5. Web Application Administration

Miquel Àngel París i Peñaranda

Web Application Deployment

2nd C-VET Web Application Development

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Web Application Server exercises

1. **A web application can be deployed on different web servers maintaining its functionality and without any modification in its code due to the servlet 2.2 specification, what is the directory structure it should have?**

<div align="center">

/nombredelaApp

│── /WEB-INF

│　　│── web.xml

│　　│── /classes

│　　│── /lib

</div>

2. **You have a machine that has the recently updated Ubuntu operating system, in which the network environment is configured, and, in addition, you have an Internet connection and you are working with the root user's account. Indicate each of the steps, and commands involved in them, (and add the necessary screenshots, in some of them, you must see the platform with your profile picture) to do the following:**

   1. **Install the JDK.**

```
user2@server:~$ java -version
openjdk version "17.0.14" 2025-01-21
OpenJDK Runtime Environment (build 17.0.14+7-Ubuntu-122.04.1)
OpenJDK 64-Bit Server VM (build 17.0.14+7-Ubuntu-122.04.1, mixed mode, sharing)
```

   2. **Create a web application, just create a index.html or index.jsp file, similar to what you see in section 2.1. of the topic, and that as the title of the window it puts your locality and in the body (Body) put your name and surname.**

```
root@server:/opt/tomcat/webapps/ActivityWeb# cat index.html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Benicarló</title>
</head>
<body>
    <h1>Adrian Marschal</h1>
</body>
</html>
```

3. The name of the application, instead of Web_App as in the example in the section, should be Exampletar3.

Adrian Marschal
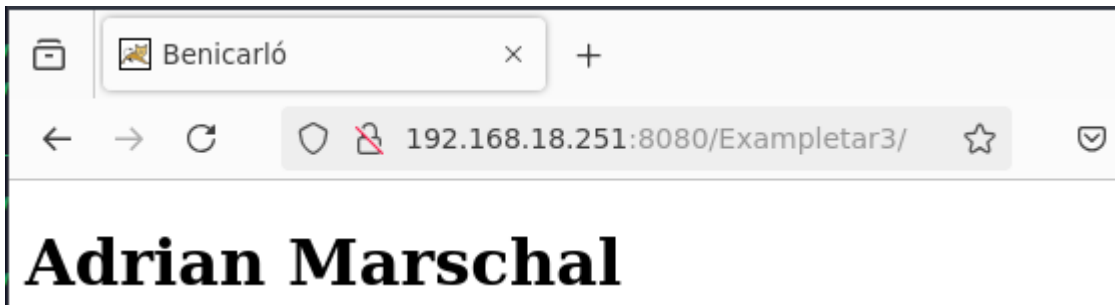
4. Indicate the steps to follow to generate an access log, do not forget to attach the file or files that you have modified when sending the task (make a backup in case you make a mistake when modifying).

a. Open the server.xml file(In folder: /opt/tomcat/conf/):

a.1 Modify the values of the Valve element inside of Host:

```
<Host name="localhost"  appBase="webapps"
      unpackWARs="true" autoDeploy="true">

<!-- SingleSignOn valve, share authentication between web applications
     Documentation at: /docs/config/valve.html -->
<!--
<Valve className="org.apache.catalina.authenticator.SingleSignOn" />
-->

<!-- Access log processes all example.
     Documentation at: /docs/config/valve.html
     Note: The pattern used is equivalent to using pattern="common" -->
<Valve className="org.apache.catalina.valves.AccessLogValve"
       directory="logs"
       prefix="exampletar3_access_log"
       suffix=".txt"
       pattern="%h %l %u %t &quot;%r&quot; %s %b" />

</Host>
```

b. Restart the server

```
root@server:/opt/tomcat# systemctl restart tomcat
root@server:/opt/tomcat# 
```

c. Refresh in the Client's Machine

d. Show the access logs file where we said where save the access do it for the clients

```
root@server:/opt/tomcat# cat logs/exampletar3_access_log.2025-02-10.txt
192.168.18.102 - manager [10/Feb/2025:15:52:29 +0000] "GET /manager/html HTTP/1.1" 200 20087
192.168.18.102 - - [10/Feb/2025:15:52:31 +0000] "GET /Exampletar3/ HTTP/1.1" 304 -
192.168.18.102 - - [10/Feb/2025:15:52:31 +0000] "GET /Exampletar3/ HTTP/1.1" 304 -
```

5. Download and install WildFly Application Server (do not install it with Synaptic).

```
root@server:/opt# systemctl status wildfly
● wildfly.service - The WildFly Application Server
     Loaded: loaded (/etc/systemd/system/wildfly.service; enabled; vendor preset: enabled)
     Active: active (running) since Mon 2025-02-10 16:03:26 UTC; 2min 18s ago
   Main PID: 4543 (launch.sh)
      Tasks: 54 (limit: 4547)
     Memory: 282.3M
        CPU: 25.920s
     CGroup: /system.slice/wildfly.service
             ├─4543 /bin/bash /opt/wildfly/bin/launch.sh standalone standalone.xml 0.0.0.0
             ├─4544 /bin/sh /opt/wildfly/bin/standalone.sh -c standalone.xml -b 0.0.0.0
             └─4677 java "-D[Standalone]" "-Djdk.serialFilter=maxbytes=10485760;maxdepth=128;max

Feb 10 16:03:26 server systemd[1]: Started The WildFly Application Server.
lines 1-13/13 (END)
```

6. Create user for WildFly.

```
root@server:/opt# id wildfly
uid=998(wildfly) gid=998(wildfly) groups=998(wildfly)
```

7. Set the corresponding environment variables for Java and WildFly.

File: .profile (folder: /~/)

```
CATALINA_HOME=/opt/tomcat
JAVA_HOME=/usr/lib/jvm/java-1.11.0-openjdk-amd64
PATH=$PATH:$JAVA_HOME/bin:$CATALINA_HOME
export PATH JAVA_HOME CATALINA_HOME
```

8. Change the WildFly administrator password.

```
user@server:~$ sudo /opt/wildfly/bin/add-user.sh

What type of user do you wish to add?
 a) Management User (mgmt-users.properties)
 b) Application User (application-users.properties)
(a): b

Enter the details of the new user to add.
Using realm 'ApplicationRealm' as discovered from the existing property files.
Username : FenFex
Password recommendations are listed below. To modify these restrictions edit the add-user.propert
ies configuration file.
 - The password should be different from the username
 - The password should not be one of the following restricted values {root, admin, administrator}
 - The password should contain at least 8 characters, 1 alphabetic character(s), 1 digit(s), 1 no
n-alphanumeric symbol(s)
Password :
WFLYDM0102: Password should have at least 1 non-alphanumeric symbol.
Are you sure you want to use the password entered yes/no? yes
Re-enter Password :
What groups do you want this user to belong to? (Please enter a comma separated list, or leave bl
ank for none)[  ]: ManagementRealm
About to add user 'FenFex' for realm 'ApplicationRealm'
Is this correct yes/no? yes
Added user 'FenFex' to file '/opt/wildfly/standalone/configuration/application-users.properties'
Added user 'FenFex' to file '/opt/wildfly/domain/configuration/application-users.properties'
Added user 'FenFex' with groups ManagementRealm to file '/opt/wildfly/standalone/configuration/ap
plication-roles.properties'
Added user 'FenFex' with groups ManagementRealm to file '/opt/wildfly/domain/configuration/applic
ation-roles.properties'
```