

Desarrollo de Software VII

Laboratorio # 20—Prof. Regis Rivera

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Parte I – Introducción a base de datos no relacionales

Definición

H bases de datos no relacionales ffl i z ffl fflch zffl
 z z ffl ii H i z i ffl ffl i
 i H i z z ffl z i ffl z u N ii ffl
 i i ii **NoSQL** ; i H
 ffl z i ffl u v i **gestión de grandes volúmenes de datos** N
 i ffl zffl i i zffl i z i z i v
 ffl z ffl zffl ffl ffl u ffl

Características


- H fflch zffl i z i ffl z
- u ffl ffl u ffl fflch zffl z
- z ffl zffl zi i i z
- z i z i ffl u v ffl
- i ffl ii H z i i z ffl
- u ffl i z ffl i ffl u z i
- ffl ffl ffl i zffl i ffl i z iffl ffl i z iffl
- ffl z ffl zffl ffl ffl u ffl

Tipos

Clave-valor	Documentos	Gráficos	En memoria
i zffl i i z i fflch zffl zi i zffl z zi ffl z ffl ffl ffl u z ii i i ffl i zffl i i z iffl zffl ch zffl ffl i ffl i z / /	i zffl i z i fflch zffl z z fflzffl i i z i ch ffl ffl z u v ffl i ch ffl i ii i i z ffl ffl u z i i ffl i ffl ffl ffl zffl z ffl ffl ffl	H i zffl i v ffl v z i zffl u ii H ffl i z ffl u i i z i i zffl ffl ch z zffl i v ffl i zffl ffl zffl zffl ch ffl z zffl	i zffl i ffl ch z ffl u ffl v ffl i ffl i i i zi ffl zffl ffl z v ffl ffl i

Parte II – Instalación de motor de base de datos (MongoDB)

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MongoDB. Products Solutions Resources Company Pricing  Sign In

MongoDB Atlas

MongoDB Enterprise Advanced

MongoDB Community Edition

MongoDB Community Server

MongoDB Community Kubernetes Operator

Tools

Mobile & Edge

The database is also offered as a fully-managed service with [MongoDB Atlas](#). Get access to advanced functionality such as auto-scaling, serverless instances (in preview), full-text search, and data distribution across regions and clouds. Deploy in minutes on AWS, Google Cloud, and/or Azure, with no downloads necessary.

[Give it a try with a free, highly-available 512 MB cluster.](#)

Version


6.0.2 (current)

Platform

Windows


Package

msi

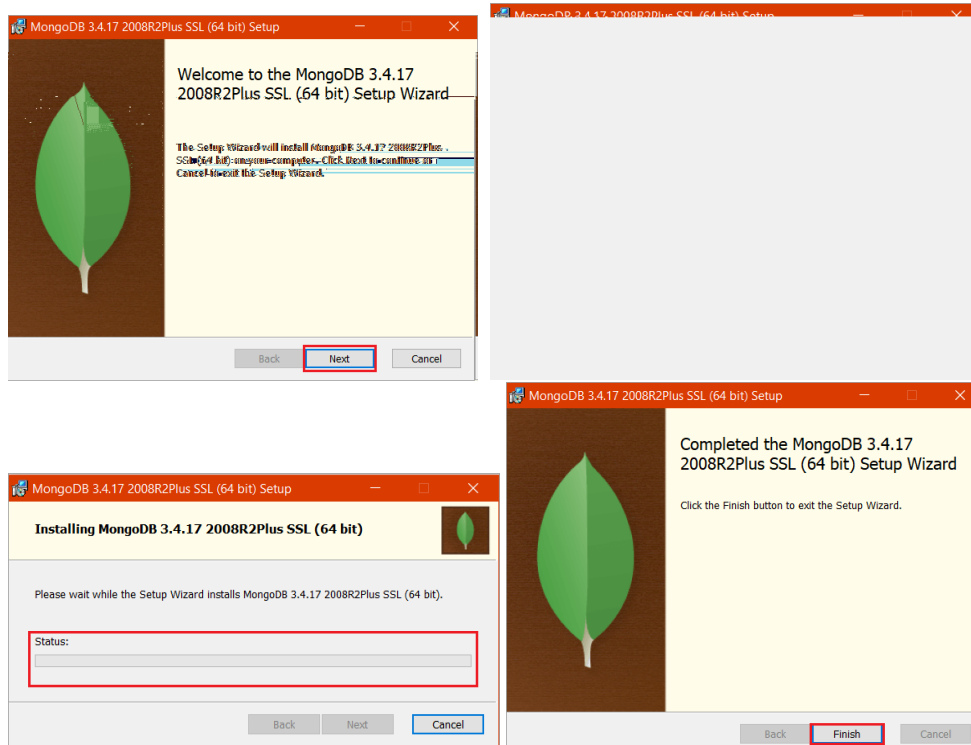
Download 

More Options ...

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 mongodb-windows-x86_64-6.0.2-signed.msi

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Parte III – Configuración de PHP

i ffl ffl i z zi zh z i ffl
 z tffl z N N z ch/ z ffl
 ffl ffl i z ch/ i ffl i z i zz
zi zh ffl /
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DLL List	
PHP 8.1	8.1 Non Thread Safe (NTS) x64 8.1 Thread Safe (TS) x64 8.1 Non Thread Safe (NTS) x86 8.1 Thread Safe (TS) x86
PHP 8.0	8.0 Non Thread Safe (NTS) x64 8.0 Thread Safe (TS) x64 8.0 Non Thread Safe (NTS) x86 8.0 Thread Safe (TS) x86
PHP 7.4	7.4 Non Thread Safe (NTS) x64 7.4 Thread Safe (TS) x64 7.4 Non Thread Safe (NTS) x86 7.4 Thread Safe (TS) x86

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 php_mongodb-1.13.0-7.4-ts-vc15-x64.zip

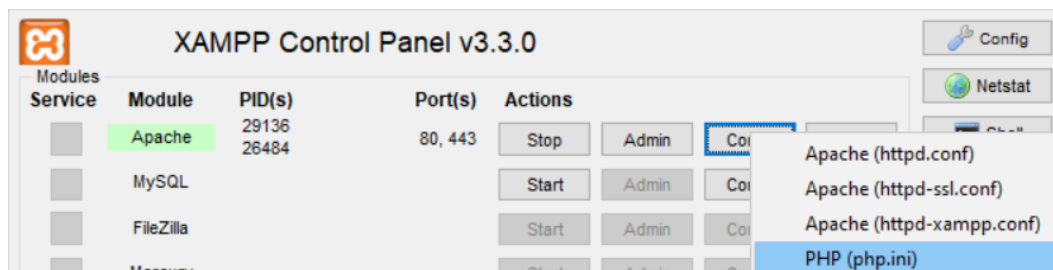
th i Hii « iuz i z i i z th th
 (D:) > xampp > php > ext

Nombre

 php_mongodb.dll

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 XAMPP Control Panel v3.3.0 [Compiled: Apr 6th 2021]



The screenshot shows the XAMPP Control Panel v3.3.0 interface. The 'Modules' section lists Apache, MySQL, FileZilla, and Mercury. The 'Actions' column for Apache shows 'Stop', 'Admin', and 'Config' buttons. The 'Config' button is highlighted, and a dropdown menu is open, showing the following options: 'Apache (httpd.conf)', 'Apache (httpd-ssl.conf)', 'Apache (httpd-xampp.conf)', and 'PHP (php.ini)'. The 'PHP (php.ini)' option is selected.

 php.ini: Bloc de notas

Archivo Edición Formato Ver Ayuda

```

;extension=sqllite3
;extension=tidy
;extension=xmlrpc
;extension=xsl

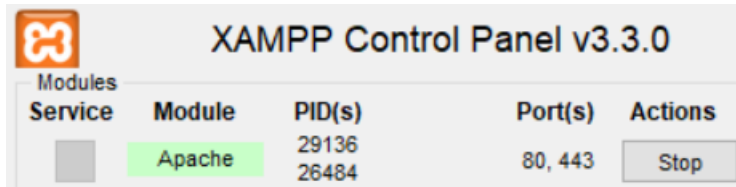
; Module Settings ;
; Module Settings ;
; Module Settings ;
asp_tags=Off
display_startup_errors=On
track_errors=Off
y2k_compliance=On
allow_call_time_pass_reference=Off
safe_mode=Off
safe_mode_gid=Off
safe_mode_allowed_env_vars=PHP_
safe_mode_protected_env_vars=LD_LIBRARY_PATH
error_log="\\xampp\\php\\logs\\php_error_log"
register_globals=Off
register_long_arrays=Off
magic_quotes_gpc=Off
magic_quotes_runtime=Off
magic_quotes_sybase=Off
extension=php_openssl.dll
extension=php_ftp.dll

```

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extension=php_mongodb.dll

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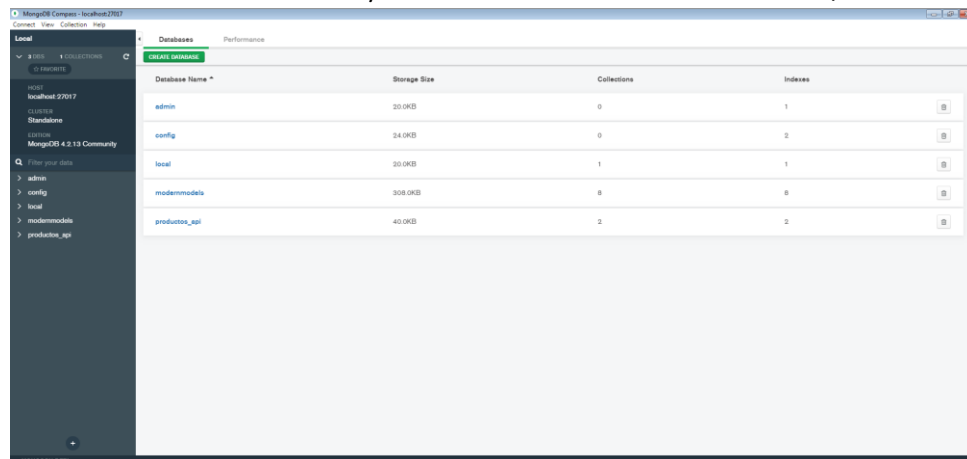
ifl ffl z z z ffl z ffl
i z i ch zfl fflch// u z zzfl ffl
ffl ffl v ffl z z

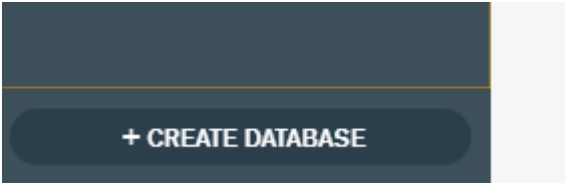
mongodb

MongoDB support		enabled	
MongoDB extension version		1.13.0	
MongoDB extension stability		stable	
libbson bundled version		1.21.1	
libmongoc bundled version		1.21.1	
libmongoc SSL		enabled	
libmongoc SSL library		OpenSSL	
libmongoc crypto		enabled	
libmongoc crypto library		libcrypto	
libmongoc crypto system profile		disabled	
libmongoc SASL		enabled	
libmongoc ICU		disabled	
libmongoc compression		disabled	
libmongoc version		1.21.1	
libmongoc crypto library		libcrypto	
libmongoc crypto library		libcrypto	
Master Value		Directive	
		Local Value	
		no value	
		no value	
		Off	
		Off	

Parte IV – Creación de la base de datos y colección

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Create Database

Database Name

usuarios_api

Collection Name

usuarios

☐ Capped Collection ⓘ

☐ Use Custom Collation ⓘ

Before MongoDB can save your new database, a collection name must also be specified at the time of creation. [More Information](#)

CANCEL CREATE DATABASE

z i i ffl ffl u i i ffl z i zzffl

usuarios_api usuarios 4.0KB

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ffl z

Collections

CREATE COLLECTION

Collection Name ^	Documents	Avg. Document Size	Total Document Size
usuarios	0	-	0.0 B

ifzh i z i zzffl ffl / i i ffl / i ii i z i zzffl ffl ffl

ttffl / z /

usuarios_api.usuarios

DOCUMENTS 0 TOTAL SIZE 0B AVG. SIZE 0B INDEXES 1 TOTAL SIZE 4.0KB AVG. SIZE 4.0KB

IONS FIND RESET [field: 'value'] OPT

ents 0 - 0 of N/A < > C REFRESH ADD DATA VIEW 0 1 2

Displaying docum

This collection has no data

It only takes a few seconds to import data from a JSON or CSV file

Import Data

Parte V – Codificación de la aplicación Web

```

1 <html>
2 <head>
3 <title>Laboratorio 20</title>
4 </head>
5 <body>
6 <form action = "lab201.php" method = "POST">
7 Nombre: <input type = "text" name="nombre" required><br>
8 Apellido: <input type = "text" name="apellido" required><br>
9 Email: <input type = "email" name="email"><br>
10 Edad: <input type = "number" name="edad" min="0" max="120"><br><br>
11 <input type = "submit" name="guardar" value="Guardar datos">
12 </form>
13 <?php
14 include("UsuariosMDB.php");
15 $usrs = new UsuariosMDB();
16
17 if(array_key_exists('guardar', $_POST)){
18     $usrs->insertarRegistro($_REQUEST['nombre'],$_REQUEST['apellido'],$_REQUEST['email'],$_REQUEST['edad']);
19     echo "Registro insertado exitosamente <br><br>";
20 }
21
22 echo "Registros en la coleccion usuarios: <br>";
23 $usrs->obtenerRegistros();
24 <?>

```



H

```

1 <?php
2
3 class UsuariosMDB{
4
5     private $mongo_client;
6     private $mongo_host;
7     private $mongo_user;
8     private $mongo_pswd;
9     private $mongo_database;
10    private $mongo_collection;
11    private $mongo_document;
12
13    function __construct(){
14        $this->mongo_host = "localhost:27017";
15        $this->mongo_user = "";
16        $this->mongo_pswd = "";
17        $this->mongo_database = "usuarios_api";
18        $this->mongo_collection = "usuarios";
19        $this->conectarMongodb();
20    }
21
22    public function conectarMongodb(){
23        try {
24            $this->mongo_client = new MongoClient("mongodb://" . $this->mongo_host);
25        }
26        catch (Exception $e) {
27            die("Ocurrio la siguiente excepcion al tratar de conectarse a la base de datos: " . $e->getMessage());
28        }
29    }
30
31    public function insertarRegistro($nombre,$apellido,$email,$edad){
32        try {
33            $this->mongo_document = new MongoClientDriver\BulkWrite;
34
35            $doc = ['_id' => new MongoDB\BSON\ObjectID, 'nombre'=>"$nombre", 'apellido'=>"$apellido", 'email'=>"$email", 'edad'=>intval($edad)];
36            $this->mongo_document->insert($doc);
37
38            $this->mongo_client->executeBulkWrite($this->mongo_database.'.'.$this->mongo_collection, $this->mongo_document);
39        }
40        catch (MongoDB\Driver\Exception\Exception $e){
41            echo "Ocurrio la siguiente excepcion al tratar de guardar el registro: ", $e->getMessage(), "\n";
42        }
43    }
44
45    public function obtenerRegistros(){
46        try {
47            $query = new MongoDB\Driver\Query([]);
48            $rows = $this->mongo_client->executeQuery($this->mongo_database.'.'.$this->mongo_collection, $query);
49
50            foreach ($rows as $row) {
51                echo "ID: $row->_id - Nombre Completo: $row->nombre $row->apellido - E-mail: $row->email - Edad: $row->edad <br>";
52            }
53            catch (MongoDB\Driver\Exception\Exception $e) {
54                echo "Ocurrio la siguiente excepcion al tratar de leer los registros: ", $e->getMessage(), "\n";
55            }
56        }
57    }
58 <?>

```



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Parte VI – Pruebas de la Aplicación Web y la base de datos

N

i

Nombre:

Apellido:

Email:

Edad:

Nombre:
Apellido:
Email:
Edad:

Nombre:
Apellido:
Email:
Edad:

Registro insertado exitosamente

Registros en la coleccion usuarios:

ID: 636301b174b5751670000ea9 - Nombre Completo: Maria Perez - E-mail: maria.perez@elcorreo.com - Edad: 25

z i ffl

	TOTAL SIZE	AVG. SIZE		TOTAL SIZE	AVG. SIZE
DOCUMENTS 0	0B	0B	INDEXES 1	36.0KB	36.0KB

Displaying documents 0 - 0 of N/A

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usuarios_api.usuarios

Documents Aggregations Schema Explain Plan Indexes Validation

{ field: 'value' }

```
_id: ObjectId("636301b174b5751670000ea9")
nombre: "Maria"
apellido: "Perez"
email: "maria.perez@elcorreo.com"
edad: 25
```

fffl i i

usuarios_api.usuarios

Documents Aggregations Schema Explain Plan Indexes Validation

{ field: 'value' }

```
_id: ObjectId("636301b174b5751670000ea9")
nombre: "Maria"
apellido: "Perez"
email: "maria.perez@elcorreo.com"
edad: 25
```

```
_id: ObjectId("6363025a74b5751670000eaa")
nombre: "Juan"
apellido: "Perez"
email: "juan.perez@elcorreo.com"
edad: 30
```

```
_id: ObjectId("6363028674b5751670000eab")
nombre: "Sandra"
apellido: "Sanchez"
email: "sandra@otrocorreo.com"
edad: 31
```