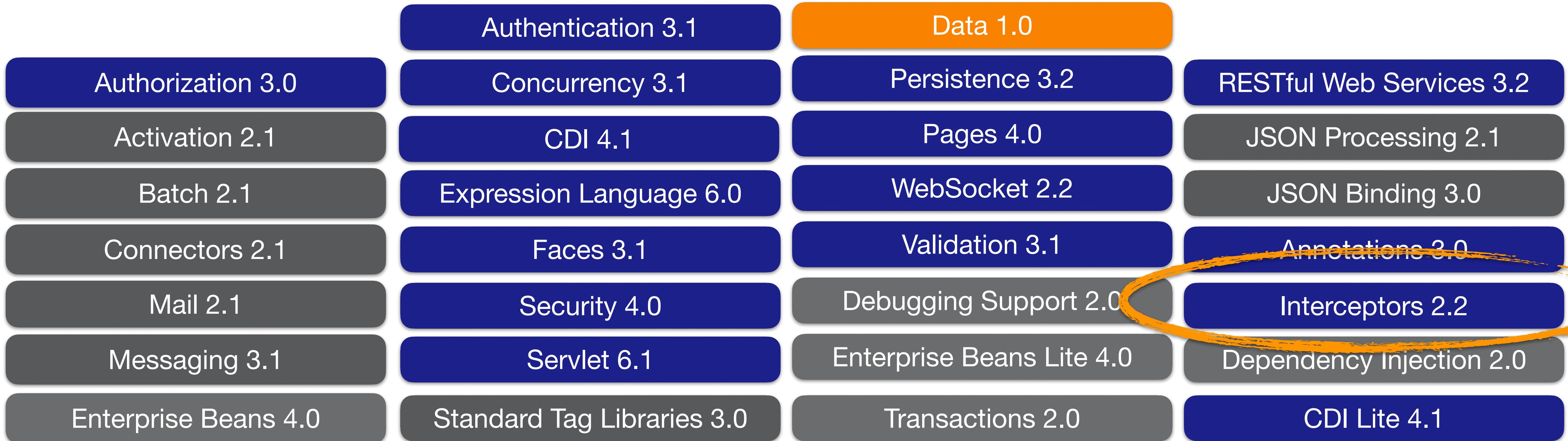
Remove the ManagedBeans Annotation



Jakarta Annotations 3.0

<https://jakarta.ee/specifications/annotations/3.0/>

Jakarta EE 11 Platform



Updated

Not Updated

New



Add Standard Access to Interceptor Bindings



JAKARTA EE

public interface InvocationContext

...

```
default Set<Annotation> getInterceptorBindings() {  
    // default implementation  
}
```

```
default <T extends Annotation> T getInterceptorBinding(Class<T> annotationType) {  
    // default implementation  
}
```

```
default <T extends Annotation> Set<T> getInterceptorBindings(Class<T> annotationType) {  
    // default implementation  
}
```

...



Jakarta Interceptors 2.2

<https://jakarta.ee/specifications/interceptors/2.2/>

Jakarta EE 11 Platform



Updated

Not Updated

New

NEW in Jakarta EE 11

Jakarta Data 1.0

Standardizes the repository pattern for data access

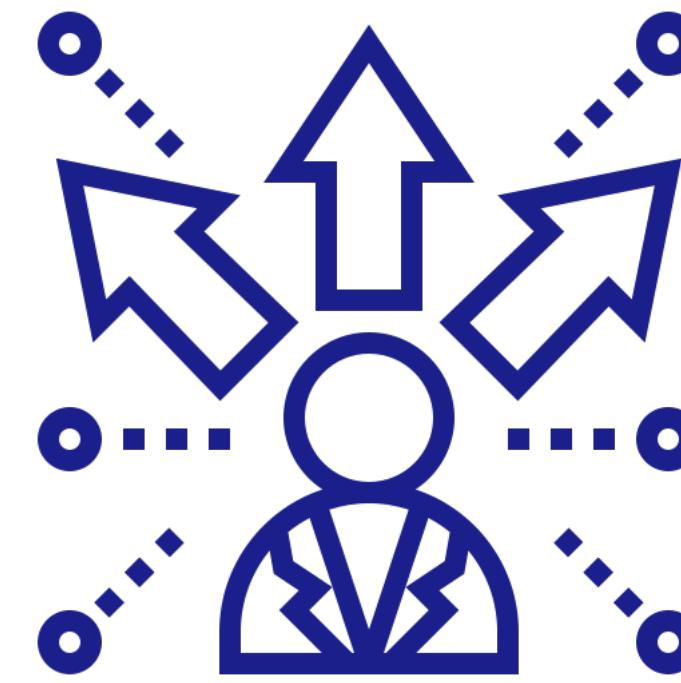
<https://jakarta.ee/specifications/data/1.0/>



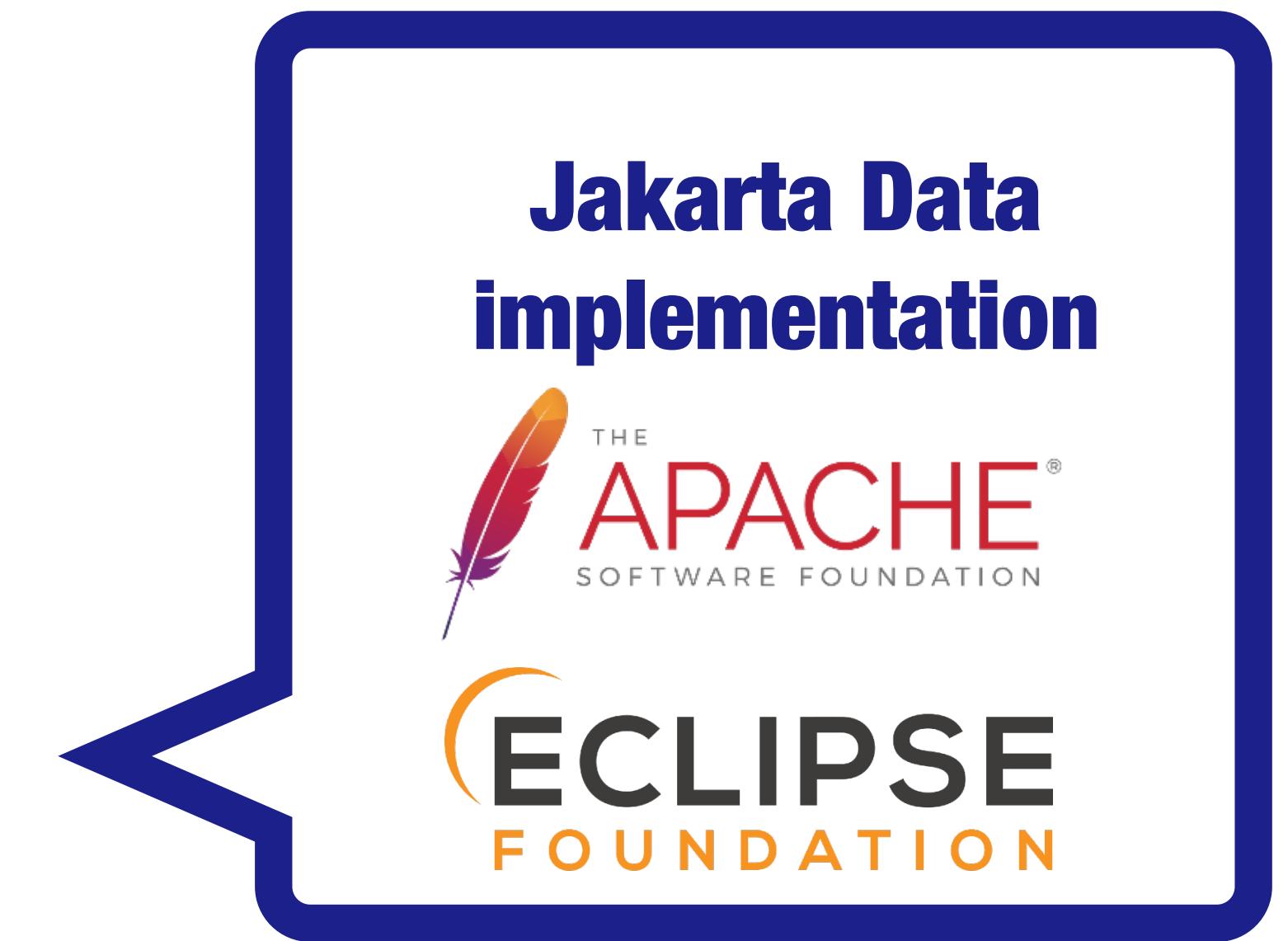
```
@Repository  
public interface GreetingRepository extends  
CrudRepository<Greeting, Long> {  
  
    Optional<Greeting> findByName(String name);  
  
}
```



Demo



An Opportunity



**Jakarta Data
implementation**





Prospective Specifications



Prospective Specification

Jakarta MVC

Standardizes the action-based model-view-controller pattern

<https://jakarta.ee/specifications/mvc/>

```
@Controller  
@View("hello.jsp")  
public void hello()  
    model.put("Hello Duke!");  
}
```



Jakarta NoSQL

Standardizes integration with NoSQL databases

<https://jakarta.ee/specifications/nosql/>





Jakarta RPC

Standardizes gRPC within Jakarta EE

<https://jakarta.ee/specifications/rpc/>





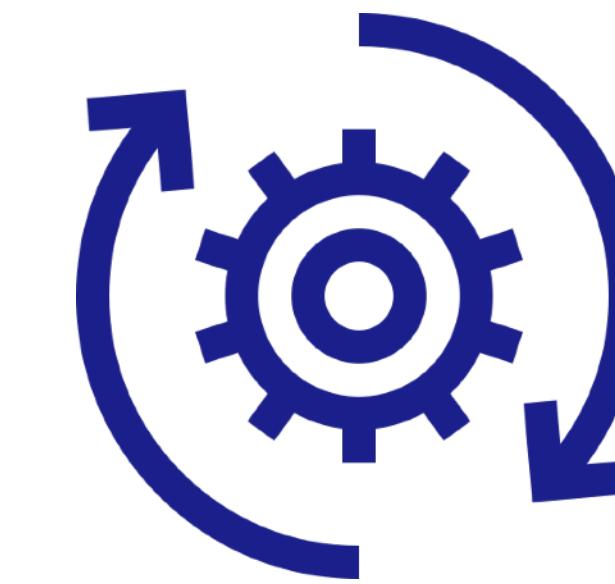
JAKARTA EE

Summary





javax.* -> jakarta.*



Transformation



Eclipse Transformer



Apache Tomcat Migration Tool

NEW RELEASE

Jakarta EE 10

Community-Driven

Modernized

Simplified

Lightweight



JAKARTA® EE

Jakarta EE 10 Platform



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Enterprise Beans 4.0	Servlet 6.0	Managed Beans 2.0	CDI Lite 4.0
	Standard Tag Libraries 3.0	Transactions 2.0	

Updated

Not Updated

New



Under Development

Jakarta EE 11 Platform

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Enterprise Beans 4.0	Servlet 6.1	Enterprise Beans Lite 4.0	Dependency Injection 2.0
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Updated

Not Updated

New



AKARTA EE



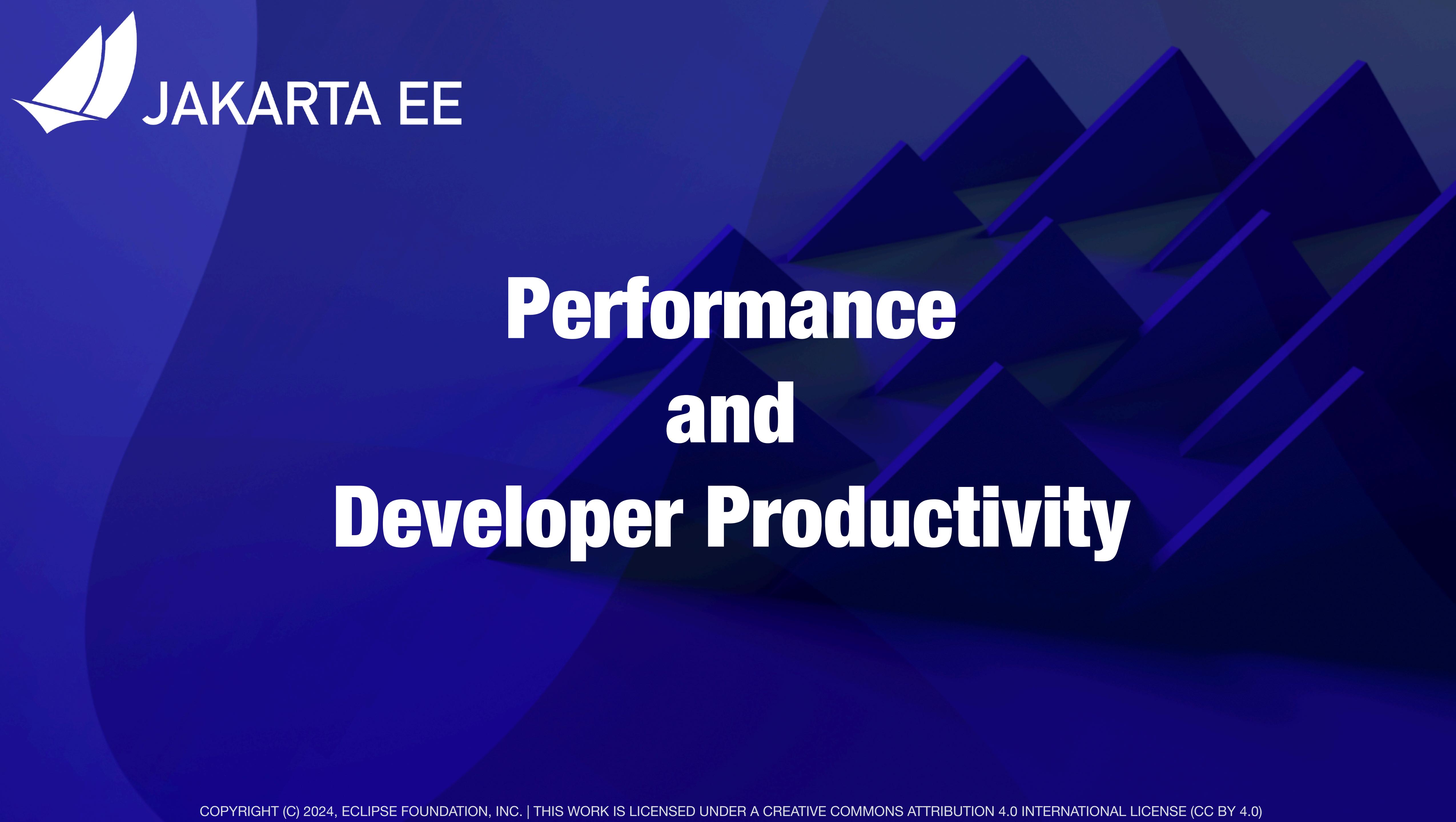
Jakarta EE 11
H1, 2024



javax.* -> jakarta.*

Jakarta EE Core Profile

Java 21
Jakarta Data
CDI Centric
Removals and Deprecations



JAKARTA EE

Performance and Developer Productivity



Jakarta EE 11
API source level: Java SE 17
API binary level: Java SE 17
TCK run with: Java SE 17+21



App Developers (YOU) can use Java SE 21 features if you like !!

Jakarta EE

<https://jakarta.ee>

Specifications

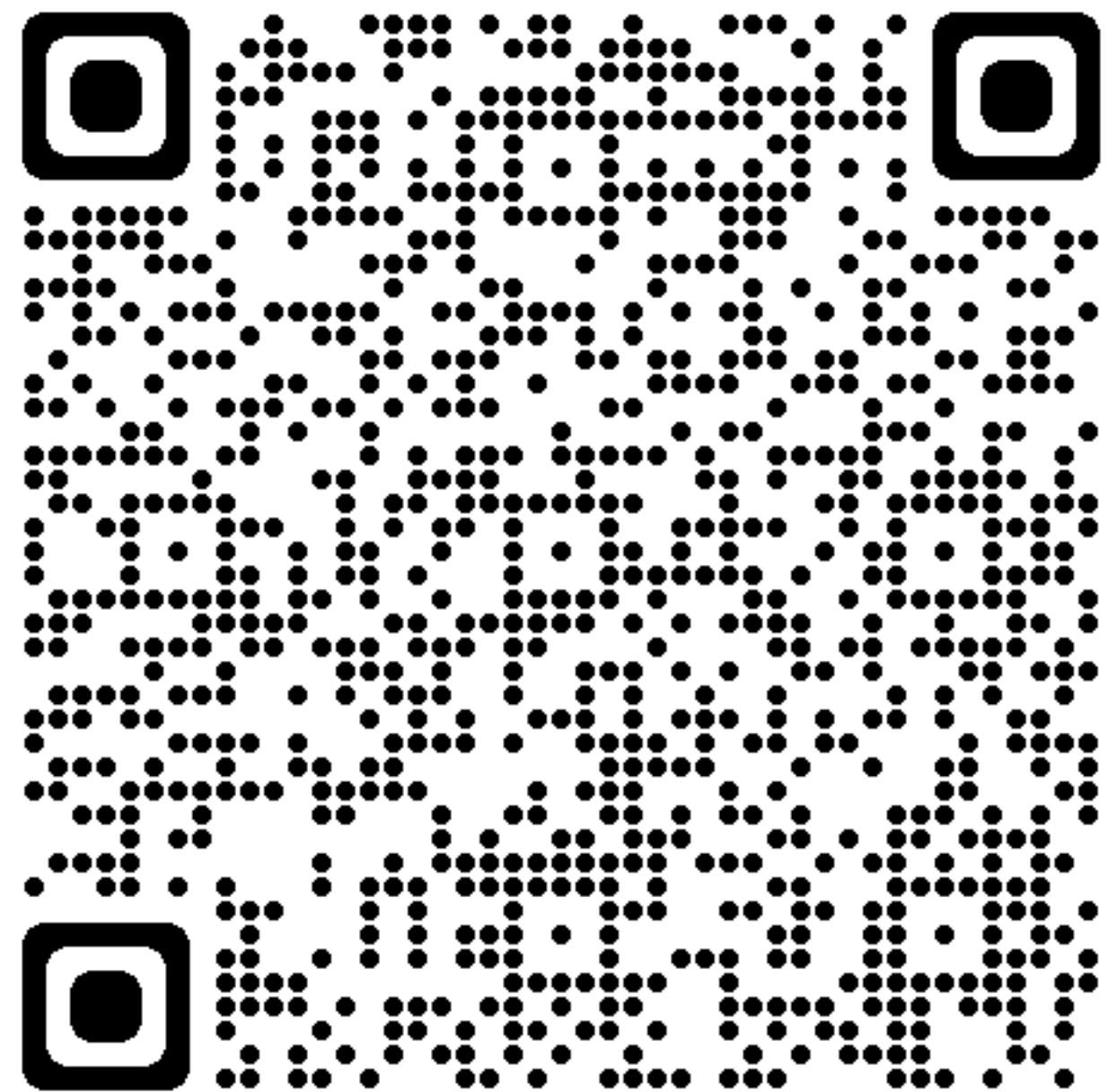
<https://jakarta.ee/specifications/>

Ivar's Hashtag Jakarta EE

<https://www.agilejava.eu/category/jakarta-ee/>

Demo Code

<https://github.com/ivargrimstad/dukes-data>



Jakarta EE Overview

Course available on **LinkedIn Learning**