Microsoft

Technologies ⌄   Documentation ⌄   Resources ⌄

Docs   https://docs.microsoft.com

Docs / SQL / SQL Server on Linux

💬 Comments

🔗 Share

|

Theme   Light

Install on Ubuntu

Install SQL Server on Ubuntu

02/02/2017 • 1 min to read • Contributors 👤 🌐 👤

In this article

[Install SQL Server](#)

[Upgrade SQL Server](#)

[Uninstall SQL Server](#)

[Next steps](#)

This topic provides a walkthrough of how to install SQL Server vNext CTP 1.3 on Ubuntu 16.04 and 16.10.

> 📝 **Note**
>
> You need at least 3.25GB of memory to run SQL Server on Linux. SQL Server Engine has been   3
> tested up to 1 TB of memory at this time.

Install SQL Server

To install the **mssql-server** Package on Ubuntu, follow these steps:

1. Import the public repository GPG keys:

bash	Copy

```
curl https://packages.microsoft.com/keys/microsoft.asc | sudo apt-key ad
```

2. Register the Microsoft SQL Server Ubuntu repository:

bash	Copy

```
curl https://packages.microsoft.com/config/ubuntu/16.04/mssql-server.lis
```

3. Run the following commands to install SQL Server:

bash	Copy

```
sudo apt-get update
sudo apt-get install -y mssql-server
```

4. After the package installation finishes, run **mssql-conf setup** and follow the prompts. Make sure to specify a strong password for the SA account (Minimum length 8 characters, including uppercase and lowercase letters, base 10 digits and/or non-alphanumeric symbols).

bash	Copy

```
sudo /opt/mssql/bin/mssql-conf setup
```

5. Once the configuration is done, verify that the service is running:

bash	Copy

```
systemctl status mssql-server
```

6. To allow remote connections, you may need to open the SQL Server TCP port on your firewall. The default SQL Server port is 1433.

Upgrade SQL Server

To upgrade the **mssql-server** package on Ubuntu, follow these steps: 1

1. Update the apt-get repository lists:

bash	Copy

   ```bash
   sudo apt-get update
   ```

2. Re-run the installation command, this will upgrade the specific mssql-server package:

bash	Copy

   ```bash
   sudo apt-get install mssql-server
   ```

These commands will download the newest package and replace the binaries located under `/opt/mssql/`. The user generated databases and system databases will not be affected by this operation.

Uninstall SQL Server

To remove the **mssql-server** package on Ubuntu, follow these steps:

1. Run the `remove` command. This will delete the package and remove the files under `/opt/mssql/`. However, this command will not affect user-generated and system databases.

bash	Copy

   ```bash
   sudo apt-get remove mssql-server
   ```

2. Removing the package will not delete the generated database files. If you want to delete the database files use the following command:

bash	Copy

   ```bash
   sudo rm -rf /var/opt/mssql/
   ```
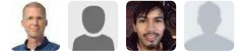
Next steps

- Install tools

- If you already have SQL Server tools, connect to the SQL Server.

198 Comments

Sign in   **62 people listening**

+ Follow   Post comment as...

Colin_Brown Feb 13, 2017

Hi - struggling with CENTOS 6 and missing dependencies.

-OpenSSL version is 1.0.2h, "Requires openssl >= 1:1.0.1";

+ missing following packages:

-numactil-libs;

-systemd.

-systemd-units

Has anyone successfully deployed to Centos?

Like   Reply

Tommy_Mullaney_MSFT Feb 13, 2017

@Colin_Brown You'll need to use CentOS 7.2+. Please take a look at the "Install on Red Hat Enterprise Linux" docs page (link below). Although CentOS is not officially supported, the RPM installation instructions are very similar for RHEL and CentOS. There are multiple people in the comments who were able to install SQL Server on CentOS 7, and it worked for me too :)

https://docs.microsoft.com/en-us/sql/linux/sql-server-linux-setup-red-hat

Like   Reply

Colin_Brown 13 days ago

Thanks! Centos7 working well.

Ubuntu 16.04 also working well.

Bulk Upload using bcp API good in Ubuntu, also Python connector is stable.

Good stuff.

Like   Reply

Colin_Brown 13 days ago

Thanks! Works on Centos7, also (obviously) having great success on Ubuntu.

Connecting World Programming's WPS software and bulk uploading to MSSQL using SAS scripts is working well. Fast.

Python connector also returning stable results.

Good stuff.

Like   Reply

Nilton_OS Feb 10, 2017

Backup MSSQL Linux in Python

https://gist.github.com/jniltinho/c67a9e85c651e187d2da2f0a813fe46a

Like   Reply

Than_Tran Feb 7, 2017

Sql Server not available on Ubuntu 32 bit

Like   Reply

Tommy_Mullaney_MSFT Feb 8, 2017

@Than_Tran SQL Server is 64-bit only, so you should use Ubuntu 64 bit.

Like   Reply

Erik_Chendo Feb 1, 2017

It is allowed, through this installation, the use of

"Microsoft SQL SERVER Management Sutdio Express" running on Linux? **https://s30.postimg.org/4jgs5slj5/aspncsp1.jpg**

Like   Reply

Tommy_Mullaney_MSFT Feb 8, 2017

@Erik_Chendo You can run SQL Server Management Studio (SSMS) on Windows, and connect it to SQL Server running on Linux. It will work just like you'd expect, but the SSMS client tool itself only runs on Windows. You can read more here: **https://docs.microsoft.com/en-us/sql/linux/sql-server-linux-manage-ssms**

If you're looking for a management tool that runs on an OS other than Windows, I'd encourage you to look at the mssql extension for VS

Code: **https://docs.microsoft.com/en-us/sql/linux/sql-server-linux-develop-use-vscode**

<div align="right">Like   Reply</div>

Ekangal Jan 30, 2017

I want to install ms-sql to my Ubuntu 16.04. But when I try to set a password for the SA with the command sudo /opt/mssql/bin/sqlservr-setup I got error: "sqlservr: Debugger.cpp:531: static void Debugger:rint(const void *, unsigned int): Assertion `m_IsAttached' failed."

How to solve a problem?

Thanks

Setting system administrator (SA) account password...

sqlservr: Debugger.cpp:531: static void Debugger:rint(const void *, unsigned int): Assertion `m_IsAttached' failed.

Hint: You are currently not seeing messages from other users and the system.

Users in the 'systemd-journal' group can see all messages. Pass -q to

turn off this notice.

No journal files were opened due to insufficient permissions.

Hint: You are currently not seeing messages from other users and the system.

Users in the 'systemd-journal' group can see all messages. Pass -q to

turn off this notice.

No journal files were opened due to insufficient permissions.

tail: cannot open '/var/log/syslog' for reading: Permission denied

ls: cannot access '/var/opt/mssql/log/errorlog*': No such file or directory

ls: cannot access '/var/opt/mssql/log/exception.log': No such file or directory

ls: cannot access '/var/opt/mssql/log/SQLDu*.txt': No such file or directory

ls: cannot access '/var/opt/mssql/log/SQLDu*.mdmp': No such file or directory

ls: cannot access '/var/opt/mssql/log/system_health*': No such file or directory

nohup: redirecting stderr to stdout

<div align="right">Like   Reply</div>

Pamanes7 Jan 8, 2017

How will Active Directory come into play here?

<div align="right">1   Like   Reply</div>

Twright@Msft Jan 9, 2017

@pamanes7 We plan to add support for AD authentication in the next few months.

<div align="right">1   Like   Reply</div>

Mike_Brooks1 Dec 29, 2016

Another quick question. Is there a provision for adding databases, via an export from MSSQL. It should work seemlessly, now, but I am afraid to try it for fear of breaking something. I have some relatively large tables in databases in MSSQL (2008R2) that I wanted to put USQL through its paces with.

Like   Reply

Twright@Msft Jan 3, 2017

@Mike_Brooks1 Yes, you can backup databases from SQL Server running on Windows and restore them on SQL Server on Linux. See this documentation topic: **https://docs.microsoft.com/en-us/sql/linux/sql-server-linux-migrate-overview**

Like   Reply

Mike_Brooks1 Jan 8, 2017

@twright@msft @Mike_Brooks1 It didn't work. Got an error message about the table being ill formed. I was from an old SQL2008R2 db. I did the obvious thing and checked that it could be attached to a SQL2008 install. There would seem to be some sort of compatibility problem.

With the easy solution not available, any idea of another way of getting 20+ tables (several million records in each) move over from a Windows7 Pro install on Bootcamp partition?

BTW, I did get Visual Studio Code up and connected. It works like a dream.

Like   Reply

Mike_Brooks1 Jan 8, 2017

@twright@msft @Mike_Brooks1 It didn't work. Got an error message about the table being ill formed. I was from an old SQL2008R2 db. I did the obvious thing and checked that it could be attached to a SQL2008 install. There would seem to be some sort of compatibility problem.

With the easy solution not available, any idea of another way of getting 20+ tables (several million records in each) move over from a Windows7 Pro install on Bootcamp partition?

BTW, I did get Visual Studio Code up and connected. It works like a dream.

Like   Reply

Jroth@MSFT Jan 9, 2017

@Mike_Brooks1 @twright@msft Mike, did you get the error creating the backup or restoring it? If you're just looking to run some tests, you might be able to use BCP to bulk export a few of your tables to a file that you then bulk import on the linux

side. Note ideal, but maybe another option.
https://docs.microsoft.com/en-us/sql/linux/sql-server-linux-migrate-bcp.

Like   Reply

Mike_Brooks1 Jan 9, 2017

I was attaching both the log and database from a SQL2008R2 DB.... which may have been my problem. I am going to do the backup recommended by you and see if that works.

As for tests, I want to run queries on full production data to get some benchmarks and check stability. My simple tests show the Linus version to be around 30% faster than the Windows SQL 2014 version I use at work. That doesn't seem right and I wanted to check it against some large legacy datasets. That might have something to do with the Dell 5510, however. I am using 32 GB Ram vs. 16 GB on my Toshiba running Windows 10. As it stands,I am amazed at the performance. Microsoft seems to have made a staggering leap forward. I can't wait to get my hands on the Native Linux GUI Manager. Any idea of when that is being released?

Like   Reply

Twright@Msft Jan 9, 2017

@Mike_Brooks1 @twright@msft Sorry to hear it didnt work as expected. Can you please provide the exact error message?

Glad you like the VS Code extension!

Like   Reply

Twright@Msft Jan 9, 2017

@Mike_Brooks1 SQL Server vNext (including the support for running SQL Server on Linux) is set to be released "mid-2017".

Like   Reply

Jorge_Piscoya_Calderón Dec 23, 2016

I can't SQL server vnext on Centos 7 with ODBC on Windows 7. Can You help me?

1 Like   Reply

_lbosq Dec 27, 2016

@Jorge_Piscoya_Calderón Hello Jorge, can you email me at lbosq at microsoft.com? We can discuss your scenario in detail there.

Thanks,

Luis

Like   Reply

Yadiyose Dec 22, 2016

I already try install on ubuntu 16.04,but still error like this "**http://ppa.launchpad.net/chris-lea/node.js/ubuntu** xenial Release' does not have a Release file."

1 Like   Reply

Twright@Msft Jan 3, 2017

@yadiyose That error seems unrelated to SQL Server. Do you have any more information on what seems to be failing?

Like   Reply

Mike_Brooks1 Jan 9, 2017

The logs you point to show you using 14.10. you need 16.04.1 .

Like   Reply

Ken_Lyle Dec 19, 2016

Should the upgrade command be apt-get *upgrade* ? install said nothing to update, and upgrade worked for me.

Like   Reply

Akash_Chandrashekar Dec 20, 2016

@Ken_Lyle Two things here:

After adding the MSSQL SQL into the apt sources, apt needs to know that has been done, hence the sudo apt-get update. Think of it as bringing the added source in to "view".

Then you ARE correct that a sudo apt-get upgrade is a GOOD practice as it will pull in the latest packages for installation. The new versions should ideally NOT break the installation as API/ABI is typically not broken with new package installs in Ubuntu LTS.

Like   Reply

_lbosq Dec 27, 2016

@Ken_Lyle Hello Ken, the upgrade command will affect all packages installed in the host. While it is a good practice to keep all the packages updated, we wanted to provide a clear path to upgrade the mssql-server package without any side effect that some users might find unexpected.

Running the install command will actually trigger the upgrade process for a particular package. What message did you get from running the upgrade command?

Like   Reply

Ken_Lyle Dec 27, 2016

I don't recall- just know that it ran the upgrsde.

Like   Reply

Thomasliddledba Dec 19, 2016

Is the ability to install multiple instances of SQL Server on Linux still not available?

1 Like   Reply

_lbosq Dec 27, 2016

@thomasliddledba Not at the moment. If you'd like to explore a multi-instance scenario, we'd recommend looking at the Docker images **https://docs.microsoft.com/en-us/sql/linux/sql-server-linux-setup-docker**

Like   Reply

Djnasb Dec 16, 2016

Is 32 bit version available?

Like   Reply

Twright@Msft Dec 16, 2016

@djnasb Hi, sorry no, only 64 bit.

Like   Reply

Quandary82 Dec 15, 2016

Doesn't work on Ubuntu 14.04, because the OpenSSL-package is 0.1 lower than required in the .deb-file.

Like   Reply

Twright@Msft Dec 16, 2016

@quandary821 Correct. That is one of a few problems with running SQL Server on 14.04. Please install on 16.04+.

Like   Reply

MatthewBlott Dec 16, 2016

@twright@msft @quandary821 FWIW manually updating OpenSSL to the required version doesn't work either. I spent a bit of time trying to get this to work with 14.04 and eventually just had to give up and go with 16.04.

1 Like   Reply

_lbosq Dec 28, 2016

@MatthewBlott @twright@msft @quandary82 Just FYI, the officially recommended version is 16.04+

Is there any particular reason to install on 14.04?

Like   Reply

MatthewBlott Dec 14, 2016

I installed this on Ubuntu 16.04 with no fuss and have been using it for a few weeks now with no problems. I even moved a live website's database across and had it run successfully. However, is it possible to configure the install? I specifically have a requirement where the collation needs to be an older default setting (MSSQL 7.0 I think). I had a look through

the sqlservr-setup file but couldn't see anything obvious (to me at least). Any help with this appreciated :-)

Like   **Reply**

Twright@Msft Dec 16, 2016

@MatthewBlott Please use the mssql-conf utilityto change the collation and other settings. **https://docs.microsoft.com/en-us/sql/linux/sql-server-linux-configure-mssql-conf**

1 **Like**   **Reply**

MatthewBlott Dec 16, 2016

@twright@msft @MatthewBlott thanks for the response, I'll have a look :-)

Like   **Reply**

Jun_lin Dec 6, 2016

I'm using sql server management studio to copy database from another windows server to linux, when I use "copy database wizard", it told me "SQL Server agent does not appear to be running on the destination server", how could I fix this? Thanks.

Like   **Reply**

Mike_Brooks1 Dec 6, 2016

Run SQL Server Mangement Studio. Select your database engine. Connect. Open up your Server. Bottom of the list SQL Server Agent. Right click and select start

Like   **Reply**

Jun_lin Dec 6, 2016

@Mike_Brooks1 Thanks, I will try it out.

Like   **Reply**

Jroth@MSFT Dec 7, 2016

@Mike_Brooks1 @jun_lin I could not get this to work on my test machine. The release notes show that SQL Server Agent is unsupported for the CTP1 release. Maybe try backup/restore instead? See **https://docs.microsoft.com/en-us/sql/linux/sql-server-linux-migrate-restore-database**

Like   **Reply**

Jun_lin Dec 7, 2016

@jroth@MSFT @Mike_Brooks1 @jun_lin I was using database copy feature to resolve this.

Like   **Reply**

Jun_lin Dec 6, 2016

Why it requires so much memory? I use it as an test server, it should not require that much memory.

Like   **Reply**

Mike_Brooks1 Dec 6, 2016

That 256 GB is the largest Server they have tested. That has nothing to do with your RAM or database..so long as it is < 256 GB

Like   Reply

Jun_lin Dec 6, 2016

@Mike_Brooks1 I mean it needs at least 3.25GB, That's a lot for test database.

Like   Reply

Mike_Brooks1 Dec 6, 2016

That is actually quite small, given the tools. Try it. If you don't end up loving MSSQL, I'd be really surprised. The command help tab and contextualized help are better than anything you have ever experienced.

Like   Reply

Jun_lin Dec 7, 2016

@Mike_Brooks1 3.25GB is huge, it used half of my laptop memory, I cannot try it anymore now. hope mssql team can fix this.

Like   Reply

Slava_Murygin Dec 19, 2016

@jun_lin @Mike_Brooks1 Microsoft won't fix it. SQL needs memory, as much as it can grab.

Like   Reply

Show More Comments

English

Blog • Privacy & Cookies • Terms of Use • Feedback • Trademarks

That 256 GB is the largest Server they have tested. That has nothing to do with your RAM or database..so long as it is < 256 GB