



SERVIDOR WEB CON SOPORTE DE SERVLETS Y JSPS

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GRUPO 17 TIPO 2 (21 HORAS)

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UBUNTU SERVER

- ¿Por qué usamos Ubuntu Server?
- Instalación de interfaz grafica
- Instalación de Tomcat y sus servicios

TOMCAT

- Definición de Tomcat
- Para que sirve Tomcat
- Que podemos trabajar con el

TOMCAT

Users of Tomcat 8.0.x should be aware that it has reached [end of life](#). Users of Tomcat 8.0.x should upgrade to 8.5.x or later.
Note: End of life has been announced for 8.0.x only. 8.5.x is not affected by this announcement.

Quick Navigation

[8.5.x](#) | [8.5.15](#) | [Release](#) | [Archives](#)

Release Integrity

You must [verify](#) the integrity of the downloaded files. We provide OpenPGP signatures for every release file. This signature should be matched against the [KEYS](#) file which contains the OpenPGP keys of Tomcat's release Managers. We also provide [SHA-512](#) checksums for every release file. After you download the file, you should calculate a checksum for your download, and make sure it is the same as ours.

Mirrors

You are currently using <http://apache.rediris.es/>. If you encounter a problem with this mirror, please select another mirror. If all mirrors are failing, there are backup mirrors (at the end of the mirrors list) that should be available.

Other mirrors: [http://apache.rediris.es/](#)

8.5.15

Please see the [README](#) file for packaging information. It explains what every distribution contains.

Binary Distributions

- Core:
 - [bin \(rpm, sha512\)](#)
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 - [bin \(rpm, sha512\)](#)
 - [bin \(rpm, sha512\)](#)
- Full documentation:
 - [bin \(rpm, sha512\)](#)
- Deployer:
 - [bin \(rpm, sha512\)](#)
 - [bin \(rpm, sha512\)](#)
- Extras:
 - [bin \(rpm, sha512\)](#)
 - [bin \(rpm, sha512\)](#)
- Embedded:
 - [bin \(rpm, sha512\)](#)
 - [bin \(rpm, sha512\)](#)

Source Code Distributions

- [bin \(rpm, sha512\)](#)
- [bin \(rpm, sha512\)](#)

```
i02pepea@i02pepea: ~  
File Edit View Search Terminal Help  
i02pepea@i02pepea:~$ sudo apt-get install default-jdk  
[sudo] password for i02pepea:  
Leyendo lista de paquetes... Hecho  
Creando árbol de dependencias  
Leyendo la información de estado... Hecho  
default-jdk ya está en su versión más reciente (2:1.10-63ubuntu1-02).  
0 actualizados, 0 nuevos se instalarán, 0 para eliminar y 107 no actualizados.  
i02pepea@i02pepea:~$
```

```
i02pepea@i02pepea: ~  
File Edit View Search Terminal Help  
GNU nano 2.9.3 /etc/systemd/system/tomcat.service  
[Unit]  
Description=Apache Tomcat Web Application Container  
After=network.target  
[Service]  
Type=forking  
Environment=JAVA_HOME=/usr/lib/jvm/java-1.11.0-openjdk-amd64  
Environment=CATALINA_PID=/opt/tomcat/temp/tomcat.pid  
Environment=CATALINA_HOME=/opt/tomcat  
Environment=CATALINA_BASE=/opt/tomcat  
Environment='CATALINA_OPTS=-Xms512M -Xmx1024M -server -XX:+UseParallelGC'  
Environment='JAVA_OPTS=-Djava.awt.headless=true -Djava.security.egd=file:/dev/./$  
ExecStart=/opt/tomcat/bin/startup.sh  
ExecStop=/opt/tomcat/bin/shutdown.sh  
User=tomcat  
Group=tomcat  
Read 25 lines  
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos  
^X Exit ^R Read File ^M Replace ^U Uncut Text ^T To Spell ^_ Go To Line
```

```
i02pepea@i02pepea: ~  
File Edit View Search Terminal Help  
GNU nano 2.9.3 /opt/tomcat/conf/tomcat-users.xml  
NOTE: The sample user and role entries below are intended for use with the  
examples web application. They are wrapped in a comment and thus are ignored  
when reading this file. If you wish to configure these users for use with the  
examples web application, do not forget to remove the <!-- ... --> that surrounds  
them. You will also need to set the passwords to something appropriate.  
-->  
<  
<role rolename="tomcat"/>  
<role rolename="role1"/>  
<user username="tomcat" password="tomcat" roles="tomcat"/>  
<user username="admin" password="admin" roles="manager-gui,admin-gui"/>  
<user username="role1" password="<must-be-changed>" roles="role1"/>  
</tomcat-users>  
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos  
^X Exit ^R Read File ^M Replace ^U Uncut Text ^T To Spell ^_ Go To Line
```

MONITORIZACION SAR




- Que es sar?
- Instalación de sysstat

```
i02pepea@i02pepea:~/Descargas/cesi$ sar -u 1
Linux 4.15.0-42-generic (i02pepea)      09/12/18      _x86_64_      (1 CPU)

20:35:07      CPU      %user      %nice      %system      %iowait      %steal      %idle
20:35:08      all      98,00      0,00      2,00      0,00      0,00      0,00
20:35:09      all      94,00      0,00      6,00      0,00      0,00      0,00
20:35:10      all      94,00      0,00      6,00      0,00      0,00      0,00
20:35:11      all      98,00      0,00      2,00      0,00      0,00      0,00
20:35:12      all      99,00      0,00      1,00      0,00      0,00      0,00
20:35:13      all     100,00      0,00      0,00      0,00      0,00      0,00
20:35:14      all      99,00      0,00      1,00      0,00      0,00      0,00
20:35:15      all      77,00      0,00     19,00      0,00      0,00      4,00
20:35:16      all      26,32      0,00     73,68      0,00      0,00      0,00
20:35:17      all      26,04      0,00     73,96      0,00      0,00      0,00
^C
Average:      all      81,63      0,00     17,96      0,00      0,00      0,40
```

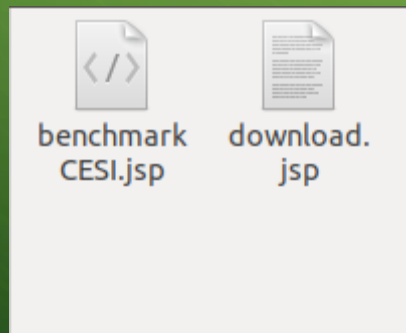
CARGA DE PRUEBA

- Carga de prueba facilitada por el profesor
- Tipos de imágenes utilizadas

 imagenesGrandes	21/11/2013 18:38	Carpeta de archivos
 imagenesMedianas	21/11/2013 12:02	Carpeta de archivos
 imagenesPequenas	21/11/2013 18:38	Carpeta de archivos

CARGA DE PRUEBA

- Archivos facilitados por el profesor
- Como Realizaremos el Benchmark
- Benchmark.jsp



```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1" import="java.io.File"%>
<%@TYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd"%>
Files:
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Generador mosaico de imágenes con JSP - Trabajo Final CESI 2018-2019</title>
</head>
<body>
<%
String iteraciones = request.getParameter("iteraciones"); //PODEMOS PASAR POR PARAMETRO (GET) EL NUMERO DE ITERACIONES
String path = "/home/i02pepea/Descargas/cargaPrueba/imagenesGrandes/"; //ES NECESARIA LA RUTA ABSOLUTA DEL DIRECTORIO DEL
SERVIDOR DONDE ESTAN ALOJADAS LAS IMAGENES
File f = new File(path);
File[] files = f.listFiles();

int numIteraciones=100;
int numImagenes = 0;

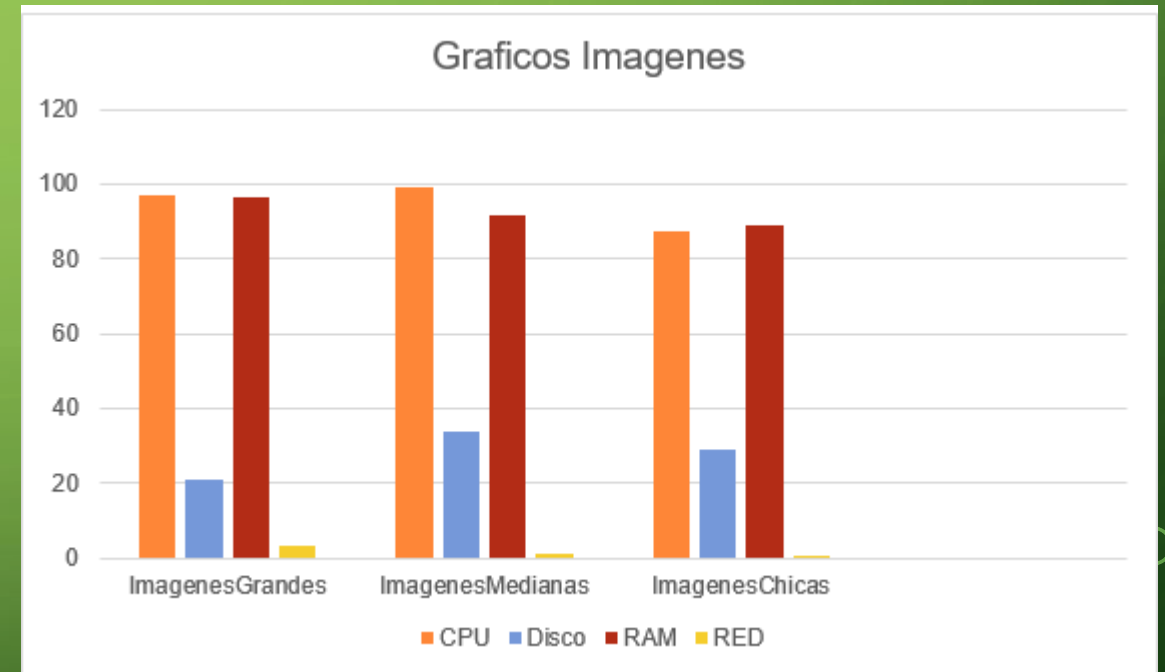
if(iteraciones!=null)
    numIteraciones = Integer.parseInt(iteraciones);
if(files != null)
    numImagenes = files.length;

String htmlImagenes = "";
long inicio = System.currentTimeMillis();
for(int k=1;k<numIteraciones;k++){
    for(int i=0;i<files.length;i++){
        if(!files[i].isDirectory() && (files[i].getName().endsWith(".jpg") || files[i].getName().endsWith(".JPG"))){
            htmlImagenes += "<img src=\"download.jsp?filename="+files[i].getAbsolutePath()+"\">";
            numImagenes++;
        }
    }
}

long fin = System.currentTimeMillis();
%>
<h1>Mosaico de
<%=numImagenes%> imágenes generadas en
<%= (float)(fin-inicio)/1000f%> segundos</h1>
<br>
<%=htmlImagenes%>
</body>
</html>
```

EJECUCIÓN

Imágenes Grandes				
	CPU %	Disco (Kb/s)	RAM %	Red (KB/s)
1	98	16,00	96.22	1,856
2	94	15.00	96.28	1,28
3	94	32,00	96.24	10,048
4	100	20,00	96.24	0,57
Media	97,00	20,75	96.25	3,43



CONCLUSIONES

- Tamaño de imagen
- Uso CPU
- Uso de Red (picos)

BIBLIOGRAFIA

- <https://tomcat.apache.org/tomcat-8.5-doc/windows-service-howto.html>
- <https://www.digitalocean.com/community/tutorials/how-to-install-apache-tomcat-8-on-ubuntu-16-04>
- https://www.ecured.cu/Servidor_Tomcat
- <https://www.arsys.es/blog/programacion/tomcat-servidores-cloud/>