



IPN
Instituto Politécnico Nacional



UPIIZ
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Campus Zacatecas*

Ingeniería en:
Sistemas Computacionales

Materia:
Sistemas Distribuidos

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Actividad:
“Práctica 05: Instalación de MongoDB”

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Zacatecas, Zac. Octubre 25 de 2023

Instalación:

Instalar Homebrew para Mac, desde <https://brew.sh/>, o usando la linea de comando:

```
1 /bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```

Homebrew, es un gestor de paquetes para macOS, para usarlo es necesario hacerlo mediante terminal, empleando la linea **brew**, en conjunto con las palabras install, uninstall, list, --help, entre otros para realizar actividades.

Para instalar MongoDB, es posible buscar en la página de homebrew el paquete, además de usar la guía de instalación de Mongo Community (<https://www.mongodb.com/docs/manual/tutorial/install-mongodb-on-os-x/>) que nos ofrece la siguiente linea: **brew install mongodb-community@7.0**, por lo que ejecutando en terminal:

```
atc@AlejandroTC ~ % brew install mongodb-community@7.0
Running 'brew update --auto-update'...
=> Auto-updated Homebrew!
Updated 5 taps (jandedobbeleer/oh-my-posh, homebrew/cask-fonts, mongodb/brew, homebrew/core and homebrew/cask).
=> New Formulae
badkeys      dockly      node@20     ssh-mitm
bob           eatmemory   nvimpager   three-body
cf2tf        gptline     pciutils     xeol
dcp           haiti       perl-xml-parser  zix
diffoci       libnghttp3  snyk-cli
=> New Casks
affine        font-lxgw-neozhising
batchoutput-pdf  font-reddit-sans
brickscore     free-podcast-transcription
commandpost    nys
font-akbalumo  simplex
font-linefont  writerside
font-lxgw-heartserif  xsplit-vcam
You have 15 outdated formulae and 1 outdated cask installed.

=> Fetching dependencies for mongodb/brew/mongodb-community: mongodb/brew/mongodb-database-tools, c-ares, libnghttp2, openssl@3, node and mongosh
=> Fetching mongodb/brew/mongodb-database-tools
=> Downloading https://fastdl.mongodb.org/tools/db/mongodb-database-tools-macos
Already downloaded: /Users/atc/Library/Caches/Homebrew/downloads/867898090a706b3b84558e4f2056a6047fca9305f02937982f1f8e34550f5107--mongodb-database-tools-macos-arm64-100.8.0.zip
=> Fetching c-ares
=> Downloading https://ghcr.io/v2/homebrew/core/c-ares/manifests/1.20.1
===== 100.0%
=> Downloading https://ghcr.io/v2/homebrew/core/c-ares/blobs/sha256:81f08757c7b
===== 100.0%
=> Fetching libnghttp2
=> Downloading https://ghcr.io/v2/homebrew/core/libnghttp2/manifests/1.57.0
===== 100.0%
=> Downloading https://ghcr.io/v2/homebrew/core/libnghttp2/blobs/sha256:1499352
===== 100.0%
=> Fetching openssl@3
=> Downloading https://ghcr.io/v2/homebrew/core/openssl/3/manifests/3.1.3
===== 100.0%
=> Downloading https://ghcr.io/v2/homebrew/core/openssl/3/blobs/sha256:fd6e98e0
===== 100.0%
=> Fetching node
=> Downloading https://ghcr.io/v2/homebrew/core/node/manifests/21.1.0
===== 100.0%
=> Downloading https://ghcr.io/v2/homebrew/core/node/blobs/sha256:2c62cf35b3e83
===== 100.0%
=> Fetching mongosh
=> Downloading https://ghcr.io/v2/homebrew/core/mongosh/manifests/2.0.2
===== 100.0%
=> Downloading https://ghcr.io/v2/homebrew/core/mongosh/blobs/sha256:c5e9188215
===== 100.0%
=> Fetching mongodb/brew/mongodb-community
=> Downloading https://fastdl.mongodb.org/osx/mongodb-macos-arm64-7.0.2.tgz
```

```

=> Fetching mongodb/brew/mongodb-community
=> Downloading https://fastdl.mongodb.org/osx/mongodb-macos-arm64-7.0.2.tgz
##### 100.0%
=> Installing mongodb-community from mongodb/brew
=> Installing dependencies for mongodb/brew/mongodb-community: mongodb/brew/mongodb-database-tools, c-ares, libnghttp2, openssl@3, node and mongosh
=> Installing mongodb/brew/mongodb-community dependency: mongodb/brew/mong
=> /opt/homebrew/Cellar/mongodb-database-tools/100.8.0: 13 files, 111.9MB, built in 3 seconds
=> Installing mongodb/brew/mongodb-community dependency: c-ares
=> Downloading https://ghcr.io/v2/homebrew/core/c-ares/manifests/1.20.1
Already downloaded: /Users/ats/Library/Caches/Homebrew/downloads/aaf2cda823b478bd269e2865aad8a2174a8f635e6c59592c115242735375cea2--c-ares-1.20.1.bottle_manifest.json
=> Pouring c-ares-1.20.1.arm64_sonoma.bottle.tar.gz
  /opt/homebrew/Cellar/c-ares/1.20.1: 85 files, 651.6KB
=> Installing mongodb/brew/mongodb-community dependency: libnghttp2
=> Downloading https://ghcr.io/v2/homebrew/core/libnghttp2/manifests/1.57.0
Already downloaded: /Users/ats/Library/Caches/Homebrew/downloads/38b8e77aafaea97ca6c05954b9694ee6376061edc08f58362177e09c9ceef3162--libnghttp2-1.57.0.bottle_manifest.json
=> Pouring libnghttp2-1.57.0.arm64_sonoma.bottle.tar.gz
  /opt/homebrew/Cellar/libnghttp2/1.57.0: 13 files, 737.2KB
=> Installing mongodb/brew/mongodb-community dependency: openssl@3
=> Downloading https://ghcr.io/v2/homebrew/core/openssl/3/manifests/3.1.3
Already downloaded: /Users/ats/Library/Caches/Homebrew/downloads/f038f548886a6a94c000296efb3058dc47e867eef00f0c6836b8ff310bc04daa--openssl@3-3.1.3.bottle_manifest.json
=> Pouring openssl@3-3.1.3.arm64_sonoma.bottle.tar.gz
  /opt/homebrew/Cellar/openssl@3/3.1.3: 6,495 files, 28.4MB
=> Installing mongodb/brew/mongodb-community dependency: node
=> Downloading https://ghcr.io/v2/homebrew/core/node/manifests/21.1.0
Already downloaded: /Users/ats/Library/Caches/Homebrew/downloads/928f4ee421121cea709f2824a912d1ba60794079e12679642dc75dec485c640f--node-21.1.0.bottle_manifest.json
=> Pouring node-21.1.0.arm64_sonoma.bottle.tar.gz
  /opt/homebrew/Cellar/node/21.1.0: 2,525 files, 64.5MB
=> Installing mongodb/brew/mongodb-community dependency: mongosh
=> Downloading https://ghcr.io/v2/homebrew/core/mongosh/manifests/2.0.2
Already downloaded: /Users/ats/Library/Caches/Homebrew/downloads/81d3698afb3054eed3f8784614c80217eaac9e8c6df1ea2c7027d60b76d643e2--mongosh-2.0.2.bottle_manifest.json
=> Pouring mongosh-2.0.2.arm64_sonoma.bottle.tar.gz
  /opt/homebrew/Cellar/mongosh/2.0.2: 10,001 files, 48MB
=> Installing mongodb/brew/mongodb-community
=> Caveats
To restart mongodb/brew/mongodb-community after an upgrade:
  brew services restart mongodb/brew/mongodb-community
=> Summary
  /opt/homebrew/Cellar/mongodb-community/7.0.2: 11 files, 265.6MB, built in 3 seconds
=> Running 'brew cleanup mongodb-community'...
Disable this behaviour by setting HOMEBREW_NO_INSTALL_CLEANUP.
Hide these hints with HOMEBREW_NO_ENV_HINTS (see 'man brew').
Removing: /Users/ats/Library/Caches/Homebrew/mongodb-community--7.0.0.tgz... (65.2MB)
=> Upgrading 1 dependent of upgraded formulae:
Disable this behaviour by setting HOMEBREW_NO_INSTALLED_DEPENDENTS_CHECK.
Hide these hints with HOMEBREW_NO_ENV_HINTS (see 'man brew').
httpd 2.4.57_1 -> 2.4.58
=> Downloading https://ghcr.io/v2/homebrew/core/httpd/manifests/2.4.58
##### 100.0%
=> Checking for dependents of upgraded formulae...
=> No broken dependents found!
=> "brew cleanup" has not been run in the last 30 days, running now...
Disable this behaviour by setting HOMEBREW_NO_INSTALL_CLEANUP.

```

```

Removing: /Users/ats/Library/Caches/Homebrew/mongodb-community--7.0.0.tgz... (65.2MB)
=> Upgrading 1 dependent of upgraded formulae:
Disable this behaviour by setting HOMEBREW_NO_INSTALLED_DEPENDENTS_CHECK.
Hide these hints with HOMEBREW_NO_ENV_HINTS (see 'man brew').
httpd 2.4.57_1 -> 2.4.58
=> Downloading https://ghcr.io/v2/homebrew/core/httpd/manifests/2.4.58
##### 100.0%
=> Checking for dependents of upgraded formulae...
=> No broken dependents found!
=> "brew cleanup" has not been run in the last 30 days, running now...
Disable this behaviour by setting HOMEBREW_NO_INSTALL_CLEANUP.
Hide these hints with HOMEBREW_NO_ENV_HINTS (see 'man brew').
Removing: /Users/ats/Library/Caches/Homebrew/bat-0.23.0... (2.1MB)
Removing: /opt/homebrew/Cellar/c-ares/1.19.1... (87 files, 581.2KB)
Removing: /Users/ats/Library/Caches/Homebrew/c-ares-1.19.1... (163KB)
Removing: /Users/ats/Library/Caches/Homebrew/django-completion-4.2.5... (23.9KB)
Removing: /Users/ats/Library/Caches/Homebrew/fsf-0.42.0... (1.4MB)
Removing: /Users/ats/Library/Caches/Homebrew/gettext-0.21.1... (8.8MB)
Removing: /Users/ats/Library/Caches/Homebrew/go-1.21.1... (95.9MB)
Removing: /Users/ats/Library/Caches/Homebrew/httpd-2.4.57_1... (7.2MB)
Removing: /opt/homebrew/Cellar/libnghttp2/1.56.0... (13 files, 734KB)
Removing: /Users/ats/Library/Caches/Homebrew/libnghttp2-1.56.0... (215.7KB)
Removing: /opt/homebrew/Cellar/mongosh/2.0.1... (9,840 files, 47.8MB)
Removing: /Users/ats/Library/Caches/Homebrew/mongosh-2.0.1... (11.2MB)
Removing: /opt/homebrew/Cellar/node/20.7.0... (2,517 files, 58.4MB)
Removing: /Users/ats/Library/Caches/Homebrew/node-20.7.0... (14.7MB)
Removing: /Users/ats/Library/Caches/Homebrew/oh-my-posh-18.9.1.tar.gz... (2.6MB)
Removing: /Users/ats/Library/Caches/Homebrew/oniguruma-6.9.8... (440.9KB)
Removing: /opt/homebrew/Cellar/openssl@3/3.1.2... (6,495 files, 28.4MB)
Removing: /Users/ats/Library/Caches/Homebrew/openssl@3-3.1.2... (7.7MB)
Removing: /Users/ats/Library/Caches/Homebrew/python@3.11-3.11.5... (14.9MB)
Removing: /Users/ats/Library/Caches/Homebrew/sqlite-3.43.1... (2.1MB)
Removing: /Users/ats/Library/Caches/Homebrew/go_mod_cache... (5,835 files, 156.5MB)
Removing: /Users/ats/Library/Caches/Homebrew/mongodb-atlas-cli-1.11.0... (17.5MB)
Removing: /Users/ats/Library/Caches/Homebrew/go_cache... (2,278 files, 181.8MB)
Removing: /Users/ats/Library/Caches/Homebrew/Cask/utm-4.3.5.dmg... (233.1MB)
Removing: /Users/ats/Library/Caches/Homebrew/Cask/term2-3.4.20.zip... (22.9MB)
Removing: /Users/ats/Library/Caches/Homebrew/Cask/mongodb-compass-1.39.4.dmg... (124.1MB)
Removing: /Users/ats/Library/Caches/Homebrew/Cask/rar-6.23.tar.gz... (558.7KB)
Removing: /Users/ats/Library/Caches/Homebrew/Cask/fig-2.16.0.dmg... (71.4MB)
Removing: /Users/ats/Library/Logs/Homebrew/httpd... (64B)
Removing: /Users/ats/Library/Logs/Homebrew/openssl@3... (64B)
Removing: /Users/ats/Library/Logs/Homebrew/ca-certificates... (64B)
Removing: /Users/ats/Library/Logs/Homebrew/node... (64B)
Removing: /Users/ats/Library/Logs/Homebrew/python@3.11... (2 files, 2.5KB)
Removing: /Users/ats/Library/Logs/Homebrew/oh-my-posh... (3 files, 125.6KB)
Pruned 1 symbolic links and 2 directories from /opt/homebrew
=> Caveats
=> mongodb-community
To restart mongodb/brew/mongodb-community after an upgrade:
  brew services restart mongodb/brew/mongodb-community

```

Una vez instalado, es posible que se tenga que iniciar el servicio de mongo, para ello se usara una linea similar a la que arroja brew para reiniciar el servicio:

A terminal window titled 'atc — -zsh — 80x24' is shown. The prompt is 'atc@AlejandroTC ~'. The command 'brew services start mongodb/brew/mongodb-community' has been entered. The output is 'Service `mongodb-community` already started, use `brew services restart mongodb-community` to restart.' followed by a new prompt line 'atc@AlejandroTC ~ _'.

```
atc — -zsh — 80x24
atc@AlejandroTC ~ brew services start mongodb/brew/mongodb-community
Service `mongodb-community` already started, use `brew services restart mongodb-
community` to restart.
atc@AlejandroTC ~ _
```

Para parar el servicio es posible usar **restart**.

Para usar mongo, es necesario usar la palabra **mongosh** como se muestra a continuacion:

```
atc — mongosh mongodb://127.0.0.1:27017/?directConnection=true&serv...
atc@AlejandroTC ~ mongosh
(node:10729) [DEP0040] DeprecationWarning: The `punycode` module is deprecated.
Please use a userland alternative instead.
(Use `node --trace-deprecation ...` to show where the warning was created)
Current Mongosh Log ID: 65397058c4083655424a3190
Connecting to:      mongodb://127.0.0.1:27017/?directConnection=true&serverS
electionTimeoutMS=2000&appName=mongosh+2.0.2
Using MongoDB:      7.0.0
Using Mongosh:      2.0.2

For mongosh info see: https://docs.mongodb.com/mongosh-shell/

-----
The server generated these startup warnings when booting
2023-10-23T15:17:19.259-06:00: Access control is not enabled for the database
. Read and write access to data and configuration is unrestricted
-----

test> _
```

Preguntas

1. ¿Qué es MongoDB y cómo se diferencia de una base de datos relacional?

Mongo es una base de datos no relacional que guarda información en documentos con una estructura similar a JSON, en vez de tablas, Mongo puede trabajar con datos flexibles o estructurados, mientras que las BD relacionales, solo pueden trabajar con datos estructurados.

2. ¿Cuál es la principal ventaja de utilizar MongoDB sobre otras bases de datos NoSQL?

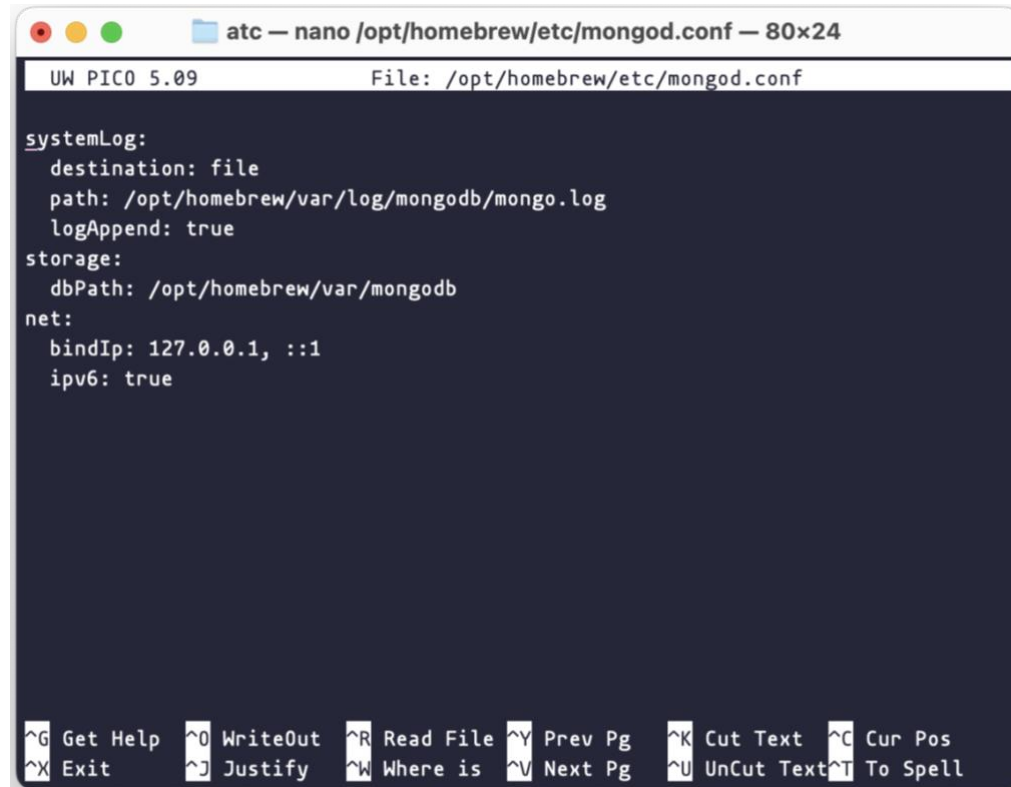
Se puede complementar con los demás servicios de Mongo, así como su amplia comunidad para resolver problemas, además de todas las soluciones que la empresa de Mongo presenta.

3. Una vez instalado MongoDB, ¿qué comando se utiliza para iniciar el servicio?

Brew service start mongodb/brew/ngodb-community
mongosh

4. ¿Qué archivo se debe modificar si se quiere cambiar la configuración predeterminada de MongoDB en Ubuntu?

/opt/homebrew/etc/mongod.conf



```
atc — nano /opt/homebrew/etc/mongod.conf — 80x24
UW PICO 5.09 File: /opt/homebrew/etc/mongod.conf

systemLog:
  destination: file
  path: /opt/homebrew/var/log/mongodb/mongo.log
  logAppend: true
storage:
  dbPath: /opt/homebrew/var/mongodb
net:
  bindIp: 127.0.0.1, ::1
  ipv6: true

^G Get Help ^O WriteOut ^R Read File ^Y Prev Pg ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where is ^V Next Pg ^U UnCut Text ^T To Spell
```

5. ¿Por qué es importante configurar la autenticación en MongoDB?

Para controlar los accesos a las bases de datos.

6. ¿Cuál es el riesgo de no configurar un firewall o reglas de acceso adecuadas para MongoDB?

Accesos no autorizados, robo de datos, inyección de datos, DoS.

7. Si MongoDB no arranca después de la instalación, ¿dónde buscarías para diagnosticar el problema?

Logs de instalación, guía de instalación de MongoDB, archivos de configuración de MongoDB, problemas en comunidades.

8. ¿Qué herramienta o comando utilizarías para verificar el estado del servicio de MongoDB en Ubuntu?

```
atc — -zsh — 80x24
atc@AlejandroTC ~ brew services info --all
httpd (homebrew.mxcl.httpd)
Running: ✗
Loaded: ✗
Schedulable: ✗
mongodb-community (homebrew.mxcl.mongodb-community)
Running: ✓
Loaded: ✓
Schedulable: ✗
User: atc
PID: 680
mysql (homebrew.mxcl.mysql)
Running: ✓
Loaded: ✓
Schedulable: ✗
User: atc
PID: 691
atc@AlejandroTC ~ _
```

9. Una vez instalado y en funcionamiento, ¿cómo accedes a la consola de MongoDB?

Usando la palabra **mongosh**

```
atc — mongosh mongodb://127.0.0.1:27017/?directConnection=true&serv...
atc@AlejandroTC ~ mongosh
(node:10729) [DEP0040] DeprecationWarning: The `punycode` module is deprecated.
Please use a userland alternative instead.
(Use `node --trace-deprecation ...` to show where the warning was created)
Current Mongosh Log ID: 65397058c4083655424a3190
Connecting to:      mongodb://127.0.0.1:27017/?directConnection=true&serverS
electionTimeoutMS=2000&appName=mongosh+2.0.2
Using MongoDB:      7.0.0
Using Mongosh:      2.0.2

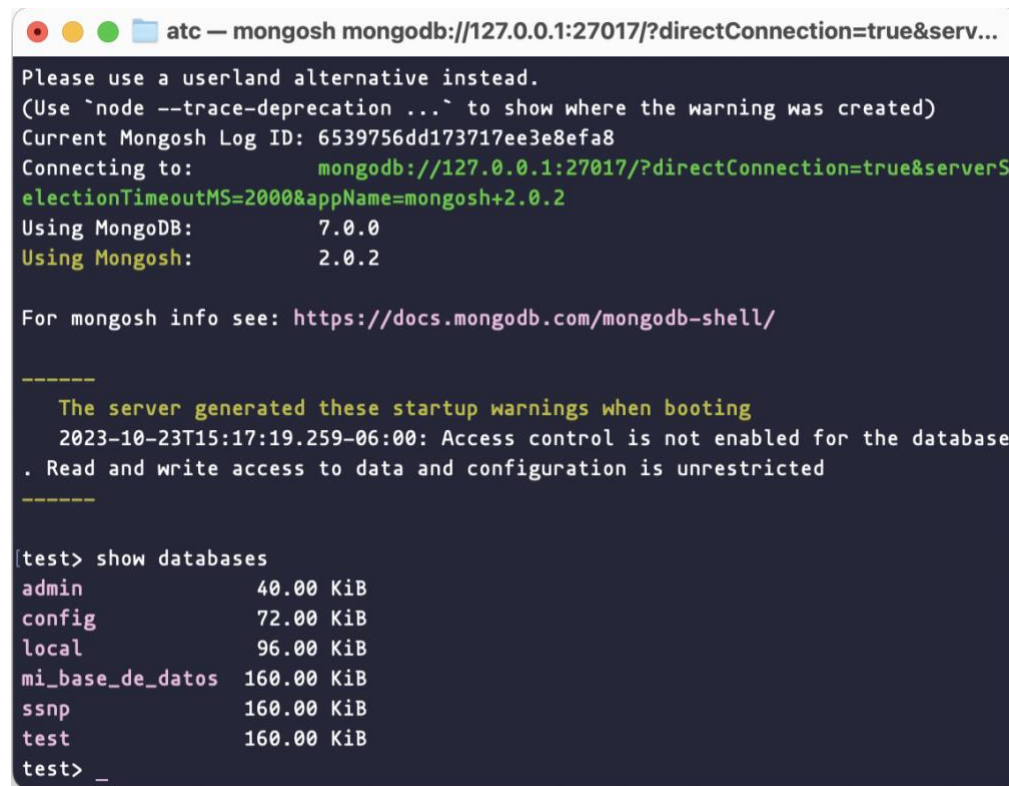
For mongosh info see: https://docs.mongodb.com/mongosh-shell/

-----
The server generated these startup warnings when booting
2023-10-23T15:17:19.259-06:00: Access control is not enabled for the database
. Read and write access to data and configuration is unrestricted
-----

test> _
```

10. ¿Qué comando utilizarías para ver las bases de datos disponibles en tu instancia de MongoDB?

Show databases



```
atc — mongosh mongodb://127.0.0.1:27017/?directConnection=true&serv...
Please use a userland alternative instead.
(Use `node --trace-deprecation ...` to show where the warning was created)
Current Mongosh Log ID: 6539756dd173717ee3e8efa8
Connecting to:      mongodb://127.0.0.1:27017/?directConnection=true&serverS
electionTimeoutMS=2000&appName=mongosh+2.0.2
Using MongoDB:      7.0.0
Using Mongosh:      2.0.2

For mongosh info see: https://docs.mongodb.com/mongodb-shell/

-----
  The server generated these startup warnings when booting
  2023-10-23T15:17:19.259-06:00: Access control is not enabled for the database
  . Read and write access to data and configuration is unrestricted
-----

[test> show databases
admin                40.00 KiB
config               72.00 KiB
local                96.00 KiB
mi_base_de_datos    160.00 KiB
ssnp                 160.00 KiB
test                 160.00 KiB
test> _
```

11. ¿Qué parte de la instalación te pareció más desafiante y por qué?

Ninguna, ya que Homebrew, es bastante sencillo de usar, y además cuenta con muchas guías para su uso, además existen otros como Xcode, donde también está bastante documentado su uso y Mongo tiene documentación de su instalación mediante estos Package Manage,

12. Si tuvieras que instalar MongoDB en otro sistema operativo, ¿qué pasos crees que serían diferentes y cuáles serían similares?

Si es para Linux usaría también Homebrew, o si no chocolatey, wget o chocolatey para windows, pacman, apt, yum, o el que recomiende Mongo.