Hoja01_Herramientas_02

Deberemos instalar un servidor web Apache, un gestor de base de datos MySQL y la versión 8.4 de PHP en la instancia EC2 de AWS**.** (La actividad se había realizado previamente, por lo que las capturas reflejan paquetes ya instalados).

1. Actualizamos el repositorio con **sudo apt update**

```
ubuntu@ip-172-31-18-19:~$ sudo apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1415 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.2 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1484 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [299 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
```

2. Instalamos Apache con **sudo apt install apache2**.

```
ubuntu@ip-172-31-18-19:~$ sudo apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
apache2 is already the newest version (2.4.58-1ubuntu8.8).
0 upgraded, 0 newly installed, 0 to remove and 30 not upgraded.
ubuntu@ip-172-31-18-19:~$
```

3. Con el comando **curl –I http://ip-publica** comprobamos que el servidor web funciona (también se puede acceder a http://ip-publica desde el navegador).

```
ubuntu@ip-172-31-18-19:~$ curl -I http://54.198.127.115
HTTP/1.1 200 OK
Date: Thu, 18 Sep 2025 20:57:05 GMT
Server: Apache/2.4.58 (Ubuntu)
Last-Modified: Thu, 18 Sep 2025 09:11:37 GMT
ETag: "d5-63f0fbd8ed50c"
Accept-Ranges: bytes
Content-Length: 213
Vary: Accept-Encoding
Content-Type: text/html
```

Se muestra el *index.html* modificado en la práctica de DAC (Hoja01_AWS_01).

4. Instalamos MySQL mediante la línea **sudo apt install mysql-server**

```
ubuntu@ip-172-31-18-19:~$ sudo apt install mysql-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
mysql-server is already the newest version (8.0.43-0ubuntu0.24.04.2).
0 upgraded, 0 newly installed, 0 to remove and 30 not upgraded.
```

5. Añadimos el repositorio con la versión 8.4 de PHP (El repositorio por defecto de Ubuntu no la tiene disponible): **sudo add-apt-repository ppa:ondrej/php**

```
ubuntu@ip-172-31-18-19:~$ sudo add-apt-repository ppa:ondrej/php
PPA publishes dbgsym, you may need to include 'main/debug' component
Repository: 'Types: deb
URIs: https://ppa.launchpadcontent.net/ondrej/php/ubuntu/
Suites: noble
Components: main
'
Description:
Co-installable PHP versions: PHP 5.6, PHP 7.x, PHP 8.x and most requested extens
ty Maintenance releases ARE NOT supported.

Debian stable, oldstable and Debian LTS packages are provided from a separate re

You can get more information about the packages at https://deb.sury.org

BUGS&FEATURES: This PPA has a issue tracker:
https://deb.sury.org/#bug-reporting

Issues reported in a private email don't scale and most likely will be ignored.
```

6. Actualizamos nuestro repositorio con **sudo apt update**

7. Instalamos la versión 8.4 de PHP con **sudo apt install php8.4**

```
ubuntu@ip-172-31-18-19:~$ sudo apt install php8.4
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
php8.4 is already the newest version (8.4.12-1+ubuntu24.04.1+deb.sury.org+1).
0 upgraded, 0 newly installed, 0 to remove and 30 not upgraded.
```

8. Con **sudo apt install libapache-mod-php8.4** instalamos el módulo de Apache para autenticación MySQL

```
ubuntu@ip-172-31-18-19:~$ sudo apt install libapache-mod-php8.4
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
E: Unable to locate package libapache-mod-php8.4
E: Couldn't find any package by glob 'libapache-mod-php8.4'
```

```
ubuntu@ip-172-31-18-19:~$ dpkg -l | grep libapache2-mod-php8.4
ii  libapache2-mod-php8.4              8.4.12-1+ubuntu24.04.1+deb.sury.org+1
amd64        server-side, HTML-embedded scripting language (Apache 2 module)
```

9. Con **sudo apt install php8.4-mysql** instalamos el módulo de MySQL para PHP

```
ubuntu@ip-172-31-18-19:~$ sudo apt install php8.4-mysql
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
php8.4-mysql is already the newest version (8.4.12-1+ubuntu24.04.1+deb.sury.org+1).
0 upgraded, 0 newly installed, 0 to remove and 30 not upgraded.
```

10. Instalamos las siguientes librerías de PHP con **sudo apt install php8.4-curl php8.4-gd php8.4-intl php8.4-xmlrpc php8.4-xml php8.4-ldap php8.4-zip php8.4-soap:**

- **cURL:** permite a PHP hacer peticiones HTTP(s), FTP y otros protocolos desde tu código.
- **gd:** extensión de PHP para manipulación de imágenes.
- **intl:** Permite trabajar con fechas, números, monedas e idiomas según la localización.
- **xmlrpc:** Permite que PHP actúe como cliente o servidor para intercambiar datos con otros sistemas mediante este protocolo.
- **xml:** Extensión básica para trabajar con XML en PHP.
- **ldap:** Extensión para conectar PHP con servidores LDAP
- **zip:** Extensión que permite trabajar con archivos comprimidos ZIP.
- **soap:** Añade soporte para el protocolo SOAP (Simple Object Access Protocol).

```
ubuntu@ip-172-31-18-19:~$ sudo apt install php8.4-curl php8.4-gd php8.4-intl php8.4
-xmlrpc php8.4-xml php8.4-ldap php8.4-zip php8.4-soap
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
php8.4-curl is already the newest version (8.4.12-1+ubuntu24.04.1+deb.sury.org+1).
php8.4-gd is already the newest version (8.4.12-1+ubuntu24.04.1+deb.sury.org+1).
php8.4-intl is already the newest version (8.4.12-1+ubuntu24.04.1+deb.sury.org+1).
php8.4-xmlrpc is already the newest version (3:1.0.0~rc3-10+ubuntu24.04.1+deb.sury.
org+1).
php8.4-xml is already the newest version (8.4.12-1+ubuntu24.04.1+deb.sury.org+1).
php8.4-ldap is already the newest version (8.4.12-1+ubuntu24.04.1+deb.sury.org+1).
php8.4-zip is already the newest version (8.4.12-1+ubuntu24.04.1+deb.sury.org+1).
php8.4-soap is already the newest version (8.4.12-1+ubuntu24.04.1+deb.sury.org+1).
0 upgraded, 0 newly installed, 0 to remove and 30 not upgraded.
```

11. Para comprobar que MySQL se ha instalado correctamente escribimos **sudo mysql**. Se muestra un mensaje de bienvenida y se abrirá el *prompt* de MySQL.

ALTER USER 'root'@'localhost' IDENTIFIED WITH caching_sha2_password BY 'root'; permite modificar la contraseña del usuario ‘root’ por *root*.

12. Con **mysql -u root –p**, podemos comprobar que la contraseña se ha establecido de forma correcta.

```
ubuntu@ip-172-31-18-19:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.43-0ubuntu0.24.04.2 (Ubuntu)

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owners.

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

mysql>
```
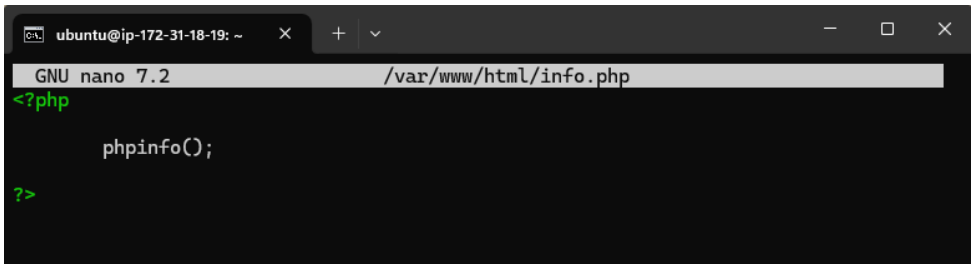
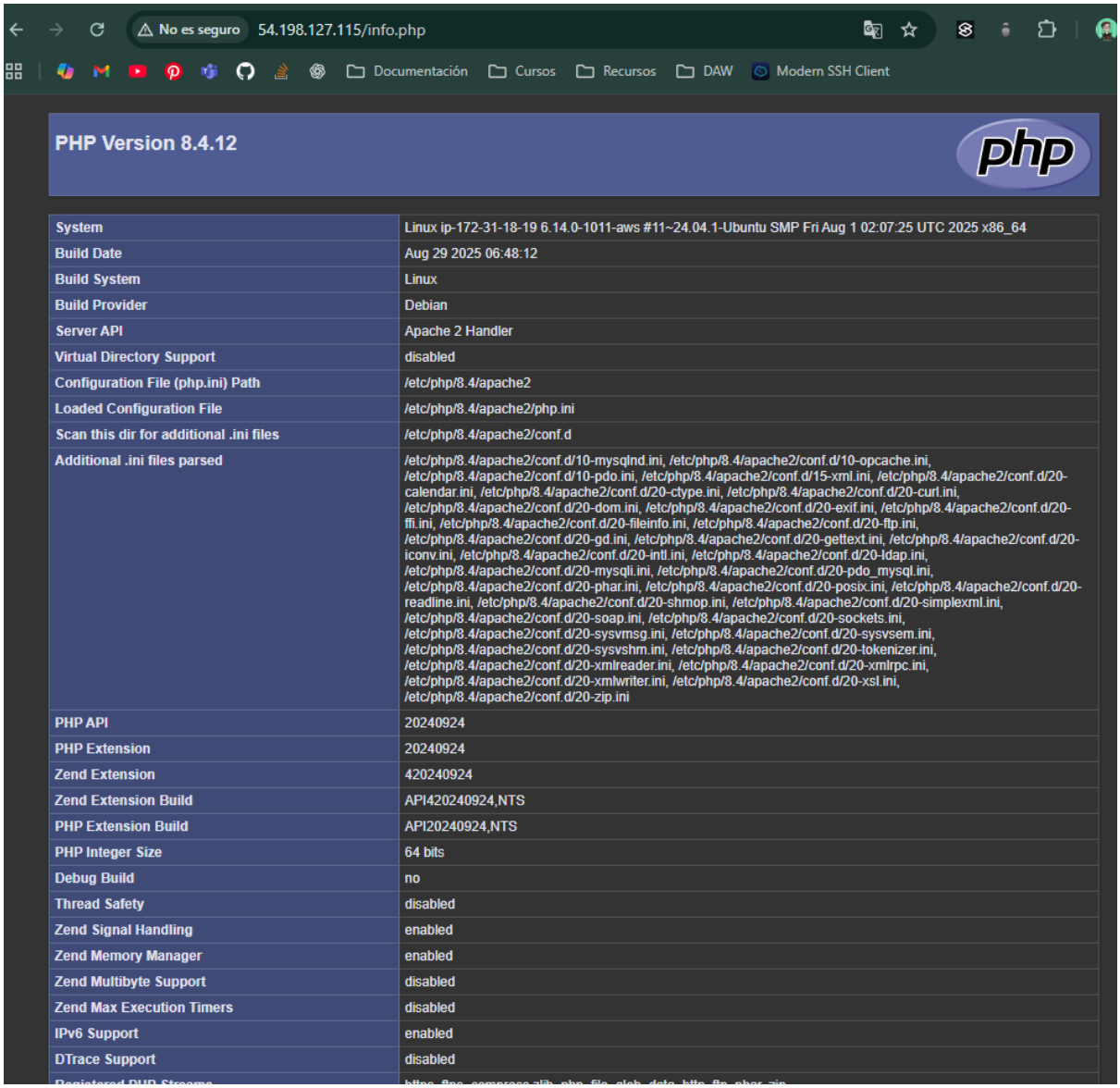

13. Crearemos un fichero *info.php* en el directorio */var/www/html/* con el comando **sudo nano /var/www/html/info.php**. En su interior, escribimos **<?php phpinfo(); ?>**

```
ubuntu@ip-172-31-18-19:~$ sudo nano /var/www/html/info.php
ubuntu@ip-172-31-18-19:~$
```



Esto mostrará la información detallada de la configuración actual de PHP en http://ip-publica/info.php

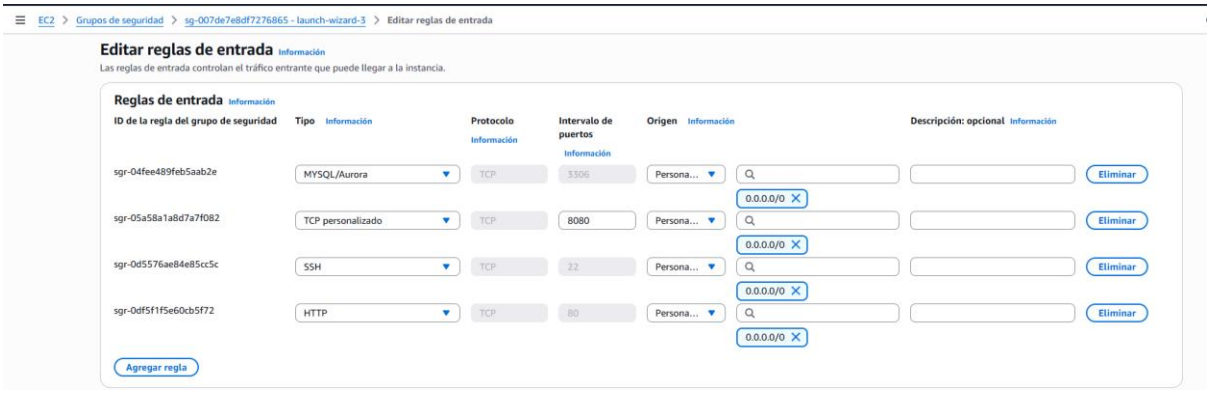
```
ubuntu@ip-172-31-18-19:~$ curl -I http://54.198.127.115/info.php
HTTP/1.1 200 OK
Date: Thu, 18 Sep 2025 21:08:48 GMT
Server: Apache/2.4.58 (Ubuntu)
Content-Type: text/html; charset=UTF-8
```



System	Linux ip-172-31-18-19 6.14.0-1011-aws #11~24.04.1-Ubuntu SMP Fri Aug 1 02:07:25 UTC 2025 x86_64
Build Date	Aug 29 2025 06:48:12
Build System	Linux
Build Provider	Debian
Server API	Apache 2 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/php/8.4/apache2
Loaded Configuration File	/etc/php/8.4/apache2/php.ini
Scan this dir for additional .ini files	/etc/php/8.4/apache2/conf.d
Additional .ini files parsed	/etc/php/8.4/apache2/conf.d/10-mysqlnd.ini, /etc/php/8.4/apache2/conf.d/10-opcache.ini, /etc/php/8.4/apache2/conf.d/10-pdo.ini, /etc/php/8.4/apache2/conf.d/15-xml.ini, /etc/php/8.4/apache2/conf.d/20-calendar.ini, /etc/php/8.4/apache2/conf.d/20-ctype.ini, /etc/php/8.4/apache2/conf.d/20-curl.ini, /etc/php/8.4/apache2/conf.d/20-dom.ini, /etc/php/8.4/apache2/conf.d/20-exif.ini, /etc/php/8.4/apache2/conf.d/20-ffi.ini, /etc/php/8.4/apache2/conf.d/20-fileinfo.ini, /etc/php/8.4/apache2/conf.d/20-ftp.ini, /etc/php/8.4/apache2/conf.d/20-gd.ini, /etc/php/8.4/apache2/conf.d/20-gettext.ini, /etc/php/8.4/apache2/conf.d/20-iconv.ini, /etc/php/8.4/apache2/conf.d/20-intl.ini, /etc/php/8.4/apache2/conf.d/20-ldap.ini, /etc/php/8.4/apache2/conf.d/20-mysqli.ini, /etc/php/8.4/apache2/conf.d/20-pdo_mysql.ini, /etc/php/8.4/apache2/conf.d/20-phar.ini, /etc/php/8.4/apache2/conf.d/20-posix.ini, /etc/php/8.4/apache2/conf.d/20-readline.ini, /etc/php/8.4/apache2/conf.d/20-shmop.ini, /etc/php/8.4/apache2/conf.d/20-simplexml.ini, /etc/php/8.4/apache2/conf.d/20-soap.ini, /etc/php/8.4/apache2/conf.d/20-sockets.ini, /etc/php/8.4/apache2/conf.d/20-sysvmsg.ini, /etc/php/8.4/apache2/conf.d/20-sysvsem.ini, /etc/php/8.4/apache2/conf.d/20-sysvshm.ini, /etc/php/8.4/apache2/conf.d/20-tokenizer.ini, /etc/php/8.4/apache2/conf.d/20-xmlreader.ini, /etc/php/8.4/apache2/conf.d/20-xmlrpc.ini, /etc/php/8.4/apache2/conf.d/20-xmlwriter.ini, /etc/php/8.4/apache2/conf.d/20-xsl.ini, /etc/php/8.4/apache2/conf.d/20-zip.ini
PHP API	20240924
PHP Extension	20240924
Zend Extension	420240924
Zend Extension Build	API420240924,NTS
PHP Extension Build	API20240924,NTS
PHP Integer Size	64 bits
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	disabled
Zend Max Execution Timers	disabled
IPv6 Support	enabled
DTrace Support	disabled

Conectar con las bases de datos MySQL de EC2 desde DBeaver (MV Linux Mint):

1. Primero, debemos añadir una regla de entrada al grupo de seguridad del protocolo TCP para el puerto 3306 desde cualquier sitio (0.0.0.0/0)



2. En la instancia EC2, modificamos el fichero de configuración de MySQL mediante el comando **sudo nano /etc/mysql/mysql.conf.d/mysqld.cnf**

```
ubuntu@ip-172-31-18-19:~$ sudo nano /etc/mysql/mysql.conf.d/mysqld.cnf
```

Podemos comentar con '**#**' la línea que declara ***bind-address: 127.0.0.1***, o sustituirla por ***bind-address: 0.0.0.0***.

```
                                                    usuario@dwes: ~
  GNU nano 7.2                                  /etc/mysql/mysql.conf.d/mysqld.cnf *
# If MySQL is running as a replication slave, this should be
# changed. Ref https://dev.mysql.com/doc/refman/8.0/en/server-system-variables.html#sysvar_tmpdir
# tmpdir                = /tmp
#
# Instead of skip-networking the default is now to listen only on
# localhost which is more compatible and is not less secure.
# bind-address          = 127.0.0.1
mysqlx-bind-address     = 127.0.0.1
#
# * Fine Tuning
#
key_buffer_size         = 16M
# max_allowed_packet    = 64M
# thread_stack          = 256K
```

Reiniciamos MySQL en la instancia con el comando **sudo systemctl restart mysql** y comprobamos que el puerto 3306 es accesible con **sudo ss -tulnp | grep 3306**

```
ubuntu@ip-172-31-18-19:~$ sudo systemctl restart mysql
Warning: The unit file, source configuration file or drop-ins of mysql.service changed on disk. Run 'systemctl daemon-re
load' to reload units.
ubuntu@ip-172-31-18-19:~$ sudo ss -tulnp | grep 3306
tcp   LISTEN 0      70             127.0.0.1:33060      0.0.0.0:*    users:(("mysqld",pid=1550,fd=21))

tcp   LISTEN 0      151                *:3306             *:*    users:(("mysqld",pid=1550,fd=23))
```

Finalmente, accedemos al prompt de MySQL y creamos un nuevo usuario con acceso a la base de datos desde cualquier host (**%**): **CREATE USER 'aws-mysql'@'%' IDENTIFIED BY 'aws-mysql';**

GRANT ALL PRIVILEGES ON *.* TO 'aws-mysql'@'%' WITH GRANT OPTION; le da privilegios al usuario en todas las bases de datos y tablas (*.*) con opción de conceder permisos a otros usuarios.

FLUSH PRIVILEGES; actualiza los privilegios en memoria para que los cambios realizados tengan efecto inmediatamente.

```
ubuntu@ip-172-31-18-19:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.43-0ubuntu0.24.04.2 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

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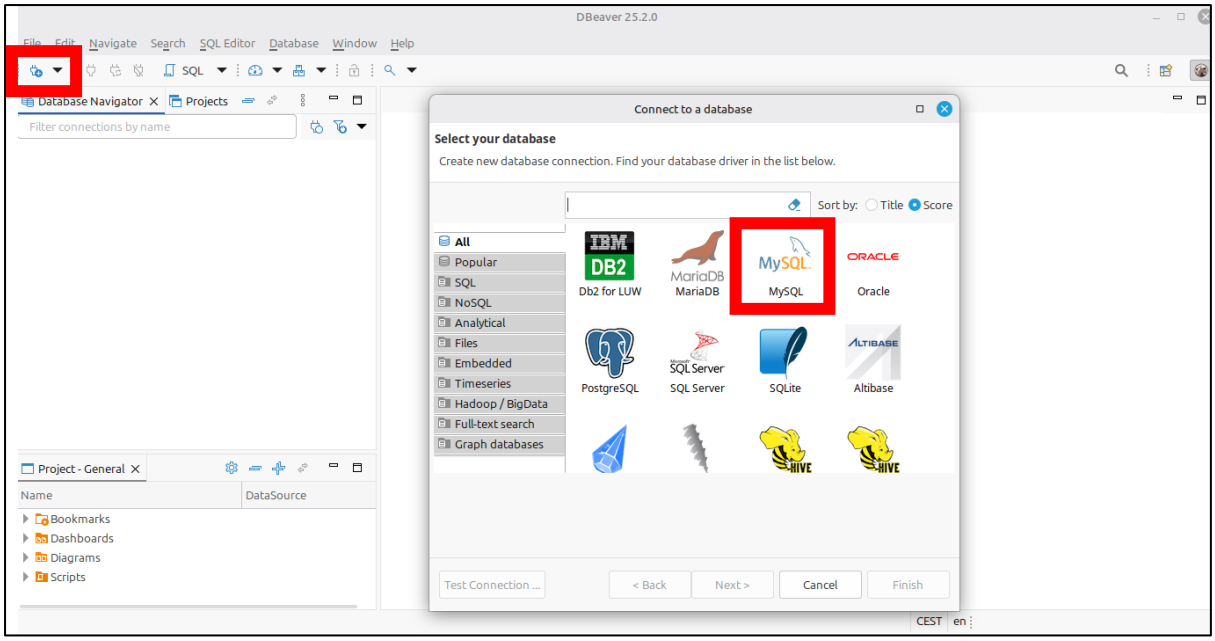
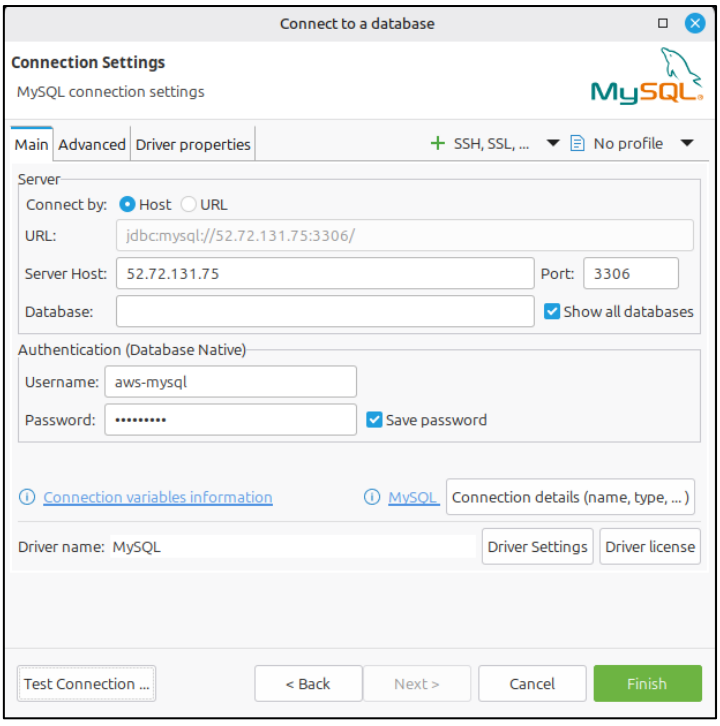
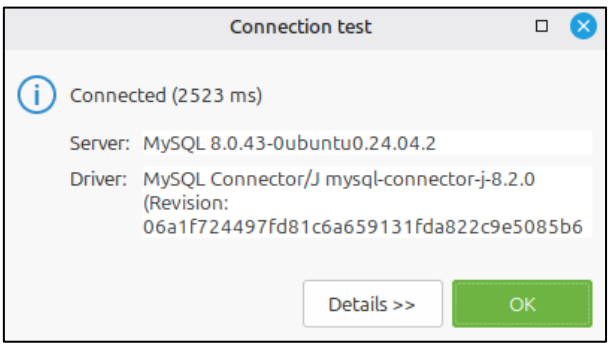

```
mysql> CREATE USER 'aws-mysql'@'%' IDENTIFIED BY 'aws-mysql';
Query OK, 0 rows affected (0.11 sec)

mysql> GRANT ALL PRIVILEGES ON *.* TO 'aws-mysql'@'%' WITH GRANT OPTION;
Query OK, 0 rows affected (0.01 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.01 sec)

mysql> exit
Bye
```


DBeaver 25.2.0
File Edit Navigate Search SQL Editor Database Window Help
Database Navigator
Projects
Filter connections by name
Project - General
Name
DataSource
Bookmarks
Dashboards
Diagrams
Scripts
Connect to a database
Select your database
Create new database connection. Find your database driver in the list below.
Sort by: Title Score
All
Popular
SQL
NoSQL
Analytical
Files
Embedded
Timeseries
Hadoop / BigData
Full-text search
Graph databases
Db2 for LUW
MariaDB
MySQL
Oracle
PostgreSQL
SQL Server
SQLite
Altibase
Test Connection ...
< Back
Next >
Cancel
Finish
CEST
en


Connect to a database
Connection Settings
MySQL connection settings
Main
Advanced
Driver properties
SSH, SSL, ...
No profile
Server
Connect by: Host URL
URL: jdbc:mysql://52.72.131.75:3306/
Server Host: 52.72.131.75
Port: 3306
Database:
Show all databases
Authentication (Database Native)
Username: aws-mysql
Password: ••••••••
Save password
Connection variables information
MySQL
Connection details (name, type, ...)
Driver name: MySQL
Driver Settings
Driver license
Test Connection ...
< Back
Next >
Cancel
Finish


Connection test
Connected (2523 ms)
Server: MySQL 8.0.43-0ubuntu0.24.04.2
Driver: MySQL Connector/J mysql-connector-j-8.2.0 (Revision: 06a1f724497fd81c6a659131fda822c9e5085b6
Details >>
OK