IES POETA PACO MOLLÁ PETRER

Tomcat

1. Install Tomcat on a Debian virtual machine. You can download the debianGeneric version or create one from scratch and thus you will not have LAMP installed, since it is not necessary. In this case, download the latest version of Debian. To install tomcat, follow the steps in the module notes. (if you use the repositories, everything will be much easier).
https://www.debian.org/download

2. Define the JAVA_HOME variable. To do this, follow the steps from page 6-7 of the notes.

3. Take a look at all the Tomcat documentation and examples, post a screenshot of what you found most interesting.

4. Add the tomcat variables, as specified on pages 9-10 of the notes.

5. Deploys the following applications described in section 5.2 of the notes:

   a. Displays a JSP file, you can use the one from the example or create your own. And test its operation.

   b. Deploy the sample.war application by copying it from the host machine using scp and then moving it to the appropriate folder.

6. Define the users to use Web Manager. One of the users will be your name. The other one, you can leave it as the example on page 14.

7. Enter the administration panel, display the example application EjemploPruebaCarga from the Web Manager control panel. On this website they explain how the application works:
http://carloszuluaga.wikidot.com/pruebascarga:instalar-app-ejemplo

8. Carry out the practical example of creating session variables as specified on page 16 and check the session data and its associated variables from the Web Manager.

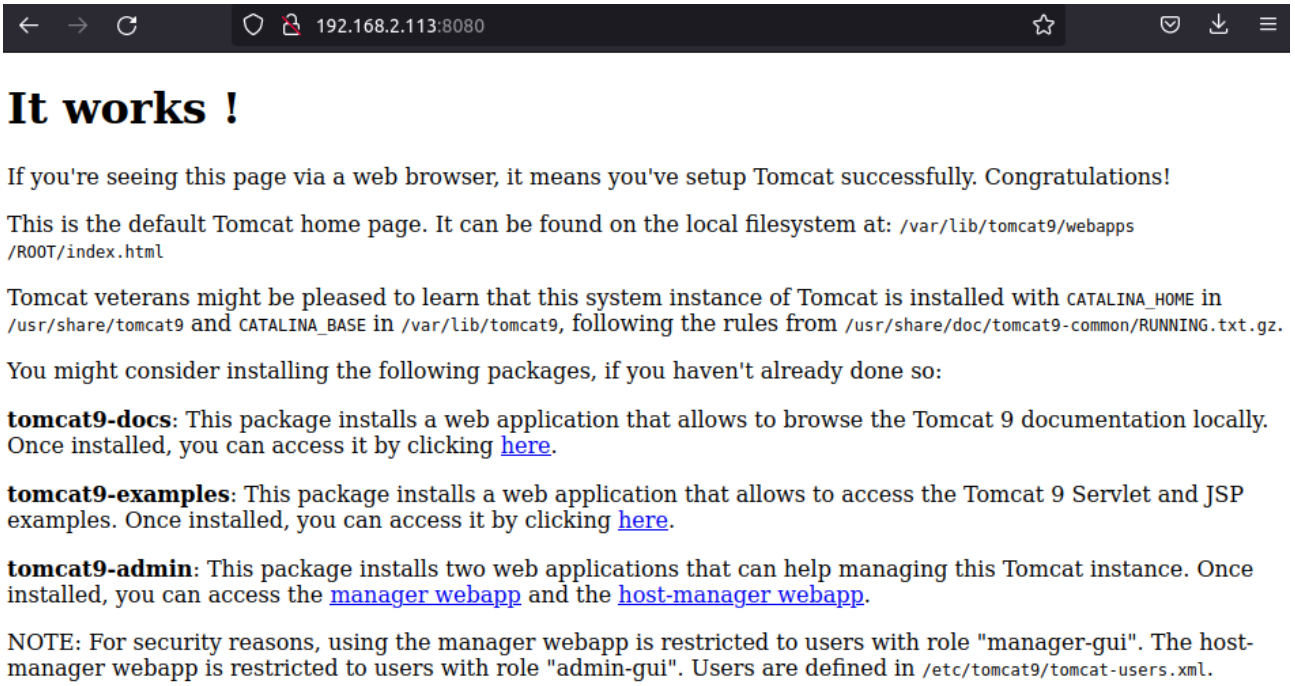
9. Integrate Apache with Apache Tomcat and verify that it works correctly. To do this, you must follow the steps on pages 19-20 of the notes.

1. Install Tomcat in a virtual machine with Debian. You can download the debianGeneric version or create one from scratch and thus you will not have LAMP installed, since it is not necessary. In this case, download the latest version of Debian. To install tomcat, follow the steps in the module notes. (If you use the repositories, everything will be much easier). https://www.debian.org/download

We are going to use the following command to install tomcat

```
root@debianGenerico:~# apt-get install tomcat9 tomcat9-*
```

And if we put our IP plus 8080 we can see that it is installed and started



2. Define the JAVA_HOME variable. To do this, follow the steps from page 6-7 of the notes.

We will use the following command to know where the java file is

```
root@debianGenerico:~# whereis java
java: /usr/bin/java /usr/share/java /usr/share/man/man1/java.1.gz
root@debianGenerico:~#
```

And with this command we will know where the symbolic link points

```
root@debianGenerico:~# ls -l /usr/bin/java
lrwxrwxrwx 1 root root 22 ene 13 16:30 /usr/bin/java -> /etc/alternatives/java
root@debianGenerico:~# _
```

And with this command we will know where our java is installed

```
root@debianGenerico:~# ls -l /etc/alternatives/java
lrwxrwxrwx 1 root root 43 ene 13 16:30 /etc/alternatives/java -> /usr/lib/jvm/java-11-openjdk-amd64/
bin/java
```

Now we go to the next file and we are going to write the following line

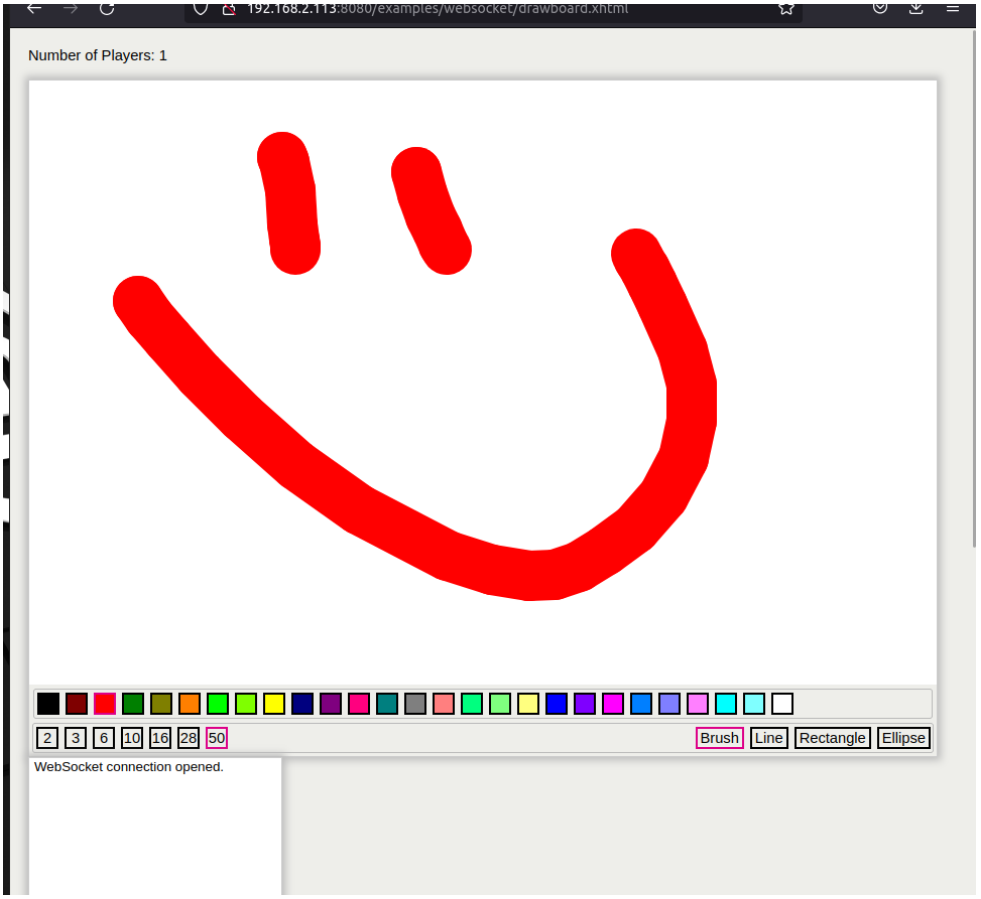
```
 GNU nano 3.2                                    /etc/environment

JAVA_HOME=/usr/lib/jvm/java-11-openjdk-amd64/bin
```

We are going to restart the machine and We are going to put the following and the line that we have put previously comes

```
root@debianGenerico:~# echo $JAVA_HOME
/usr/lib/jvm/java-11-openjdk-amd64/bin
```

3. OUT TAKE A LOOK AT ALL THE DOCUMENTATION AND THE TOMCAT EXAMPLES, PUT A SCREENSHOT OF WHAT YOU HAVE FOUND MOST INTERESTING.

I liked this kind of paint to which more than one person can connect to the same server



4. ADD THE TOMCAT VARIABLES, AS SPECIFIED ON PAGES 9-10 OF THE NOTES.

We go to the following file and we are going to put the last two lines

```
DebianGenericoLAMP [Corriendo] - Oracle VM
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
 GNU nano 3.2                                /etc/environment

JAVA_HOME=/usr/lib/jvm/java-11-openjdk-amd64/bin
CATALINA_HOME=/usr/share/tomcat9
CATALINA_BASE=/var/lib/tomcat9
```

And we are going to check where they are installed

```
root@debianGenerico:~# echo $CATALINA_HOME
/usr/share/tomcat9
root@debianGenerico:~# echo $CATALINA_BASE
/var/lib/tomcat9
root@debianGenerico:~# _
```

5. DEPLOY THE FOLLOWING APPLICATIONS DESCRIBED IN SECTION 5.2 OF THE NOTES:
   a. Deploy a JSP file, you can use the one in the example or create your own. And test its operation.

From the terminal we are going to create the following file

```
 GNU nano 4.8                        prueba.jsp                        Modific
<%@ page import ="java.util.Calendar" %>
<html>
  <head>
        <title>PRUEBA JSP</title>
  </head>
  <body>
        <h1>Obteniendo la longitud de una cadena</h1>
        <%
        String s1 = "Longitud de una cadena!";
        out.println("\"" + s1 + "\"" + " es de  "  +
                    s1.length() +   " caracteres ");
        %>
        <h1>Funciones de fecha/hora</h1>
        <p>
        Hoy es <%=Calendar.getInstance().getTime()%>
        </p>
        <%
        String saludo;
        int hora= Calendar.getInstance().get(Calendar.HOUR_OF_DAY);
        if (hora<12) {
        saludo = "Buenos días";
        } else if ( hora >= 12 && hora < 21) {
        saludo = "Buenas tardes";
        } else {
        saludo = "Buenas noches";
        }
        %>
        <p> <%=saludo%> </p>
  </body>
</html>
```

now we are going to copy the file in the home of the student user of the virtual

machine

```
ciclost@pc-13:~$ scp prueba.jsp alumno@192.168.2.113:/home/alumno
alumno@192.168.2.113's password:
prueba.jsp                                    100%  707     1.7MB/s   00:00
ciclost@pc-13:~$
```

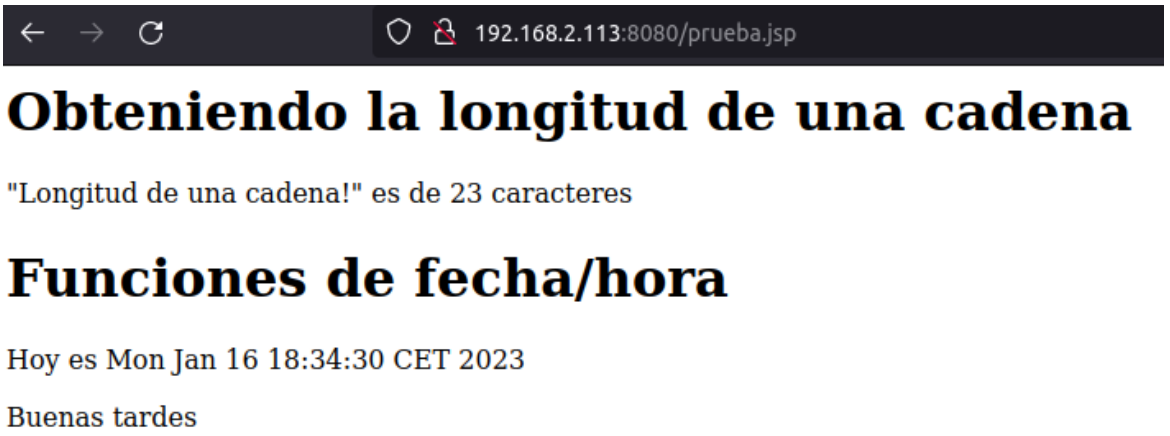
And we can see that there is the file in the virtual machine

```
root@debianGenerico:~# ls /home/alumno/
phpMyAdmin-4.9.0.1-all-languages.tar.gz  prueba.jsp
```

Now we are going to move the file to the following path

```
root@debianGenerico:/# mv /home/alumno/prueba.jsp $CATALINA_BASE/webapps/ROOT
root@debianGenerico:/#
```

And we are going to Look for the following path:**http://192.168.2.113:8080/test.jsp/** and we will see that we can access the



b. Deploy the application sample.war file by copying it from the host computer using scp and then taking it to the corresponding folder.

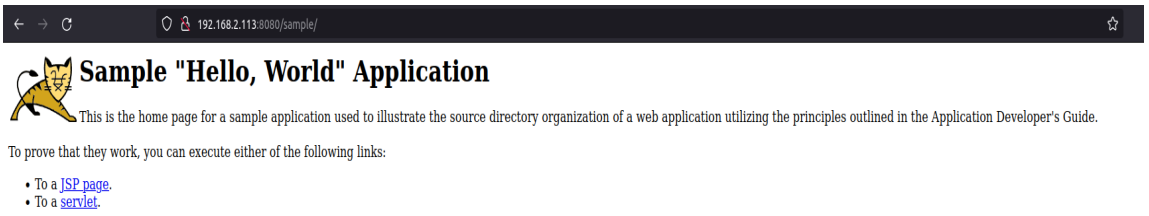
Now we are going to download the sample.war file and we are going to pass it to the virtual machine

```
ciclost@pc-13:~/Descargas$ scp sample.war alumno@192.168.2.113:/home/alumno
alumno@192.168.2.113's password:
sample.war                                    100% 4606     9.5MB/s   00:00
```

Now we are going to move the file to the webapp folder and it will automatically unzip

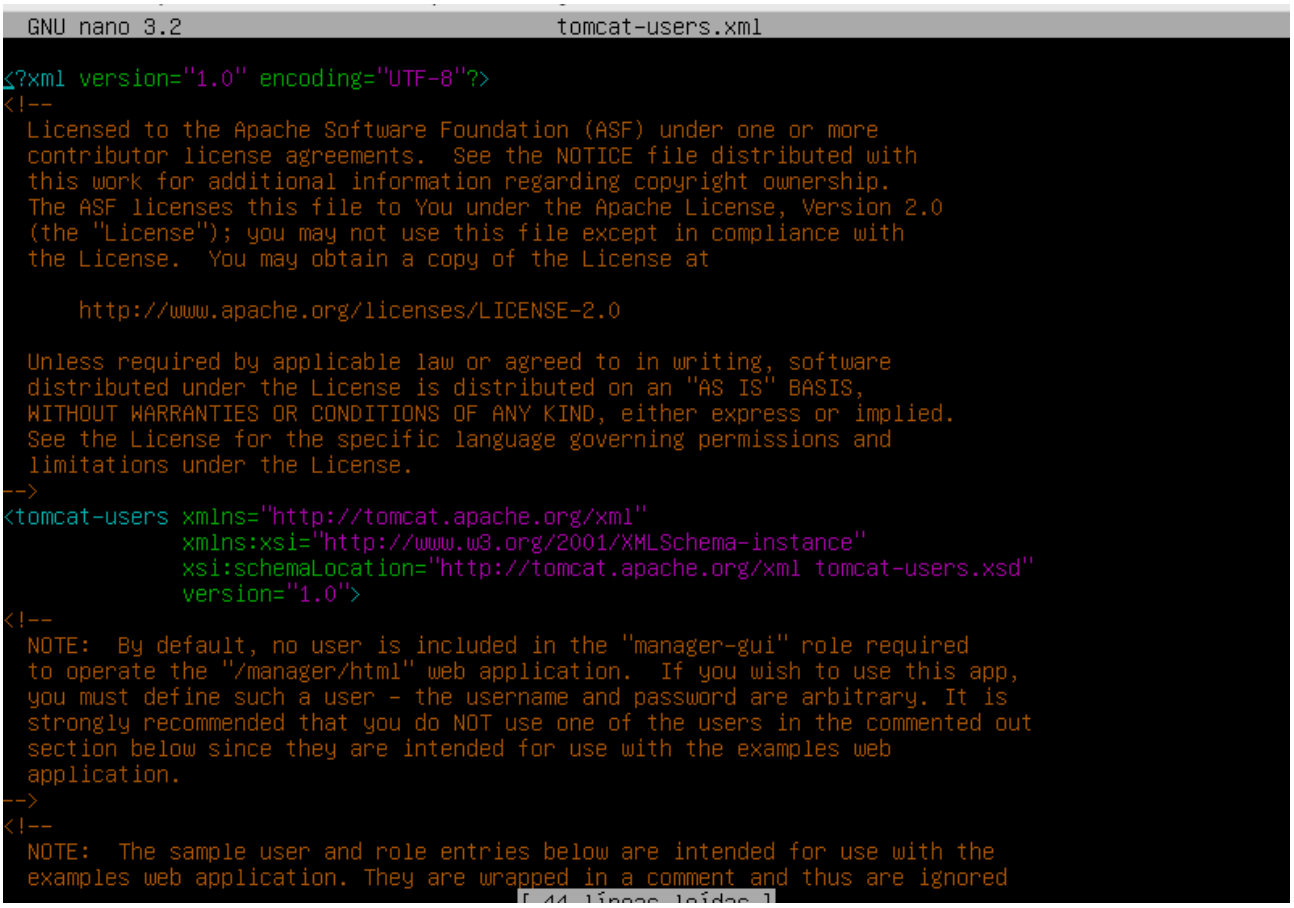
```
root@debianGenerico:/# mv /home/alumno/sample.war $CATALINA_BASE/webapps
root@debianGenerico:/# ls $CATALINA_BASE/webapps/
ROOT  sample  sample.war
root@debianGenerico:/# _
```

And we can see that it works perfectly if we put the following path: **http://192.168 .2.113:8080/sample/**



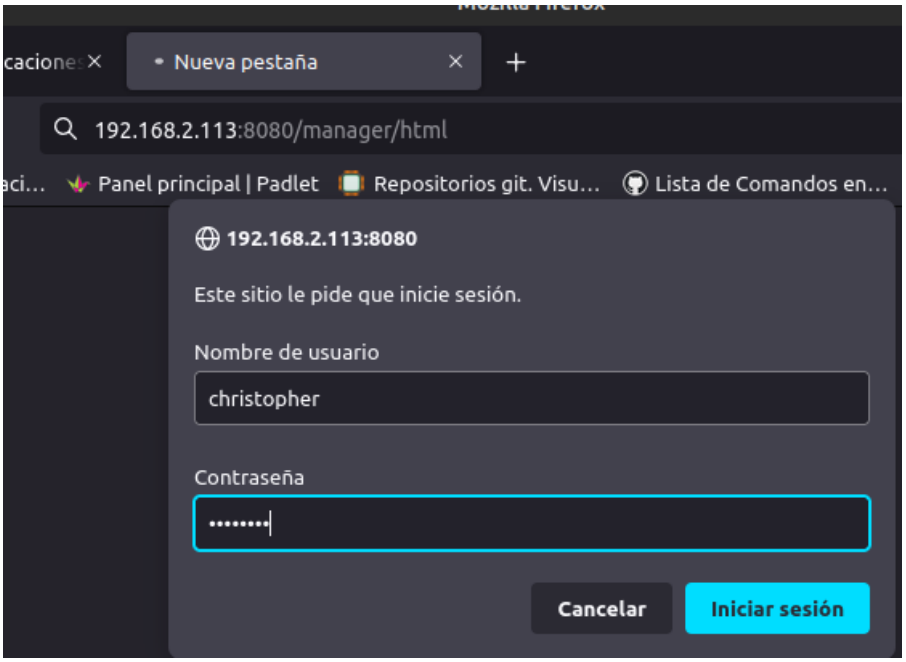
6. Defines the users to use Web Manager. One of the users will be your name. The other one, you can leave it as the example on page 14.

Let's go to the following file

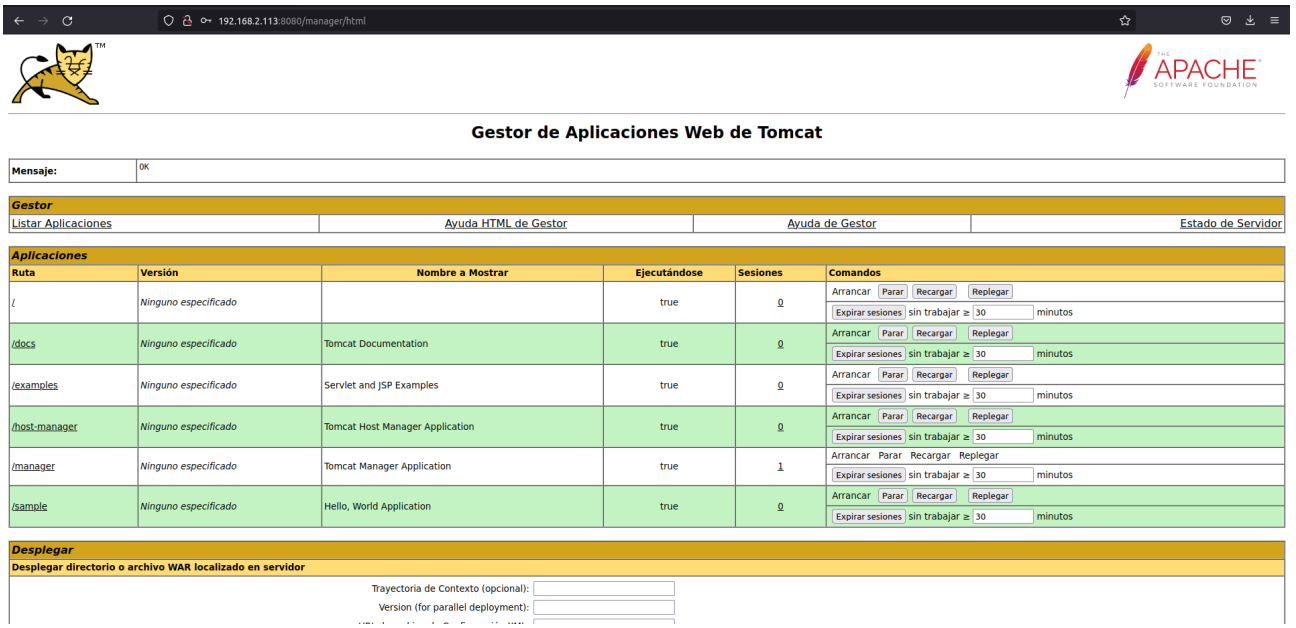


And at the end of this same file are the user roles and we are going to put the following

We are going to put the following url in our web browser and we will start the session with the credentials that we have previously created



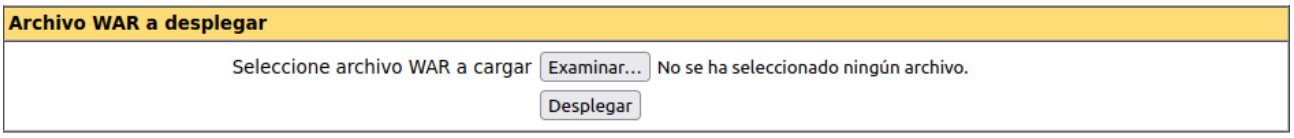
And we will already be in the panel



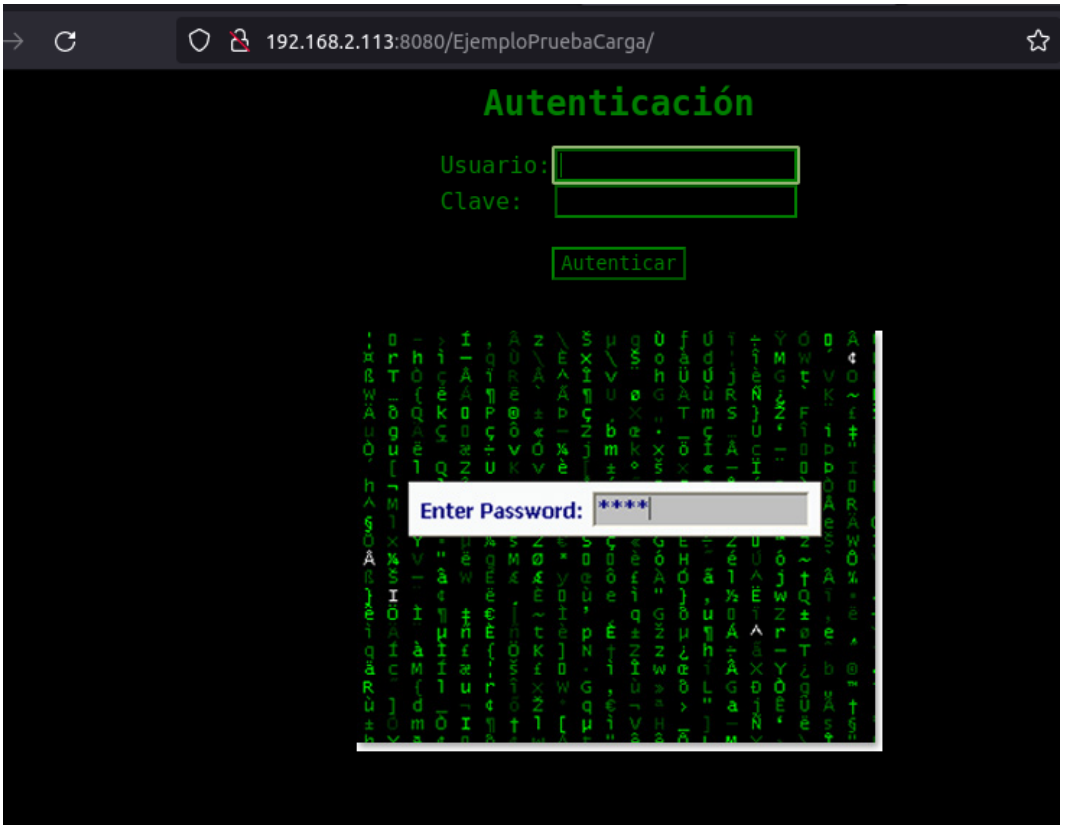
7. Enter the administration panel, deploy the sample application EjemploPruebaCarga from the Web Manager control panel. On this website they explain how the application works: http://carloszuluaga.wikidot.com/pruebascarga:instalar-app-ejemplo

We are going to download the file

And now we are going to click on deploy and we will select the file



Now we are going to the following route and we see that the application has been perfectly deployed



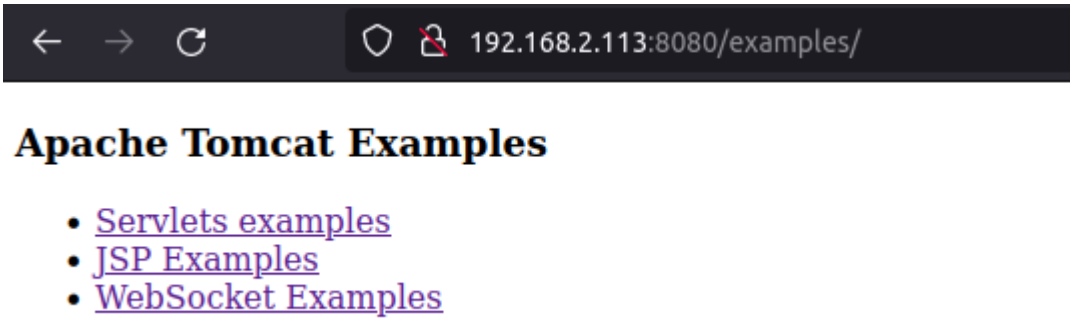
These are accounts that are available

- pepe/pepe123
- juan/juan123
- roberto/roberto123
- chonto/chonto123

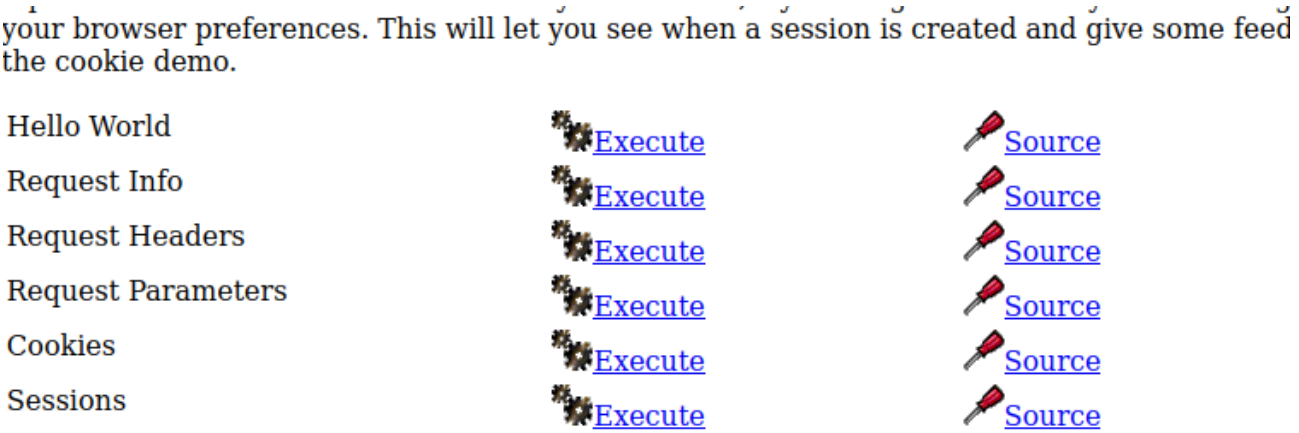
And we can see that it is a list

8. CARRY OUT THE PRACTICAL EXAMPLE OF CREATION OF SESSION VARIABLES AS SPECIFIED ON PAGE 16 AND CHECK THE SESSION DATA AND ITS ASSOCIATED VARIABLES FROM THE WEB MANAGER.

We go to the next page and we are going to enter the first option



And now we are going to enter Sessions



And we have created some example variables

Ejemplo de Sesiones

ID de Sesión: AFD3D9B51790C7A08CB520A68EDC6E50
Creado: Fri Jan 20 16:44:25 CET 2023
Ultimo Acceso: Fri Jan 20 16:48:30 CET 2023

Lo siguientes datos están en tu sesión:
color = rojo
calle = Reina victoria
mascota = perro

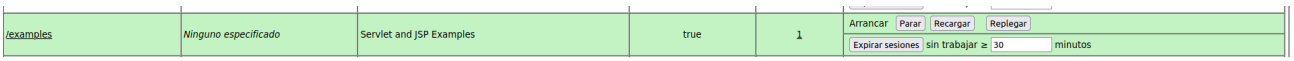
Nombre del atributo de sesión:
Valor del atributo de sesión:
Enviar consulta

GET based form:

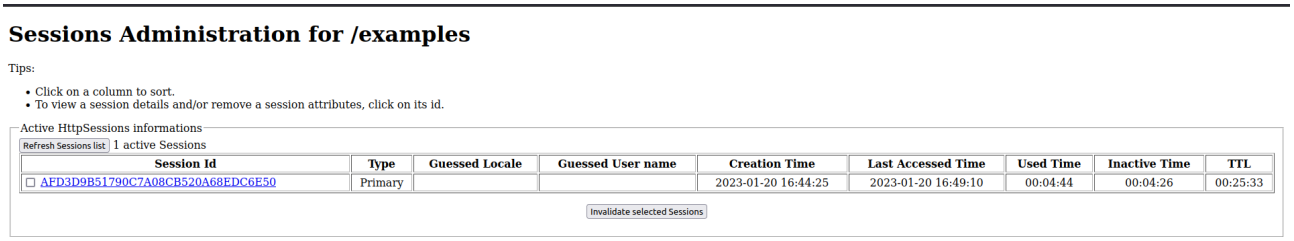
Nombre del atributo de sesión:
Valor del atributo de sesión:
Enviar consulta

URL encoded

We can see that there is a session in the example



When we enter we see the following page



Sessions Administration for /examples

Tips:

- Click on a column to sort.
- To view a session details and/or remove a session attributes, click on its id.

Active HttpSessions informations

Refresh Sessions list 1 active Sessions

Session Id	Type	Guessed Locale	Guessed User name	Creation Time	Last Accessed Time	Used Time	Inactive Time	TTL
AFD3D9B51790C7A08CB520A68EDC6E50	Primary			2023-01-20 16:44:25	2023-01-20 16:49:10	00:04:44	00:04:26	00:25:33

Invalidate selected Sessions

And if we go to the session we can see and delete the variables that we have previously created

Details for Session AFD3D9B51790C7A08CB520A68EDC6E50

Session Id	AFD3D9B51790C7A08CB520A68EDC6E50
Guessed Locale	
Guessed User	
Creation Time	2023-01-20 16:44:25
Last Accessed Time	2023-01-20 16:49:10
Session Max Inactive Interval	00:30:00
Used Time	00:04:44
Inactive Time	00:06:22
TTL	00:23:37

Refresh

3 ATTRIBUTES

Remove Attribute	Attribute name	Attribute value
Remove	color	rojo
Remove	calle	Reina victoria
Remove	mascota	perro

Return to session list

9. INTEGRATE APACHE WITH APACHE TOMCAT AND CHECK THAT IT WORKS CORRECTLY. TO DO THIS, YOU MUST FOLLOW THE STEPS ON PAGES 19-20 OF THE NOTES.

Let's enable the following modules

```
root@debianGenerico:/# a2enmod proxy
Module proxy already enabled
root@debianGenerico:/# a2enmod proxy_http
```

Let's go to the following file and add the Proxy tag

```
 GNU nano 3.2                    /etc/apache2/mods-enabled/proxy.conf

<IfModule mod_proxy.c>

        # If you want to use apache2 as a forward proxy, uncomment the
        # 'ProxyRequests On' line and the <Proxy *> block below.
        # WARNING: Be careful to restrict access inside the <Proxy *> block.
        # Open proxy servers are dangerous both to your network and to the
        # Internet at large.
        #
        # If you only want to use apache2 as a reverse proxy/gateway in
        # front of some web application server, you DON'T need
        # 'ProxyRequests On'.

        #ProxyRequests On
        #<Proxy *>
        #   AddDefaultCharset off
        #   Require all denied
        #   #Require local
        #</Proxy>

        <Proxy *>
                AddDefaultCharset off
                Order deny,allow
        </Proxy>
```

Now let's modify the following file and add the two lines below the DocumentRoot

```
 GNU nano 3.2                 /etc/apache2/sites-available/agencia.conf

<VirtualHost *:90>
        ServerName agencia.com
        #Redirect / https://www.agencia.es
</VirtualHost>
<VirtualHost *:443>
        # The ServerName directive sets the request scheme, hostname and port that
        # the server uses to identify itself. This is used when creating
        # redirection URLs. In the context of virtual hosts, the ServerName
        # specifies what hostname must appear in the request's Host: header to
        # match this virtual host. For the default virtual host (this file) this
        # value is not decisive as it is used as a last resort host regardless.
        # However, you must set it for any further virtual host explicitly.
        #ServerName www.example.com

        ServerAdmin christopherrodriguea.alu@iespacomolla.es
        ServerName agencia.com
        ServerAlias www.agencia.es
        DocumentRoot /var/www/html/agencia.com/public_html
        ProxyPass /sample http://localhost:8080/sample
        ProxyPassReverse /sample http://localhost:8080/sample
```

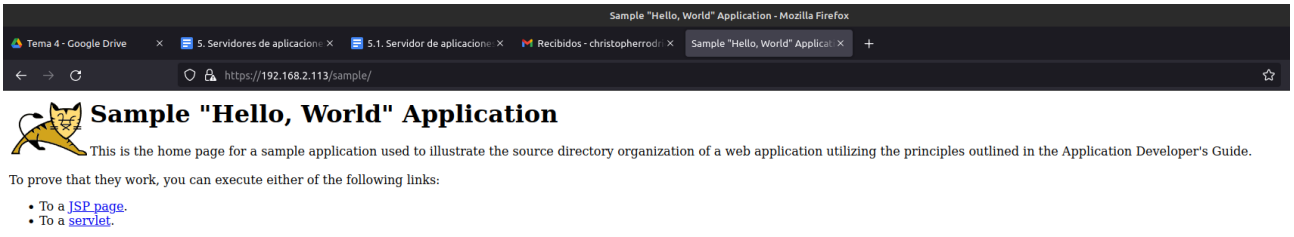
Now let's modify the Tomcat file and put the following in the Connector label

```
 GNU nano 3.2                                  /etc/tomcat9/server.xml

        Java AJP  Connector: /docs/config/ajp.html
        APR (HTTP/AJP) Connector: /docs/apr.html
        Define a non-SSL/TLS HTTP/1.1 Connector on port 8080
    -->
    <Connector port="8080" protocol="HTTP/1.1"
               connectionTimeout="20000"
               URIEncoding="UTF-8"
               redirectPort="8443" proxyPort="90" />
```

And we are going to restart the services

```
root@debianGenerico:/etc# systemctl restart apache2
root@debianGenerico:/etc# systemctl restart tomcat9.service
root@debianGenerico:/etc#
```

And going to the following URL we can see that apache has been connected perfectly with tomcat



Conclusion

Silvia Apruébame :)