
JavaOne™

JavaOne℠

50 new features of Java EE 7 in 50 minutes

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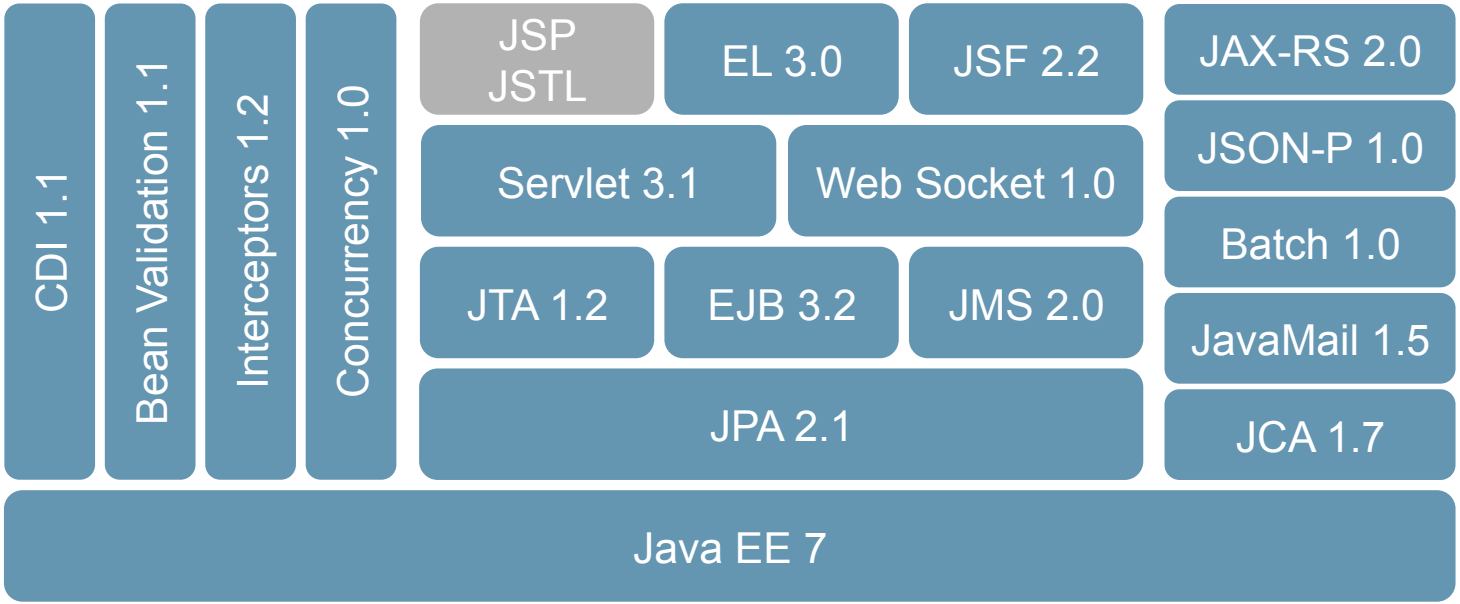
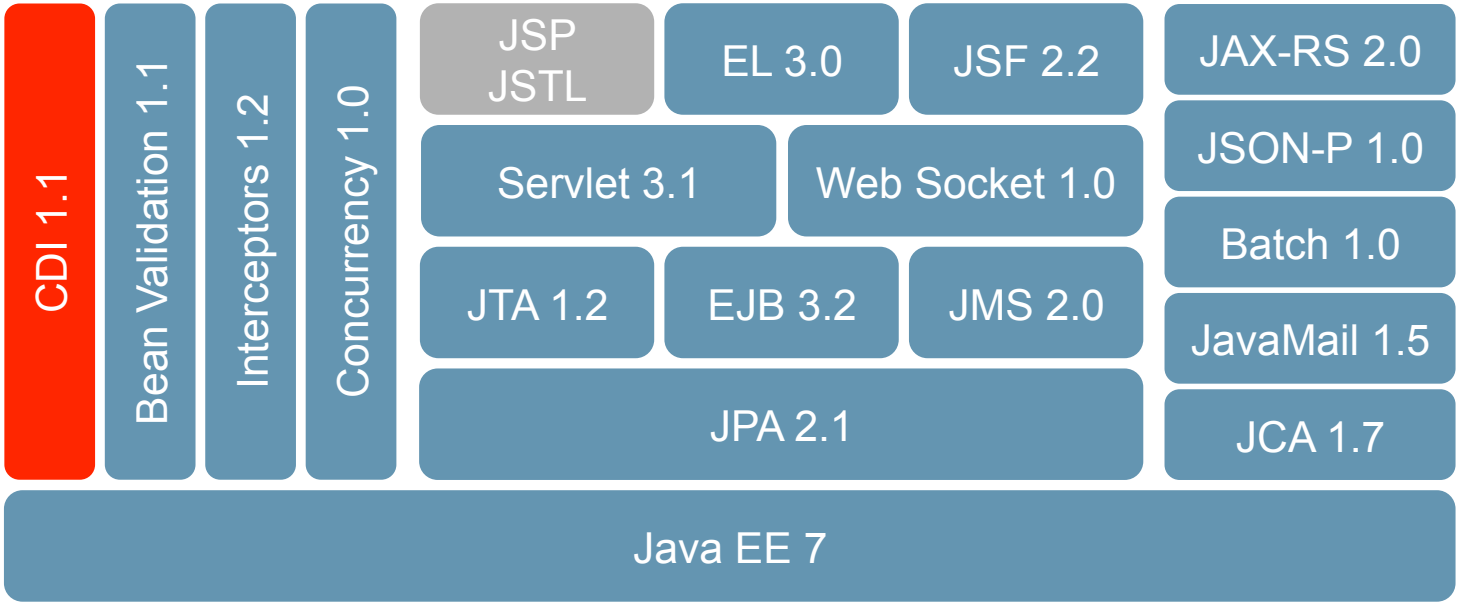
#NN: <spec>: <feature>



CDI 1.1 (JSR 346)



#01: CDI: Default enabling

Finer scanning control

- Possible values: `all`, `annotated`, `none`
- `all` behaves like in Java EE 6 (default if not set)

```
<beans ... version="1.1" bean-discovery-mode="all">
  <alternatives>
    <class>org.agoncal.book.MockGenerator</class>
  </alternatives>
</beans>
```

#02: CDI: @Vetoed

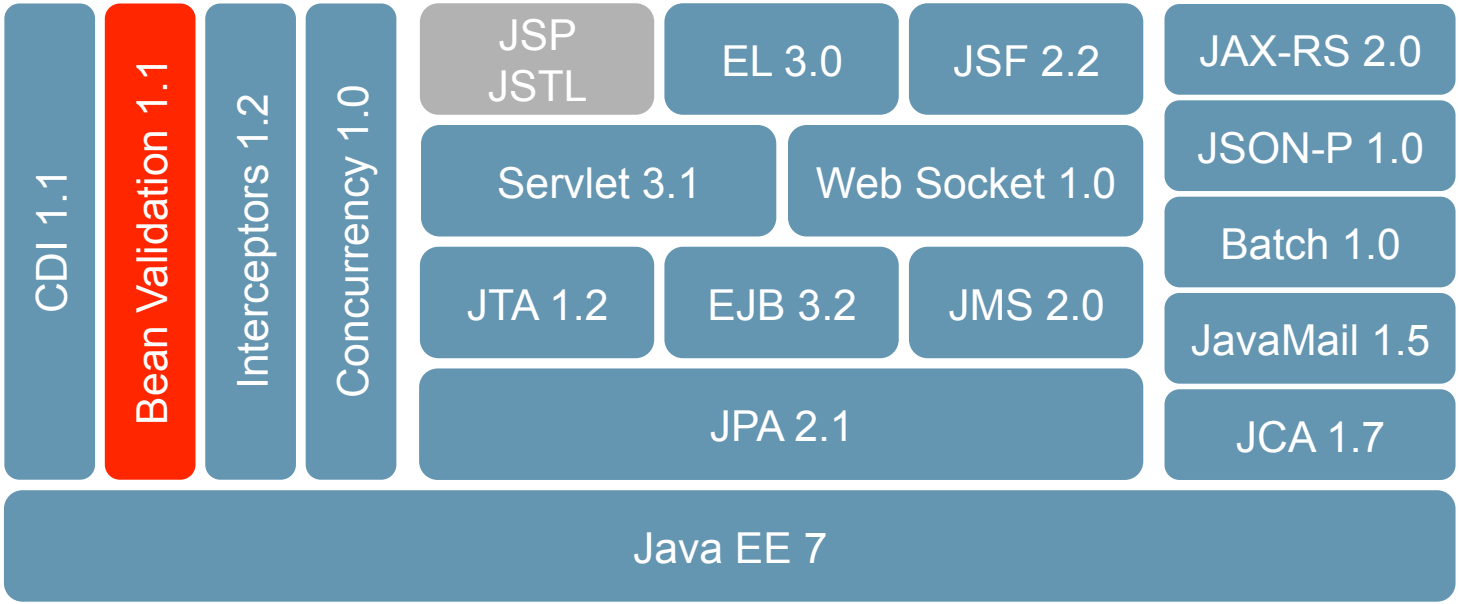
Veto the processing of the class or package

```
@Vetoed
public class NonProcessedBean {
    ...
}
```

package-info.java

```
@Vetoed
package com.non.processed.package;
```

Bean Validation 1.1 (JSR 349)

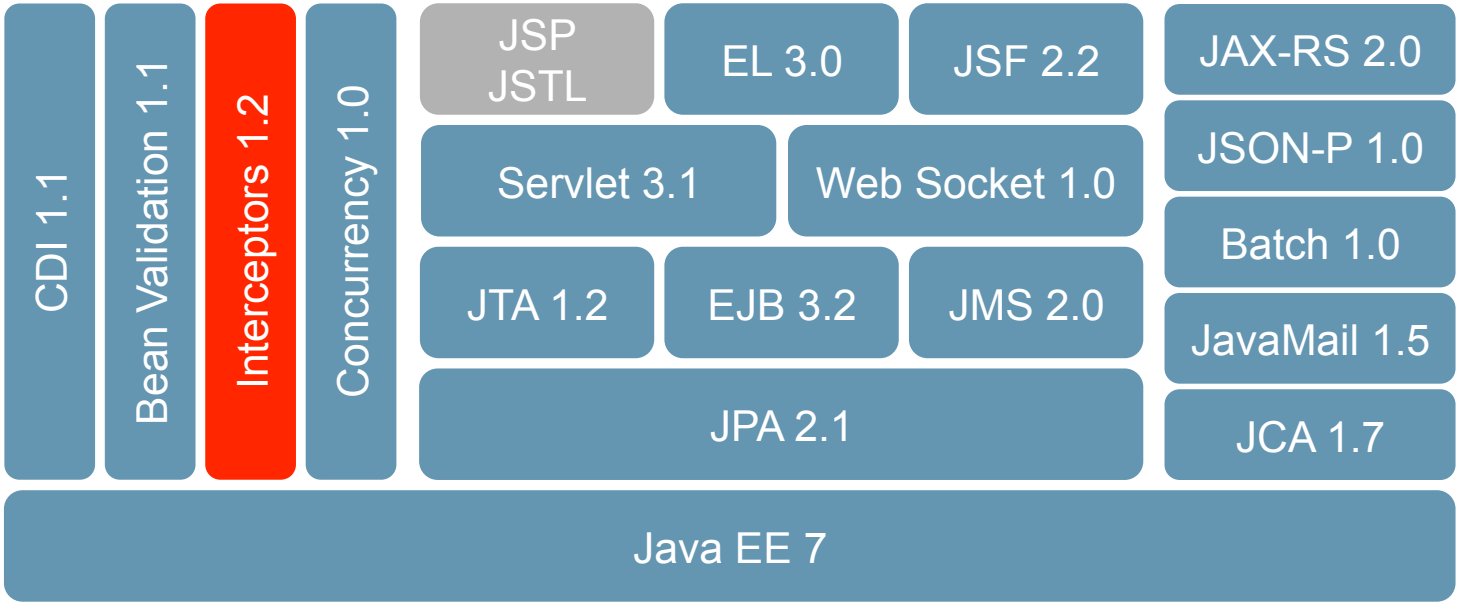


#03: Bean Validation: Method validation

Pre/post conditions on method and constructors

```
public class CardValidator {

    public CardValidator(@NotNull Algorithm algorithm) {
        this.algorithm = algorithm;
    }

    @AssertTrue
    public Boolean validate(@NotNull CreditCard creditCard) {
        return algorithm.validate(creditCard.getNumber());
    }
}
```

Interceptors 1.2 (JSR 318)



#04: Interceptors: AroundConstruct

Interceptor associated with a constructor

```
public class LoggingInterceptor {

    @AroundConstruct
    private void init(InvocationContext ic) throws Exception{
        logger.fine("Entering constructor");
        ic.proceed();
        logger.fine("Exiting constructor");
    }

    @AroundInvoke
    public Object logMethod(InvocationContext ic) ... {
        // ...
    }
}
```

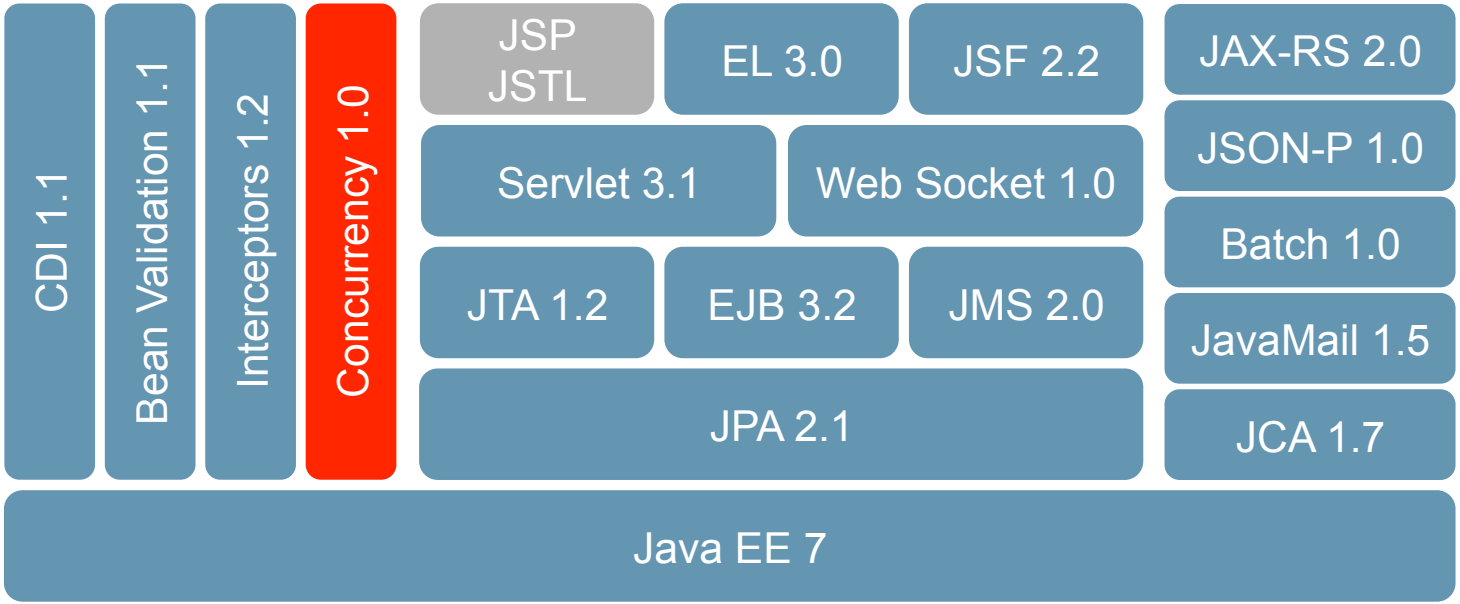
#05: Interceptors: @Priority

Prioritizing interceptor bindings

- `PLATFORM_BEFORE` (0), `LIBRARY_BEFORE` (1000), `APPLICATION` (2000), `LIBRARY_AFTER` (3000), `PLATFORM_AFTER` (4000)

```
@Interceptor
@Loggable
@Priority(Interceptor.Priority.LIBRARY_BEFORE + 10)
public class LoggingInterceptor {

    @AroundInvoke
    ...
}
```

Concurrency utilities 1.0 (JSR 236)



#06: Concurrency: ManagedExecutor

- User threads in Java EE applications
- Support simple and advance concurrency design patterns
- Extend Concurrency Utilities API from Java SE (JSR 166y)
  - `java.util.concurrent` package

#06: Concurrency: ManagedExecutor

Default ManagedExectuor

```
@Resource
ManagedExecutorService executor;


ManagedExecutorService executor =
(ManagedExecutorService) ctx
  .lookup("java:comp/DefaultManagedExecutorService");
```

#06: Concurrency: ManagedExecutor

Specify in web.xml

```
<web-app … version="3.1">
    <resource-env-ref>
        <resource-env-ref-name>
            concurrent/myExecutor
        </resource-env-ref-name>
        <resource-env-ref-type>
            javax.enterprise.concurrent.ManagedExecutorService
        </resource-env-ref-type>
    </resource-env-ref>
</web-app>
```

#07: Concurrency: ManagedScheduledExecutor

- Managed version of `ScheduledExecutorService`
- Submit delayed or periodic tasks

```
@Resource
ManagedScheduledExecutorService executor;
```

#07: Concurrency: ManagedScheduledExecutor

Access using JNDI

```
InitialContext ctx = new InitialContext();

ManagedScheduledExecutorService executor =
(ManagedScheduledExecutorService)ctx.lookup(
"java:comp/DefaultManagedScheduledExecutorService");
```

- Can be defined in web.xml as well

#07: Concurrency: ManagedScheduledExecutor

- `executor.schedule(new MyCallableTask(), 5, TimeUnit.SECONDS);`
- `executor.scheduleAtFixedRate(new MyRunnableTask(), 2, 3, TimeUnit.SECONDS);`
- `executor.scheduleWithFixedDelay(new MyRunnableTask(), 2, 3, TimeUnit.SECONDS);`

#08: Concurrency: ManagedThreadFactory

- Extends `ThreadFactory`

```
@Resource(name = "DefaultManagedThreadFactory")
ManagedThreadFactory factory;


ManagedThreadFactory factory =
(ManagedThreadFactory) ctx.lookup("java:comp/
DefaultManagedThreadFactory");
```

#08: Concurrency: ManagedThreadFactory

- `Thread thread = factory.newThread(new MyTask());`
- `((ManageableThread)thread).isShutdown();`

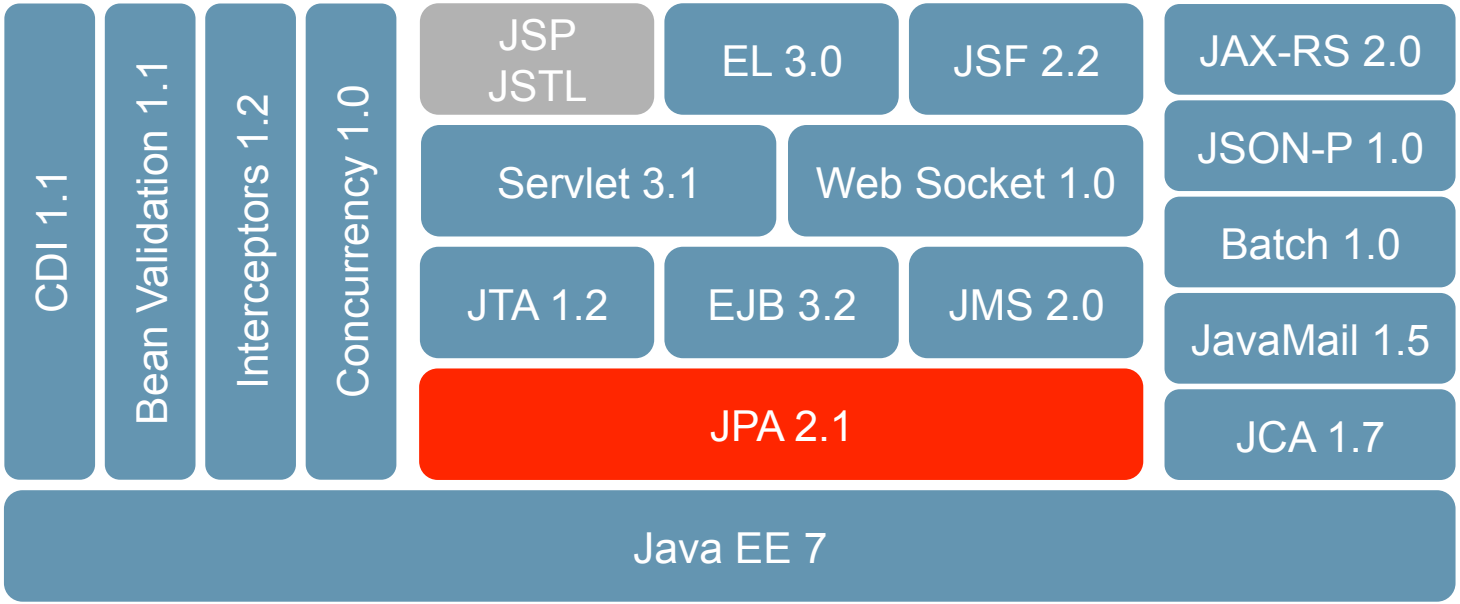
#09: Concurrency: DynamicProxy

- Create dynamic proxy objects, adds contextual information available for applications running in Java EE environment
- Classloading, JNDI, Security, …

#09: Concurrency: DynamicProxy

```
@Resource
ContextService service;


Runnable proxy = service.createContextualProxy(new
MyRunnable(), Runnable.class);


Future f = executor.submit(proxy);
```

JPA 2.1 (JSR 338)



#10: JPA: Schema Generation

Standardized database schema generation

```
<persistence ... version="2.1">
  <persistence-unit ...>
  <properties>
    <property name="javax.persistence.schema-generation.scripts.action"
              value="drop-and-create"/>
    <property name="javax.persistence.schema-generation.scripts.create-target"
              value="create.sql"/>
    <property name="javax.persistence.sql-load-script-source"
              value="insert.sql"/>
  </properties>
</persistence-unit>
```

#11: JPA: @Index

Defines additional indexes in schema generation

```
@Entity
@Table(indexes = {
        @Index(columnList = "ISBN"),
        @Index(columnList = "NBOFPAGE")
})
public class Book {

    @Id @GeneratedValue
    private Long id;
    private String isbn;
    private Integer nbOfPage;
    ...
}
```

#12: JPA: Unsynchronized Persistence Context

Persistence context is not enlisted in any tx unless explicitly joined

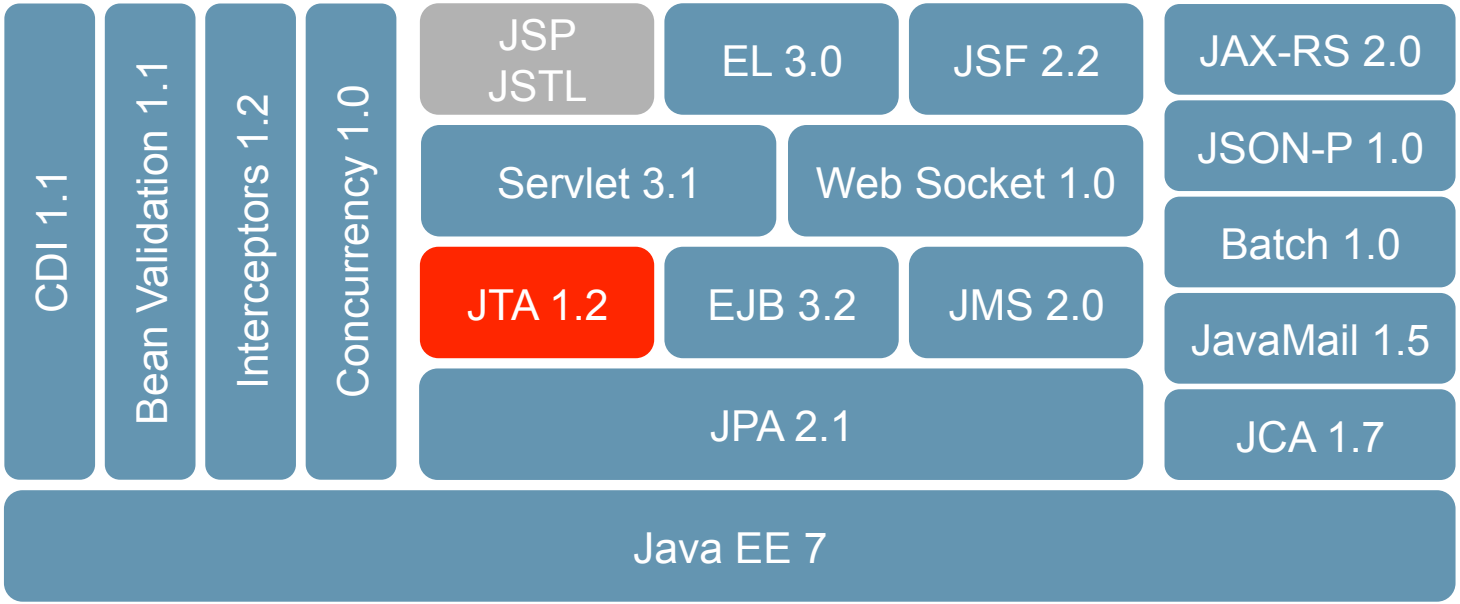
```
@PersistenceContext(synchronization =
                    SynchronizationType.UNSYNCHRONIZED)
private EntityManager em;
...

em.persist(book);

...
em.joinTransaction();
```

#13: JPA: Stored Procedure

Calling a stored procedure

```
@Entity
@NamedStoredProcedureQuery(name = "archiveOldBooks",
                    procedureName = "sp_archive_books",
    parameters = {
    @StoredProcedureParameter(name = ”date", mode = IN,
                              type = Date.class),
    @StoredProcedureParameter(name = "warehouse", mode = IN,
                              type = String.class)
})
public class Book {...}
```

JTA 1.2 (JSR 907)



#14: JTA: @Transactional

Transaction management on Managed Beans as CDI interceptor binding

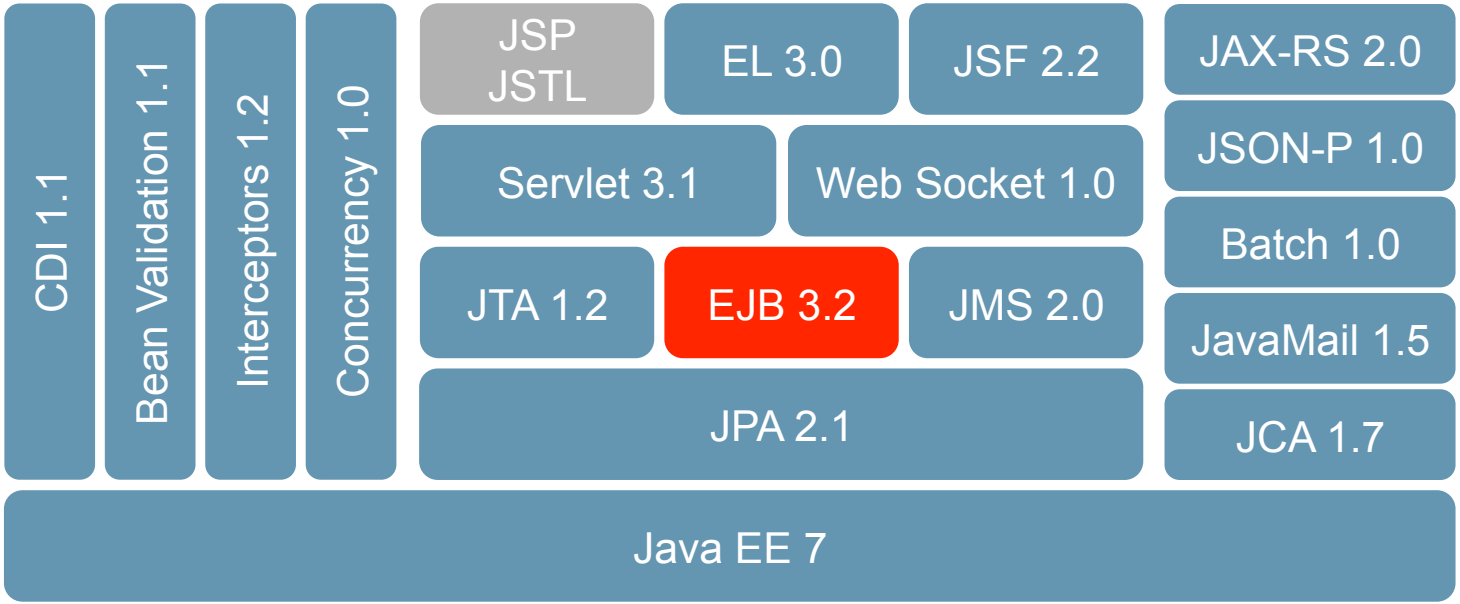
```
@Path("book")
@Transactional(value = Transactional.TxType.REQUIRED,
      rollbackOn = {SQLException.class, JMSException.class},
      dontRollbackOn = SQLWarning.class)
public class BookRestService {

    @PersistenceContext
    private EntityManager em;

    @POST
    @Consumes(MediaType.APPLICATION_XML)
    public Response createBook(Book book) {...}
}
```

#15: JTA: @TransactionScoped

CDI scope whose lifecycle is scoped to the currently active JTA transaction

```
@TransactionScoped
public class BookBean {...}

@WebServlet
public class TxServlet extends HttpServlet {
    @Inject UserTransaction tx;
    @Inject BookBean b1;
    @Inject BookBean b2;

    protected void processRequest(...) {
        tx.begin();
        s_out.println(b1.getReference());
        s_out.println(b2.getReference());
        tx.commit();
    }
}
```

EJB 3.2 (JSR 345)



#16: EJB: Disable passivation of stateful

In some cases increases performance, scalability and robustness

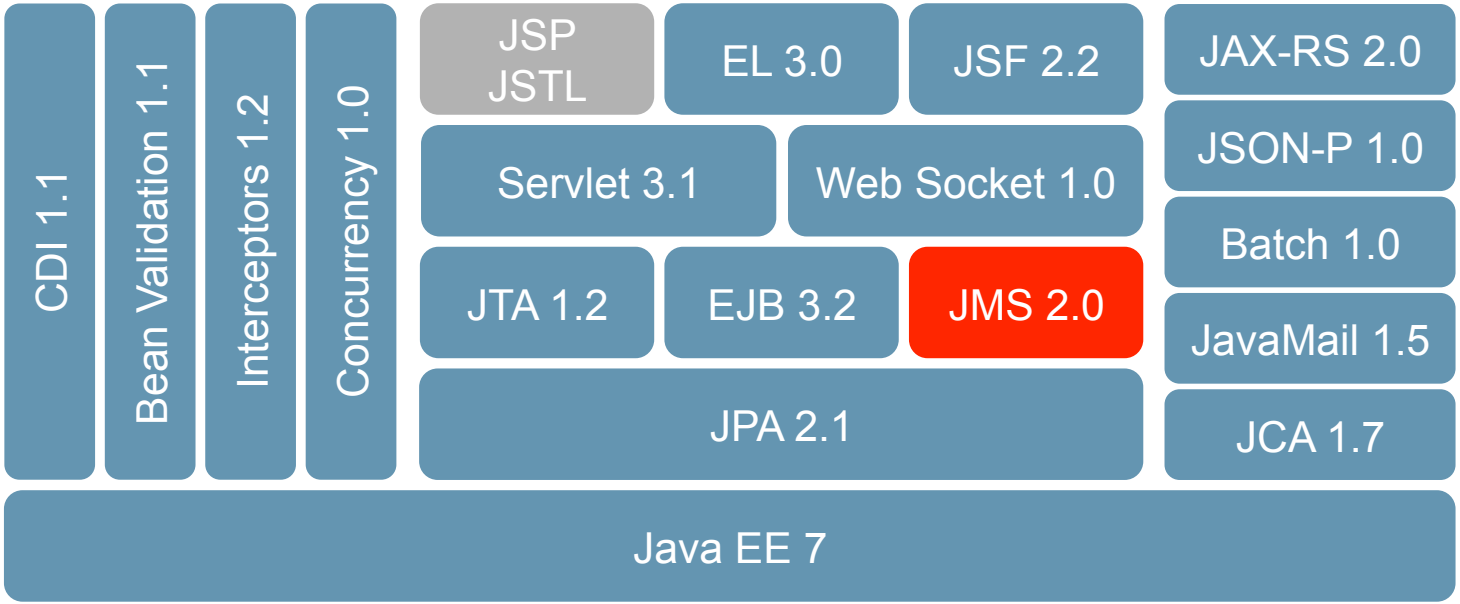
```
@Stateful(passivationCapable = false)
public class ShoppingCart {
    ...
}
```

#17: EJB-Lite: Async + Non-persistent timer

Extended the EJB Lite to include local asynchronous invocations and non-persistent EJB Timer Service

```
@Stateless
public class OrderEJB {

    @Asynchronous
    public void sendEmail (Order order) {
        // Very Long task
    }

    @Schedule(hour="2", persistent=false)
    public void createDailyReport() {
        // ...
    }
}
```

JMS 2.0 (JSR 343)



#18: JMS: JMSContext API

New simplified API to produce and consume messages

```
JMSContext ctx = connectionFactory.createContext()

ctx.createProducer().send(queue, "Text message sent");

ctx.createConsumer(queue).receiveBody(String.class);

ctx.createProducer()
    .setPriority(2)
    .setTimeToLive(1000)
    .setDeliveryMode(DeliveryMode.NON_PERSISTENT)
    .send(queue, message);
```

#19: JMS: Autocloseable

Several JMS interfaces implement Autocloseable

```
try (JMSContext ctx = connectionFactory.createContext()) {
  ctx.createProducer().send(queue, "Text message sent");
}

...

try (JMSContext ctx = connectionFactory.createContext()) {
  while (true) {
    String s = ctx.createConsumer(queue).receiveBody(String.class);
  }
}
```

#20: JMS: JMSConnectionFactoryDefinition

A JMS ConnectionFactory can be defined using an annotation on a container-managed class

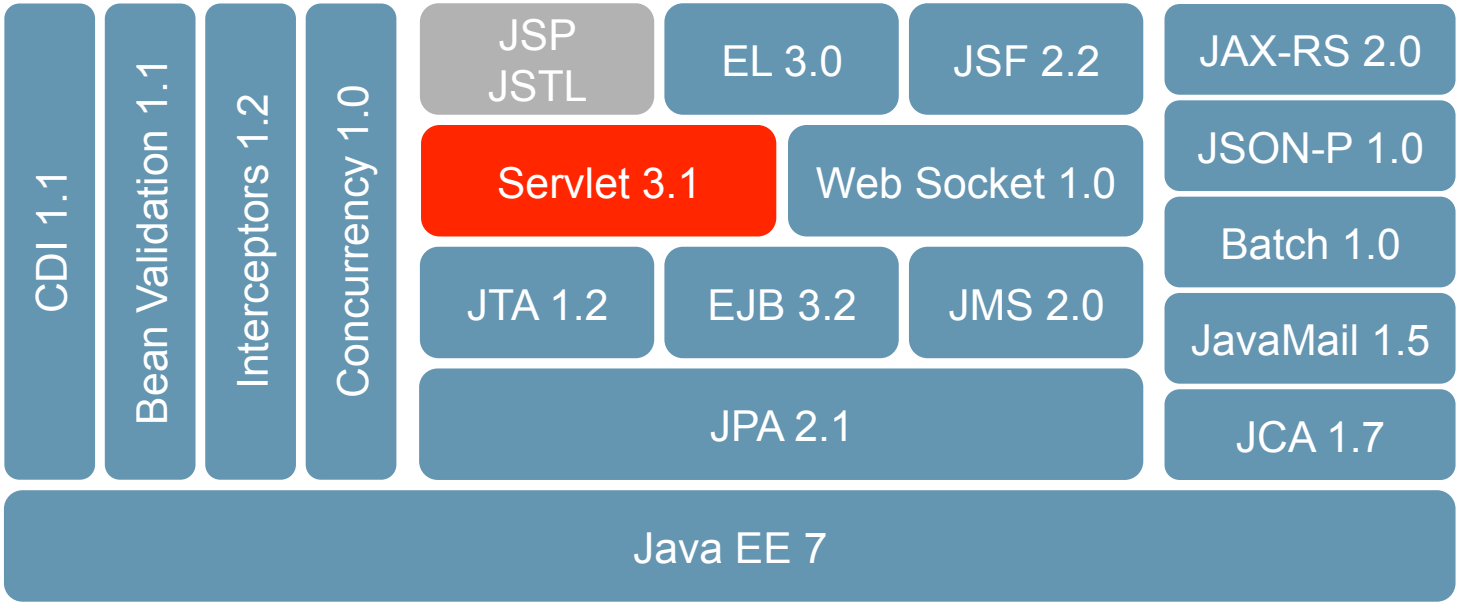
```
@Stateless
@JMSConnectionFactoryDefinition(
        name = "java:app/jms/MyConnectionFactory",
        interfaceName = "javax.jms.TopicConnectionFactory")



public class ExpensiveOrderEJB {...}
```

#21: JMS: JMSDestinationDefinition

A JMS queue or topic can be defined using an annotation

```
@Stateless
@JMSConnectionFactoryDefinition(
        name = "java:app/jms/MyConnectionFactory",
        interfaceName = "javax.jms.TopicConnectionFactory")
@JMSDestinationDefinition(
        name = "java:app/jms/MyTopic",
        interfaceName = "javax.jms.Topic")
public class ExpensiveOrderEJB {...}
```

Servlet 3.1 (JSR 340)



#22: Servlet: Non-blocking I/O

```
public class TestServlet extends HttpServlet
  protected void doGet(HttpServletRequest request,
                       HttpServletResponse response)
                  throws IOException, ServletException {
    ServletInputStream input = request.getInputStream();
    byte[] b = new byte[1024];
    int len = -1;
    while ((len = input.read(b)) != -1) {
      . . .
    }
  }
}
```

#22: Servlet: Non-blocking I/O

New methods to existing interfaces

- `ServletInputStream`
  - `public void setReadListener(ReadListener listener);`
  - `public boolean isFinished();`
  - `public boolean isReady();`
- `ServletOutputStream`
  - `public setWriteListener(WriteListener listener);`
  - `public boolean canWrite();`

#22: Servlet: Non-blocking I/O

New interfaces

```
public interface ReadListener extends EventListener {
    public void onDataAvailable();
    pubic void onAllDataRead();
    public void onError();
}
public interface WriteListener extends EventListener {
    public void onWritePossible();
    public void onError();
}
```

#22: Servlet: Non-blocking I/O

Only for Asynchronous Servlets

```
AsyncContext context = request.startAsync();
ServletInputStream input = request.getInputStream();
input.setReadListener(
    new MyReadListener(input, context));
```

#23: Servlet: Protocol Upgrade

- `<T extends HttpUpgradeHandler> T HttpServletRequest.upgrade(Class<T> class) throws IOException;`

- `HttpUpgradeHandler`
  - `init(WebConnection wc);`
  - `destroy();`

#23: Servlet: Protocol Upgrade

```
public interface WebConnection {
  ServletInputStream getInputStream();
  ServletOutputStream getOutputStream();
}
```

#24: Servlet: Improved Security

Deny an HTTP method request for an uncovered HTTP method

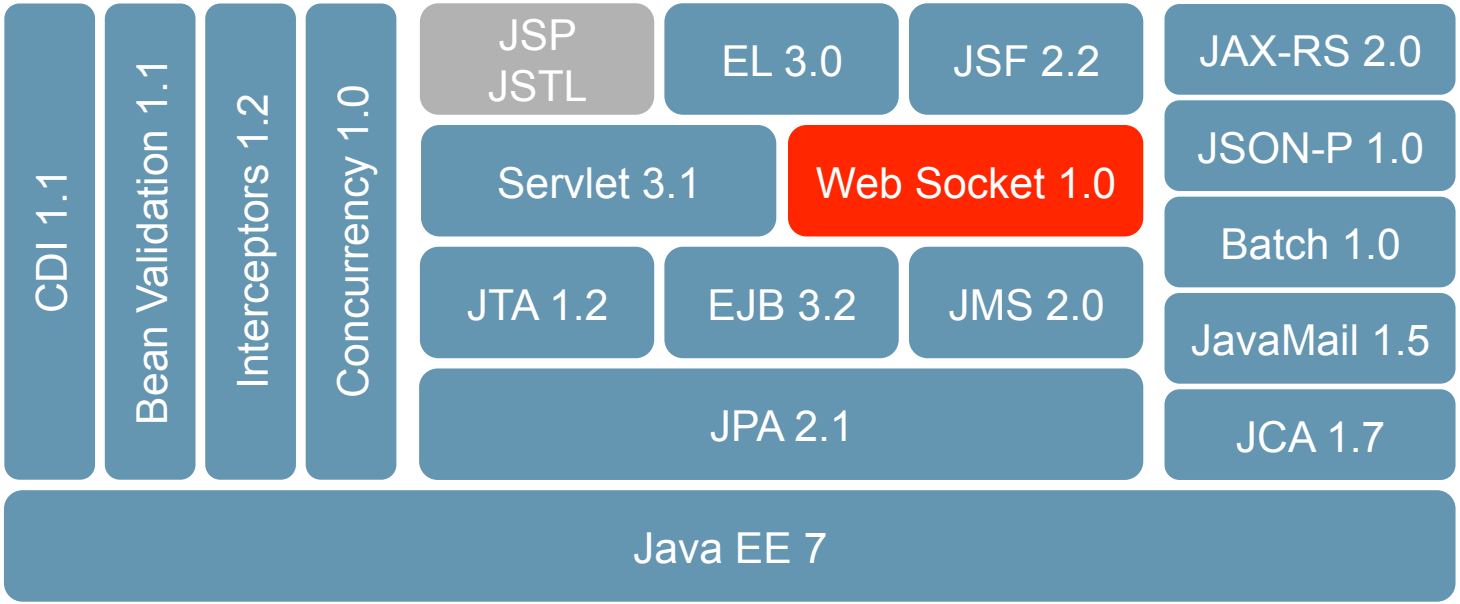
```
<web-app . . . version="3.1">
  <web-resource-collection>
    <url-pattern>/account/*</url-pattern>
    <http-method>GET</http-method>
  </web-resource-collection>
</web-app>
```

#24: Servlet: Improved Security

Deny an HTTP method request for an uncovered HTTP method

```
<web-app . . . version="3.1">
  <deny-uncovered-http-methods/>
  <web-resource-collection>
    <url-pattern>/account/*</url-pattern>
    <http-method>GET</http-method>
  </web-resource-collection>
</web-app>
```

Web Socket 1.0 (JSR 356)



#25: WebSocket: Annotated server endpoint

- Enables full-duplex bi-directional communication over single TCP connection

```
@javax.websocket.server.ServerEndpoint("/chat")
public class ChatServer {

    @OnMessage
    public String chat(String name, Session session) {
        for (Session peer : client.getOpenSessions()) {
            peer.getBasicRemote().sendObject(message);
        }
    }
}
```

#26: WebSocket: Lifecycle callbacks

```
@javax.websocket.OnOpen
public void open(Session s) { . . . }

@javax.websocket.OnClose
public void close(CloseReason c) { . . . }

@javax.websocket.OnError
public void error(Throwable t) { . . . }
```

#27: WebSocket: Annotated client endpoint

```
@javax.websocket.ClientEndpoint
public class MyClient {
    @javax.websocket.OnOpen
    public void open(Session session) { … }

    // Lifecycle callbacks
}
```

#27: WebSocket: Annotated client endpoint

```
ContainerProvider
   .getWebSocketContainer()
   .connectToServer(
      MyClient.class,
      URI.create("ws://. . ."));
```

#28: WebSocket: Programmatic endpoints

```
public class ChatServer extends Endpoint {
  @Override
  public void onOpen(Session s, EndpointConfig ec) {
    s.addMessageHandler(new MessageHandler.Whole<String>() {
      public void onMessage(String text) { . . . }
    }
  }

  @Override
  public void onClose(Session s, CloseReason cr) { . . . }

  //. . .
}
```

#28: WebSocket: Programmatic endpoints

```
public class MyApplicationConfig implements
ServerApplicationConfig {
  public Set<ServerEndpointConfig> getEndpointConfigs(…) {
    ServerEndpointConfig.Builder
      .create(MyEndpoint.class, "/websocket”)
      .configurator(new MyConfig())
      .build()
  }
}
```

#28: WebSocket: Programmatic endpoints

```
public class MyConfig extends ServerEndpointConfig.Configurator {

  public <T> T getEndpointInstance(. . .) { . . . }

  public void modifyHandshake(. . .) { . . . }

  . . .
}
```

#29: WebSocket: Encoder and Decoder

```
@javax.websocket.server.ServerEndpoint(
  value="/chat",
  decoders="MyDecoder.class",
  encoders="MyEncoder.class")
public class ChatServer {

    @OnMessage
    public String chat(ChatMessage name, Session session) {
      . . .
    }
}
```

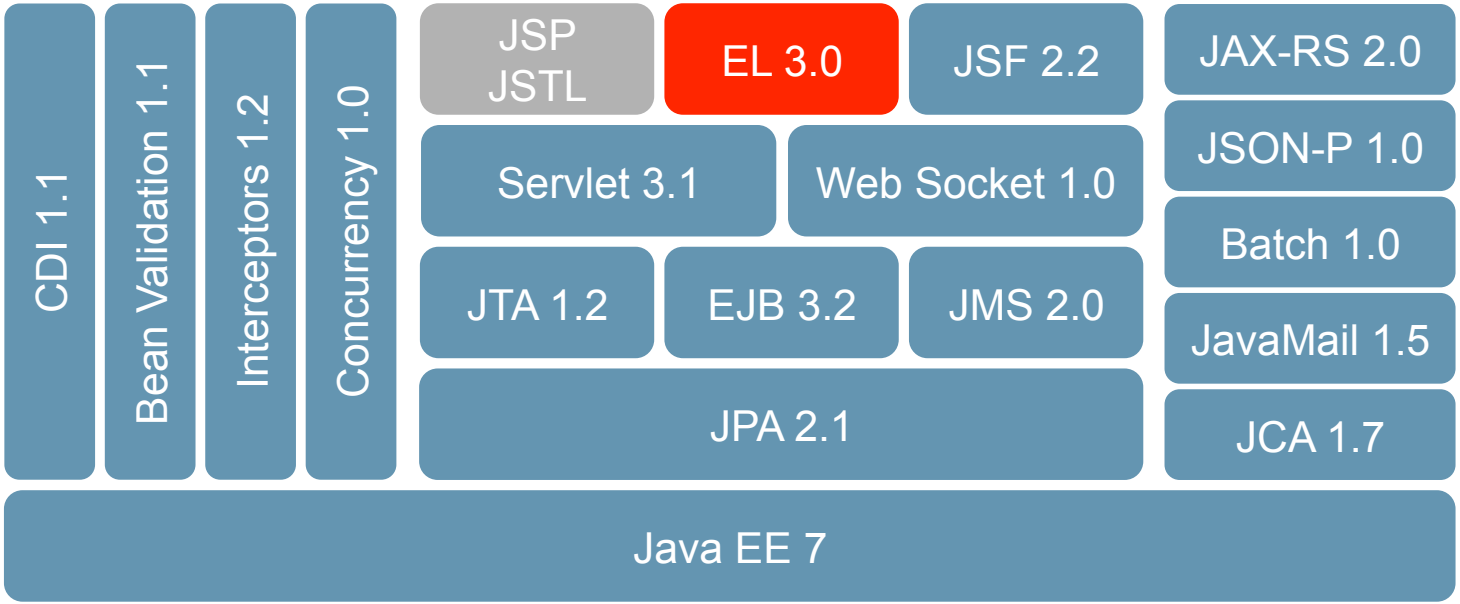
#29: WebSocket: Encoder and Decoder

```
public class MyDecoder implements Decoder.Text<ChatMessage> {
  public ChatMessage decode(String s) {
    // . . .
  }

  public boolean willDecode(String string) {
    // . . .
  }

  //. . .
}
```

#29: WebSocket: Encoder and Decoder

```
public class MyEncoder implements Encoder.Text<ChatMessage> {

  public String encode(ChatMessage chatMessage) {
    // . . .
  }

  // . . .
}
```

Expression Language 3.0 (JSR 341)

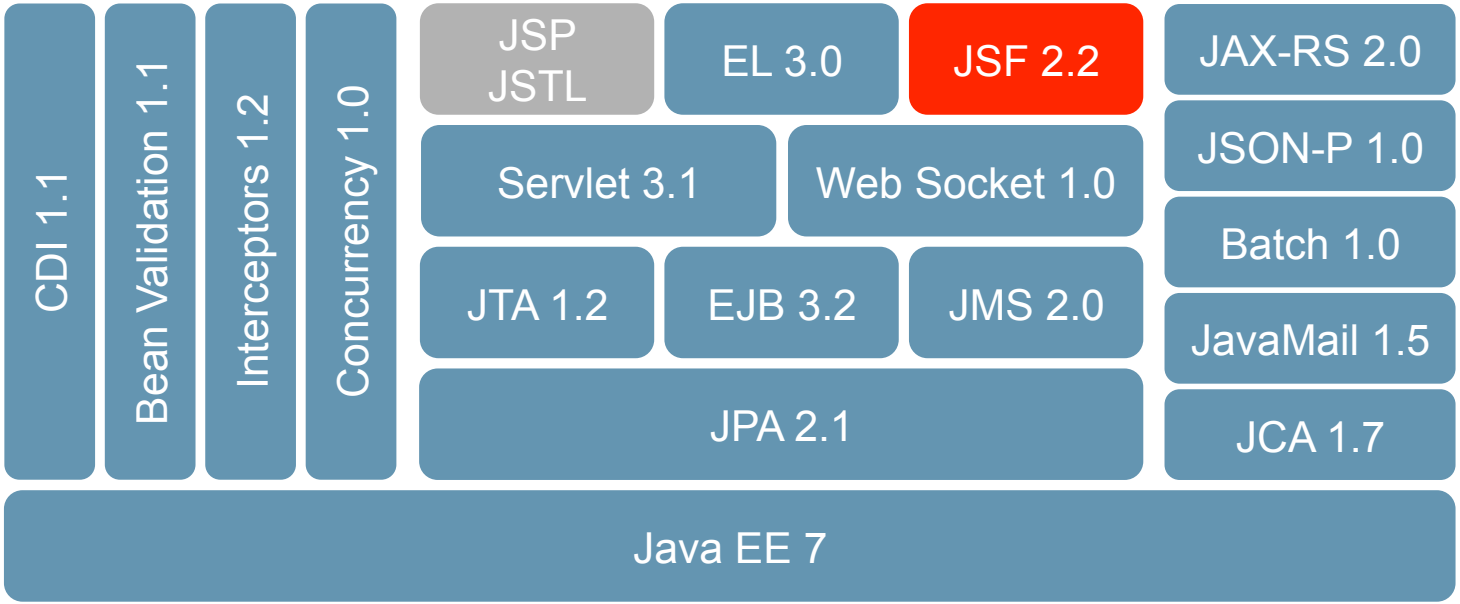


#30: Expression Langauge: ELProcessor

- Use EL in a stand-alone environment
  - Evaluate EL expressions
  - Get/set bean properties
  - Defining a static method as an EL function
  - Defining an object instance as an EL name

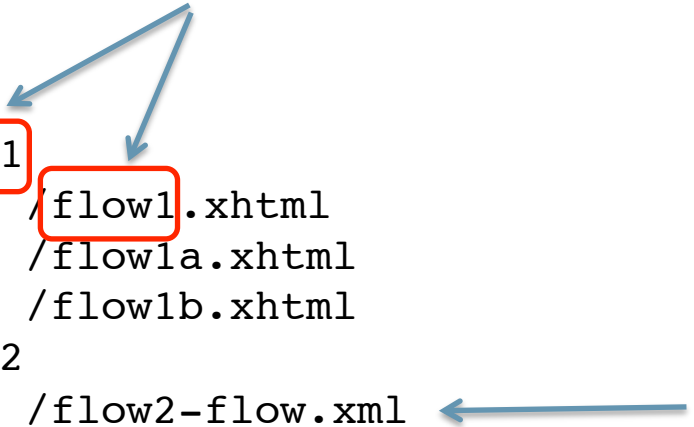
```
ELProcessor elp = new ELProcessor();
elp.defineBean("employee", new Employee("Charlie Brown"));
String name = elp.eval("employee.name");
```

JSF 2.2 (JSR 344)



#31: JSF: Faces Flow

Package reusable flows in JAR



```
./src/main/webapp/flow1
                        /flow1.xhtml
                        /flow1a.xhtml
                        /flow1b.xhtml
./src/main/webapp/flow2
                        /flow2-flow.xml
                        /flow2.xhtml
                        /flow2a.xhtml
                        /flow2b.xhtml
                  /index.xhtml
```

#31: JSF: Faces Flow

Package reusable flows in JAR

```
@Named
@FlowScoped("flow1")
public class Flow1Bean implements Serializable {
}
```

```
@Produces @FlowDefinition
public Flow defineFlow(@FlowBuilderParameter FlowBuilder fb) {
  String flowId = "flow1";
  //. . .
  return fb.getFlow();
}
```

#31: JSF: Faces Flow

Package reusable flows in JAR

#{flowScope}: Local flow storage

#{facesContext.application.flowHandler.currentFlow}: Returns true if within a flow

#32: JSF: Resource Library Contract

Apply templates in a reusable and interchangeable manner

```
index-blue.xhtml
index-red.xhtml
WEB-INF/lib/contracts-library-1.0-SNAPSHOT.jar
                /META-INF/contracts/blue
                                    /style.css
                                    /javax.faces.contract.xml
                                    /template.xhtml
                /META-INF/contracts/red
                                    /style.css
                                    /javax.faces.contract.xml
                                    /template.xhtml
```

#32: JSF: Resource Library Contract

Apply templates in a reusable and interchangeable manner

```
<f:view contracts="red">
  <ui:composition template="/template.xhtml">
    . . .
  </ui:composition>
</f:view>
```

#33: JSF: Pass-through Attributes

HTML5-Friendly Markup

```
<h:inputText type="email" value="#{user.email}"/>

<input type="text" name="j_idt6:j_idt10"/>
```

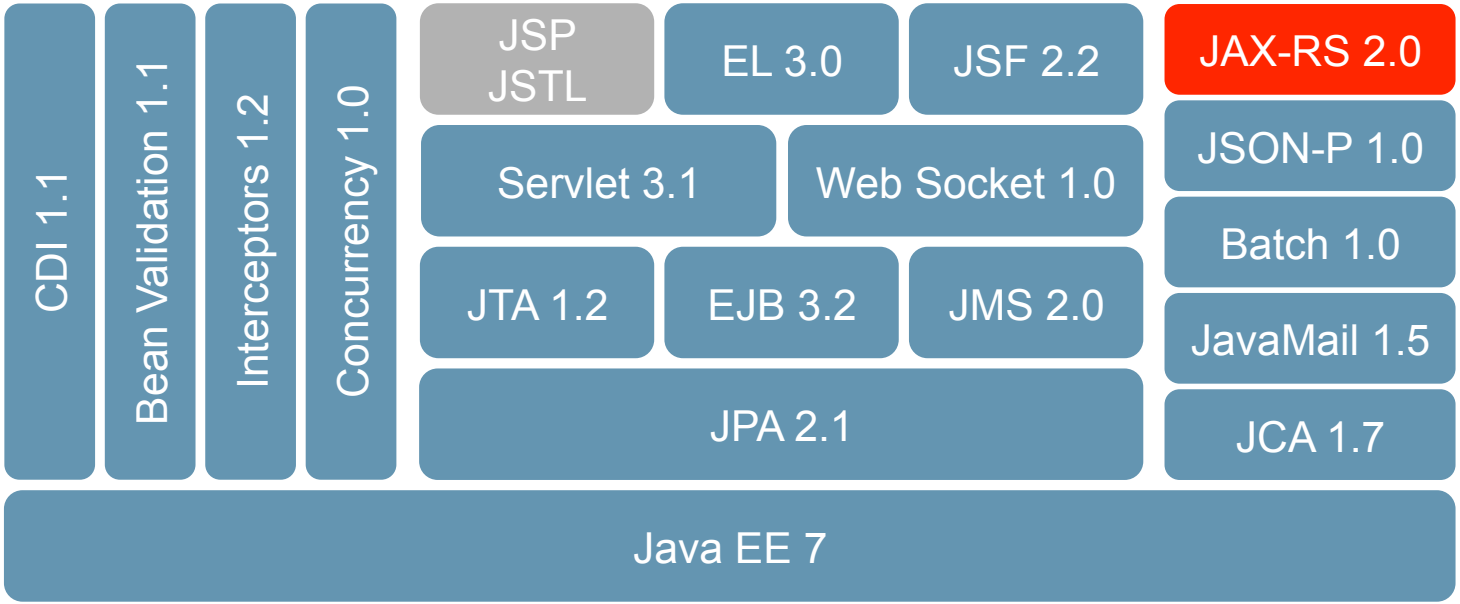
```
<h:inputText p:type="email" value="#{user.email}"/>

<input type="email" name="j_idt6:j_idt10"/>
```

#34: JSF: File Upload Component

```
<h:form enctype="multipart/form-data">
  <h:inputFile value="#{fileUploadBean.file}"/><br/>
  <h:commandButton value="Upload"/><p/>
</h:form>
```

```
@Named @RequestScoped
public class FileUploadBean {
  private Part file;

  //getter and setter
}
```

JAX-RS 2.0 (JSR 339)



#35: JAX-RS: Client API

New API to consume rest services

```
Client client = ClientBuilder.newClient();
WebTarget target = client.target("http://www.foo.com/book");
Invocation invocation = target.request(TEXT_PLAIN).buildGet()
Response response = invocation.invoke();

Response response = ClientBuilder.newClient()
    .target("http://www.foo.com/book")
    .request(MediaType.TEXT_PLAIN)
    .get();

String body = ClientBuilder.newClient()
    .target("http://www.foo.com/book")
    .request()
    .get(String.class);
```

#36: JAX-RS: Async Client

The client API also supports asynchronous invocation

```
Future<String> future = ClientBuilder.newClient()
    .target("http://www.foo.com/book")
    .request()
    .async()
    .get(String.class);

try {
    String body = future.get(1, TimeUnit.MINUTES);
} catch (InterruptedException | ExecutionException e) {...}
```

#37: JAX-RS: Async Server

Asynchronous request processing on the server

```
@Path("/async")
public class AsyncResource {

  @GET
  public void asyncGet(@Suspended AsyncResponse asyncResp) {

    new Thread(new Runnable() {

      public void run() {
        String result = veryExpensiveOperation();
        asyncResp.resume(result);
      }
    }).start();
  }}
```

#38: JAX-RS: Message Filter

Used to process incoming and outgoing request or response headers

- Filters on client side
  - `ClientRequestFilter`
  - `ClientResponseFilter`
- Filters on server side
  - `ContainerRequestFilter`
  - `ContainerResponseFilter`

#38: JAX-RS: Message Filter

Used to process incoming and outgoing request or response headers

```
public class LogginFilter implements ClientRequestFilter {

    public void filter(ClientRequestContext ctx) throws IOException {
        System.out.println(ctx.getMethod());
        System.out.println(ctx.getUri());
    }
}
```

#39: JAX-RS: Entity Interceptors

Marshalling and unmarshalling HTTP message bodies

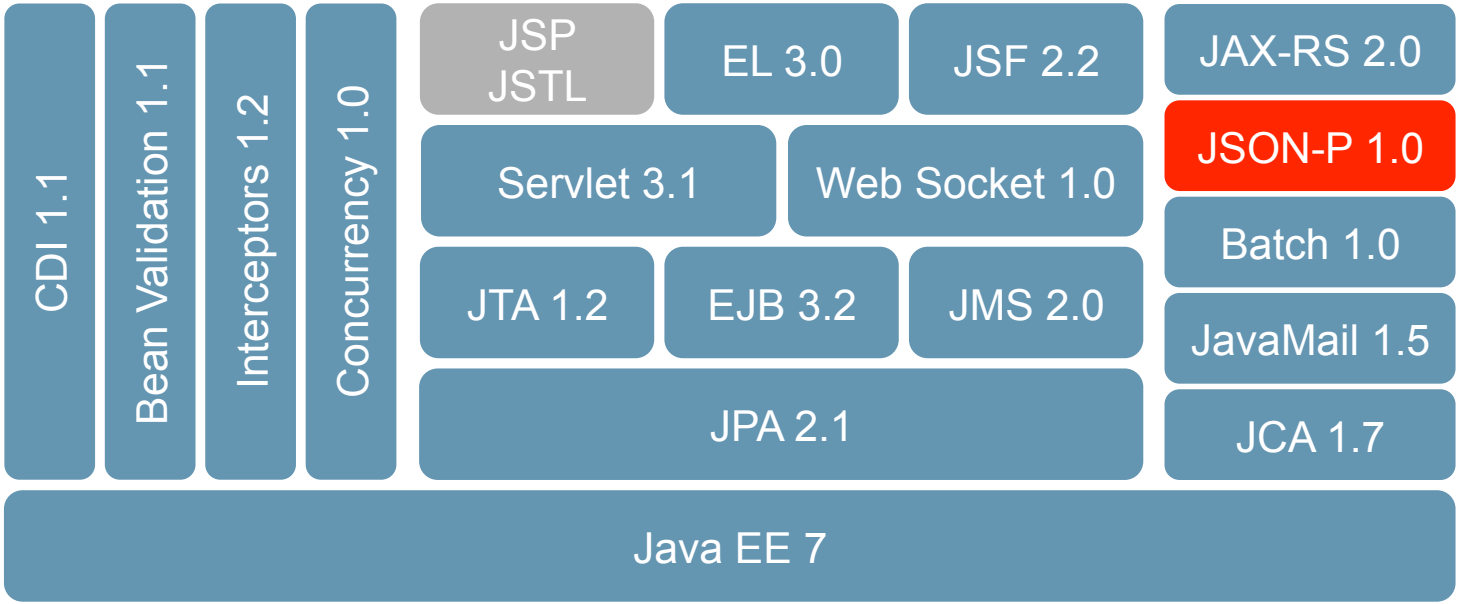
- Intercepts inbound entity streams (read from the “wire”)
  - `ReaderInterceptor`
- Intercepts outbound entity streams (written to the “wire”)
  - `WriterInterceptor`

#39: JAX-RS: Entity Interceptors

Marshalling and unmarshalling HTTP message bodies

```
public class GZipInterceptor implements WriterInterceptor {

    public void aroundWriteTo(WriterInterceptorContext ctx){
        OutputStream os = ctx.getOutputStream();
        ctx.setOutputStream(new GZIPOutputStream(os));
        ctx.proceed();
    }
}
```

JSON-P 1.0 (JSR 353)



#40: JSON-P: JSON Builder

Creates an object model (or an array) in memory by adding elements

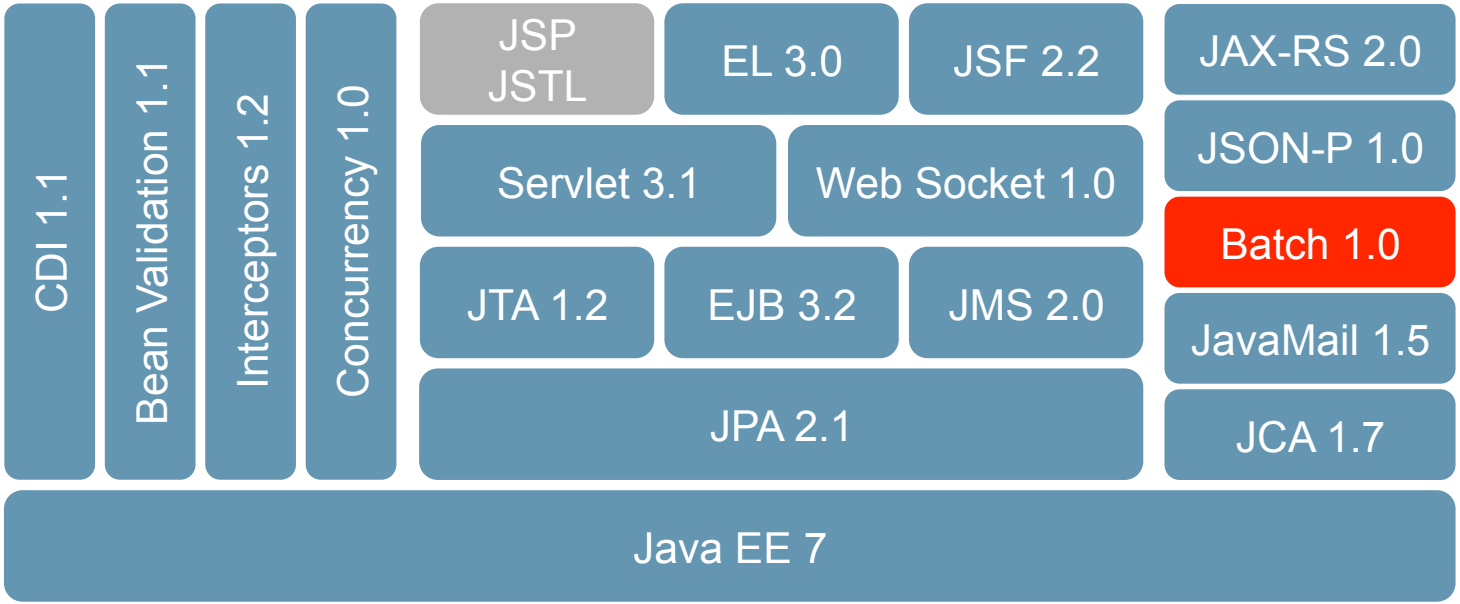
```
JsonObject value = Json.createObjectBuilder()
            .add("id", "1234")
            .add("date", "19/09/2012")
            .add("total_amount", "93.48")
            .add("customer", Json.createObjectBuilder()
                    .add("first_name", "James")
                    .add("last_name", "Rorrison")
                    .add("email", "j.rorri@me.com")
                    .add("phoneNumber", "+44 1234 1234")
            )
            .build();
```

#41: JSON-P: JsonParser

Event-based parser that can read JSON data from a stream

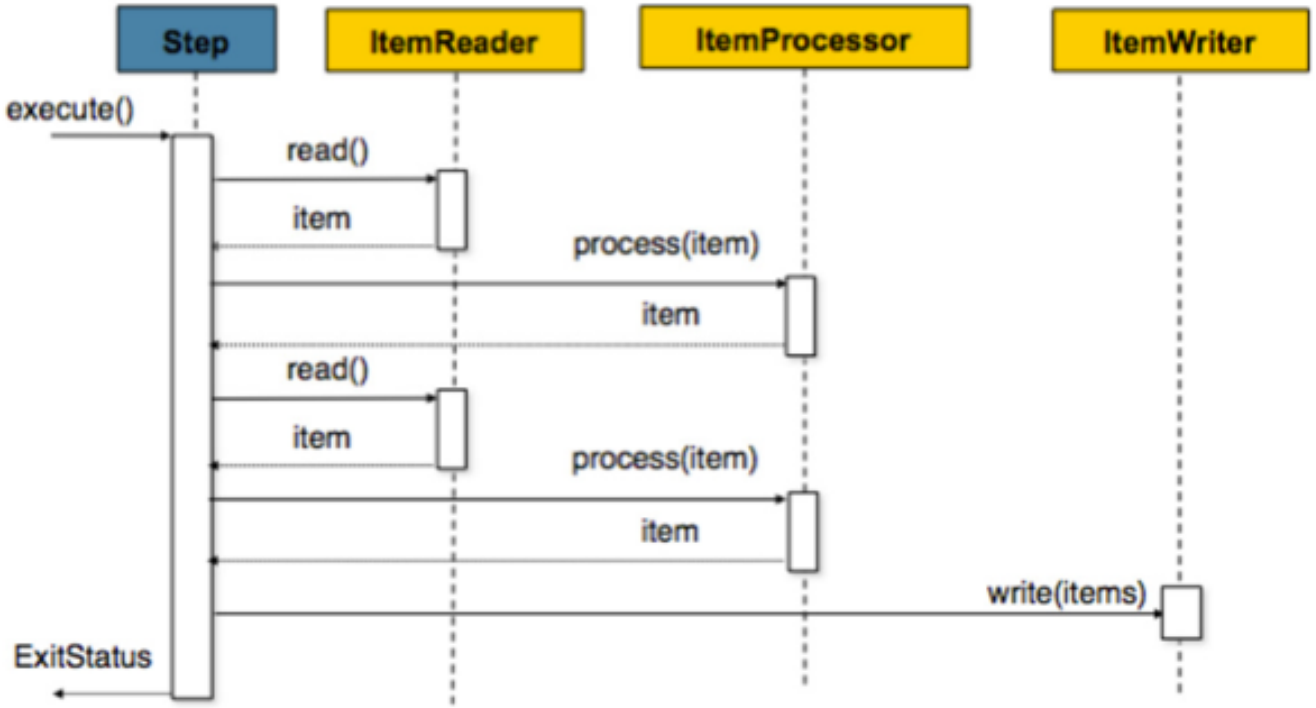
```
JsonParser parser = Json.createParser(new FileReader(“order.json"));
while (parser.hasNext()) {
    JsonParser.Event event = parser.next();

    if (event.equals(JsonParser.Event.KEY_NAME) &&
        parser.getString().matches("email")) {
        parser.next();
        email = parser.getString();
    }
}
```

Batch 1.0 (JSR 352)



#42: Batch: Chunk-style Processing

Item-oriented Processing Style (primary)



#42: Batch: Chunk-style Processing

```
<step id="sendStatements">
  <chunk item-count="3">
    <reader ref="accountReader"/>
    <processor ref="accountProcessor"/>
    <writer ref="emailWriter"/>
</step>
```

```
…implements ItemReader {
public Object readItem() {
    // read account using JPA
}
```

```
…implements ItemProcessor {
public Object processItems(Object account) {
    // read Account, return Statement
}
```

```
…implements ItemWriter {
public void writeItems(List accounts) {
    // use JavaMail to send email
}
```

#43: Batch: Batchlet-style Processing

Task-oriented processing style

```
<step id="transferFile">
  <batchlet ref="MyFileTransfer" />
</step>
```

```
…implements Batchlet {
@Override
public void process() {
    // Transfer file
}
```

#44: Batch: Job/Step/Chunk Listeners

```
<job id="myJob" xmlns="http://xmlns.jcp.org/xml/ns/javaee" version="1.0”>
    <listeners>
        <listener ref="myJobListener"/>
    </listeners>
    <step id="myStep" >
        <listeners>
            <listener ref="myStepListener"/>
            <listener ref="myChunkListener"/>
            <listener ref="myItemReadListener"/>
            <listener ref="myItemProcessorListener"/>
            <listener ref="myItemWriteListener"/>
        </listeners>
        <chunk item-count="3”>. . .</chunk>
    </step>
</job>
```

#44: Batch: Job/Step/Chunk Listeners

Interface	Abstract Classes
`JobListener`	`AbstractJobListener`
`StepListener`	`AbstractStepListener`
`ChunkListener`	`AbstractChunkListener`
`ItemRead/Write/ProcessListener`	`AbstractItemRead/Write/ProcessListener`
`SkipRead/Write/ProcessListener`	`AbstractSkipRead/Write/ProcessListener`
`RetryRead/Write/ProcessListener`	`AbstractRetryRead/Write/ProcessListener`

#44: Batch: Job/Step/Chunk Listeners

```
@Named
public class MyJobListener extends AbstractJobListener {

    @Override
    public void beforeJob() throws Exception { . . . }

    @Override
    public void afterJob() throws Exception { . . . }
}
```

#45: Batch: Partition

```
<step>
  <chunk item-count="3">
    <reader ref="myItemReader">
      <properties>
        <property name="start" value="#{partitionPlan['start']}"/>
        <property name="end" value="#{partitionPlan['end']}"/>
      </properties>
    </reader>
    . . .
  </chunk>
```

#45: Batch: Partition

```
  <partition>
    <plan partitions="2">
      <properties partition="0">
        <property name="start" value="1"/>
        <property name="end" value="10"/>
      </properties>
      <properties partition="1">
        <property name="start" value="11"/>
        <property name="end" value="20"/>
      </properties>
    </plan>
  </partition>
</step>
```

#46: Batch: Creating Workflows

Flow: Elements that execute together as a unit

```
<flow id="flow1" next="step3">
  <step id="step1" next="step2"> . . . </step>
  <step id="step2"> . . . </step>
</flow>
<step id="step3"> . . . </step>
```

#46: Batch: Creating Workflows

Split: Concurrent execution of flows

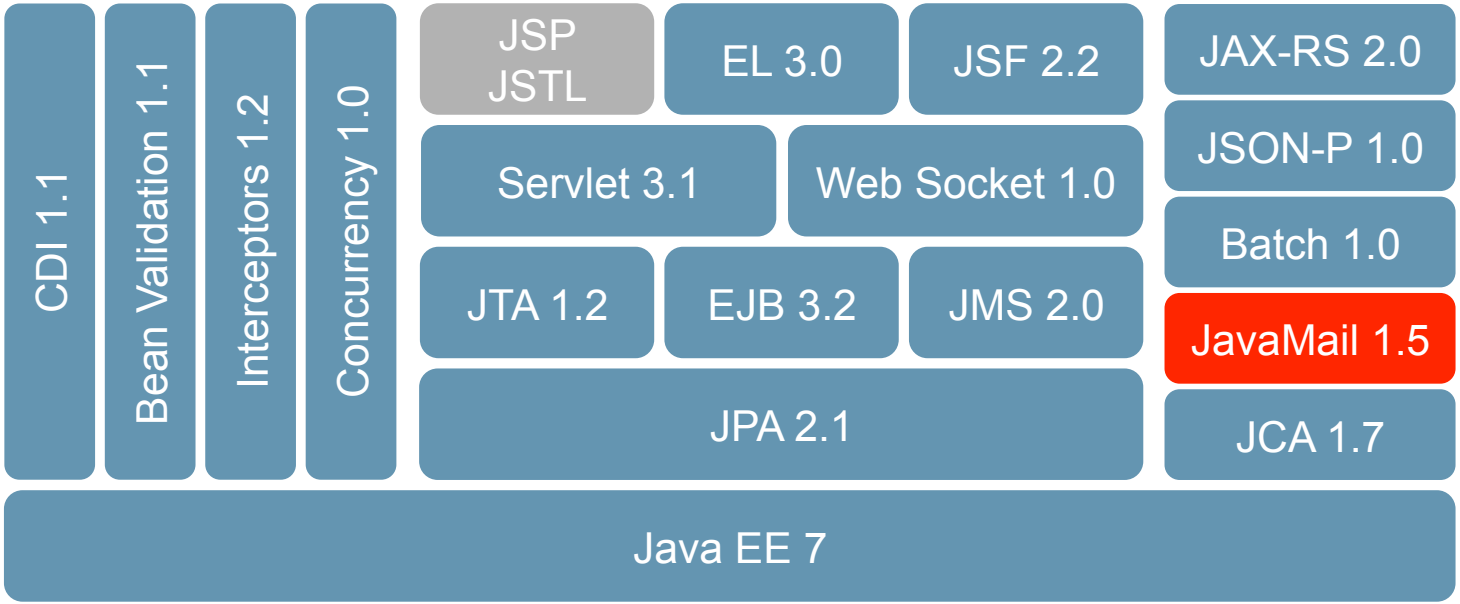
```
<split id="split1" next=" . . . ">
  <flow id="flow1”>
    <step id="step1”> . . . </step>
  </flow>
  <flow id="flow2”>
    <step id="step2”> . . . </step>
  </flow>
</split>
```

#46: Batch: Creating Workflows

Decision: Customized way of sequencing between steps, flows, splits

```
<step id="step1" next="decider1">. . .</step>
<decision id="decider1" ref="myDecider">
  <next on="DATA_LOADED" to="step2"/>
  <end on="NOT_LOADED"/> </decision>
<step id="step2">. . .</step>

@Named
public class MyDecider implements Decider {
  @Override
  public String decide(StepExecution[] ses) throws Exception {
    . . .
    return "DATA_LOADED"; // or "NOT_LOADED"
  }
}
```

JavaMail 1.5 (JSR 919)

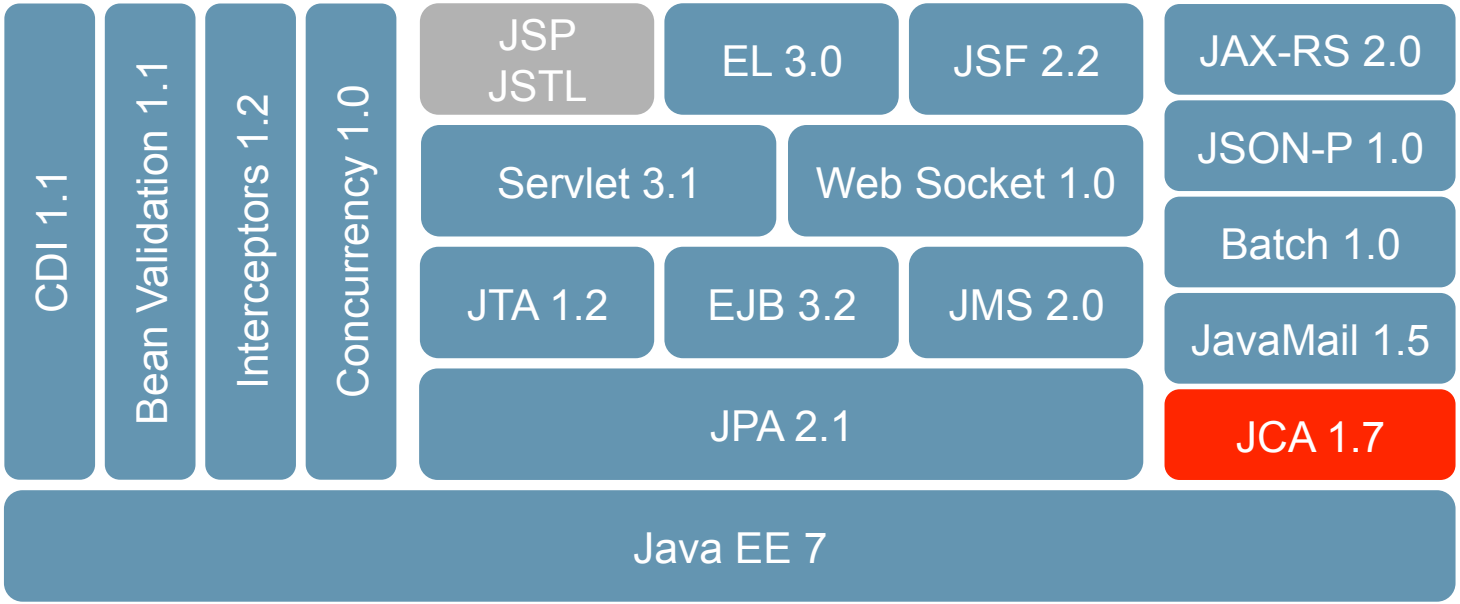


#48: JavaMail

```
@MailSessionDefinition(name = "java:comp/myMailSession",
        properties = {
            "mail.smtp.host=smtp.gmail.com",
            "mail.smtp.ssl.enable=true",
            "mail.smtp.auth=true",
            "mail.transport.protocol=smtp",
            "mail.debug=true"
        })
```

```
@Resource(lookup = "java:comp/myMailSession")
Session session;
```

JCA 1.7 (JSR 322)



#49: Java Connector Architecture

```
@ConnectionDefinition(
  connection="MyConnection.class",
  connectionImpl="MyConnectionImpl.class",
  connectionFactory="MyConnectionFactory.class",
  connectionFactoryImpl="MyConnectionFactoryImpl.class"
)

@AdministeredObjectDefinition(
  className="MyQueueImpl.class",
  name="java:comp/MyQueue",
  resourceAdapter="myAdapter",
)
```

#47: Default Resources

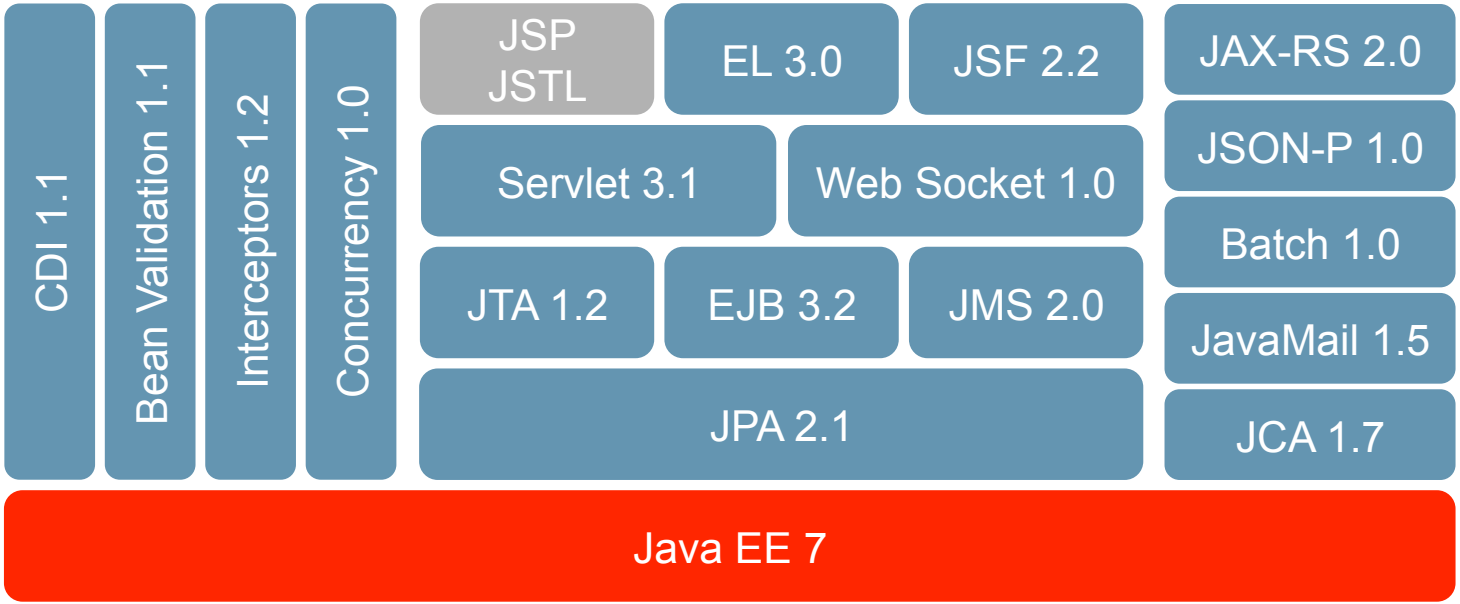
Default Data Source

JNDI name: `java:comp/DefaultDataSource`

```
@Resource(lookup="java:comp/DefaultDataSource")
DataSource myDS;
```

```
@Resource
DataSource myDS;
```

Java EE 7 (JSR 342)



#47: Default Resources

Default JMS Connection Factory

JNDI name: `java:comp/DefaultJMSConnectionFactory`

```
@Resource(lookup="java:comp/DefaultJMSConnectionFactory")
ConnectionFactory myCF;
```

```
@Resource
ConnectionFactory myCF;
```

#47: Default Resources

Default Concurrency Utilities Objects

JNDI names

- `java:comp/DefaultManagedExecutorService`
- `java:comp/DefaultManagedScheduledExecutorService`
- `java:comp/DefaultManagedThreadFactory`
- `java:comp/DefaultContextService`

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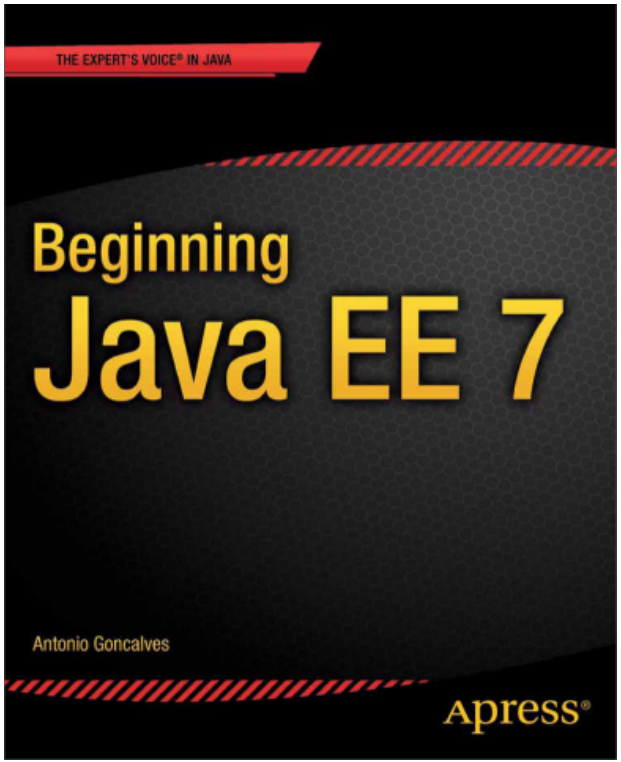

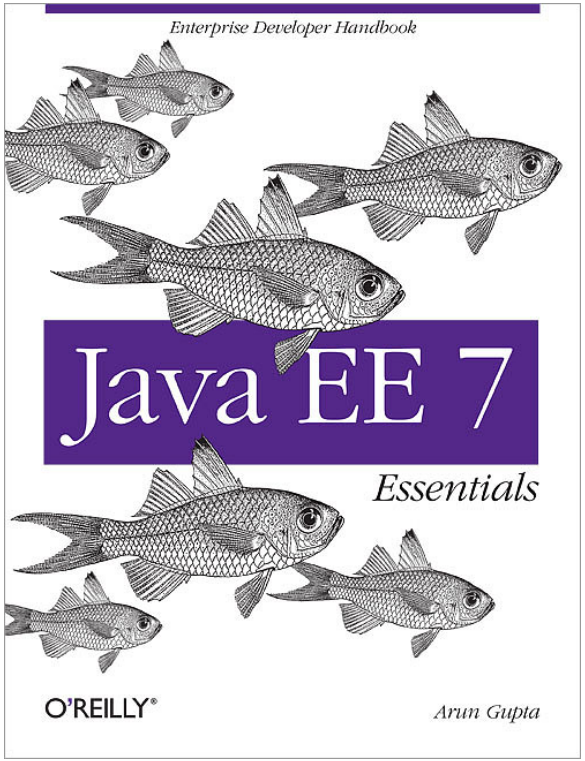

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