DBVM Documentation

Sunday, February 12, 2023   12:53 AM

Howdy!

I decided to challenge myself this weekend to build an MVP(Minimum Viable Product) for students, professionals or anyone that needs a VM to use common databases without having to use Cloud initially.

Once you download and extract the OVA file in your favorite Virtualization tool, perform these steps:

Please be patient as the server boots up as I have made the database servers to auto-start on boot.

Once logged in, get the IP Address :

ifconfig

My machine returned 192.168.52.129: Yours might be different.

```
System information as of Sun 12 Feb 2023 07:28:57 AM UTC

System load:  1.42              Processes:            277
Usage of /:   5.7% of 100.82GB  Users logged in:      0
Memory usage: 15%               IPv4 address for ens33: 192.168.52.129
Swap usage:   0%
```

Then use **ssh dbvm@<Your IP Address>**

1) Login Name: dbvm
2) Password: dbvm

To login as root:

sudo su
Enter dbvm as the password

Installed Sample Database servers , these are all Free Editions and started on Boot. Nothing commercial is bundled.

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dbvm@dbvm:~$ systemctl status mysql.service
● mysql.service - MySQL Community Server
   Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset: enabled)
   Active: active (running) since Sun 2023-02-12 07:28:01 UTC; 2min 57s ago
  Process: 917 ExecStartPre=/usr/share/mysql/mysql-systemd-start pre (code=exited, status=
0/SUCCESS)
 Main PID: 1047 (mysqld)
   Status: "Server is operational"
    Tasks: 38 (limit: 9406)
   Memory: 431.3M
   CGroup: /system.slice/mysql.service
           └─1047 /usr/sbin/mysqld

Feb 12 07:27:55 dbvm systemd[1]: Starting MySQL Community Server...
Feb 12 07:28:01 dbvm systemd[1]: Started MySQL Community Server.
dbvm@dbvm:~$ systemctl status postgresql.service
● postgresql.service - PostgreSQL RDBMS
   Loaded: loaded (/lib/systemd/system/postgresql.service; enabled; vendor preset: enabled)
   Active: active (exited) since Sun 2023-02-12 07:27:59 UTC; 3min 5s ago
  Process: 1133 ExecStart=/bin/true (code=exited, status=0/SUCCESS)
 Main PID: 1133 (code=exited, status=0/SUCCESS)

Feb 12 07:27:59 dbvm systemd[1]: Starting PostgreSQL RDBMS...
Feb 12 07:27:59 dbvm systemd[1]: Finished PostgreSQL RDBMS.
dbvm@dbvm:~$ systemctl status mssql-server.service
● mssql-server.service - Microsoft SQL Server Database Engine
   Loaded: loaded (/lib/systemd/system/mssql-server.service; enabled; vendor preset: enabled)
   Active: active (running) since Sun 2023-02-12 07:27:55 UTC; 3min 18s ago
     Docs: https://docs.microsoft.com/en-us/sql/linux
 Main PID: 916 (sqlservr)
    Tasks: 144
   Memory: 1.8G
   CGroup: /system.slice/mssql-server.service
           ├─ 916 /opt/mssql/bin/sqlservr
           └─1244 /opt/mssql/bin/sqlservr

Feb 12 07:29:28 dbvm sqlservr[1244]: [153B blob data]
Feb 12 07:29:28 dbvm sqlservr[1244]: [193B blob data]
Feb 12 07:29:29 dbvm sqlservr[1244]: [65B blob data]
Feb 12 07:29:29 dbvm sqlservr[1244]: [61B blob data]
Feb 12 07:29:30 dbvm sqlservr[1244]: [193B blob data]
Feb 12 07:29:30 dbvm sqlservr[1244]: [66B blob data]
Feb 12 07:29:31 dbvm sqlservr[1244]: [96B blob data]
```

Feb 12 07:29:31 dbvm sqlservr[1244]: [100B blob data]
Feb 12 07:29:31 dbvm sqlservr[1244]: [71B blob data]
Feb 12 07:29:31 dbvm sqlservr[1244]: [124B blob data]
dbvm@dbvm:~$ systemctl status mongod
● mongod.service - MongoDB Database Server
    Loaded: loaded (/lib/systemd/system/mongod.service; enabled; vendor preset: enabled)
    Active: active (running) since Sun 2023-02-12 07:27:55 UTC; 3min 25s ago
     Docs: https://docs.mongodb.org/manual
  Main PID: 915 (mongod)
   Memory: 235.9M
   CGroup: /system.slice/mongod.service
        └─915 /usr/bin/mongod --config /etc/mongod.conf

Feb 12 07:27:55 dbvm systemd[1]: Started MongoDB Database Server.

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PostgreSQL 15.x

Login as root and use the following command to login to postgreSQL Server

sudo su
su postgres

You should see a screen like this below

```
dbvm@dbvm:~$ sudo su
[sudo] password for dbvm:
root@dbvm:/home/dbvm# su postgres
postgres@dbvm:/home/dbvm$ psql
psql (15.2 (Ubuntu 15.2-1.pgdg20.04+1))
Type "help" for help.

postgres=# \l
                                       List of databases
   Name    |  Owner   | Encoding |   Collate   |    Ctype    | ICU Locale | Locale Provider |   Access privileges
-----------+----------+----------+-------------+-------------+------------+-----------------+-----------------------
 postgres  | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 |            | libc            |
 template0 | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 |            | libc            | =c/postgres          +
           |          |          |             |             |            |                 | postgres=CTc/postgres
 template1 | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 |            | libc            | =c/postgres          +
           |          |          |             |             |            |                 | postgres=CTc/postgres
(3 rows)

postgres=#
```

MySQL 8.x

```
root@dbvm:/home/dbvm# mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.32-0ubuntu0.20.04.2 (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> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
4 rows in set (0.00 sec)

mysql>
```

Microsoft SQL Server Express Edition 2022

```
dbvm@dbvm:~$ sqlcmd -S localhost -U sa -P 'P@ssW0rd1'
1> use master
2> go
Changed database context to 'master'.
1> select @@version;
2> go

---------------------------------------------------------------------
---------------------------------------------------------------------
----------------------------------------
Microsoft SQL Server 2022 (RTM) - 16.0.1000.6 (X64)
        Oct  8 2022 05:58:25
        Copyright (C) 2022 Microsoft Corporation
        Express Edition (64-bit) on Linux (Ubuntu 20.04.5 LTS) <X64>


(1 rows affected)
1>
```

MongoDB Community Server 6.0

```
root@dbvm:/home/dbvm#
root@dbvm:/home/dbvm# mongosh
Current Mongosh Log ID: 63e88edc55185c50ade39318
Connecting to:          mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+1.7.0
Using MongoDB:          6.0.4
Using Mongosh:          1.7.0

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

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   The server generated these startup warnings when booting
   2023-02-12T06:48:34.552+00:00: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine. See http://doc
hub.mongodb.org/core/prodnotes-filesystem
   2023-02-12T06:48:37.139+00:00: Access control is not enabled for the database. Read and write access to data and configuration is
unrestricted
   2023-02-12T06:48:37.139+00:00: vm.max_map_count is too low
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   Enable MongoDB's free cloud-based monitoring service, which will then receive and display
   metrics about your deployment (disk utilization, CPU, operation statistics, etc).

   The monitoring data will be available on a MongoDB website with a unique URL accessible to you
   and anyone you share the URL with. MongoDB may use this information to make product
   improvements and to suggest MongoDB products and deployment options to you.

   To enable free monitoring, run the following command: db.enableFreeMonitoring()
   To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
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test>
```

Enjoy this virtual appliance! I have not enabled Remote access on purpose as I prefer the users to
do what they wish with it.

This is an Open Source Project, I will improving this based on feedback.

For any questions and feedback: anilmahadev@outlook.com