

Access is denied when attaching a database

[Ask Question](#)

I am using SQL Server 2008 developer edition. I was trying to attach the AdventureWorks2008 database.

135



When I tried to attach, I received an "access is denied" error. According to the event log, it came from the O/S:



21

Open failed: Could not open file
D:\ProjectData\AdventureWorks\AdventureWorksLT2008_Data.mdf for file number 0. OS error: 5(Access is denied.).

I thought "NTFS problem", but System (and I) have modify access to both files.

I found that I can successfully attach the database if I log in as sa, but my user account won't work.

I am a member of the local administrators group on my machine, and I am in the sysadmins role in SQL Server instance.

Any idea why I had to be logged in as sa?



sql-server

security

administration

edited Feb 3 '12 at 15:03

**Rob****37.6k** 21 103 131

asked Feb 24 '10 at 23:19

**JMarsch****16k** 11 61 112

Is the MDF file encrypted by any chance? – [Brettski](#) Feb 24 '10 at 23:31

Nope -- the real curiosity for me is that it works fine if I log in as sa (using Management Studio), but it does not work if I use my local admin account. My account is an admin, a domain admin, and it is the account that I was logged in under when I installed SQL Server (during setup there was an option to make my current account a sysadmin, and I did so). – [JMarsch](#) Feb 25 '10 at 15:43

1 This is how UAC works in W7, no surprise. – [Al Kepp](#) Jun 16 '12 at 1:53

@AlKepp Nope -- not a UAC thing. Just logging in as sa corrects (SQL server account, has nothing to do with UAC) the problem. Also, just by being a member of the local admins group, I get my permissions -- I do not have to elevate in order for my AD credentials to work. – [JMarsch](#) Jun 18 '12 at 14:01

30 Answers



Run SQL Server Management Studio as an Administrator. (right click-> run as administrator) that took care of all the weirdness in my case.

144


SQL SRV EXPRESS 2008 R2. Windows 7

answered May 22 '12 at 18:18

**MandoMando****3,380** 3 23 30

4 Running Management Studio as administrator did NOT work for me. This error occurs when attempting to start the windows service. – [nuzzolilo](#) Dec

10 '13 at 19:58

-
- 9 Running as Administrator is first step. Second step is logging to SQL Server by Windows Authentication. (This method worked for me!) – [Furkan Ekinici](#) Sep 23 '16 at 11:35 
-
- 2 Worked for me too. Cannot express in words how tiring & frustrating the permission prompts and errors are on Windows. I AM AN ADMINISTRATOR! – [David Masters](#) Nov 24 '16 at 10:36
-
- Worked for me too. At first I didn't think it would work because SSMS is just a UI client. I thought needed the service to be run as Admin. But running SSMS as Admin is enough. – [Luke Vo](#) Aug 16 '18 at 5:28
-
- Worked with SQL Server Express 2014 using management studio 2017. – [mortb](#) Oct 25 '18 at 9:03
-



Thank you for all of the comments. Some of you helped to lead me to the answer. Here's what I found:

96



It was an NTFS permission problem, and not a SQL problem. Further, it looks kind of bug-like (and it's repeatable).



The problem: The account that I was using had full control NTFS permissions to the mdf and ldf files. However, it had those permissions through group membership (the Local Administrators group had permissions, and my account is a member of local admins). (I verified the permissions)

If I try to do the attach, connect to SQL Server as me (where I am in the admins group), it fails with the NTFS problem.

However, if I grant the same file permissions that the local admin group has directly to my Domain Account, then I can attach with no problems.

(oh, and yes, I checked the local groups on this machine, and I verified that my domain account is indeed a member of the local admins group).

So, it looks as though the error occurs because some code (either in SQL Server or Management Studio) checks for the permissions that the user account holds, but it doesn't go so far as to check group permissions that the user account inherits.

That sounds weird to me, but I can reproduce it over and over again, so I have concluded that it is the answer.

Update: I reported this as a bug:

<https://connect.microsoft.com/SQLServer/feedback/details/539703/access-denied-attaching-a-database-when-permissions-are-inherited>

edited Mar 28 '18 at 12:29



Noah Hawkins

3 4

answered Mar 5 '10 at 18:04



JMarsch

16k 11 61 112

101 If, like me, you are using Windows 7, you will have to run SQL Server Management Studio as Administrator to avoid getting this error. –

[Antony](#) Dec 20 '10 at 0:59

4 Reproduced on Win7 Pro using SS2008 Express. Same issue for both sqlcmd and SSMS. == Meldung '5120', Ebene '16', Status '101', Server 'DAGO\SQLEXPRESS', Zeile 1 - 'Die physische Datei 'D:\data\mssql\drei.mdf' kann nicht geöffnet werden. Betriebssystemfehler 5: '5(Zugriff verweigert) == Granting full access to the user (who is a member of the local admin group, which has access) fixes the problem. Also, running sqlcmd (or SSMS, I guess) as Administrator doesn't produce this error. – [Lumi](#) Apr 24 '11 at 14:37

1 Anthony Highsky has the answer. Just need to be sure to run Management Studio as an Administrator. – [James](#) Jul 30 '11 at 13:13

Same problem, and solution, for me. 2008R2, Win 7, etc. Just added myself explicitly to the security list, and it worked. I suppose that SQL Server can read them, once attached, but not under my credentials when attaching? – [Andrew Backer](#) Sep 20 '11 at 12:29

- 4 Running Management Studio as administrator did NOT work for me. This error occurs when attempting to start the windows service. – [nuzzolilo](#) Dec 10 '13 at 19:57

I'd like to add additional info to the answers that were posted.

17

Be careful when detaching the database because the *windows user* you are logged in as becomes the only user with permissions to the .mdf file! The original permissions the .mdf file had which included the user

SQLServerMSSQLUser\$<computer_name>\$<instance_name> and the Administrators account get overwritten by whichever windows user you are logged in as (not sql server user). Boom, all permissions gone just like that. So do as others have said and right click your .mdf file and double check the permissions.

I ran into this problem because I used SSMS to connect to the database (doesn't matter which sql server account) and detached the database. After doing that my windows user was the only one that had any permissions to the .mdf file. So later on when I tried to attach the db using the sa account, it threw the "access denied" error.

To keep the original permissions in tact you should take the database offline, then detach, then attach in that order like so:

```
USE [master]
GO
-- kick all users out of the db
ALTER DATABASE mydb
SET SINGLE_USER WITH ROLLBACK IMMEDIATE
GO

-- Take the Database Offline
ALTER DATABASE mydb SET OFFLINE WITH
ROLLBACK IMMEDIATE
GO

-- detach the db
```

Home

PUBLIC

 Stack Overflow

Tags

Users

Jobs

Teams

Q&A for work



[Learn More](#)

```
EXEC master.dbo.sp_detach_db @dbname = N'mydb'  
GO
```

edited Oct 26 '11 at 17:21

answered Oct 26 '11 at 15:48



goku_da_master

2,623 27 32

- 1 Thanks for this! I think it's vastly easier to get it right if you are also logged in using a SQL Server Authenticated account with serveradmin privileges.
– [William Rose](#) May 10 '12 at 7:32

Unfortunately, this doesn't help me if I originally created the database as 'sa' instead of as a Windows user – [David Gardiner](#) Sep 4 '15 at 3:11

"Be careful when detaching the database". Tell SSMS to be careful. My problems occurred because using SSMS the Copy Database command failed leaving me in shaft city with no explanation – [Alan Macdonald](#) Feb 5 '18 at 9:51



Add permission to the folder where your .mdf file is.

15

Check this name: NT Service\MSSQLSERVER



And change the Location to your server name.

edited Feb 4 '15 at 17:01



gvasov

6,736 16 49 85

answered Feb 4 '15 at 16:17



Leonardo

151 1 2

-
- 5 To find the exact account name, since it can vary from instance to instance, run this: `SELECT servicename, service_account FROM sys.dm_server_services` . – [Arve Systad](#) Jun 7 '16 at 6:34
-

▲
13 This problem is caused by UAC (User Account Control), isn't it? Although your user account is a member of Administrators group, the UAC in Windows 7 doesn't allow you do administrator things unless you run programs "as administrator". It is not a real bug in SQL Server or Management Studio or whatever. (Although it could possibly know the problem and ask you for elevated permissions instead of just complaining "error 5".)
▼

[edited Feb 26 '13 at 21:32](#)

answered Jun 16 '12 at 1:52



[Al Kepp](#)

4,839 2 17 41

▲
11 Run SQL Server Management Studio as an Administrator. (right click-> run as administrator) worked for me with Windows 7 - SQL server 2008 R2
▼

answered Aug 27 '14 at 9:50



[Rolwin C](#)

3,216 2 21 41

-
- 1 This answer should be upvoted. Running the SSMS as Administrator is a work around that replicates this answer. Microsoft reports this as "expected behaviour" here: [link](#) – [FreeText](#) Oct 16 '16 at 23:35
-

Isn't this the same as MandoMando's answer? – [mortb](#) Oct 25 '18 at 9:00

▲ A SQL2005 database can be attached in this way in Windows 7:

9 ▲
▼ `start` menu >
`all` program >
Microsoft sql server 2005 >
sql server management studio >
`right` click >
run `as` administrator >
click ok

And then attached database successfully completed.

edited Dec 11 '15 at 17:10



[Artjom B.](#)

53.2k 17 81 152

answered Dec 11 '15 at 14:50



[Rahul garg aggarwal](#)

91 1 2

This worked with SQL Server 2016 with Management Studio 2008 R2 on Windows 10 :) – [par](#) Jul 18 '16 at 7:18

▲ When you login as `sa` (or any Sql Server account), you're
8 ▲ functioning as the SQL Server service account, when you're logged
▼ in as you, you have the permissions of your account. For some
reason you don't have the appropriate file access but the service
account does.

answered Feb 24 '10 at 23:27



[Nick Craver](#) ♦

537k 115 1202
1108

NTFS issue was the first thing that I thought as well, but that doesn't seem to be the issue: I am a member of the local admins group, and I verified that admins have "full control" permissions on the mdf and ldf files. Also, I am the owner of the files -- I had just created a directory and copied the mdf/ldf files to their location myself. – [JMarsch](#) Feb 25 '10 at 15:47

@JMarsch: @Nick is saying that 'sa' has a set of SQLSERVER RIGHTS - not NTFS rights -- which your account does not have. – [Trevoke](#) Mar 1 '10 at 16:37

@Trevoke: I'm with you. If that's the case, then what rights would I need to assign to my user account? (I'm already assigned to the sysadmin role) – [JMarsch](#) Mar 1 '10 at 17:02

- 1 Old answer, this, but for people like myself five minutes ago: you can find the exact service user name by running `SELECT servicename, service_account FROM sys.dm_server_services` – [Arve Systad](#) Jun 7 '16 at 6:36

▲
5

it can be **fixed easily** but radically, just go to the folder where you have stored **mdf file**. select file-> Right click -> click on properties and **give full permissions to file for logged in user Security**.

▼
[edited Sep 19 '14 at 9:57](#)

answered Sep 19 '14 at 9:12



[Ema.H](#)

1,862 3 20 32

▲
5

With me - Running on window 8 - Right click SQL Server Manager Studio -> Run with admin. -> attach no problems

answered Feb 27 '14 at 14:02

[Grey Wolf](#)



4,229 2 19 20



4

I found this solution: Right click on folder where you store your .mdf file --> click Properties --> choose Security tab, click Edit... and give it full control. Hope this helps!



answered Oct 1 '16 at 7:40



quokka

62 1 10



4

The `sa` user uses NTFS accounts

`SQLServerMSSQLUser$<computer_name>$<instance_name>` and
`SQLServerSQLAgentUser$<computer_name>$<instance_name>` to access the database files. You may want to try adding permissions for one or both these users.



I don't know if solves your problem since you say you have no problems with the `sa` user, but I hope it helps.

answered Mar 5 '10 at 13:08



djeidot

2,961 4 34 45



3

Every time I have run into this issue was when attempting to attach a database that is in a different directory from the default database directory that is setup in SQL server.



I would highly recommend that instead of jacking with permissions on various directories and accounts that you simply move your data file into the directory that sql server expects to find it.

answered Apr 8 '11 at 0:17



NotMe



76.8k 25 151 232

In a lot of situations, I would agree with your point, but with SQL server, you often want to be able to locate your databases on different spindles or volumes for scalability. In fact, it's a common practice to put the transaction log on a separate spindle from the database in order to improve transaction throughput. – JMarsch Apr 8 '11 at 21:51

@JMarsch: Yes.. the directories are actually configurable thorough the Server Properties > Database Settings tab for default data and log locations... – NotMe Apr 8 '11 at 22:44

That covers defaults, but that's only defaults. It is completely acceptable to put dbs elsewhere, and really not even that uncommon if you have your server managing more than 1 actively used database. – JMarsch Apr 9 '11 at 3:18

I have this same problem even with the default sql server directory:
c:\Program Files\Microsoft SQL
Server\MSSQL10_50.SPATIAL_IM\MSSQL\DATA\mydb.mdf on win7. –
goku_da_master Oct 26 '11 at 15:03

I just wanted to add this information as well.

3

<http://www.mssqltips.com/sqlservertip/2528/database-attach-failure-in-sql-server-2008-r2/>

Solution

You get this error because two different logins did the detach and attach operations. So the files, when detached, were owned by the first login, but the attach failed because the login that was used was not the owner of the mdf and ldf files.

When we detach database files, the owner becomes the person who did the detach command, so to resolve the issue we need to change or add the other login as the owner of the mdf and ldf files.

Right click on the "filename.mdf" file and select properties to check the permissions of the mdf file. Here we can see that only one account has permission to the "filename.mdf" file because that was the account that was used to detach the database.

To resolve this issue, click on the Add... button to add the other login or any other login needed and give the login Full Control. You should do this for the "ldf" file as well. Once you have completed this task click the OK button. (Note for other OS versions you may have an Edit option , click this first and then you will see the Add... option.)

edited Jul 16 '15 at 7:12

community wiki
2 revs, 2 users 86%
stormwild

I changed my connection in SSMS to match the user who performed the detach, and i was able to perform the attach. – [glitzsfa](#) Aug 8 '17 at 18:33



For what it's worth to anyone having the particular variation of this problem that I had:

2



- SQL Express 2008
- Visual Studio 2010 Premium

Through the context menu of the App_data folder I had created a SQL Express database for debugging purposes. The connection string (used by NHibernate) was as follows:

```
Server=.\SQLEXPRESS;  
AttachDbFilename=|DataDirectory|DebugDatabase.mdf;  
Database=DebugDatabase;  
Trusted_Connection=Yes;
```

This gave me the same "Access denied" error on the database file. I tried giving various users Full Control to the folder and files, at one point even to "Everyone". Nothing helped, so I removed the added permissions again.

What finally solved it was to open the Server Explorer in Visual Studio, then connect to the MDF, and detach it again. After I'd done that my web app could access the database just fine.

PS. Credits go to [this blog post](#) I found while googling this particular problem, triggering the idea to attach/detach the database to solve the issue.

answered Mar 6 '12 at 21:48



Jeroen

36.6k 24 130 210



1

I moved a database mdf from the default Data folder to my asp.net app_data folder and ran into this problem trying to set the database back online.



I compared the security settings of the other file databases in the original location to the moved files and noticed that MSSQL\$SQLEXPRESS was not assigned permissions to the files in their new location. I added Full control for "NT SERVICE\MSSQL\$SQLEXPRESS" (must include that NT SERVICE) and it attached just fine.

It appears that the original Data folder has these permissions and the files inherit it. Move the files and the inheritance breaks of course.

I checked another project's mdf file which I created directly into its app_data folder. it does not have MSSQL\$SQLEXPRESS

permissions. Hmm. I wonder why SQL Express likes one but not the other?

answered Feb 18 '16 at 5:36



[Brad Mathews](#)

476 1 9 30

This solution worked for me on Windows 10 and SQL Server 2017 when moving a log file to a separate disk. In my case the username was "NT SERVICE\MSSQLSERVER" – [John Hanley](#) Jan 5 '18 at 0:22



I attached the mdf file by right clicking the database and removing the log file AdventureWorks2012_Data_log.ldf in the wizard . The mdf file was placed in the following location



C:\Program Files\Microsoft SQL Server\MSSQL10.SQLEXPRESS\MSSQL\DI

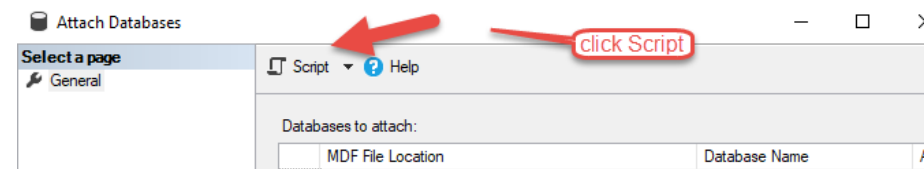
The above method helped me to resolve the issue .

answered Apr 26 '12 at 15:03



[praveen](#)

10.4k 30 40



```
USE [master]
GO
CREATE DATABASE [DataBasename] ON
```

```
( FILENAME = N'C:\data\DataBasename.mdf' )  
FOR ATTACH  
GO
```

**change to FOR ATTACH -- > FOR
ATTACH_FORCE_REBUILD_LOG**

```
USE [master]  
GO  
CREATE DATABASE [DataBasename] ON  
( FILENAME = N'C:\data\DataBasename.mdf' )  
FOR ATTACH_FORCE_REBUILD_LOG  
GO
```

answered Sep 3 '17 at 2:57



Valentin Petkov

814 9 18

Thanks, you saved my day – [RezaSh](#) Mar 1 '18 at 8:53



1

I had the same issue when attaching a database. It wasn't a SQL issue it was an account issue. Go to the panel control/User Account Control Settings/Set to "never notify". Finally, restart the computer and it worked for me.



answered Sep 1 '11 at 16:42



Paola

11 1



1

I got this error as sa. In my case, database security didn't matter. I added everyone full control to the mdf and ldf files, and attach went fine.

edited Feb 14 at 19:20

answered Nov 14 '11 at 15:34



toddmo

9,629 7 63 76

1

This sounds like NTFS permissions. It usually means your SQL Server service account has read only access to the file (note that SQL Server uses the same service account to access database files regardless of how you log in). Are you sure you didn't change the folder permissions in between logging in as yourself and logging in as sa? If you detach and try again, does it still have the same problem?

answered Mar 5 '10 at 12:25



Adrian O'Connor

58 5

In my case, no -- I re-did it several times to make sure. The issue was that my account only had access to the files through a level of indirection - I was a member of group Domain Admin. Domain Admin was a member of the Local Administrators group on the machine, and Local Admins (and system) had full control to the folder. (so there were 2 levels of group indirection). If I assigned permissions to myself directly, it worked, if I removed them, I could still copy/delete the files from Explorer, etc, but SQL Server could not load them. — [JMarsch](#) Aug 9 '10 at 15:49

When try to attach database. Log in as Windows authenticated user will help us overcome permission on database files. (This case, MS SQLServer instance in disk what has Windows OS). — [Do Nhu Vy](#) Sep 15 '17 at 2:44

I was reading [this page](#) and they have an interesting sentence in



there:

Caution: Be very selective when adding users to these roles. For example, sysadmin maps out to dbo in every database and is the equivalent of logging in using the sa account.

Of course, they also have this:

Permissions that are granted to users and roles and are database specific. All permissions are cumulative with the exception of a DENY. A denied permission at either a user level or at a role level overrides the same permission granted via other role memberships with the exception of the sysadmin fixed server role. (A sysadmin retains all permissions, even if a role they are a member of has a DENY permission.)

So if you're a domain admin and in SQL 'sysadmin' group, the world should be your crustacean.

Of course, according to Microsoft, you should be taking a quick look at these two pages:

[Link to Database Prerequisites](#)

[Link to Installing Databases](#)

You're being naughty and trying to attach them manually :) Seriously though, do you have all the prerequisites for the AdventureWorks2008 database? I suspect this is just another Microsoft oddity/edge case, but I could be wrong.

edited Jul 16 '15 at 7:10



sudhAnsu63

4,421 3 28 44

answered Mar 2 '10 at 13:57

Trevoke



3,544 1 22 44

+1 because your comment helped me to find the answer. I will post my findings to this thread. BTW (I was being "naughty" due to very strange policies where I work -- the adventureworks database is distributed as an exe. I can't download exe's. (I can download zip files and MSI files, so I don't see how the exe filtering really does anything other than get in the way, but those are the rules). Anyway, I could get the raw mdf files as zips from codeplex, and that's when I ran onto this little curiosity. – [JMarsch](#)
Mar 5 '10 at 17:58



For those who could not fix the problem with the other solutions here, the following fix worked for me:

0



Go to your "DATA" folder in your SQL Server installation, right click, properties, security tab, and add full control permissions for the "NETWORK SERVICE" user.

<http://decoding.wordpress.com/2008/08/25/sql-server-2005-express-how-to-fix-error-3417/>

(The above link is for SQL 2005, but this fixed a SQL 2008 R2 installation for me).

Some additional info: This problem showed up for me after replacing a secondary hard drive (which the SQL installation was on). I copied all the files, and restored the original drive letter to the new hard disk. However, the security permissions were not copied over. I think next time I will use a better method of copying data.

answered Dec 10 '13 at 20:15

nuzzolilo
1,549 1 19 25

It is in fact NTFS permissions, and a strange bug in SQL Server. I'm

0

not sure the above bug report is accurate, or may refer to an additional bug.



To resolve this on Windows 7, I ran SQL Server Management Studio normally (not as Administrator). I then attempted to Attach the MDF file. In the process, I used the UI rather than pasting in the path. I noticed that the path was cut off from me. This is because the MS SQL Server (SQLServerMSSQLUser\$machinename\$SQLEXPRESS) user that the software adds for you does not have permissions to access the folder (in this case a folder deep in my own user folders).

Pasting the path and proceeding results in the above error. So - I gave the MS SQL Server user permissions to read starting from the first directory it was denied from (my user folder). I then immediately cancelled the propagation operation because it can take an eternity, and again applied read permissions to the next subfolder necessary, and let that propagate fully.

Finally, I gave the MS SQL Server user Modify permissions to the .mdf and .ldf files for the db.

I can now Attach to the database files.

answered Apr 8 '11 at 0:12



[Chris Moschini](#)

26.5k 14 123 161



0

I have solved the problem by just move the .mdf file that you want to attach to the public folder, in my case I moved it to the users/public folder. Then I attach it from there without any problem. Hope this helps.



answered Aug 26 '13 at 0:44



[databaseUser](#)

11

▲ I've had the same issue when re-attaching database after detaching it and moving ldf and mdf files from drive C to F.

0

▼ In order to fix it I had to add OWNER RIGHTS principal to both files and gave it full control over them in the Security tab of the Properties dialog.

answered Nov 30 '15 at 14:17



Art

56 6

▲ I struggled with SSMS (2016) to attach the AdventureWorks2012 database. But had success with this code, taken from [a CodeProject article by Mohammad Elsheimy](#):

0

▼ **CREATE DATABASE** AdventureWorks2012
ON PRIMARY (FILENAME='D:\Dev\SQL Server\AdventureWorks2012.mdf')
FOR ATTACH;

edited Sep 3 '17 at 13:52



Cody Gray ♦

195k 35 382 470

answered Jan 27 '17 at 3:42



Michael Melio

1

▲ Copy Database to an other folder and attach or Log in SQLServer with "Windows Authentication"

0



answered May 16 '15 at 8:23

[Chưa biết](#)

501 4 5

In my case what solved the problem was the following:

0

```
USE [master]
GO
CREATE DATABASE [AdventureWorks2008R2] ON
( FILENAME = 'C:\Program Files\Microsoft SQL
Server\MSSQL10_50.SQLEXPRESS\MSSQL\DATA\AdventureWors2008R2_Data.mdf
FOR ATTACH_REBUILD_LOG
```

answered Feb 21 '15 at 14:13

[Nick_](#)

6 1 3



0



If you run sql server 2012 you can get this error by trying to attach an older version of an MDF-file. ex an MDF file from sql server 2008.

answered Oct 18 '12 at 9:23



[Erik Forsmyr](#)

13 2

I think that part was relatively self explanatory. it would be good to know how to sort it out. – [dansan](#) Feb 2 '13 at 2:04