

Práctica UD3

SERVIDOR DE APLICACIONES

APACHE TOMCAT

Desenvolvimento de Aplicações Web

Despregamento de Aplicações Web

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Instrucciones

- Las capturas de las máquinas virtuales deben mostrar el nombre de la máquina.
- En el nombre de la máquina virtual debe contener la inicial y el apellido del alumno/a que entrega la práctica.
 - Por ejemplo, si creo una máquina virtual llamada "vsFTPd Server", debo nombrarla "jlopez vsFTPd Server".
- Las capturas deben de tener una calidad suficiente para que su contenido pueda ser legible.
- La entrega será en la tarea de la plataforma moodle mediante un fichero pdf practica_x_tu_nombre.pdf (x es número de practica y tu_nombre es tu nombre) en el que se puedan ver en las diferentes secciones lo solicitado.

Objetivo de la Tarea

Se pondrá en práctica la instalación y administración del contenedor de servlets y JSPs Tomcat, con algunas tareas habituales y sencillas de configuración.

Entorno de trabajo

Sistema Anfitrión: El de vuestro equipo.

Sistema Huésped (Virtualizado): Máquina virtual con Ubuntu 25.04 Plucky Puffin en VirtualBox y máquina virtual con Windows 7 y XAMPP.

Software base a instalar: Apache Tomcat

Entrega

1. Crea un documento PDF (Nombrado como: Tarea3_1_TuNombre_TuApellido.pdf).
2. Incluye todas las capturas de pantalla que estimes oportunas, con pie de foto o comentarios en los casos que se precise explicar brevemente lo que se ve.
3. Responde a las cuestiones
4. Autoevalúate en la siguiente rúbrica

Rúbrica de autoevaluación

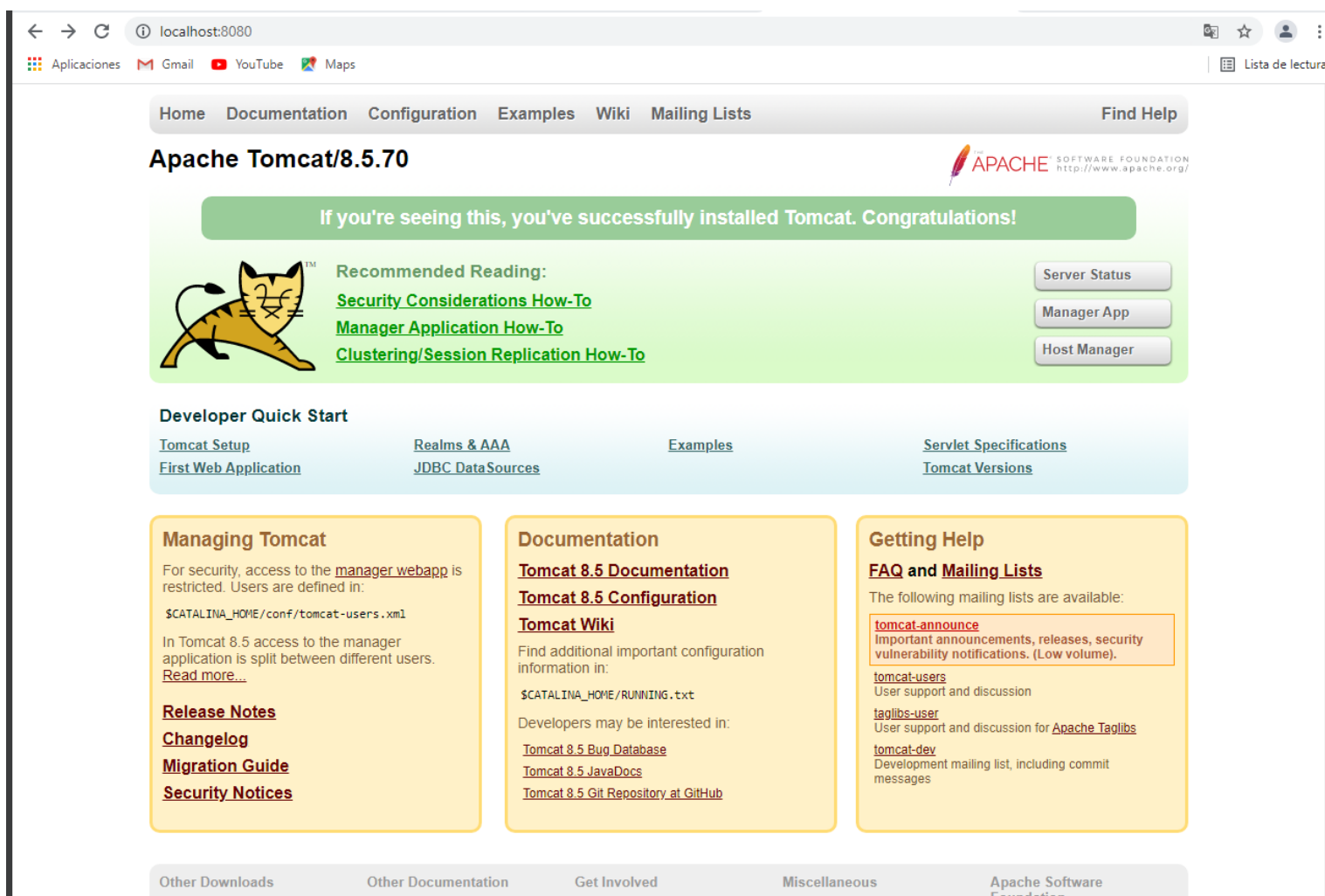
Tarea	OK / KO	Comentarios
Parte 1.1 (1 punto)		
Parte 1.2 (3 puntos)		
Parte 1.3 (1 punto)		
Parte 1.4 (1 punto)		
Parte 1.5 (1 punto)		
Parte 1.6 (2 puntos)		
Parte 1.7 (1 punto)		
	NOTA FINAL:	

1. Funcionamiento de Tomcat en Windows con XAMPP

Se te facilita una máquina Windows, que ya viene con un Xampp operativo. Se te pedirá lo siguiente.

1.1. Arranque y configuración inicial

Configura para que arranque, y se pueda acceder a su página principal



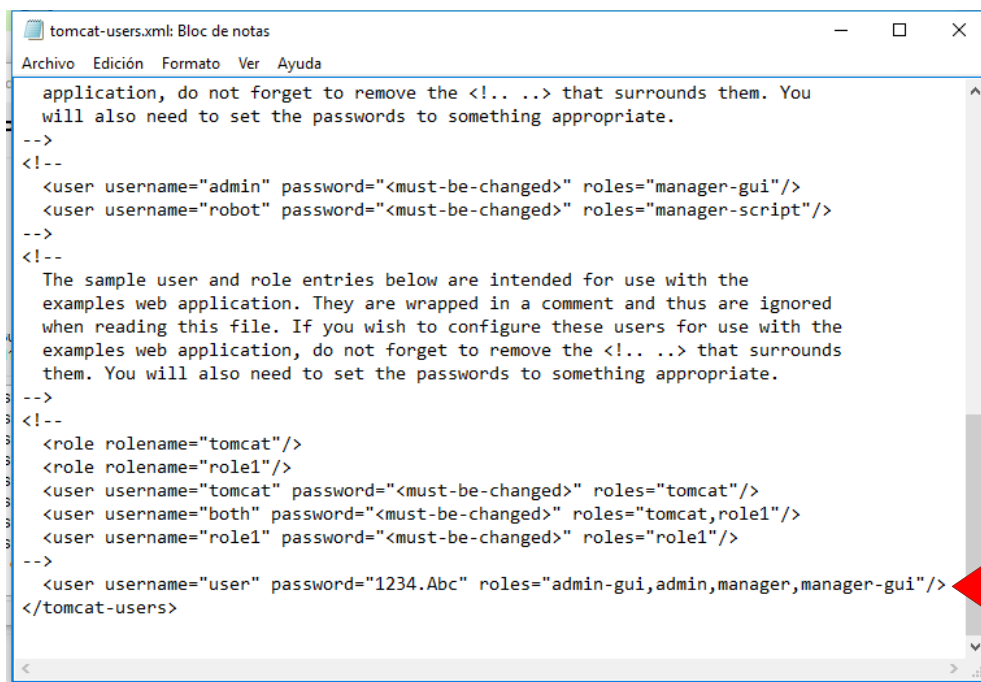
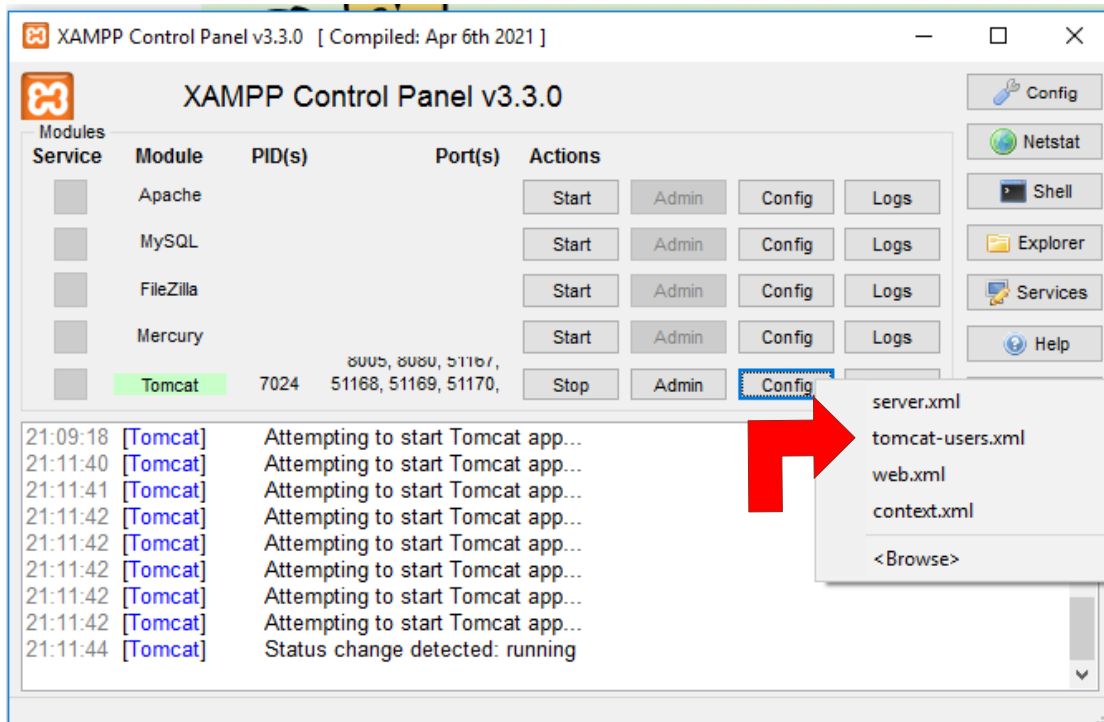
The screenshot shows the Apache Tomcat/8.5.70 web interface in a browser window. The address bar shows 'localhost:8080'. The page has a navigation bar with links: Home, Documentation, Configuration, Examples, Wiki, Mailing Lists, and a 'Find Help' button. Below the navigation bar, the title 'Apache Tomcat/8.5.70' is displayed. A green banner reads: 'If you're seeing this, you've successfully installed Tomcat. Congratulations!'. To the left of this banner is the Tomcat logo (a cat). To the right, under 'Recommended Reading', are links: 'Security Considerations How-To', 'Manager Application How-To', and 'Clustering/Session Replication How-To'. On the far right of this section are buttons for 'Server Status', 'Manager App', and 'Host Manager'. Below this is a 'Developer Quick Start' section with links: 'Tomcat Setup', 'First Web Application', 'Realms & AAA', 'JDBC DataSources', 'Examples', 'Servlet Specifications', and 'Tomcat Versions'. The main content area is divided into three columns: 'Managing Tomcat', 'Documentation', and 'Getting Help'. 'Managing Tomcat' includes text about security and access to the manager webapp, a link to 'Read more...', and links for 'Release Notes', 'Changelog', 'Migration Guide', and 'Security Notices'. 'Documentation' includes links for 'Tomcat 8.5 Documentation', 'Tomcat 8.5 Configuration', 'Tomcat Wiki', and text about finding additional configuration information, with links to '\$CATALINA_HOME/RUNNING.txt', 'Developers may be interested in:', 'Tomcat 8.5 Bug Database', 'Tomcat 8.5 JavaDocs', and 'Tomcat 8.5 Git Repository at GitHub'. 'Getting Help' includes links for 'FAQ and Mailing Lists' and text about available mailing lists: 'tomcat-announce' (important announcements, releases, security vulnerability notifications), 'tomcat-users' (user support and discussion), 'taglibs-user' (user support and discussion for Apache Taglibs), and 'tomcat-dev' (development mailing list, including commit messages). At the bottom, there is a footer with links: 'Other Downloads', 'Other Documentation', 'Get Involved', 'Miscellaneous', and 'Apache Software Foundation'.

1.2 Acceso a opciones de gestión y administración

Realiza la configuración para que pueda acceder a server status, Manager App y Host Manager

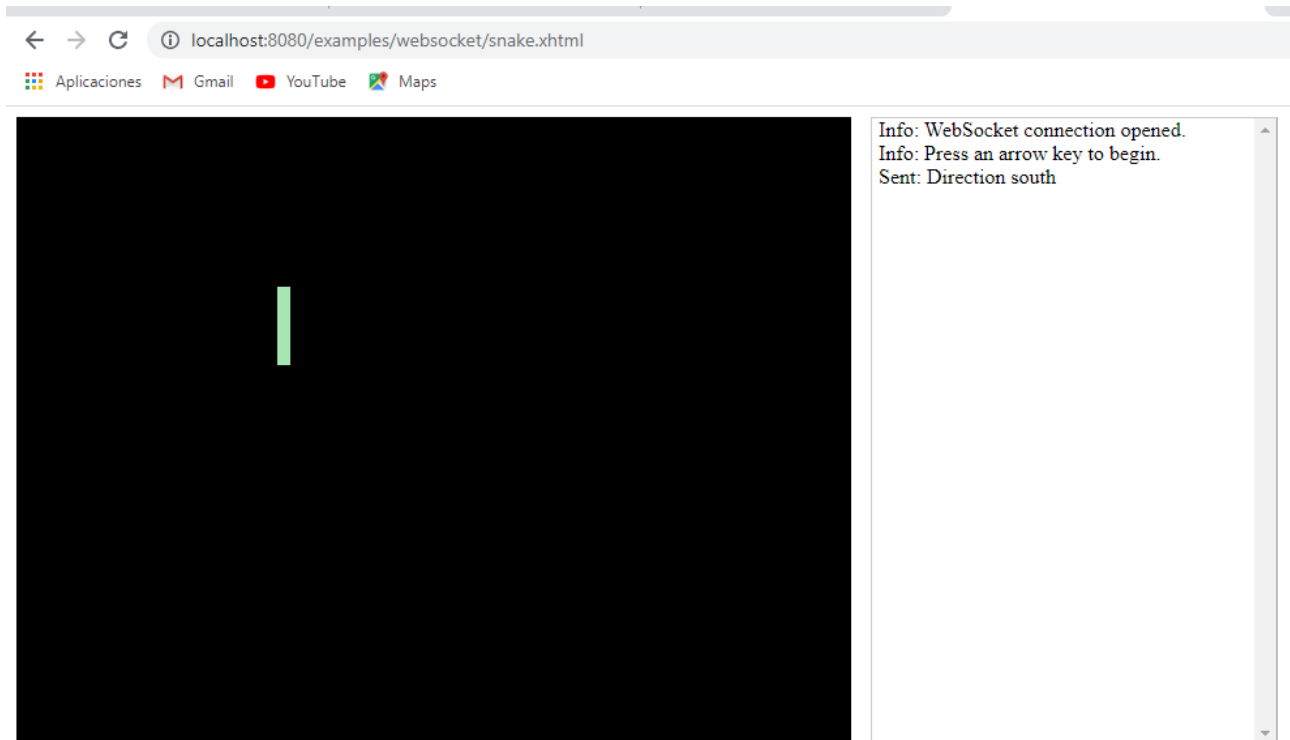
Pistas:

[Guide to Tomcat Manager Application | Baeldung](#)



1.3 Ejemplos

Muestra su funcionamiento con alguno de los ejemplos disponibles



1.4 Despliega tu propia aplicación web

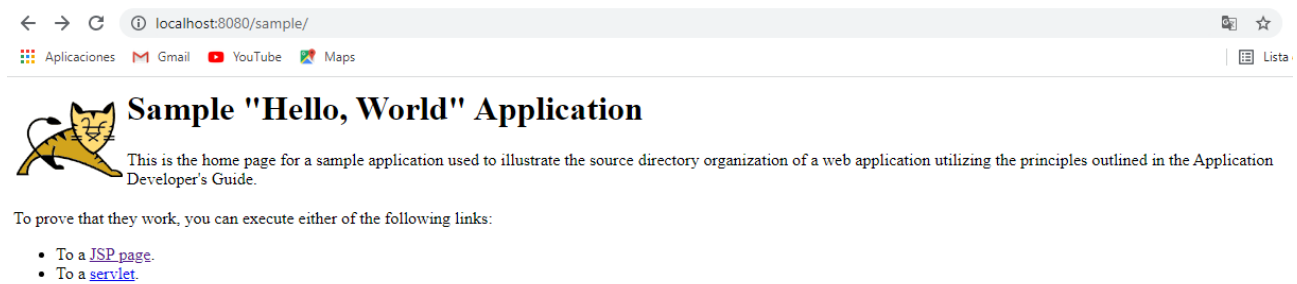
Despliega un fichero Sample.war, y comprueba que puedes acceder a la aplicación

Pistas:

[Apache Tomcat 11 \(11.0.0-M16\) - Tomcat Web Application Deployment](#)

[How to Deploy a WAR File to Tomcat | Baeldung](#)

[Tomcat Manager y su configuración - Arquitectura Java](#)

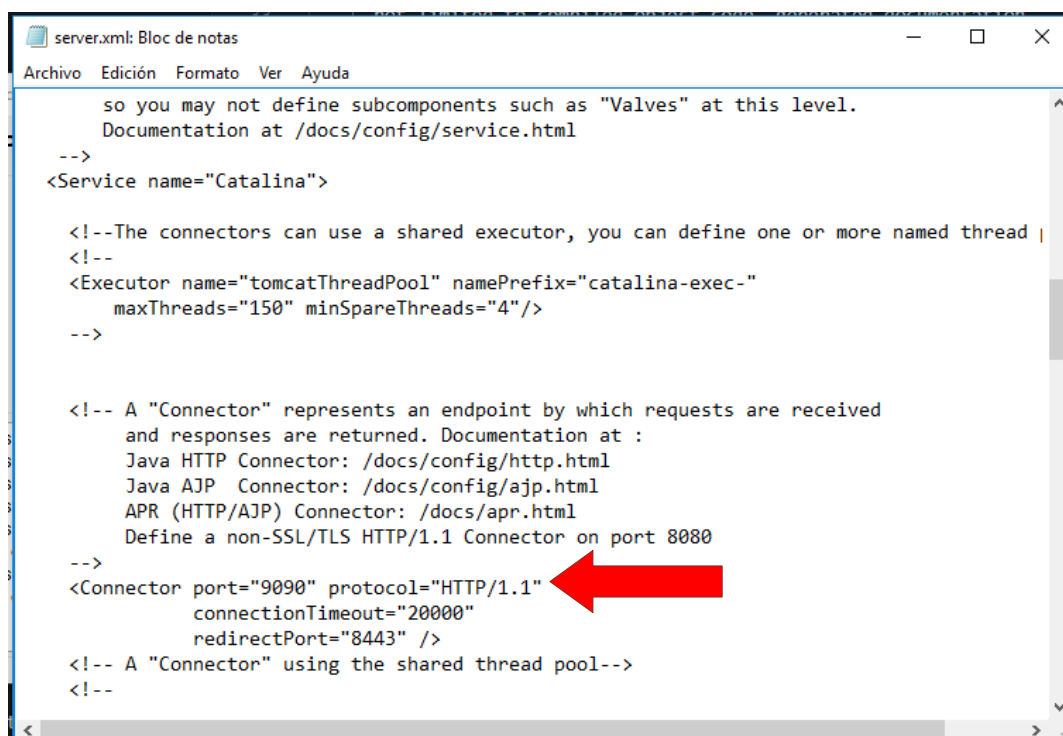
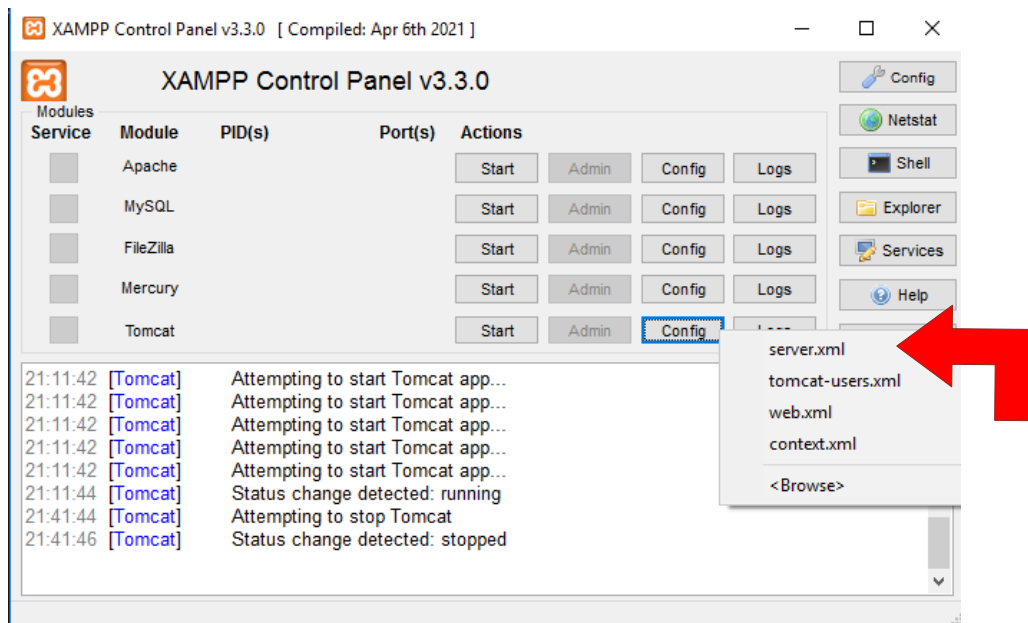


1.5 Puerto de escucha

Cambia el puerto donde escucha por defecto de Tomcat

Pista:

[Change the Default Port of the Tomcat Server \(microfocus.com\)](https://microfocus.com)




← → ↻ localhost:9090


Aplicaciones Gmail YouTube Maps

Home Documentation Configuration Examples Wiki Mailing Lists Find Help

Apache Tomcat/8.5.70

 SOFTWARE FOUNDATION
http://www.apache.org/

If you're seeing this, you've successfully installed Tomcat. Congratulations!

 **Recommended Reading:**

- [Security Considerations How-To](#)
- [Manager Application How-To](#)
- [Clustering/Session Replication How-To](#)

Server Status
Manager App
Host Manager

Developer Quick Start

- [Tomcat Setup](#)
- [First Web Application](#)
- [Realms & AAA](#)
- [JDBC Data Sources](#)
- [Examples](#)
- [Servlet Specifications](#)
- [Tomcat Versions](#)

Managing Tomcat

For security, access to the [manager webapp](#) is restricted. Users are defined in:

```
$CATALINA_HOME/conf/tomcat-users.xml
```

In Tomcat 8.5 access to the manager application is split between different users. [Read more...](#)

[Release Notes](#)
[Changelog](#)
[Migration Guide](#)
[Security Notices](#)

Documentation

[Tomcat 8.5 Documentation](#)
[Tomcat 8.5 Configuration](#)
[Tomcat Wiki](#)

Find additional important configuration information in:

`$CATALINA_HOME/RUNNING.txt`

Developers may be interested in:

- [Tomcat 8.5 Bug Database](#)
- [Tomcat 8.5 JavaDocs](#)
- [Tomcat 8.5 Git Repository at GitHub](#)

Getting Help

[FAQ and Mailing Lists](#)

The following mailing lists are available:

- [tomcat-announce](#)
Important announcements, releases, security vulnerability notifications. (Low volume).
- [tomcat-users](#)
User support and discussion
- [taglibs-user](#)
User support and discussion for [Apache Taglibs](#)
- [tomcat-dev](#)
Development mailing list, including commit messages

2. Instalación, configuración y funcionamiento de Tomcat en Linux

2.1 Instalación

Instala y realiza configuración para que pueda acceder a server status, Manager App y Host Manager

Pistas:

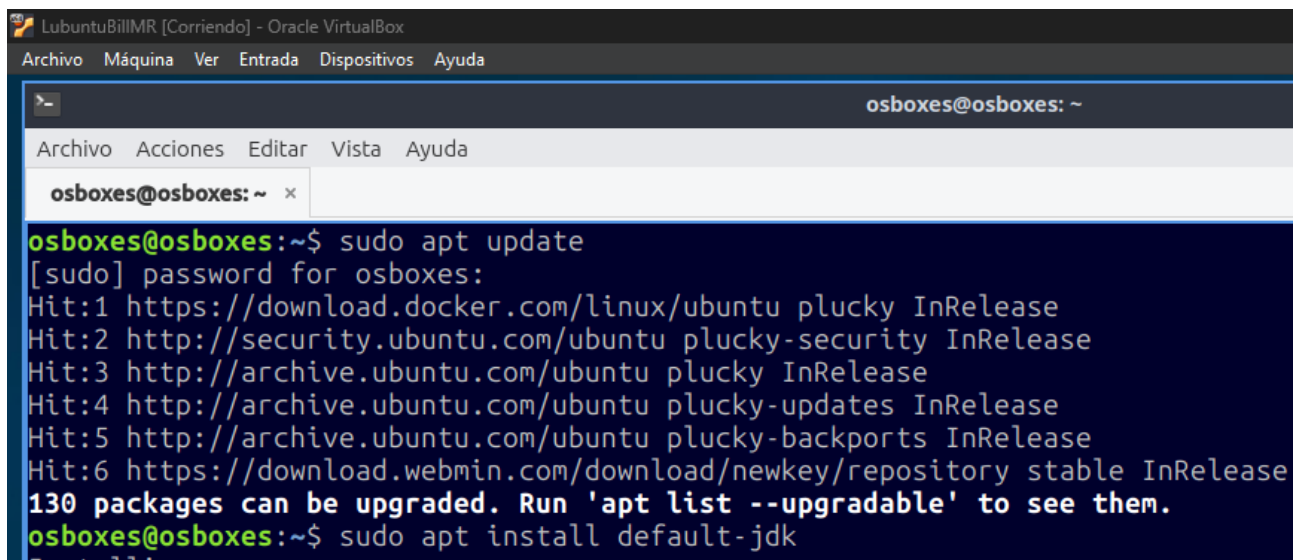
[How to Install Tomcat 11 on Ubuntu 24.04 - Geek Rewind](#)

[How to Install Tomcat 11 on Ubuntu, Debian and Mint](#)

[Apache Tomcat: Complete Guide to Setup and Configuration | Contabo Blog](#)

Paso 1: Instalar el Kit de desarrollo de Java (JDK)

```
osboxes@osboxes:~$ sudo apt update
```



```
LubuntuBillMR [Corriendo] - Oracle VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda

osboxes@osboxes: ~
Archivo  Acciones  Editar  Vista  Ayuda

osboxes@osboxes: ~ x
osboxes@osboxes:~$ sudo apt update
[sudo] password for osboxes:
Hit:1 https://download.docker.com/linux/ubuntu plucky InRelease
Hit:2 http://security.ubuntu.com/ubuntu plucky-security InRelease
Hit:3 http://archive.ubuntu.com/ubuntu plucky InRelease
Hit:4 http://archive.ubuntu.com/ubuntu plucky-updates InRelease
Hit:5 http://archive.ubuntu.com/ubuntu plucky-backports InRelease
Hit:6 https://download.webmin.com/download/newkey/repository stable InRelease
130 packages can be upgraded. Run 'apt list --upgradable' to see them.
osboxes@osboxes:~$ sudo apt install default-jdk
```

```
osboxes@osboxes:~$ java -version
openjdk version "21.0.9" 2025-10-21
OpenJDK Runtime Environment (build 21.0.9+10-Ubuntu-125.04)
OpenJDK 64-Bit Server VM (build 21.0.9+10-Ubuntu-125.04, mixed mode, sharing)
```

Crear usuario y directorios para Tomcat

```
osboxes@osboxes:~$ sudo useradd -m -U -d /opt/tomcat -s /bin/false tomcat
```

Descargamos Tomcat desde la web oficial

```
osboxes@osboxes:/tmp$ wget https://dlcdn.apache.org/tomcat/tomcat-11/v11.0.14/bin/apache-tomcat-11.0.14.tar.gz
--2025-12-04 12:53:37-- https://dlcdn.apache.org/tomcat/tomcat-11/v11.0.14/bin/apache-tomcat-11.0.14.tar.gz
Resolving dlcdn.apache.org (dlcdn.apache.org)... 151.101.2.132, 2a04:4e42::644
Connecting to dlcdn.apache.org (dlcdn.apache.org)|151.101.2.132|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 14146369 (13M) [application/x-gzip]
Saving to: 'apache-tomcat-11.0.14.tar.gz'

apache-tomcat-11.0.14.tar.gz 100%[=====>] 13.49M 10.9MB/s in 1.2s

2025-12-04 12:53:38 (10.9 MB/s) - 'apache-tomcat-11.0.14.tar.gz' saved [14146369/14146369]
```

Instalamos

```
osboxes@osboxes:/tmp$ sudo mkdir -p /opt/tomcat
```

```
osboxes@osboxes:/tmp$ sudo tar -xf apache-tomcat-11.0.14.tar.gz -C /opt/tomcat --strip-components=1
```

Arrancamos tomcat

```
osboxes@osboxes:/tmp$ sudo /opt/tomcat/bin/startup.sh
Using CATALINA_BASE: /opt/tomcat
Using CATALINA_HOME: /opt/tomcat
Using CATALINA_TMPDIR: /opt/tomcat/temp
Using JRE_HOME: /usr
Using CLASSPATH: /opt/tomcat/bin/bootstrap.jar:/opt/tomcat/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
```

Apache Tomcat/11.0.14

If you're seeing this, you've successfully installed Tomcat. Congratulations!

Recommended Reading:

- [Security Considerations How-To](#)
- [Manager Application How-To](#)
- [Clustering/Session Replication How-To](#)

Server Status
Manager App
Host Manager

Developer Quick Start

- [Tomcat Setup](#)
- [Realms & AAA](#)
- [Examples](#)
- [Servlet Specifications](#)
- [First Web Application](#)
- [JDBC DataSources](#)
- [Tomcat Versions](#)

Managing Tomcat

For security, access to the `manager` webapp is restricted. Users are defined in:

`$CATALINA_HOME/conf/tomcat-users.xml`

In Tomcat 11.0 access to the manager application is split between different users. [Read more...](#)

[Release Notes](#)
[Changelog](#)
[Migration Guide](#)
[Security Notices](#)

Documentation

[Tomcat 11.0 Documentation](#)
[Tomcat 11.0 Configuration](#)
[Tomcat Wiki](#)

Find additional important configuration information in:

`$CATALINA_HOME/RUNNING.txt`

Developers may be interested in:

- [Tomcat 11.0 Bug Database](#)
- [Tomcat 11.0 JavaDocs](#)
- [Tomcat 11.0 Git Repository at GitHub](#)

Getting Help

[FAQ and Mailing Lists](#)

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User support and discussion for [Apache Taglibs](#)
- [tomcat-dev](#)
Development mailing list, including commit messages

Configurar Manager, Host Manager y Server Status

```

osboxes@osboxes: /tmp
GNU nano 8.3 /opt/tomcat/conf/tomcat-users.xml *
<user username="robot" password="<must-be-changed>" roles="manager-script"/>
-->
<!--
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="<must-be-changed>" roles="tomcat"/>
<user username="both" password="<must-be-changed>" roles="tomcat,role1"/>
<user username="role1" password="<must-be-changed>" roles="role1"/>
-->
<user username="user" password="1234.Abc" roles="admin-gui,admin,manager,manager-gui"/>
</tomcat-users>
  
```

```

osboxes@osboxes:/tmp$ sudo /opt/tomcat/bin/shutdown.sh
Using CATALINA_BASE:   /opt/tomcat
Using CATALINA_HOME:   /opt/tomcat
Using CATALINA_TMPDIR: /opt/tomcat/temp
Using JRE_HOME:        /usr
Using CLASSPATH:       /opt/tomcat/bin/bootstrap.jar:/opt/tomcat/bin/tomcat-juli.jar
osboxes@osboxes:/tmp$ sudo /opt/tomcat/bin/startup.sh
Using CATALINA_BASE:   /opt/tomcat
Using CATALINA_HOME:   /opt/tomcat
Using CATALINA_TMPDIR: /opt/tomcat/temp
Using JRE_HOME:        /usr
Using CLASSPATH:       /opt/tomcat/bin/bootstrap.jar:/opt/tomcat/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.

```

Ubuntu 64-bit [Corriendo] - Oracle VM VirtualBox



Archivo Máquina Ver Entada Dispositivos Ayuda

/manager — Mozilla Firefox

manager x +

← → ↻ http://localhost:8080/manager/status

Inicio sesión

Estado de Servidor

Gestor			
Listar Aplicaciones	Ayuda HTML de Gestor	Ayuda de Gestor	Estado Completo de Servicio

Información de Servidor							
Versión de Tomcat	Versión JVM	Vendedor JVM	Nombre del SO	Versión de SO	Arquitectura de SO	NombreDeMáquina	Dirección IP
Apache Tomcat/11.0.14	21.0.9+10-Ubuntu-125.04	Ubuntu	Linux	6.14.0-29-generic	amd64	osboxes	127.0.1.1

JVM

Memoria disponible: 24.95 MiB Total Memory: 60.00 MiB Max Memory: 980.00 MiB

Pool de Memoria	Type	Initial	Total	Maximum	Used
G1 Eden Space	Heap memory	6.00 MiB	37.00 MiB	-0.00 MiB	20.00 MiB
G1 Old Gen	Heap memory	56.00 MiB	22.00 MiB	980.00 MiB	12.81 MiB (1%)
G1 Survivor Space	Heap memory	0.00 MiB	1.00 MiB	-0.00 MiB	0.54 MiB
CodeHeap 'non-nmethods'	Non-heap memory	2.43 MiB	2.43 MiB	5.55 MiB	1.46 MiB (26%)
CodeHeap 'non-profiled nmethods'	Non-heap memory	2.43 MiB	2.43 MiB	117.22 MiB	1.65 MiB (1%)
CodeHeap 'profiled nmethods'	Non-heap memory	2.43 MiB	7.87 MiB	117.21 MiB	7.81 MiB (6%)
Compressed Class Space	Non-heap memory	0.00 MiB	2.62 MiB	1024.00 MiB	2.46 MiB (0%)
Metaspace	Non-heap memory	0.00 MiB	25.81 MiB	-0.00 MiB	25.42 MiB

2.2. Despliegue de aplicación web

Despliega un fichero Sample.war, y comprueba que puedes acceder a la aplicación

Pistas:

[Apache Tomcat 11 \(11.0.0-M16\) - Tomcat Web Application Deployment](#)

[How to Deploy a WAR File to Tomcat | Baeldung](#)

Archivo WAR a desplegar

Seleccione archivo WAR a cargar sample.war

Gestor de Aplicaciones Web de Tomcat

Mensaje: OK

Gestor					
Lista Aplicaciones	Ayuda HTML de Gestor	Ayuda de Gestor	Estado de Servidor		
Aplicaciones					
Ruta	Versión	Nombre a Mostrar	Ejecutándose	Sesiones	Comandos
/	Ninguno especificado	Welcome to Tomcat	true	0	<input type="button" value="Arrancar"/> <input type="button" value="Parar"/> <input type="button" value="Recargar"/> <input type="button" value="Replegar"/>
/docs	Ninguno especificado	Tomcat Documentation	true	0	<input type="button" value="Arrancar"/> <input type="button" value="Parar"/> <input type="button" value="Recargar"/> <input type="button" value="Replegar"/>
/examples	Ninguno especificado	Servlet and JSP Examples	true	0	<input type="button" value="Arrancar"/> <input type="button" value="Parar"/> <input type="button" value="Recargar"/> <input type="button" value="Replegar"/>
/host-manager	Ninguno especificado	Tomcat Host Manager Application	true	0	<input type="button" value="Arrancar"/> <input type="button" value="Parar"/> <input type="button" value="Recargar"/> <input type="button" value="Replegar"/>
/manager	Ninguno especificado	Tomcat Manager Application	true	1	<input type="button" value="Arrancar"/> <input type="button" value="Parar"/> <input type="button" value="Recargar"/> <input type="button" value="Replegar"/>
/sample	Ninguno especificado	Hello, World Application	true	0	<input type="button" value="Arrancar"/> <input type="button" value="Parar"/> <input type="button" value="Recargar"/> <input type="button" value="Replegar"/>



Sample "Hello, World" Application

This is the home page for a sample application used to illustrate the source directory organization of a web application utilizing the principles outlined in the Application Developer's Guide.

To prove that they work, you can execute either of the following links:

- To a [JSP page](#).
- To a [servlet](#).

3. Securización

Configura para que el acceso sea seguro mediante certificados SSL, accediendo por HTTPS

Pistas:

[A Step-By-Step Guide to Apache Tomcat with SSL Configuration | by Kayathiri Mahendrakumaran | Analytics Vidhya | Medium](#)

[Instalación del certificado SSL en el servidor Apache Tomcat \(sslmarket.es\)](#)

[Apache Tomcat 9 \(9.0.85\) - SSL/TLS Configuration How-To](#)

Crear un certificado SSL autofirmado

```
osboxes@osboxes:/tmp$ sudo keytool -genkey -alias tomcat -keyalg RSA -keystore /opt/tomcat/conf/keystore.jks -keysize 2048 -storepass 1234.Abc -keypass 1234.Abc -dname "CN=localhost, OU=Dev, O=MíEmpresa, L=Ciudad, S=Estado, C=ES"
[sudo] password for osboxes:
Generating 2,048 bit RSA key pair and self-signed certificate (SHA384withRSA) with a validity of 90 days
for: CN=localhost, OU=Dev, O=MíEmpresa, L=Ciudad, S=Estado, C=ES
```

Configurar Tomcat para usar HTTPS

```
osboxes@osboxes:/tmp$ sudo nano /opt/tomcat/conf/server.xml
```

```
<Connector port="8443" protocol="org.apache.coyote.http11.Http11NioProtocol"
    maxThreads="150" SSLEnabled="true" scheme="https" secure="true">
  <SSLHostConfig>
    <Certificate certificateKeystoreFile="/opt/tomcat/conf/keystore.jks"
      certificateKeystorePassword="1234.Abc"
      type="RSA" />
    </SSLHostConfig>
  </Connector>
```

Abrir puerto HTTPS (si aplica)

```
osboxes@osboxes:/tmp$ sudo ufw allow 8443
Rules updated
Rules updated (v6)
```


lubuntu@lillimr [Corriendo] - Oracle VirtualBox
Archivo Máquina Ver Entrada Dispositivos Ayuda


Apache Tomcat/11.0.14 — Mozilla Firefox

Apache Tomcat/11.0.14 × Centro Integrado de Form... +
localhost:8443

Home Documentation Configuration Examples Wiki Mailing Lists Find Help

Apache Tomcat/11.0.14

If you're seeing this, you've successfully installed Tomcat. Congratulations!



Recommended Reading:

- [Security Considerations How-To](#)
- [Manager Application How-To](#)
- [Clustering/Session Replication How-To](#)

Server Status
Manager App
Host Manager

Developer Quick Start

Tomcat Setup	Realms & AAA	Examples	Servlet Specifications
First Web Application	JDBC DataSources		Tomcat Versions

Managing Tomcat

For security, access to the `manager.webapp` is restricted. Users are defined in:

```
$CATALINA_HOME/conf/tomcat-users.xml
```

In Tomcat 11.0 access to the manager application is split between different users.
[Read more...](#)

[Release Notes](#)
[Changelog](#)
[Migration Guide](#)
[Security Notices](#)

Documentation

[Tomcat 11.0 Documentation](#)
[Tomcat 11.0 Configuration](#)
[Tomcat Wiki](#)

Find additional important configuration information in:

```
$CATALINA_HOME/RUNNING.txt
```

Developers may be interested in:

- [Tomcat 11.0 Bug Database](#)
- [Tomcat 11.0 JavaDocs](#)
- [Tomcat 11.0 Git Repository at GitHub](#)

Getting Help

FAQ and Mailing Lists

The following mailing lists are available:

- [tomcat-announce](#)
Important announcements, releases, security vulnerability notifications. (Low volume).
- [tomcat-users](#)
User support and discussion
- [taglibs-user](#)
User support and discussion for [Apache Taglibs](#)
- [tomcat-dev](#)
Development mailing list, including commit messages

4. Integración con un IDE

Raliza la integración de Tomcat con un IDE de tu elección (IntelliJ IDEA, Eclipse, Netbeans, Visual Studio Code,...)

Pistas:

[How to Deploy a WAR File to Tomcat | Baeldung](#)

[Visual Studio Code Tomcat y su configuración - Arquitectura Java](#)

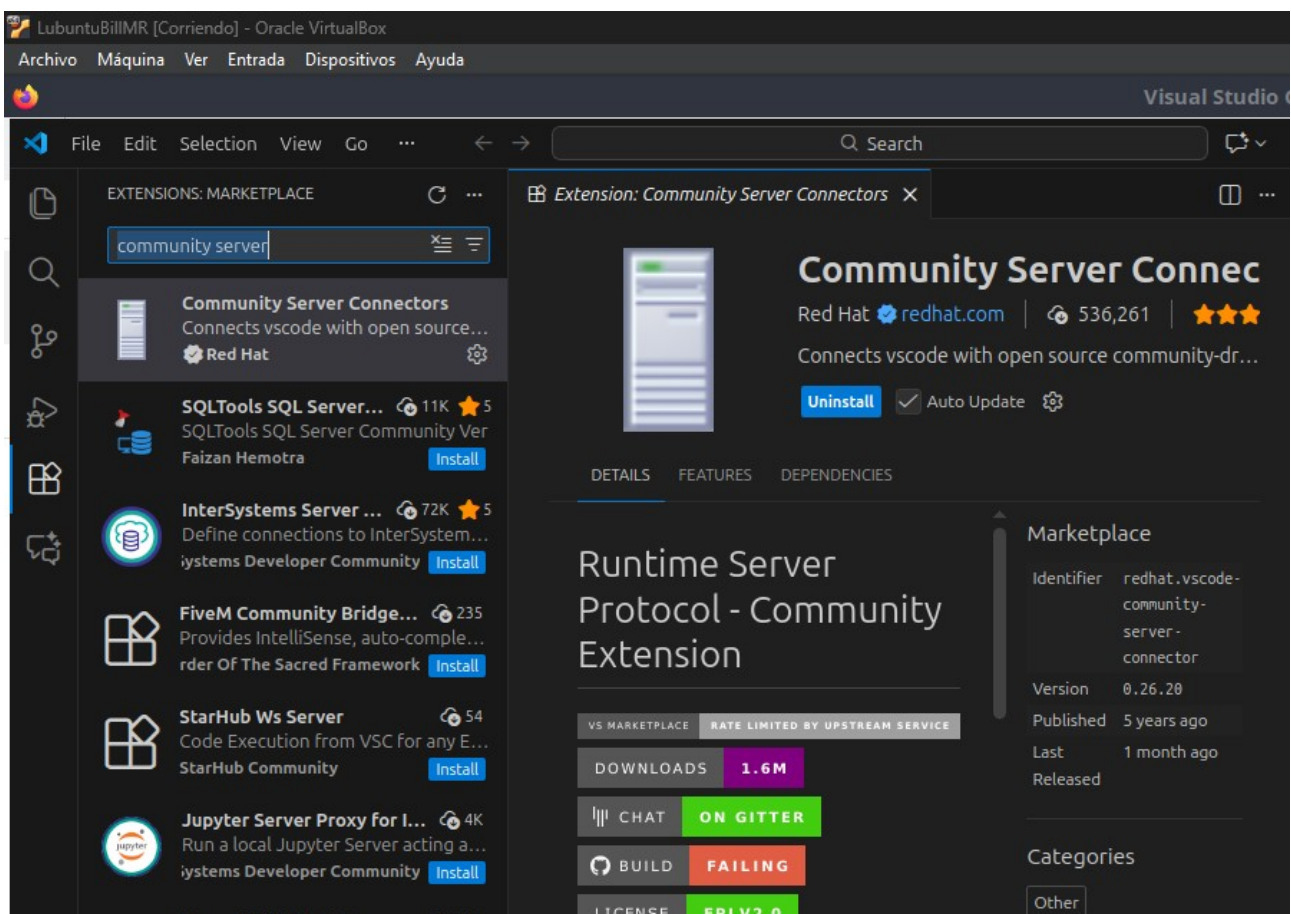
[Instalación de Tomcat y configuración con Visual Studio Code - YouTube](#)

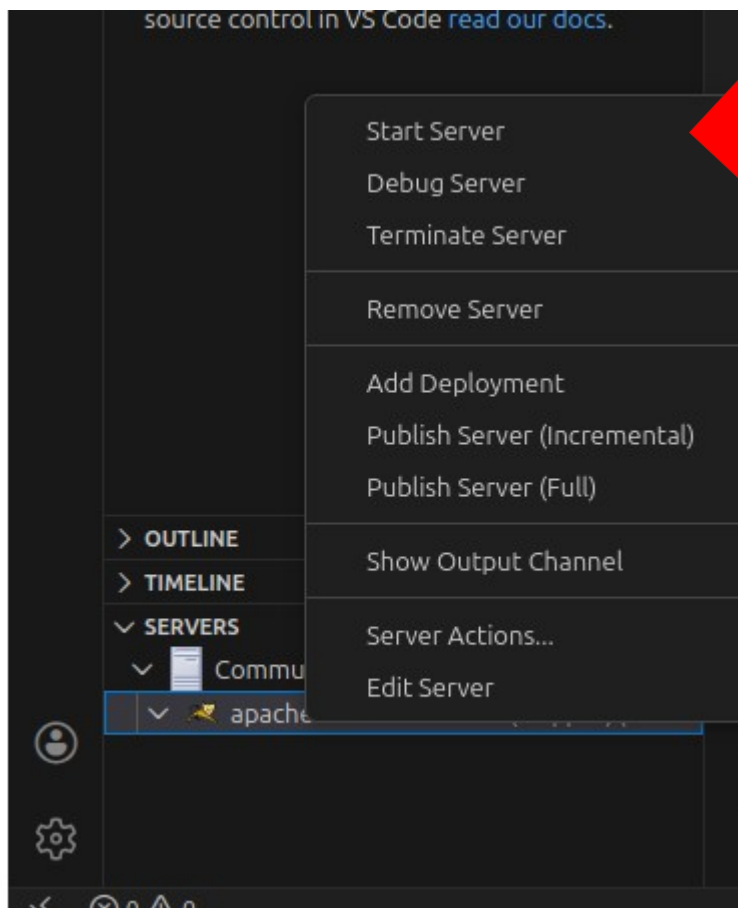
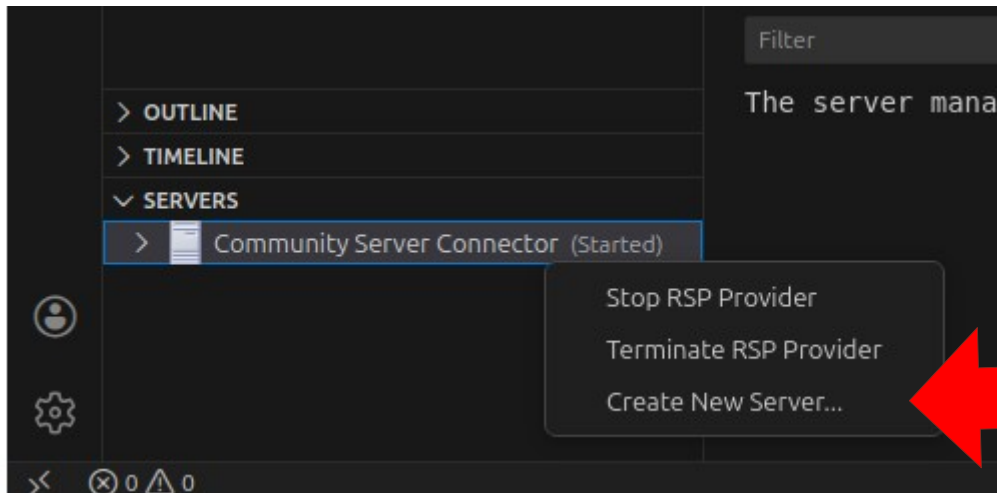
[\(Microsoft Word - Cap\355tulo 6. Eclipse con el plug-in de TOMCAT.doc\) \(us.es\)](#)

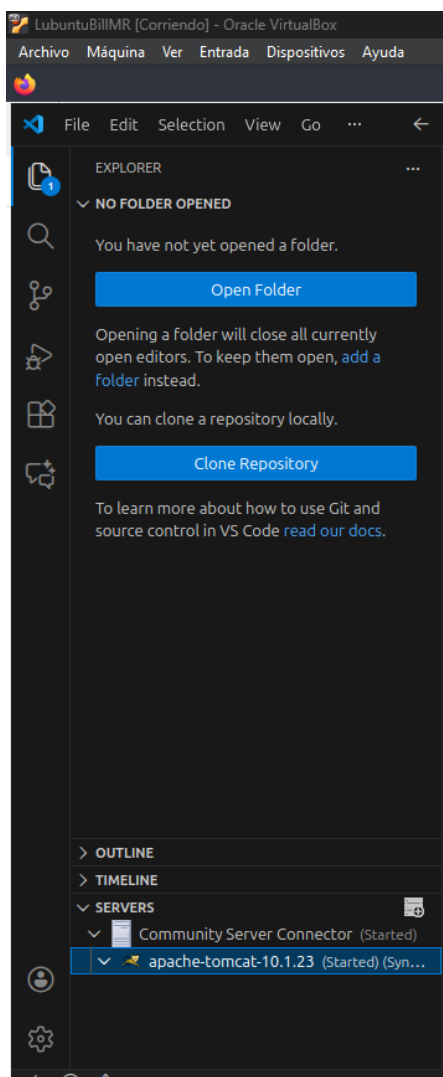
[Cómo configurar Eclipse y Apache Tomcat para desarrollar aplicaciones Java Web - YouTube](#)

[AGREGAR EL SERVIDOR TOMCAT 9 A NETBEANS – VIDELCLOUD \(wordpress.com\)](#)

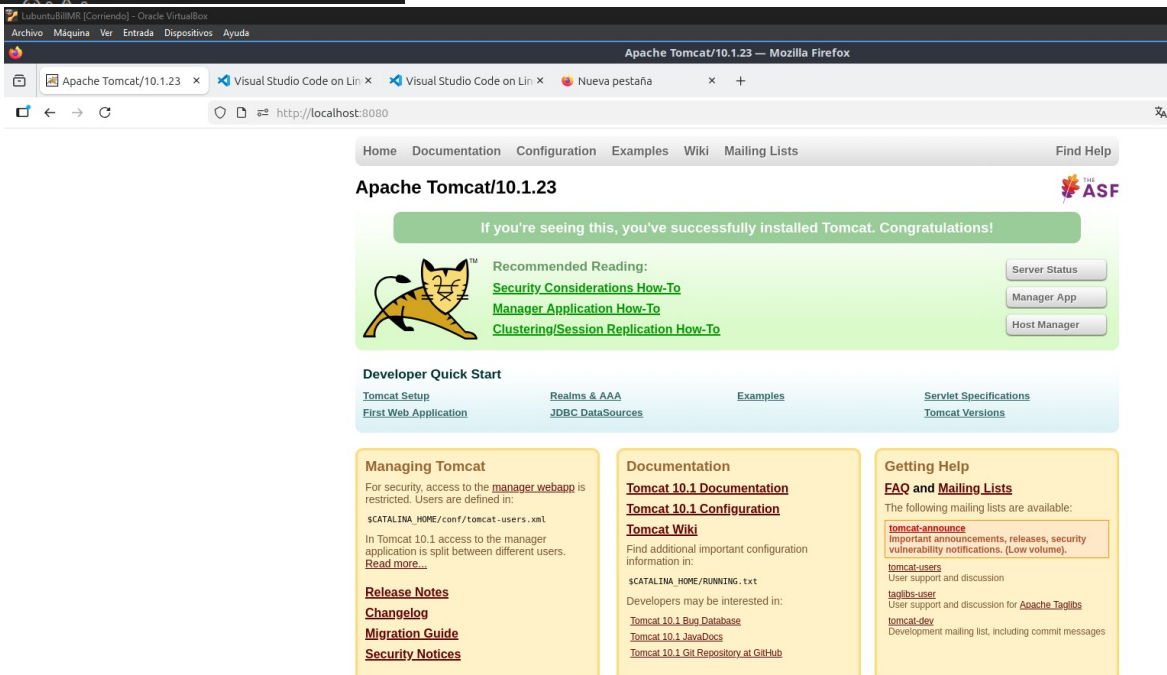
[Instalar y configurar Apache Tomcat 9 en NetBeans - YouTube](#)







Visual Studio Code interface showing the Explorer sidebar. The 'SERVERS' section is expanded, and 'apache-tomcat-10.1.23 (Started)' is selected. A red arrow points to this entry.




Apache Tomcat/10.1.23 — Mozilla Firefox

Home Documentation Configuration Examples Wiki Mailing Lists Find Help

Apache Tomcat/10.1.23

If you're seeing this, you've successfully installed Tomcat. Congratulations!

 Recommended Reading:

- [Security Considerations How-To](#)
- [Manager Application How-To](#)
- [Clustering/Session Replication How-To](#)

Server Status
Manager App
Host Manager

Developer Quick Start

- [Tomcat Setup](#)
- [First Web Application](#)
- [Realms & AAA](#)
- [JDBC DataSources](#)
- [Examples](#)
- [Servlet Specifications](#)
- [Tomcat Versions](#)

Managing Tomcat

For security, access to the [manager webapp](#) is restricted. Users are defined in:

```
$CATALINA_HOME/conf/tomcat-users.xml
```

In Tomcat 10.1 access to the manager application is split between different users. [Read more...](#)

- [Release Notes](#)
- [Changelog](#)
- [Migration Guide](#)
- [Security Notices](#)

Documentation

- [Tomcat 10.1 Documentation](#)
- [Tomcat 10.1 Configuration](#)
- [Tomcat Wiki](#)

Find additional important configuration information in:

- [\\$CATALINA_HOME/RUNNING.txt](#)

Developers may be interested in:

- [Tomcat 10.1 Bug Database](#)
- [Tomcat 10.1 JavaDocs](#)
- [Tomcat 10.1 Git Repository at GitHub](#)

Getting Help

FAQ and Mailing Lists

The following mailing lists are available:

- [tomcat-announce](#)
Important announcements, releases, security vulnerability notifications. (Low volume).
- [tomcat-users](#)
User support and discussion
- [taglibs-user](#)
User support and discussion for [Apache Taglibs](#)
- [tomcat-dev](#)
Development mailing list, including commit messages

5. Cuestiones

a) ¿Qué versión de Apache Tomcat instalarás dependiendo de tu versión de Java?

Tomcat 9 → Java 8 a 11

- Tomcat 10 → Java 8 a 17
- Tomcat 11 → Java 11 a 21

a.1) Y para la versión 8?

Debes usar **Tomcat 9 o 10**.

a.2) Y para la versión 21?

Debes usar **Tomcat 11**, ya que soporta Java 17 a 21.

b) ¿Qué otros servidores de aplicaciones hay en el mercado? ¿Cuáles son software libre y cuales productos comerciales?

Libres: Tomcat, WildFly, GlassFish, Payara, Jetty

Comerciales: WebSphere, WebLogic, Payara Enterprise

c) Una de las cuestiones a tener en cuenta es el rendimiento de las aplicaciones. ¿Sabrías indicar alguna herramienta para pruebas de carga?

Apache JMeter

d) Otra de las cuestiones a tener en cuenta es la monitorización del servidor de aplicaciones. ¿Sabrías indicarme alguna herramienta para monitorizar tomcat u otro servidor de aplicaciones? ¿Qué indicadores puede interesar monitorizar?

Gratuitas: JConsole, VisualVM, Prometheus + Grafana

Comerciales: New Relic, Dynatrace

Indicadores importantes:

- CPU y memoria JVM
- Heap / non-heap memory
- Threads activos
- Conexiones y sesiones
- Tiempo de respuesta
- Número de peticiones por segundo (Throughput)

- Errores HTTP

Pistas:

[Apache Tomcat® - Which Version Do I Want?](#)

[Apache Tomcat monitoring and integration with Zabbix](#)

[Apache Tomcat Monitoring Guide & 5 Best Tools for 2024 \(comparitech.com\)](#)

[Apache Tomcat - Nagios Exchange](#)

[JMeter vs Other Performance Testing Tools | automateNow](#)

[List of application servers - Wikipedia](#)

[List of application servers - Wikipedia \(aimultiple.com\)](#)

[WebLogic Server | Oracle España](#)

[WebSphere Application Server | IBM](#)

[WildFly](#)