

# Fundamentos de MongoDB

## Practica 4 Instalación y Configuración Avanzada de mongoDB 4.2

### Objetivo

- Realizar la instalación y configuración avanzada del servidor de base de datos NoSQL mongoDB

### Procedimiento

1. Crea una máquina virtual Linux Centos 7 en virtual box. La máquina virtual debe tener las siguientes características:

**Hardware:**

4 GB de RAM

24 GB HD

**Paquetes de Instalación:**

Server GUI

*Ftp Server*

*Hardware Monitoring Utilites*

*Performance Tools*

*Compatibility Libraries*

*Development Tools*

**Networking:** Crea dos interfaces de red una solo anfitrión y la otra NAT. La interface solo anfitrión debe tener la ip estática 192.168.56.101/24, el nombre del host será odiseo.example.com

**Credenciales:**

root/password

admin/password

2. En la PC cliente genera el par de llaves ssh



Microsoft Windows [Versión 10.0.17763.805]

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C:\Users\Daddy>**ssh-keygen**

Generating public/private rsa key pair.

Enter file in which to save the key (C:\Users\Daddy/.ssh/id\_rsa):

Created directory 'C:\Users\Daddy/.ssh'.

Enter passphrase (empty for no passphrase): *changeit*

Enter same passphrase again: *changeit*

Your identification has been saved in C:\Users\Daddy/.ssh/id\_rsa.

Your public key has been saved in C:\Users\Daddy/.ssh/id\_rsa.pub.

The key fingerprint is:

SHA256:wh0lKillpscHB07jygMnboA47YaF+rrSVZOAITCCZqU daddy@LAPTOP-P45M6H5U

The key's randomart image is:

+---[RSA 2048]-----+

| B o+O.. . . |

| =BoX.= . o |

| @E\* B.o.. |

| +X + ++. . |

| oo\* .o.S |

| .o .. . |

| ... |

| ... |

| +. |

+----[SHA256]-----+

C:\Users\Daddy>

3. En el servidor odiseo.example.com logeado con la cuenta admin, copia la clave publica en el archivo authorized\_keys

```
[admin@odiseo .ssh]$ umask 077 && test -d ~/.ssh || mkdir ~/.ssh
```

```
[admin@odiseo .ssh]$ umask 077 && touch ~/.ssh/authorized_keys
```

```
[admin@odiseo .ssh]$ vi .ssh/authorized_keys
```

El archivo `authorized_keys` debe lucir algo así:

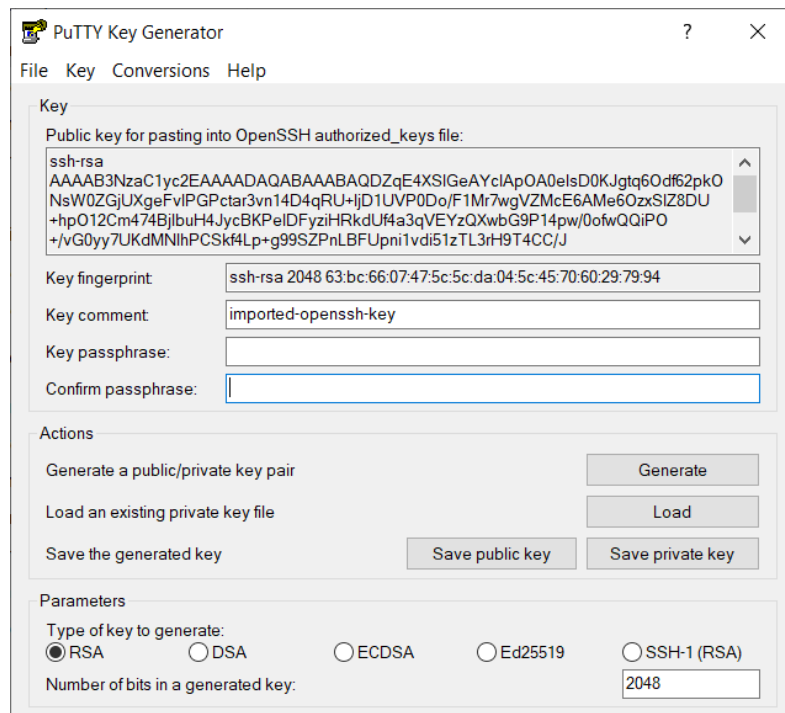
```
[admin@odiseo .ssh]$ cat authorized_keys
```

```
ssh-rsa
```

```
AAAAB3NzaC1yc2EAAAADAQABAAQDZqE4XSIgeAYclApOA0elsD0KJgtq6Odf62pkONs  
W0ZGjUXgeFvIPGPctar3vn14D4qRU+ljd1UVP0Do/F1Mr7wgVZMcE6AMe6OzxSIZ8DU+hpO  
12Cm474BjlbuH4JycBKPeIDFyziHRkdUf4a3qVEYzQXwbG9P14pw/0ofwQQiPO+/vG0yy7UK  
dMNIhPCSkf4Lp+g99SZPnLBFUpni1vdi51zTL3rH9T4CC/J+cbRqFr1HGon92VMjYiUqLEV7UF  
Z57Y21QqpKUKwFNdCdWRejLR/u4uZvO07WTff/PVbtAzuDYW503WU8bCjur6trb7ifKz38r7  
nLr4Vb7OB9yB daddy@LAPTOP-P45M6H5U admin@192.168.56.1
```

4. Genera una llave privada en el formato que usa `putty.exe`, utiliza la herramienta `puttygen.exe`

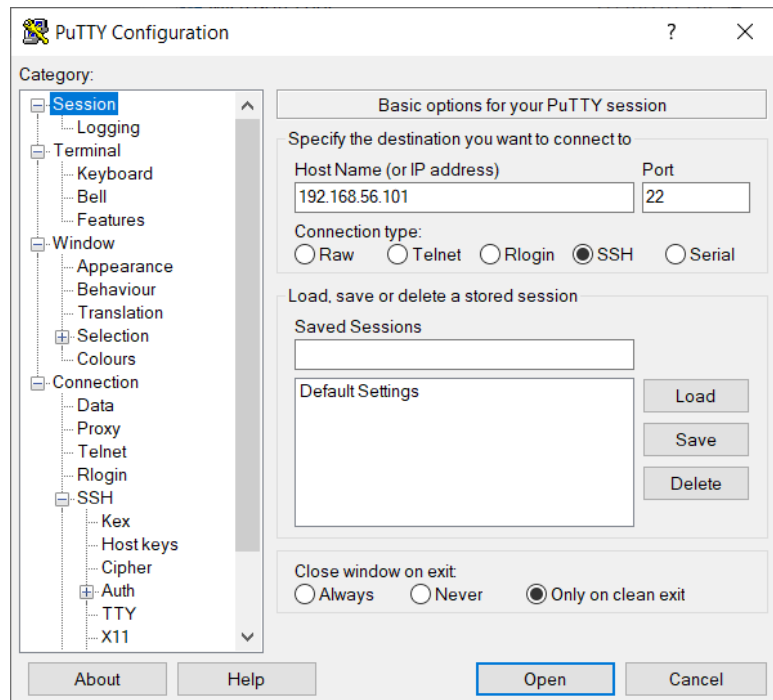
Haz clic en **Load**, carga el archivo **id\_rsa**, borra el contenido de la caja **key passphrase** y **confirm passphrase**.



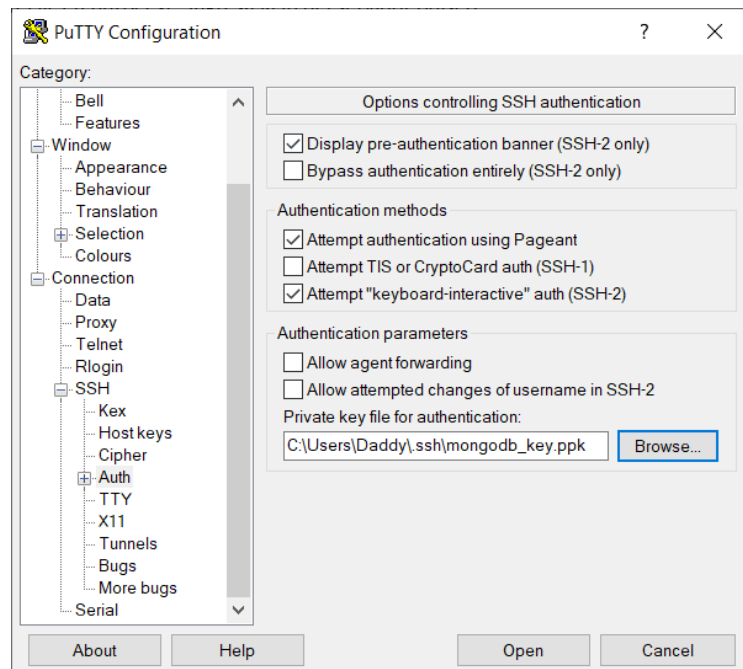
Haz clic en **Save private key**, salva la clave en el archivo con nombre `mongodb_key.ppk`

5. Inicia sesión con la cuenta `admin` con `putty.exe` utilizando autenticación mediante `keys`

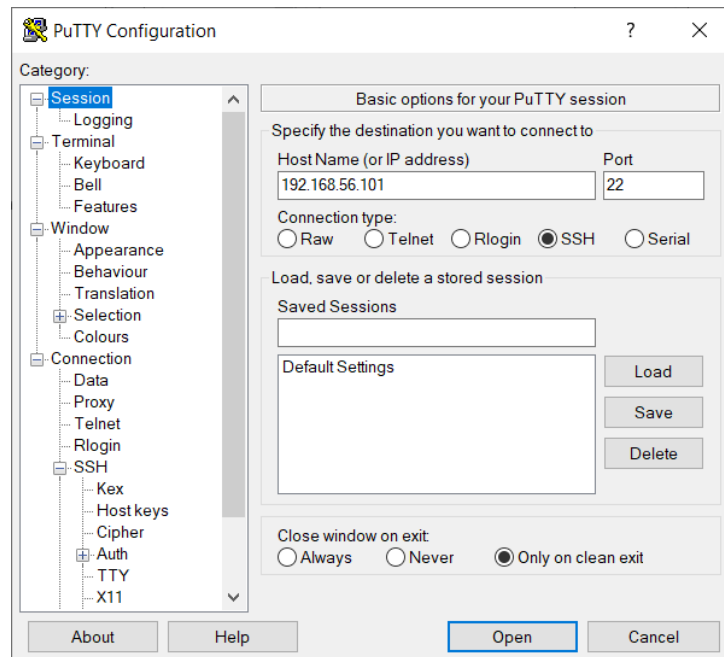
Haz clic en putty.exe, ingresa la ip del servidor odiseo



Haz clic en SSH y carga el archivo de llave mongo\_key.ppk



Regresa a Session y haz clic en open.



Ingresa con la cuenta admin, deberás notar que no es necesario escribir la clave esto es porque nos estamos autenticando mediante la llave privada.

```
admin@odiseo:~  
login as: admin  
Authenticating with public key "imported-openssh-key"  
Last login: Sun Oct 27 12:52:38 2019 from 192.168.56.1  
[admin@odiseo ~]$
```

#### 6. Asegura los permisos del directorio .ssh

En el servidor ejecuta los siguientes comandos:

```
[admin@odiseo ~]$ chmod 700 ~/.ssh
```

```
[admin@odiseo ~]$ chmod 600 ~/.ssh/authorized_keys
```

## 7. Crea el archiv de configuracion del repositorio de MongoDB

```
[admin@odiseo ~]$ su -
Password:
Last login: Sun Oct 27 12:31:46 EDT 2019 on pts/0
[root@odiseo ~]# vi /etc/yum.repos.d/mongodb-enterprise.repo

[mongodb-enterprise]
name=MongoDB Enterprise Repository
baseurl=http://repo.mongodb.com/yum/redhat/$releasever/mongodb-
enterprise/4.2/$basearch/
gpgcheck=1
enabled=1
gpgkey=https://www.mongodb.org/static/pgp/server-4.2.asc

[root@odiseo ~]# yum repolist
Loaded plugins: fastestmirror, langpacks
Loading mirror speeds from cached hostfile
* base: mirror.ufro.cl
* extras: mirror.ufro.cl
* updates: mirror.ufro.cl
mongodb-enterprise | 2.4 kB
00:00:00
mongodb-enterprise/7/x86_64/primary_db
| 16 kB 00:00:07
repo id                repo name
status
base/7/x86_64          CentOS-7 - Base
10,097
extras/7/x86_64        CentOS-7 - Extras
305
mongodb-enterprise/7/x86_64  MongoDB Enterprise Repository
11
updates/7/x86_64        CentOS-7 - Updates
680
repolist: 11,093
[root@odiseo ~]#
```

## 8. Instalación de MongoDB Enterprise con yum

```
[root@odiseo ~]# yum install mongodb-enterprise
Loaded plugins: fastestmirror, langpacks
Loading mirror speeds from cached hostfile
* base: mirror.ufro.cl
```

```

* extras: mirror.ufro.cl
* updates: mirror.ufro.cl
Resolving Dependencies
--> Running transaction check
---> Package mongodb-enterprise.x86_64 0:4.2.1-1.el7 will be installed
--> Processing Dependency: mongodb-enterprise-tools = 4.2.1 for package: mongodb-
enterprise-4.2.1-1.el7.x86_64
--> Processing Dependency: mongodb-enterprise-shell = 4.2.1 for package: mongodb-
enterprise-4.2.1-1.el7.x86_64
--> Processing Dependency: mongodb-enterprise-server = 4.2.1 for package: mongodb-
enterprise-4.2.1-1.el7.x86_64
--> Processing Dependency: mongodb-enterprise-mongos = 4.2.1 for package: mongodb-
enterprise-4.2.1-1.el7.x86_64
--> Processing Dependency: mongodb-enterprise-cryptd = 4.2.1 for package: mongodb-
enterprise-4.2.1-1.el7.x86_64
--> Running transaction check
---> Package mongodb-enterprise-cryptd.x86_64 0:4.2.1-1.el7 will be installed
---> Package mongodb-enterprise-mongos.x86_64 0:4.2.1-1.el7 will be installed
---> Package mongodb-enterprise-server.x86_64 0:4.2.1-1.el7 will be installed
--> Processing Dependency: net-snmp for package: mongodb-enterprise-server-4.2.1-
1.el7.x86_64
--> Processing Dependency: libnetsnmpmibs.so.31()(64bit) for package: mongodb-
enterprise-server-4.2.1-1.el7.x86_64
--> Processing Dependency: libnetsnmpagent.so.31()(64bit) for package: mongodb-
enterprise-server-4.2.1-1.el7.x86_64
---> Package mongodb-enterprise-shell.x86_64 0:4.2.1-1.el7 will be installed
---> Package mongodb-enterprise-tools.x86_64 0:4.2.1-1.el7 will be installed
--> Running transaction check
---> Package net-snmp.x86_64 1:5.7.2-43.el7 will be installed
--> Processing Dependency: net-snmp-libs = 1:5.7.2-43.el7 for package: 1:net-snmp-5.7.2-
43.el7.x86_64
---> Package net-snmp-agent-libs.x86_64 1:5.7.2-43.el7 will be installed
--> Running transaction check
---> Package net-snmp-libs.x86_64 1:5.7.2-32.el7 will be updated
---> Package net-snmp-libs.x86_64 1:5.7.2-43.el7 will be an update
--> Finished Dependency Resolution

```

## Dependencies Resolved

```

=====
=====
Package                Arch          Version           Repository
Size

```

```

=====
=====
Installing:
mongodb-enterprise          x86_64          4.2.1-1.el7          mongodb-
enterprise          6.0 k
Installing for dependencies:
mongodb-enterprise-cryptd    x86_64          4.2.1-1.el7          mongodb-
enterprise          12 M
mongodb-enterprise-mongos    x86_64          4.2.1-1.el7
mongodb-enterprise          15 M
mongodb-enterprise-server    x86_64          4.2.1-1.el7          mongodb-
enterprise          25 M
mongodb-enterprise-shell     x86_64          4.2.1-1.el7          mongodb-
enterprise          18 M
mongodb-enterprise-tools     x86_64          4.2.1-1.el7          mongodb-
enterprise          64 M
net-snmp                  x86_64          1:5.7.2-43.el7          base
331 k
net-snmp-agent-libs         x86_64          1:5.7.2-43.el7          base
706 k
Updating for dependencies:
net-snmp-libs              x86_64          1:5.7.2-43.el7          base
750 k

```

#### Transaction Summary

```

=====
=====
Install 1 Package (+7 Dependent packages)
Upgrade      ( 1 Dependent package)

```

Total size: 136 M

Total download size: 135 M

Is this ok [y/d/N]: y

Downloading packages:

warning: /var/cache/yum/x86\_64/7/mongodb-enterprise/packages/mongodb-enterprise-4.2.1-1.el7.x86\_64.rpm: Header V3 RSA/SHA1 Signature, key ID 058f8b6b: NOKEY

Public key for mongodb-enterprise-4.2.1-1.el7.x86\_64.rpm is not installed

(1/8): mongodb-enterprise-4.2.1-1.el7.x86\_64.rpm

| 6.0 kB 00:00:00

(2/8): mongodb-enterprise-cryptd-4.2.1-1.el7.x86\_64.rpm

| 12 MB 00:00:08

(3/8): mongodb-enterprise-mongos-4.2.1-1.el7.x86\_64.rpm

| 15 MB 00:00:18



(4/8): mongodb-enterprise-server-4.2.1-1.el7.x86\_64.rpm  
| 25 MB 00:00:15  
warning: /var/cache/yum/x86\_64/7/base/packages/net-snmp-5.7.2-43.el7.x86\_64.rpm:  
Header V3 RSA/SHA256 Signature, key ID f4a80eb5: NOKEY:00:32 ETA  
Public key for net-snmp-5.7.2-43.el7.x86\_64.rpm is not installed  
(5/8): net-snmp-5.7.2-43.el7.x86\_64.rpm |  
331 kB 00:00:01  
(6/8): net-snmp-agent-libs-5.7.2-43.el7.x86\_64.rpm  
| 706 kB 00:00:02  
(7/8): mongodb-enterprise-shell-4.2.1-1.el7.x86\_64.rpm  
| 18 MB 00:00:16  
(8/8): mongodb-enterprise-tools-4.2.1-1.el7.x86\_64.rpm  
| 64 MB 00:00:33

-----  
Total 2.4 MB/s | 135 MB

00:00:57

Retrieving key from <https://www.mongodb.org/static/pgp/server-4.2.asc>

Importing GPG key 0x058F8B6B:

Userid : "MongoDB 4.2 Release Signing Key <packaging@mongodb.com>"

Fingerprint: e162 f504 a20c df15 827f 718d 4b7c 549a 058f 8b6b

From : <https://www.mongodb.org/static/pgp/server-4.2.asc>

Is this ok [y/N]: y

Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7

Importing GPG key 0xF4A80EB5:

Userid : "CentOS-7 Key (CentOS 7 Official Signing Key) <security@centos.org>"

Fingerprint: 6341 ab27 53d7 8a78 a7c2 7bb1 24c6 a8a7 f4a8 0eb5

Package : centos-release-7-5.1804.el7.centos.x86\_64 (@anaconda)

From : /etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7

Is this ok [y/N]: y

Running transaction check

Running transaction test

Transaction test succeeded

Running transaction

Updating : 1:net-snmp-libs-5.7.2-43.el7.x86\_64

1/10

Installing : 1:net-snmp-agent-libs-5.7.2-43.el7.x86\_64

2/10

Installing : 1:net-snmp-5.7.2-43.el7.x86\_64

3/10

Installing : mongodb-enterprise-server-4.2.1-1.el7.x86\_64

4/10

Created symlink from /etc/systemd/system/multi-user.target.wants/mongod.service to  
/usr/lib/systemd/system/mongod.service.

Installing : mongodb-enterprise-cryptd-4.2.1-1.el7.x86\_64  
5/10  
Installing : mongodb-enterprise-mongos-4.2.1-1.el7.x86\_64  
6/10  
Installing : mongodb-enterprise-tools-4.2.1-1.el7.x86\_64  
7/10  
Installing : mongodb-enterprise-shell-4.2.1-1.el7.x86\_64  
8/10  
Installing : mongodb-enterprise-4.2.1-1.el7.x86\_64  
9/10  
Cleanup : 1:net-snmp-libs-5.7.2-32.el7.x86\_64  
10/10  
Verifying : mongodb-enterprise-shell-4.2.1-1.el7.x86\_64  
1/10  
Verifying : mongodb-enterprise-tools-4.2.1-1.el7.x86\_64  
2/10  
Verifying : mongodb-enterprise-4.2.1-1.el7.x86\_64  
3/10  
Verifying : mongodb-enterprise-server-4.2.1-1.el7.x86\_64  
4/10  
Verifying : 1:net-snmp-libs-5.7.2-43.el7.x86\_64  
5/10  
Verifying : 1:net-snmp-agent-libs-5.7.2-43.el7.x86\_64  
6/10  
Verifying : mongodb-enterprise-mongos-4.2.1-1.el7.x86\_64  
7/10  
Verifying : mongodb-enterprise-cryptd-4.2.1-1.el7.x86\_64  
8/10  
Verifying : 1:net-snmp-5.7.2-43.el7.x86\_64  
9/10  
Verifying : 1:net-snmp-libs-5.7.2-32.el7.x86\_64  
10/10

Installed:

mongodb-enterprise.x86\_64 0:4.2.1-1.el7

Dependency Installed:

mongodb-enterprise-cryptd.x86\_64 0:4.2.1-1.el7 mongodb-enterprise-mongos.x86\_64  
0:4.2.1-1.el7 mongodb-enterprise-server.x86\_64 0:4.2.1-1.el7  
mongodb-enterprise-shell.x86\_64 0:4.2.1-1.el7 mongodb-enterprise-tools.x86\_64  
0:4.2.1-1.el7 net-snmp.x86\_64 1:5.7.2-43.el7  
net-snmp-agent-libs.x86\_64 1:5.7.2-43.el7

Dependency Updated:

net-snmp-libs.x86\_64 1:5.7.2-43.el7

Complete!

[root@odiseo ~]#

9. Inicia mongodb en una instancia personalizada.

[root@odiseo ~]# **exit**

logout

[admin@odiseo ~]\$ **mkdir mongodb**

[admin@odiseo ~]\$ **chmod -R 777 mongodb**

[admin@odiseo ~]\$ **mongod --dbpath mongodb --port 27017 --logpath mongodb/log --logappend --fork --bind\_ip\_all**

about to fork child process, waiting until server is ready for connections.

forked process: 25593

child process started successfully, parent exiting

[admin@odiseo ~]\$

10. Comprueba que mongod está ejecutándose

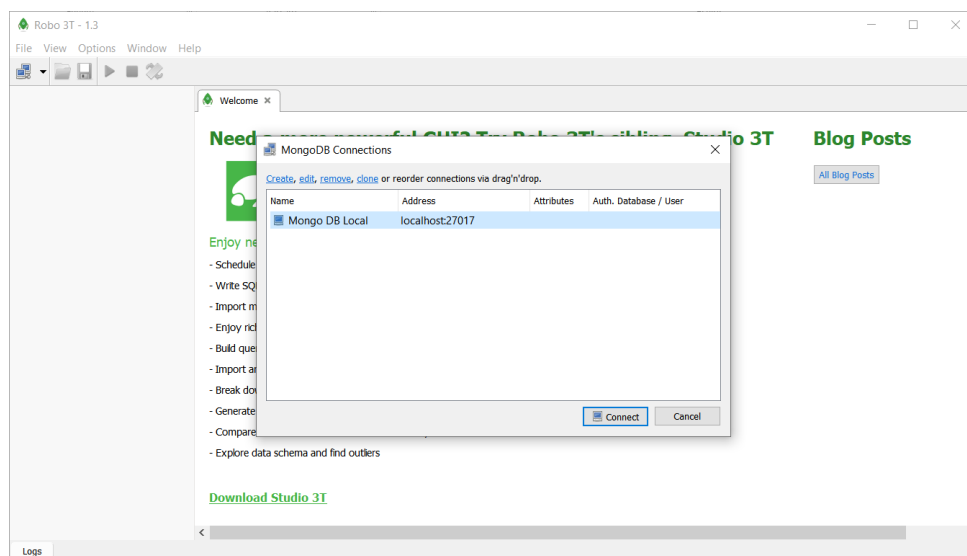
[admin@odiseo ~]\$ **ps -fea | grep mongo**

admin 25593 1 0 13:41 ? 00:00:01 mongod --dbpath mongodb --port 27017 --logpath mongodb/log --logappend --fork --bind\_ip\_all

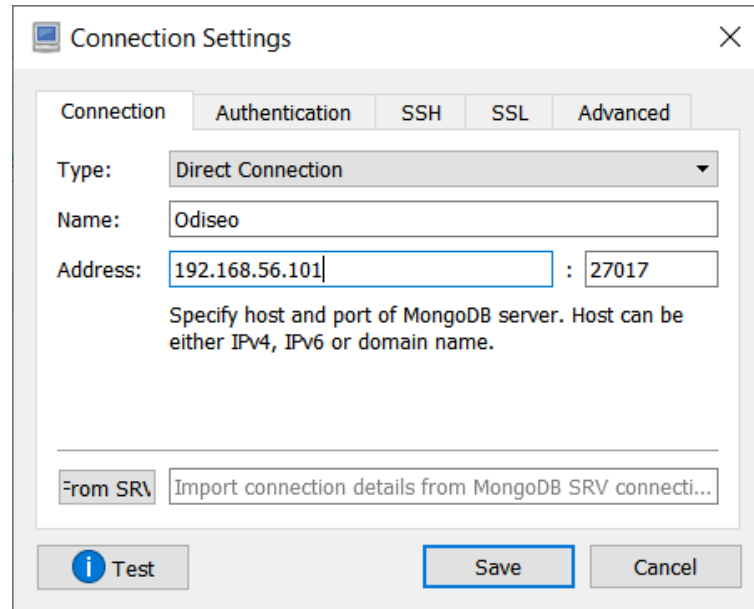
admin 25650 5507 0 13:44 pts/1 00:00:00 grep --color=auto mongo

11. Conectandose a mongodb desde Robo 3T

Abre Robo 3T, haz clic en create



Ingresa el nombre de la conexión y la ip del servidor



The image shows the 'Connection Settings' dialog box with the 'Connection' tab selected. The 'Type' is set to 'Direct Connection'. The 'Name' field contains 'Odiseo'. The 'Address' field contains '192.168.56.101' and the 'Port' field contains '27017'. Below these fields is a note: 'Specify host and port of MongoDB server. Host can be either IPv4, IPv6 or domain name.' At the bottom, there is a 'From SRV' button and a text field with the placeholder 'Import connection details from MongoDB SRV connecti...'. The 'Test', 'Save', and 'Cancel' buttons are at the bottom right.

Connection Settings

Connection Authentication SSH SSL Advanced

Type: Direct Connection

Name: Odiseo

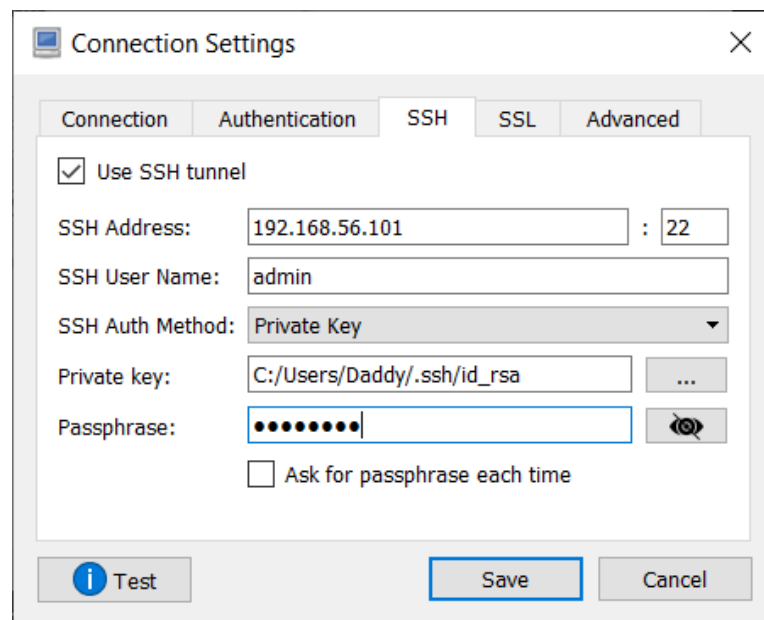
Address: 192.168.56.101 : 27017

Specify host and port of MongoDB server. Host can be either IPv4, IPv6 or domain name.

From SRV Import connection details from MongoDB SRV connecti...

Test Save Cancel

Haz clic en SSH y activa Use SSH tunnel y escribe los datos: ip del servidor, usuario y el archivo de llave privada.



The image shows the 'Connection Settings' dialog box with the 'SSH' tab selected. The 'Use SSH tunnel' checkbox is checked. The 'SSH Address' field contains '192.168.56.101' and the 'SSH Port' field contains '22'. The 'SSH User Name' field contains 'admin'. The 'SSH Auth Method' is set to 'Private Key'. The 'Private key' field contains 'C:/Users/Daddy/.ssh/id\_rsa'. The 'Passphrase' field is masked with dots. There is an 'Ask for passphrase each time' checkbox which is unchecked. The 'Test', 'Save', and 'Cancel' buttons are at the bottom right.

Connection Settings

Connection Authentication SSH SSL Advanced

☒ Use SSH tunnel

SSH Address: 192.168.56.101 : 22

SSH User Name: admin

SSH Auth Method: Private Key

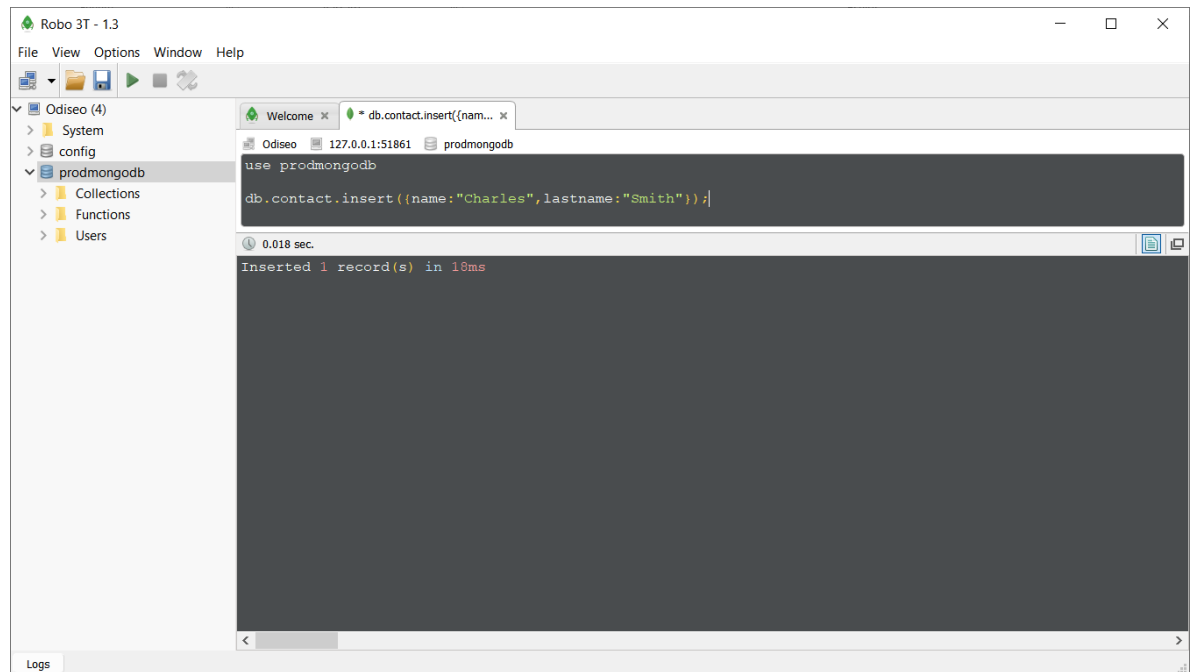
Private key: C:/Users/Daddy/.ssh/id\_rsa

Passphrase: .....

☐ Ask for passphrase each time

Test Save Cancel

Haz clic en save, crea una base de datos y una colección de prueba.



## 12. Importa tu primer conjunto de datos en json

```
[admin@odiseo ~]$ curl -LO https://raw.githubusercontent.com/mongodb/docs-
assets/primer-dataset/primer-dataset.json
```

```
% Total    % Received % Xferd Average Speed   Time    Time     Time  Current
           Dload  Upload  Total   Spent    Left  Speed
```

```
100 11.3M 100 11.3M    0     0 500k    0 0:00:23 0:00:23 --:--:-- 1014k
```

```
[admin@odiseo ~]$ ls
```

```
Desktop Documents Downloads mongodb Music Pictures primer-dataset.json Public
Templates Videos
```

```
[admin@odiseo ~]$ mongoimport --db prodmongodb --collection restaurants --file
./primer-dataset.json
```

```
2019-10-27T15:03:08.636-0400  connected to: mongodb://localhost/
```

```
2019-10-27T15:03:11.121-0400  25359 document(s) imported successfully. 0
document(s) failed to import.
```

```
[admin@odiseo ~]$
```

