



Tema 4 Despliegues Ruben Corral Romero

Practica Tema_4 Servidor de Aplicaciones

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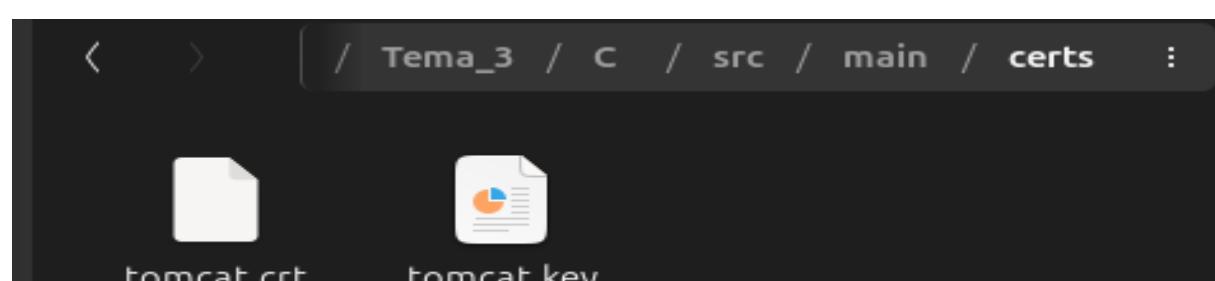
Fase 1

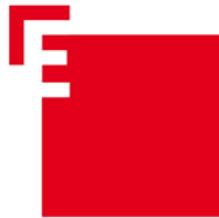
```
usu5pc2@ASPC2:~/Escritorio/Despliegue-de-aplicaciones-web/Tema_4/C/src/main$ docker ps | grep tomcat_t3
ed551c8273e3   tomcat:10.1           "catalina.sh run"      About a minute ago   Up About a minute   0.0.0.0:8080->8080/tcp, [::]:8080->
8080/tcp, 0.0.0.0:8443->8443/tcp, [::]:8443->8443/tcp
usu5pc2@ASPC2:~/Escritorio/Despliegue-de-aplicaciones-web/Tema_3/C/src/main$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS
ed551c8273e3 tomcat:10.1 "catalina.sh run" About a minute ago Up About a minute 0.0.0.0:8080->8080/tcp, [::]:8080->
8080/tcp, 0.0.0.0:8443->8443/tcp, [::]:8443->8443/tcp
888a3d7b5055 backend-app "docker-php-entrypoi..." 2 hours ago Up 2 hours 0.0.0.0:8001->8000/tcp, [::]:8001->
8000/tcp
0345elbf6456 mariadb:11.3 "docker-entrypoint.s..." 2 hours ago Up 2 hours (healthy) 3306/tcp, 0.0.0.0:32773->5432/tcp,
[::]:32773->5432/tcp
b68e0a6c630f axlent/mailpit "/mailpit" 2 hours ago Up 2 hours (healthy) 1110/tcp, 0.0.0.0:32771->1025/tcp,
[::]:32771->1025/tcp, 0.0.0.0:32772->8025/tcp, [::]:32772->8025/tcp
c4f4f21128bb postgres:16-alpine "docker-entrypoint.s..." 10 days ago Up 3 hours 0.0.0.0:5434->5432/tcp, [::]:5434->
5432/tcp
```

```
Tema_3 > C > src > main > docker-compose.yml
1
2 version: "3.8"
3
4 services:
5   tomcat:
6     image: tomcat:10.1
7     container_name: tomcat_t3
8     ports:
9       - "8080:8080"
10      - "8443:8443"
11     restart: unless-stopped
12     volumes:
13       # Certificados SSL/TLS
14       - ./certs:/usr/local/tomcat/certs
15       # Configuración del servidor
16       - ./server.xml:/usr/local/tomcat/conf/server.xml
17       # Usuarios y roles
18       - ./tomcat-users.xml:/usr/local/tomcat/conf/tomcat-users.xml
19       # Aplicación WAR (se generará con Maven)
20       - ../../target/calculadora.war:/usr/local/tomcat/webapps/calculadora.war
21
```

Fase 2

① localhost:8080/calculadora/login.jsp





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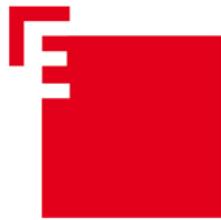
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Fase 3

```
● usua5pc2@A5PC2:~/Escritorio/Despliegue-de-aplicaciones-web/Tema_3/C/src/main$ mvn --version
Apache Maven 3.8.7
Maven home: /usr/share/maven
Java version: 21.0.9, vendor: Ubuntu, runtime: /usr/lib/jvm/java-21-openjdk-amd64
Default locale: es_ES, platform encoding: UTF-8
OS name: "linux", version: "6.14.0-37-generic", arch: "amd64", family: "unix"
```

Fase 4

```
Tema_3 > C:\> pom.xml
1  ?xml version="1.0" encoding="UTF-8"?>
2  <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/pom-4.0.0.xsd">
3      <modelVersion>4.0.0</modelVersion>
4
5      <groupId>calculadora</groupId>
6      <artifactId>calculadora</artifactId>
7      <version>1.0.0</version>
8      <packaging>war</packaging>
9
10     <properties>
11         <maven.compiler.source>11</maven.compiler.source>
12         <maven.compiler.target>11</maven.compiler.target>
13         <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
14     </properties>
15
16     <dependencies>
17         <dependency>
18             <groupId>jakarta.servlet</groupId>
19             <artifactId>jakarta.servlet-api</artifactId>
20             <version>6.0.0</version>
21             <scope>provided</scope>
22         </dependency>
23     </dependencies>
24
25     <build>
26         <finalName>calculadora</finalName>
27         <plugins>
28             <plugin>
29                 <groupId>org.apache.maven.plugins</groupId>
30                 <artifactId>maven-compiler-plugin</artifactId>
31                 <version>3.11.0</version>
32                 <configuration>
33                     <source>11</source>
34                     <target>11</target>
35                 </configuration>
36             </plugin>
37             <plugin>
38                 <groupId>org.apache.maven.plugins</groupId>
39                 <artifactId>maven-war-plugin</artifactId>
40                 <version>3.4.0</version>
41                 <configuration>
42                     <!-- Si falta web.xml, NO falla el build --&gt;
43                     &lt;failOnMissingWebXml&gt;false&lt;/failOnMissingWebXml&gt;
44                 &lt;/configuration&gt;
45             &lt;/plugin&gt;
46         &lt;/plugins&gt;
47     &lt;/build&gt;
48 &lt;/project&gt;</pre>
```



Tema 4 Despliegues Ruben Corral Romero

Practica Tema_4 Servidor de Aplicaciones

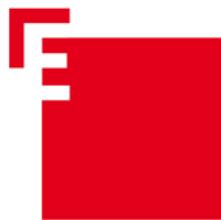
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Fase 5: Configuración y Dependencias

```
Tema_3 > C > src > main > server.xml
 1 <?xml version="1.0" encoding="UTF-8"?>
 2 <Server port="8005" shutdown="SHUTDOWN">
 3   <Listener className="org.apache.catalina.startup.VersionLoggerListener" />
 4   <Listener className="org.apache.catalina.core.AprLifecycleListener" SSLEngine="on" />
 5   <Listener className="org.apache.catalina.core.JreMemoryLeakPreventionListener" />
 6   <Listener className="org.apache.catalina.mbeans.GlobalResourcesLifecycleListener" />
 7   <Listener className="org.apache.catalina.core.ThreadLocalLeakPreventionListener" />
 8
 9   <GlobalNamingResources>
10     <Resource name="UserDatabase" auth="Container"
11       type="org.apache.catalina.UserDatabase"
12       description="User database that can be updated and saved"
13       factory="org.apache.catalina.users.MemoryUserDatabaseFactory"
14       pathname="conf/tomcat-users.xml" />
15   </GlobalNamingResources>
16
17   <Service name="Catalina">
18
19     <Connector port="8080" protocol="HTTP/1.1"
20       connectionTimeout="20000"
21       redirectPort="8443"
22       maxParameterCount="1000" />
23
24
25     <Connector port="8443" protocol="org.apache.coyote.http11.Http11NioProtocol"
26       maxThreads="150" SSLEnabled="true"
27       maxParameterCount="1000">
28       <SSLHostConfig>
29         <Certificate certificateFile="/usr/local/tomcat/certs/tomcat.crt"
30           certificateKeyFile="/usr/local/tomcat/certs/tomcat.key"
31           type="RSA" />
32     </SSLHostConfig>
33   </Connector>
34
35   <Engine name="Catalina" defaultHost="localhost">
36     <Realm className="org.apache.catalina.realm.LockOutRealm">
37       <Realm className="org.apache.catalina.realm.UserDatabaseRealm"
38         resourceName="UserDatabase"/>
39     </Realm>
40
41     <Host name="localhost" appBase="webapps"
42       unpackWars="true" autoDeploy="true">
43       <Valve className="org.apache.catalina.valves.AccessLogValve" directory="logs"
44         prefix="localhost_access_log" suffix=".txt"
45         pattern="%h %l %u %t \"%r\" %s %b" />
46     </Host>
47   </Engine>
48 </Service>
49 </Server>
```

En esta fase se realizaron las siguientes tareas:

- **Problemas y Solución con Marven:** Tuve problemas con Marven, ya que no soportaba la versión Java 17. La solución fue **bajar a la versión Java 11** para que el proyecto funcionase correctamente.



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Fase 6: Desarrollo y Pruebas

```
<Connector port="8443" protocol="org.apache.coyote.http11.Http11NioProtocol"
           maxThreads="150" SSLEnabled="true"
           maxParameterCount="1000">
    <SSLHostConfig>
        <Certificate certificateFile="/usr/local/tomcat/certs/tomcat.crt"
                     certificateKeyFile="/usr/local/tomcat/certs/tomcat.key"
                     type="RSA" />
    </SSLHostConfig>
</Connector>
```

Fase 7: Integración Continua

```
@WebServlet("/calcular")
public class CalculadoraServlet extends HttpServlet {
```

Fase 8: Despliegue Inicial

```

<security-constraint>
    <display-name>Restriccion Calculadora</display-name>
    <web-resource-collection>
        <web-resource-name>Recursos Protegidos</web-resource-name>
        <url-pattern>/index.jsp</url-pattern>
        <url-pattern>/calcular</url-pattern>
    </web-resource-collection>
    <auth-constraint>
        <role-name>calc_basic</role-name>
        <role-name>calc_full</role-name>
    </auth-constraint>
</security-constraint>

<login-config>

```

```

usu@usua5pc2:~/Escritorio/Despliegue-de-aplicaciones-web/Tema_3/C$ mvn clean package
[INFO] Scanning for projects...
[INFO]
[INFO] -----> calculadora:calculadora <-----
[INFO] Building calculadora 1.0.0
[INFO] -----[ war ]-----
[INFO]
[INFO] --- maven-clean-plugin:2.5:clean (default-clean) @ calculadora ---
[INFO] Deleting /home/usua5pc2/Escritorio/Despliegue-de-aplicaciones-web/Tema_3/C/target
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ calculadora ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory /home/usua5pc2/Escritorio/Despliegue-de-aplicaciones-web/Tema_3/C/src/main/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.11.0:compile (default-compile) @ calculadora ---
[INFO] Changes detected - recompiling the module! :source
[INFO] Compiling 1 source file with javac [debug target 11] to target/classes
[WARNING] system modules path not set in conjunction with -source 11
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ calculadora ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory /home/usua5pc2/Escritorio/Despliegue-de-aplicaciones-web/Tema_3/C/src/test/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.11.0:testCompile (default-testCompile) @ calculadora ---
[INFO] No sources to compile
[INFO]
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ calculadora ---
[INFO] No tests to run.
[INFO]
[INFO] --- maven-war-plugin:3.4.0:war (default-war) @ calculadora ---
[INFO] Packaging webapp
[INFO] Assembling webapp [calculadora] in [/home/usua5pc2/Escritorio/Despliegue-de-aplicaciones-web/Tema_3/C/target/calculadora]
[INFO] Processing war project
[INFO] Copying webapp resources [/home/usua5pc2/Escritorio/Despliegue-de-aplicaciones-web/Tema_3/C/src/main/webapp]
[INFO] Building war: [/home/usua5pc2/Escritorio/Despliegue-de-aplicaciones-web/Tema_3/C/target/calculadora.war]
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 11,648 s
[INFO] Finished at: 2026-02-02T11:28:51+01:00
[INFO] -----

```



Fase 9: Verificación y Solución de Problemas Post-despliegue

```

<?xml version="1.0" encoding="UTF-8"?>
<tomcat-users xmlns="http://tomcat.apache.org/xml" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://tomcat.apache.org/xml tomcat
<role rolename="calc_basic"/>
<role rolename="calc_full"/>
<user username="basic_user" password="123" roles="calc_basic"/>
<user username="full_user" password="321" roles="calc_full"/>

</tomcat-users>

```

Iniciar Sesión

Calculadora DAW - Práctica Tema 3

Usuario:
Introduce tu usuario

Contraseña:
Introduce tu contraseña

Iniciar Sesión

Usuario	Contraseña	Rol
basic_user	123	Básico
full_user	321	Completo

Calculadora DAW

Bienvenido, basic_user
Acceso Básico

Primer número:
Ej: 10

Operación:
-- Selecciona --

Segundo número:
Ej: 5

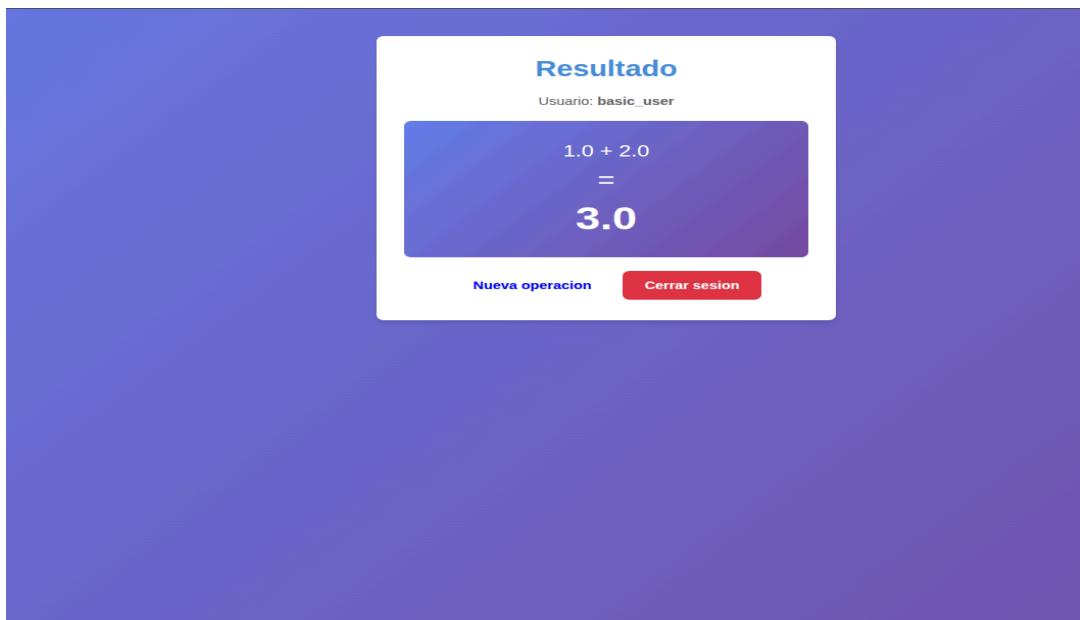
Calcular

Información de tu cuenta
Tu cuenta tiene **acceso basico**:

- + Suma
- - Resta

Contacta con el administrador para obtener acceso completo.

Cerrar sesión



Durante la verificación del despliegue se encontró el siguiente problema:

- **ERROR 408 Request Timeout:** Al intentar acceder a la calculadora, se recibía un error "408 Request Timeout".
- **Solución:** La incidencia se resolvió limpiando la caché del navegador o utilizando una ventana de incógnito.

Pincha para ver el documento: [Practica Tema 3 Despliegues](#)

