

## 1. Para que sirven los archivos .yaml vs .json

- **YAML:** Es un formato de serialización de datos para intercambiar datos estructurados entre aplicaciones y servicios de software. Da prioridad al uso humano antes que al de las aplicaciones.

Se usa en archivos de configuración en muchas herramientas y servicios de automatización, DevOps e infraestructura como código (IaC).

- **JSON:** Es un formato de serialización de datos para intercambiar datos estructurados entre aplicaciones y servicios de software. Da prioridad al uso de las aplicaciones antes que al uso humano.

Se usa en plataformas, lenguajes, comunicaciones de software distribuido, aplicaciones web, archivos de configuración y API.

## 2. Docker -compose.yaml-uso

se usa en **Docker Compose**, una herramienta que permite definir y ejecutar **múltiples contenedores Docker** en un solo archivo YAML. Su propósito es facilitar la **orquestación de contenedores**, definiendo servicios, redes y volúmenes en un solo lugar.

## 3. Como se crea un contenedor usando yaml

El comando a usar es:

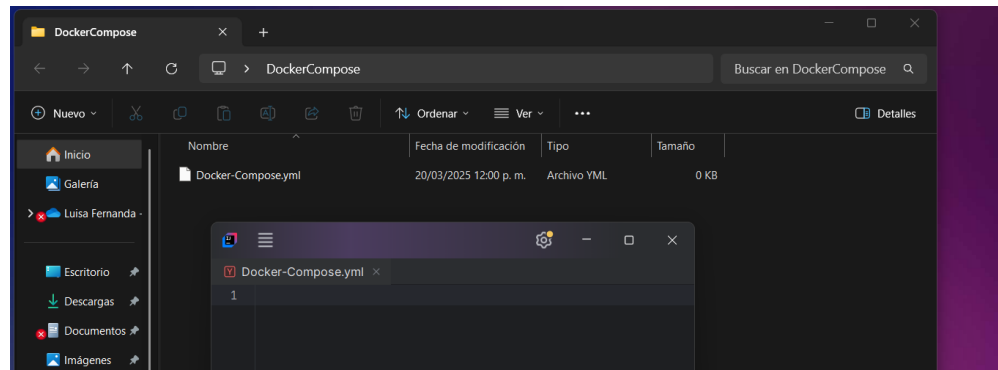
**docker-compose up -d**

up: Crea y ejecuta los contenedores.

-d: Los ejecuta en segundo plano (modo "detached").

## 4. Crear una base de datos que tenga tablas y le insertan registros

- Crear Carpeta y archivo .yaml



- Agregar informacion al archivo yml

```
Docker-Compose.yml
1 version: '3.8'
2
3 services:
4   mysql:
5     image: mysql:latest
6     container_name: Contenedor1
7     restart: always
8     environment:
9       MYSQL_ROOT_PASSWORD: "root"
10      MYSQL_DATABASE: "Tienda"
11      MYSQL_USER: "usuario"
12      MYSQL_PASSWORD: "1234"
13     ports:
14       - "3307:3306"
15     volumes:
16       - "C:/Users/luisa/Desktop/DockerCompose/mysql_data:/var/lib/mysql"
17       - ./init.sql:/docker-entrypoint-initdb.d/init.sql
18
19 volumes:
20   mysql_data:
21
```

- Agregar init.qsl

```
Docker-Compose.yml  init.sql x
*.sql files are supported by IntelliJ IDEA Ultimate
1 CREATE TABLE Clientes (
2   id INT AUTO_INCREMENT PRIMARY KEY,
3   nombre VARCHAR(100) NOT NULL,
4   correo VARCHAR(100) UNIQUE NOT NULL,
5   telefono VARCHAR(15)
6 );
7
8 CREATE TABLE Productos (
9   id INT AUTO_INCREMENT PRIMARY KEY,
10  nombre VARCHAR(100) NOT NULL,
11  precio DECIMAL(10,2) NOT NULL,
12  stock INT NOT NULL
13 );
14
15 CREATE TABLE Pedidos (
16   id INT AUTO_INCREMENT PRIMARY KEY,
17   cliente_id INT,
18   fecha_pedido DATE NOT NULL,
19   total DECIMAL(10,2),
20   FOREIGN KEY (cliente_id) REFERENCES clientes(id) ON DELETE SET NULL
21 );
22
23 CREATE TABLE Detalle_Pedido (
24   id INT AUTO_INCREMENT PRIMARY KEY,
25   pedido_id INT,
26   producto_id INT,
27   cantidad INT NOT NULL,
28   subtotal DECIMAL(10,2),
29   FOREIGN KEY (pedido_id) REFERENCES pedidos(id) ON DELETE CASCADE,
30   FOREIGN KEY (producto_id) REFERENCES productos(id) ON DELETE CASCADE
31 );
```

- Iniciar contenedor

```
luisa@HPLuu MINGW64 ~/Desktop/DockerCompose
$ docker-compose up -d
time="2025-03-22T09:25:03-05:00" level=warning msg="C:\\Users\\luisa\\Desktop\\DockerCompose\\docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
Network dockercompose_default Creating
Network dockercompose_default Created
Container Contenedor1 Creating
Container Contenedor1 Created
Container Contenedor1 Starting
Container Contenedor1 Started
```

- Revisar si el contenedor quedo

```
luisa@HPLuu MINGW64 ~/Desktop/DockerCompose
$ docker ps
```

CONTAINER ID	IMAGE	COMMAND	NAMES	CREATED	STATUS
0c71e5494c7b	mysql:latest	"docker-entrypoint.s..."	Contenedor1	12 seconds ago	Up 11 seconds

- Verificar en Docker

<input type="checkbox"/>		dockercompose	-	-	-	0.61%	2 minutes ago	<input type="checkbox"/>	:	
<input type="checkbox"/>		Contenedor1	0c71e5494c7b	mysql:latest	3307:3306 ↗	0.61%	2 minutes ago	<input type="checkbox"/>	:	

- Conectarse con MYSQL

```
luisa@HPLuu MINGW64 ~/Desktop/DockerCompose
$ winpty docker exec -it Contenedor1 mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 9.0.1 MySQL Community Server - GPL

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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> |
```

- Verificar si la base de datos es correcta

```
mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
| Tienda |
+-----+
5 rows in set (0.06 sec)
```

- **Conexión Workbench**

The screenshot shows the 'Setup New Connection' dialog box. It has a title bar with standard window controls. The 'Connection Name' field is set to 'Compose'. The 'Connection Method' is set to 'Standard (TCP/IP)'. Below these are three tabs: 'Parameters', 'SSL', and 'Advanced'. The 'Parameters' tab is active, showing fields for 'Hostname' (127.0.0.1), 'Port' (3307), 'Username' (root), 'Password' (with 'Store in Vault ...' and 'Clear' buttons), and 'Default Schema'. To the right of these fields are explanatory text labels. At the bottom, there are buttons for 'Configure Server Management...', 'Test Connection', 'Cancel', and 'OK'.

Setup New Connection

Connection Name: Compose Type a name for the connection

Connection Method: Standard (TCP/IP) Method to use to connect to the RDBMS

Parameters SSL Advanced

Hostname: 127.0.0.1 Port: 3307 Name or IP address of the server host - and TCP/IP port.

Username: root Name of the user to connect with.

Password: Store in Vault ... Clear The user's password. Will be requested later if it's not set.

Default Schema: The schema to use as default schema. Leave blank to select it later.

Configure Server Management... Test Connection Cancel OK

- **Hacer ingeniería inversa**

The screenshot shows the 'Reverse Engineer Database' window. It has a title bar with a close button. On the left is a sidebar with 'Connection Options' and a list of actions: 'Connect to DBMS', 'Select Schemas', 'Retrieve Objects', 'Select Objects', 'Reverse Engineer', and 'Results'. The main area is titled 'Set Parameters for Connecting to a DBMS'. It contains the same fields as the 'Setup New Connection' dialog: 'Stored Connection' (Compose), 'Connection Method' (Standard (TCP/IP)), and the 'Parameters' tab with 'Hostname' (127.0.0.1), 'Port' (3307), 'Username' (root), and 'Password' (with 'Store in Vault ...' and 'Clear' buttons). Explanatory text labels are present to the right of the fields.

Reverse Engineer Database

Connection Options

Connect to DBMS

Select Schemas

Retrieve Objects

Select Objects

Reverse Engineer

Results

Set Parameters for Connecting to a DBMS

Stored Connection: Compose Select from saved connection settings

Connection Method: Standard (TCP/IP) Method to use to connect to the RDBMS

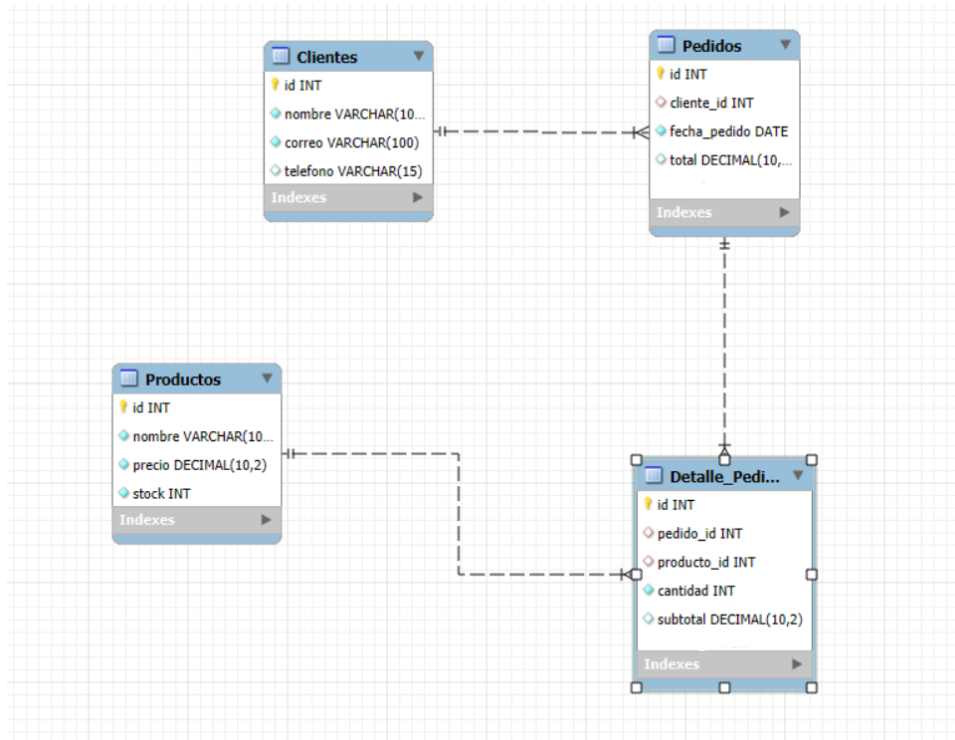
Parameters SSL Advanced

Hostname: 127.0.0.1 Port: 3307 Name or IP address of the server host - and TCP/IP port.

Username: root Name of the user to connect with.

Password: Store in Vault ... Clear The user's password. Will be requested later if it's not set.

- Obtener tablas con relaciones



- Usar base de datos

```
mysql> use Tienda;
Reading table information for your current
You can turn off this feature by setting
Database changed
```

- Insertar datos

```

Database changed
mysql> INSERT INTO Clientes (nombre, correo, telefono) VALUES
  -> ('Juan Prez', 'juanperez@email.com', '3001234567'),
  -> ('Mara Lpez', 'marialopez@email.com', '3107654321'),
  -> ('Carlos Gmez', 'carlosgomez@email.com', '3209876543'),
  -> ('Laura Martnez', 'lauramartinez@email.com', '3015678901'),
  -> ('Pedro Ramrez', 'pedroramirez@email.com', '3154321987');
Query OK, 5 rows affected (0.03 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Productos (nombre, precio, stock) VALUES
  -> ('Laptop HP', 3500.00, 10),
  -> ('Mouse Logitech', 150.00, 50),
  -> ('Teclado Mecnico', 200.00, 30),
  -> ('Monitor 24" LG', 900.00, 15),
  -> ('Impresora Epson', 1200.00, 20);
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> ^C
mysql> INSERT INTO Pedidos (cliente_id, fecha_pedido, total) VALUES
  -> (1, '2025-03-01', 3650.00),
  -> (2, '2025-06-22', 350.00),
  -> (3, '2025-02-13', 900.00),
  -> (4, '2025-01-24', 1400.00),
  -> (5, '2025-01-07', 2200.00);
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Detalle_Pedido (pedido_id, producto_id, cantidad, subtotal) VALUES
  -> (1, 1, 1, 3500.00), -- Laptop HP en el Pedido 1
  -> (1, 2, 1, 150.00), -- Mouse Logitech en el Pedido 1
  -> (2, 2, 2, 300.00), -- 2 Mouses Logitech en el Pedido 2
  -> (2, 3, 1, 50.00), -- Teclado Mecnico en el Pedido 2
  -> (3, 4, 1, 900.00), -- Monitor LG en el Pedido 3
  -> (4, 5, 1, 1200.00), -- Impresora Epson en el Pedido 4
  -> (4, 3, 1, 200.00), -- Teclado Mecnico en el Pedido 4
  -> (5, 1, 1, 2200.00); -- Laptop HP en el Pedido 5
Query OK, 8 rows affected (0.01 sec)
Records: 8 Duplicates: 0 Warnings: 0

```

- Revisar datos en tablas

```

mysql> select * from Pedidos;
+----+-----+-----+-----+
| id | cliente_id | fecha_pedido | total |
+----+-----+-----+-----+
| 1 | 1 | 2025-03-01 | 3650.00 |
| 2 | 2 | 2025-06-22 | 350.00 |
| 3 | 3 | 2025-02-13 | 900.00 |
| 4 | 4 | 2025-01-24 | 1400.00 |
| 5 | 5 | 2025-01-07 | 2200.00 |

```

```
mysql> select * from Clientes;
```

id	nombre	correo	telefono
1	Juan Prez	juanperez@email.com	3001234567
2	Mara Lpez	marialopez@email.com	3107654321
3	Carlos Gmez	carlosgomez@email.com	3209876543
4	Laura Martnez	lauramartinez@email.com	3015678901
5	Pedro Ramrez	pedroramirez@email.com	3154321987

5 rows in set (0.00 sec)

```
mysql> select * from Productos;
```

id	nombre	precio	stock
1	Laptop HP	3500.00	10
2	Mouse Logitech	150.00	50
3	Teclado Mecnico	200.00	30
4	Monitor 24" LG	900.00	15
5	Impresora Epson	1200.00	20

5 rows in set (0.00 sec)

```
mysql> select * from Detalle_Pedido;
```

id	pedido_id	producto_id	cantidad	subtotal
1	1	1	1	3500.00
2	1	2	1	150.00
3	2	2	2	300.00
4	2	3	1	50.00
5	3	4	1	900.00
6	4	5	1	1200.00
7	4	3	1	200.00
8	5	1	1	2200.00

8 rows in set (0.00 sec)

## Referencias

[YAML frente a JSON: diferencia entre los formatos de serialización de datos - AWS](#)