



JAKARTA EE

Jakarta EE 10 Feature by Feature



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



Java™
Champions



NEW RELEASE

Jakarta EE 10

Community-Driven

Modernized

Simplified

Lightweight

Coming August, 2022!



Final Specification

Specification
Document

API

TCK

Compatible
Implementation(s)



Jakarta EE 10 Platform



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



Jakarta EE 10 Web Profile

Authentication 3.0	Persistence 3.1	
Concurrency 3.0	Server Pages 3.1	RESTful Web Services 3.1
CDI 4.0	WebSocket 2.1	JSON Processing 2.1
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Not Updated

New

Jakarta EE 10 Core Profile



RESTful Web Services 3.1

JSON Processing 2.1

JSON Binding 3.0

Annotations 2.1

Interceptors 2.1

Dependency Injection 2.0

CDI Lite 4.0

Updated

Not Updated

New



Jakarta EE 10

API source level: Java SE 11

API binary level: Java SE 11

TCK run with: Java SE 11+



App Developers (YOU) can use Java SE 17 features if you like!!



Jakarta EE 10 Platform



Updated

Not Updated

New

Jakarta Security 3.0

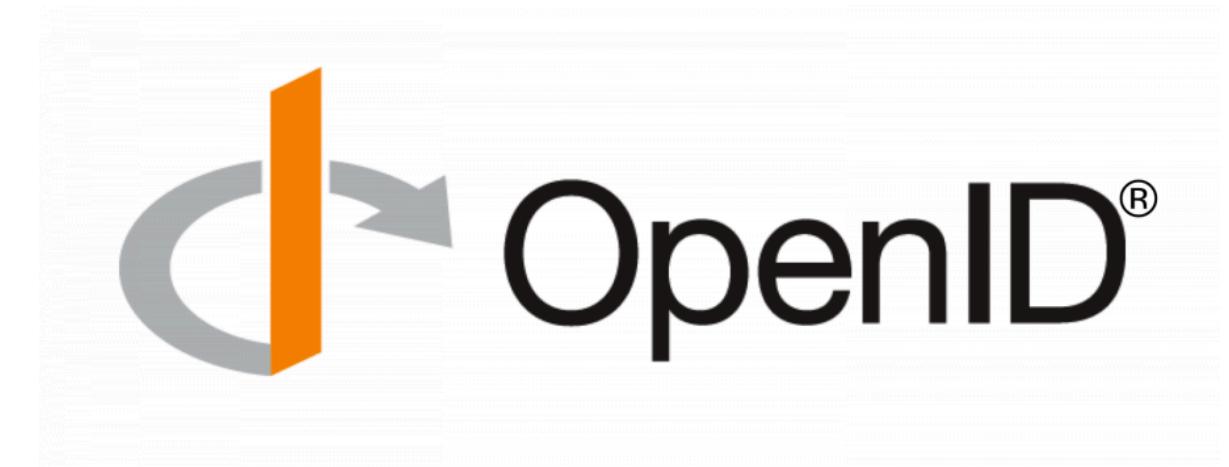
adding features and evolving the API

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



New Authentication Mechanism

- OpenID Connect

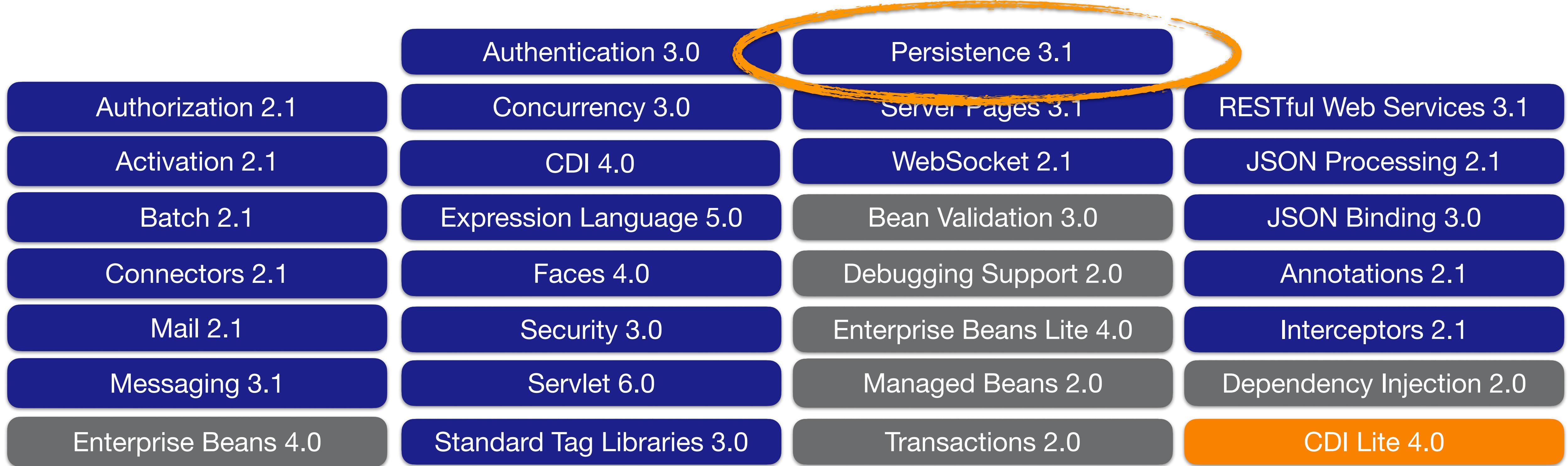


Other Updates

- Updates to Lower Level SPIs
 - Jakarta Authorization
 - Jakarta Authentication
- Foundation for Future Work

OpenID Connect Authentication Mechanism

```
@OpenIdAuthenticationMechanismDefinition(  
    providerURI = "http://oidc-provider",  
    clientId = "client",  
    clientSecret = "secret",  
    redirectURI = "${baseUrl}/Callback",  
    redirectToOriginalResource = true  
)
```



Updated

Not Updated

New

Jakarta Persistence 3.1

adding features and evolving the API

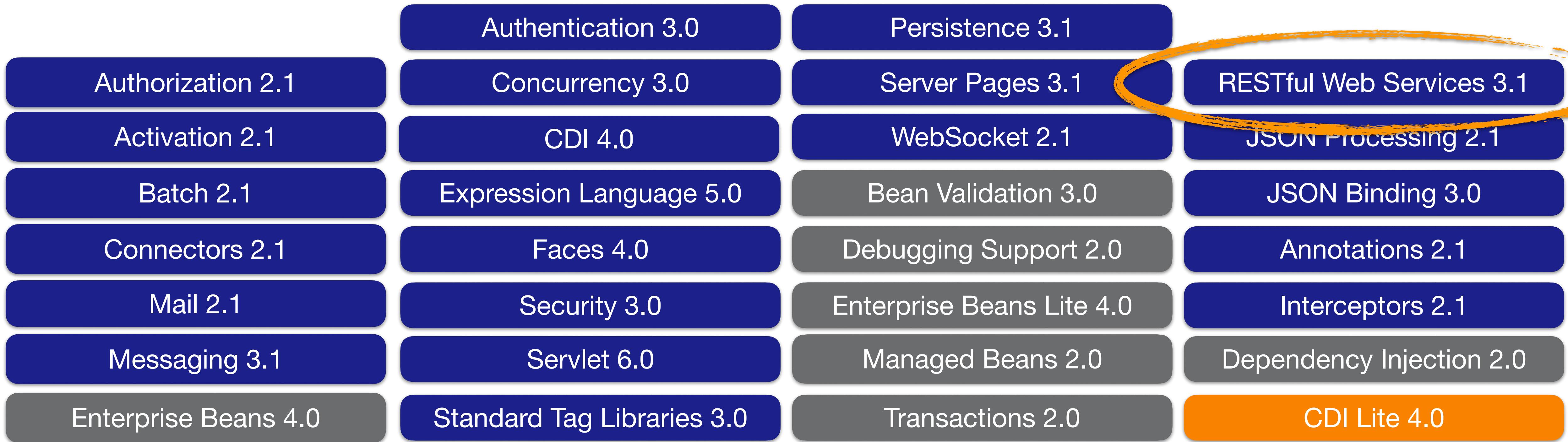
<https://jakarta.ee/specifications/persistence/>



UUID as Basic Java Type

```
@Entity  
public class Item {  
  
    @Id  
    @GeneratedValue(strategy=GenerationType.UUID)  
    private java.util.UUID id;  
    private String description;  
  
    ...  
}
```

Jakarta EE 10 Platform



Updated

Not Updated

New

Jakarta RESTful Web Services 3.1

updated API with requested features while maintaining compatibility

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



multipart/form-data Support

```
@GET  
@Produces(MediaType.MULTIPART_FORM_DATA)  
List<EntityPart> getFiles(...) {  
    List<EntityPart> parts = new ArrayList<>();  
    ...  
    for(File f: dir.listFiles()) {  
        parts.add(EntityPart.withFileName(f.getName)  
                    .content(new FileInputStream)  
                    .mediaType("application/pdf")  
                    .build());  
    }  
    return parts;  
}
```

Java SE Bootstrap API

```
public static void main(String[] args) {  
    Application app = new MyApplication();  
    SeBootstrap.start(app);  
}
```

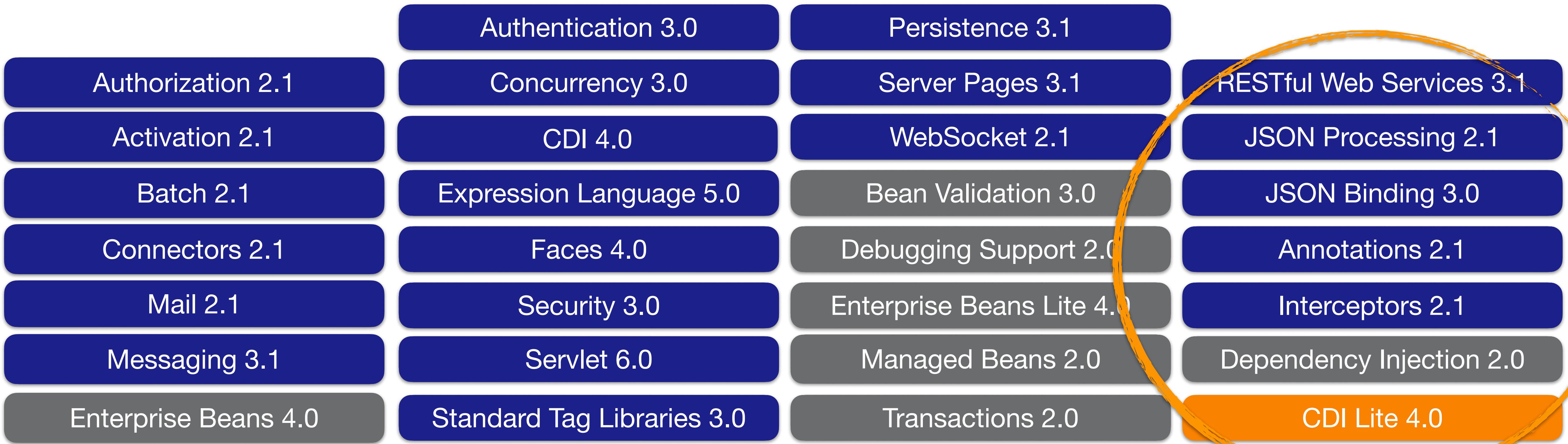


Jakarta RESTful Web Services 3.1

Java SE Bootstrap API



Jakarta EE 10 Platform



Updated

Not Updated

New



Jakarta EE Core Profile

Targeting smaller runtimes!



Jakarta EE 10 Core Profile



RESTful Web Services 3.1

JSON Processing 2.1

JSON Binding 3.0

Annotations 2.1

Interceptors 2.1

Dependency Injection 2.0

CDI Lite 4.0

Updated

Not Updated

New



Potentially Jakarta EE 10 Core Profile Compatible

CDI Lite 4.0

RESTful Web Services 3.1

JSON Processing 2.1

JSON Binding 3.0

Annotations 2.1

Interceptors 2.1

Dependency Injection 2.0

CDI Lite 4.0

Jakarta CDI 4.0 Lite

designed to work in more restricted environments

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



New Extensions API

“Dynamic” at build time

Empty beans.xml “all” -> “annotated”

Removal of Deprecated API parts

GraalVM™





Demo





Jakarta EE 8



Jakarta EE 9.1



Jakarta EE 10



Jakarta EE 8



Jakarta EE 9.1



Jakarta EE 10



javax.* -> jakarta.*

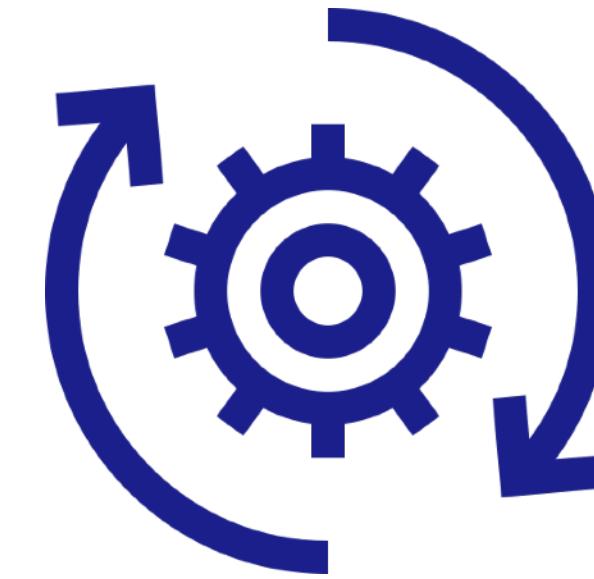




jetty://



javax.* → jakarta.*



Transformation

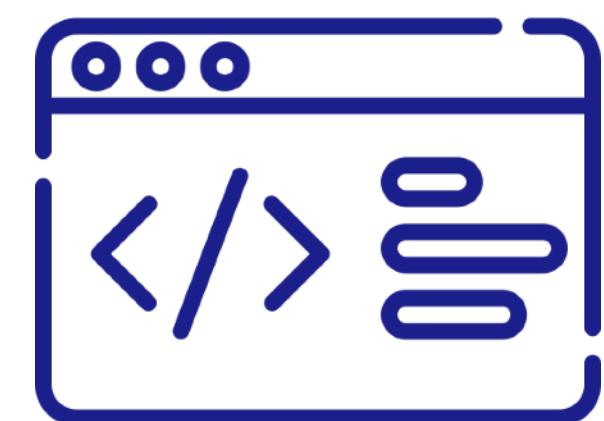




Eclipse Transformer

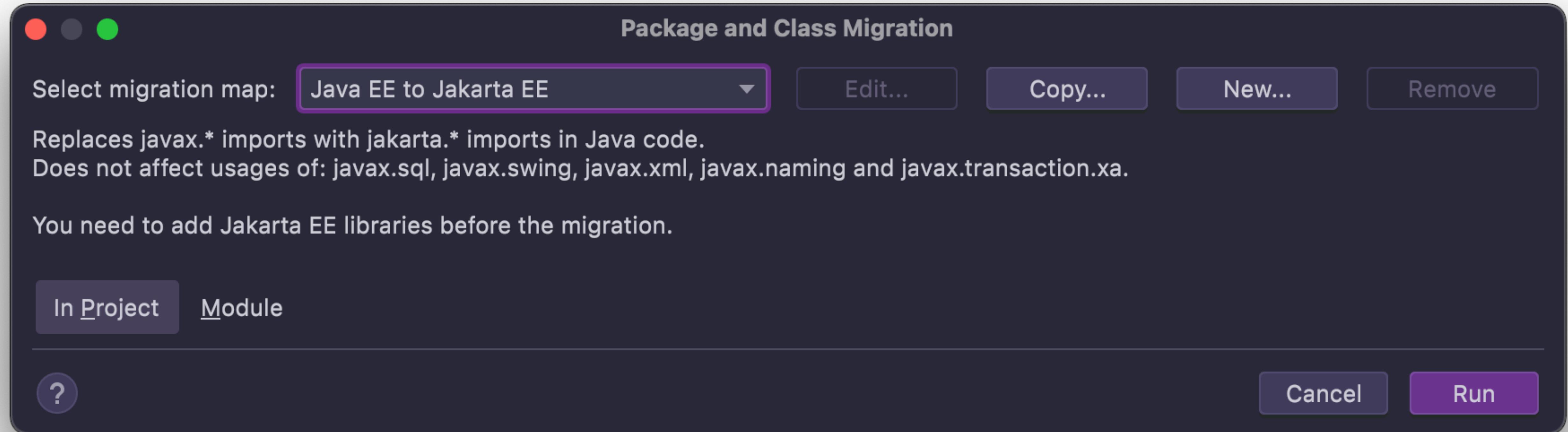


Apache Tomcat Migration Tool



IDE





- 1. Update Jakarta EE version in pom.xml**
- 2. Fix the imports**
- 3. XML Schema Namespaces**
- 4. Rename properties prefixed with javax**
- 5. Rename bootstrapping Files**
- 6. Verify data and dynamic content**

<https://github.com/ivargrimstad/jakartae-duke/>



Duke says: Hi there!

Jakarta CDI

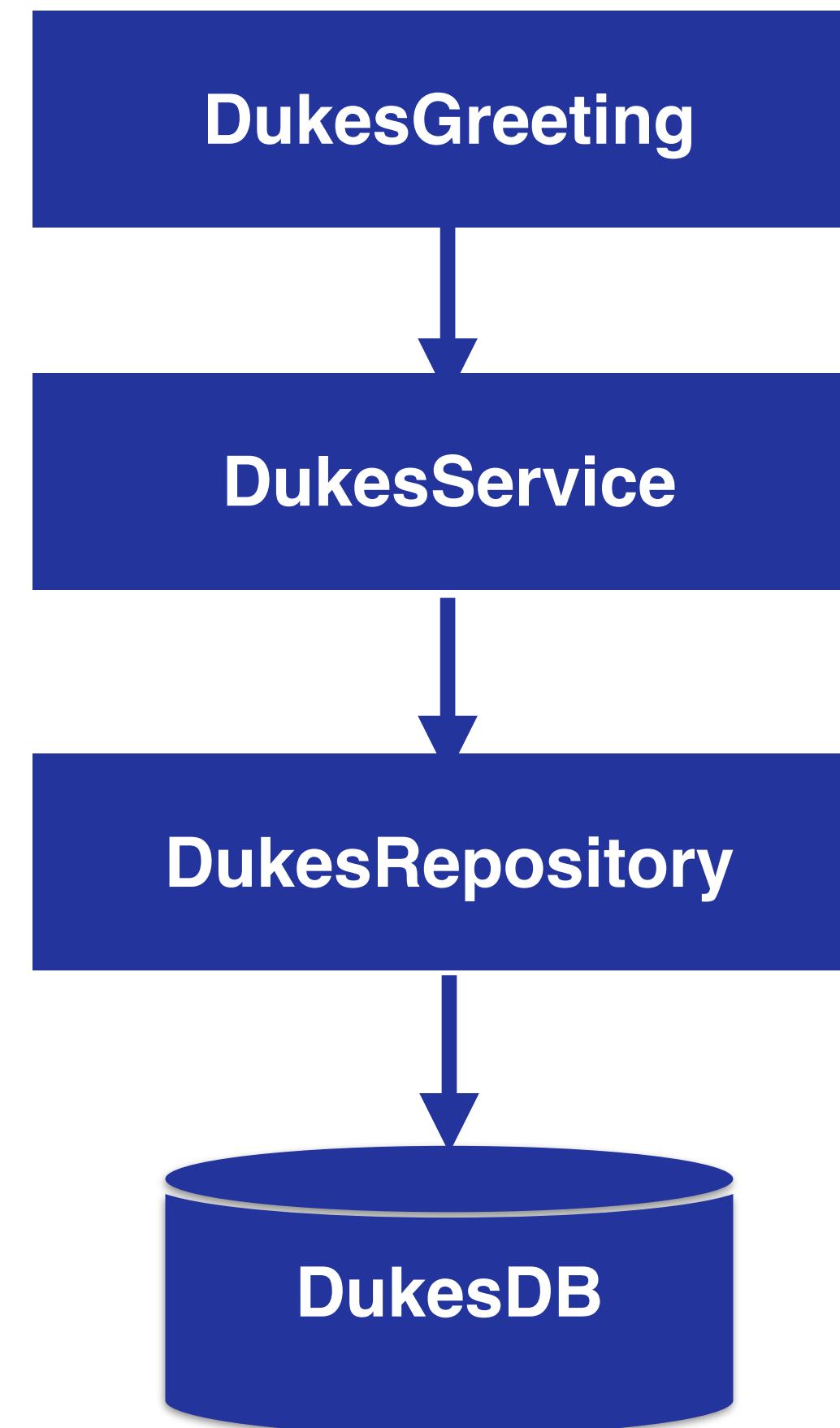


```
{
```

```
    email: "duke@dukes.java",  
    message: "Howdy Jakarta EE 10!"
```

```
}
```

Jakarta JSON Binding



Jakarta REST

Jakarta Enterprise Beans

Jakarta Persistence



Jakarta EE 8

Jakarta EE 9.1

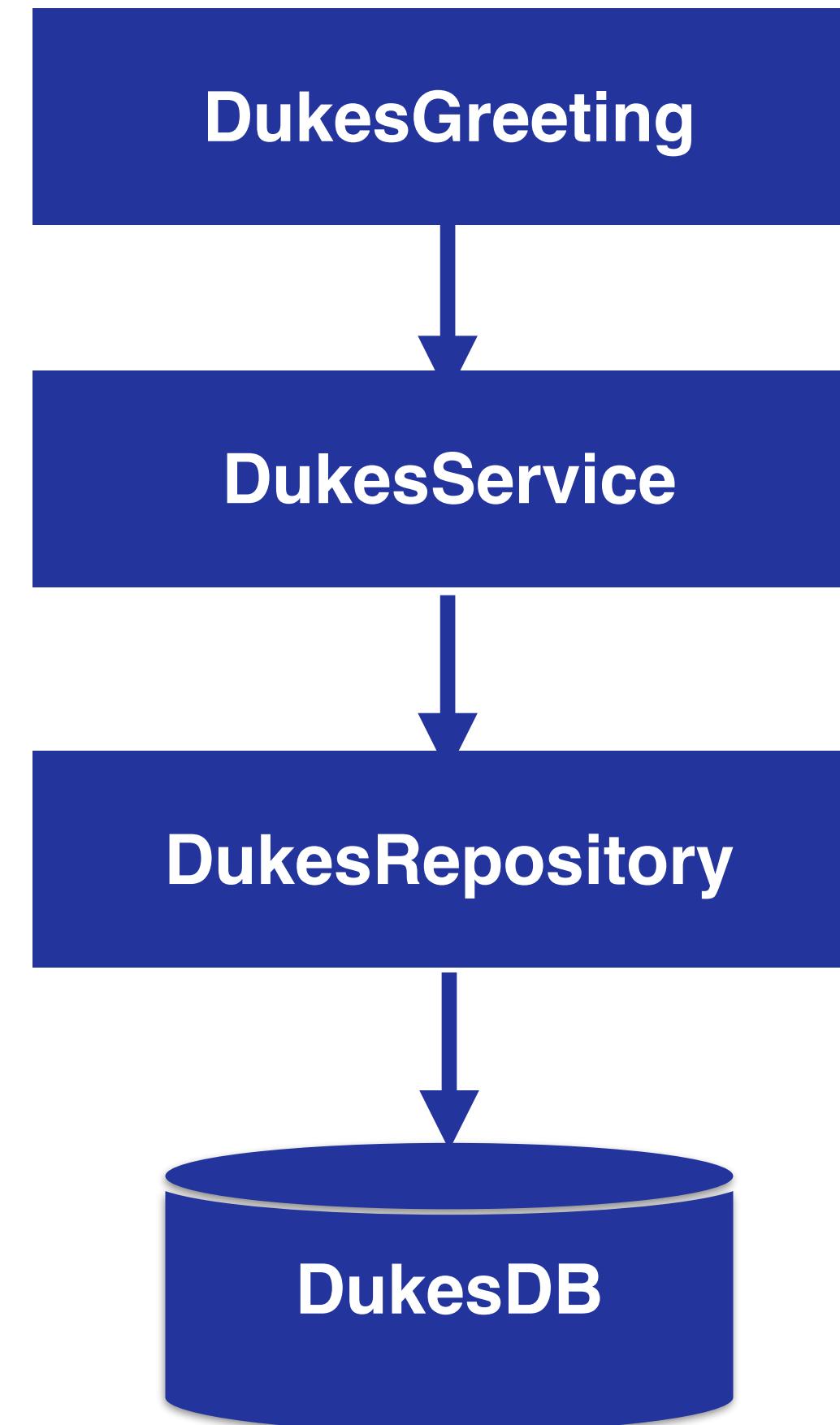
Jakarta EE 10
Jakarta EE Core Profile

Duke says: Hi there!

Jakarta CDI



```
{  
    email: "duke@dukes.java",  
    message: "Howdy Jakarta EE 10!" }  
}
```



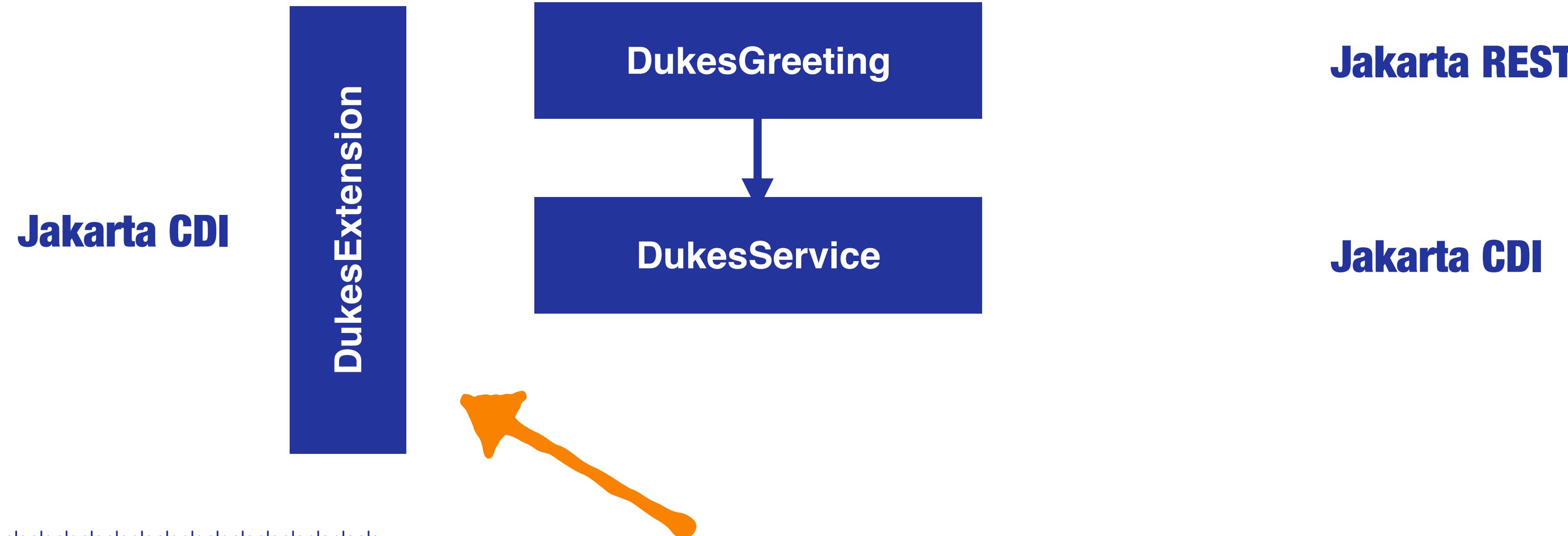
Jakarta REST

Jakarta Enterprise Beans

Jakarta Persistence

Jakarta JSON Binding

```
{  
    email: "duke@dukes.java",  
    message: "Howdy Jakarta EE 10!" } Jakarta JSON Binding
```



```
*****  
Duke says: Hi there!  
*****
```



Sushi Anyone?



Beyond JAKARTA EE 10





Jakarta EE 11

Starting NOW!





Jakarta EE 11

API source level: Java SE 17

API binary level: Java SE 17

TCK run with: Java SE 17+



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



Jakarta Config

Standarizes portable configuration from environment-aware sources

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



```
@ConfigProperty
private String place;
```

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 Data

Standardizes the repository pattern for data access

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



What do you THINK?

Jakarta Functions

Standardized Cloud Functions

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

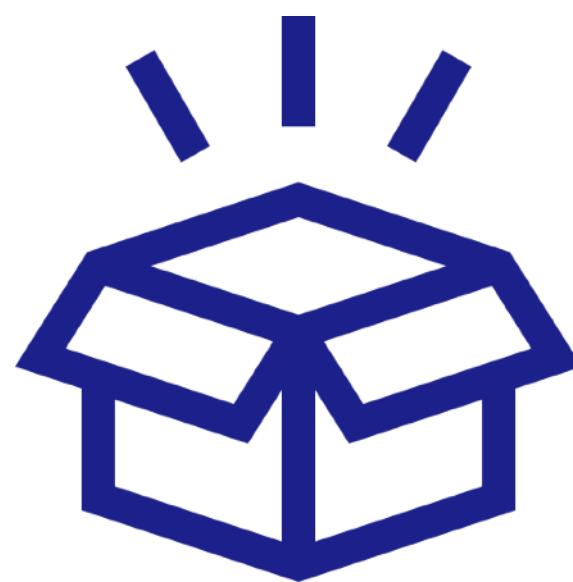




JAKARTA EE

Summary





javax.* -> jakarta.*



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Jakarta EE

<https://jakarta.ee>

Jakartablogs

<https://jakartablogs.ee/>

Ivar's Hashtag Jakarta EE

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

Demo Code

<https://github.com/ivargrimstad/jakartae-duke>



JBCNConf 2022



Jakarta EE: Community Power and Progress

By Tanja Obradovic

Tuesday July 19, 2022 / 02:30 PM - 03:20 PM

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THANK YOU!

