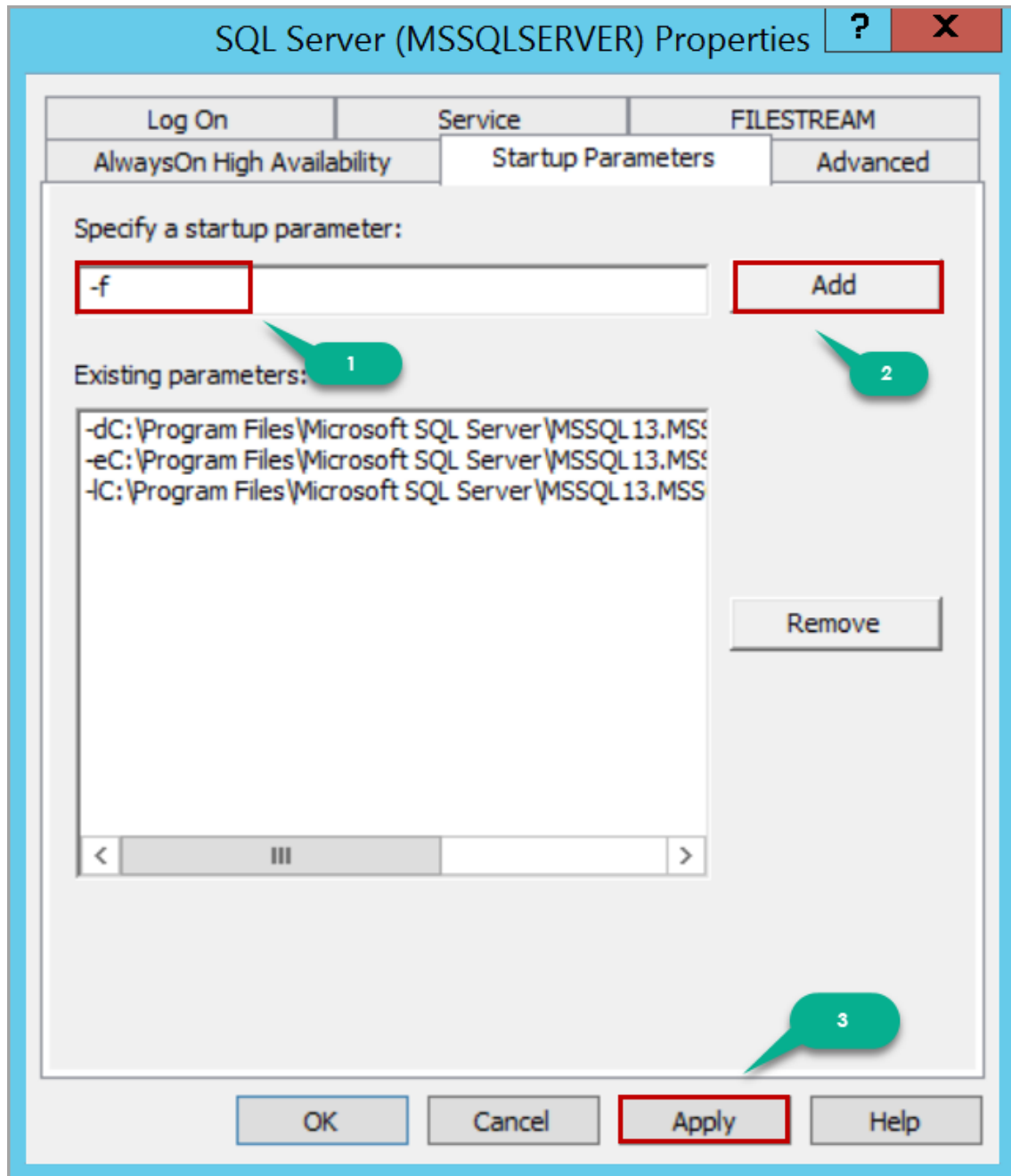


Recover a lost SA password

Start SQL Server in single user mode

We need to start SQL Server in single user mode by adding the parameter **-m** or **-f** in the startup parameters. Open SQL Server configuration manager and select the service of SQL Server instance. Right-click and click on the **Properties** option.

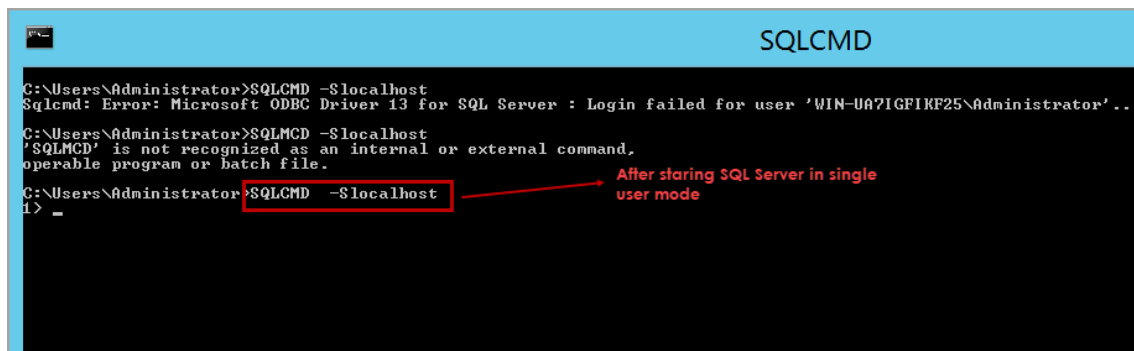


After adding the startup parameter, click on the **Apply** button and then the **OK** button in the warning message window.

Restart the SQL Server service to start SQL Server in single user mode. When the SQL Server is started in single user mode, all the users who are a member of the host's local administrator group can connect to SQL Server instance and they will gain the privileges of server level role sysadmin which helps us to recover SA password.

So, if you are a member of the local administrator group, you can connect to SQL Server instance using SQLCMD or SQL Server Management Studio. In this case, I am using SQLCMD.

Launch the Command Prompt and connect to SQL Server using SQLCMD. You would be able to successfully connect to the SQL Server instance.



```
C:\Users\Administrator>SQLCMD -Slocalhost
Sqlcmd: Error: Microsoft ODBC Driver 13 for SQL Server : Login failed for user 'WIN-UA7IGFIKF25\Administrator'..
C:\Users\Administrator>SQLCMD -Slocalhost
'SQLCMD' is not recognized as an internal or external command,
operable program or batch file.
C:\Users\Administrator>SQLCMD -Slocalhost
1> _
```

Now, if you know the password of "sa" login, just enable the "sa" login and start SQL Server in multi-user mode, connect to SQL Server instance using "sa" login and create whatever logins you need for your application to run.

Please refer to the below T-SQL script to enable "sa" login.

- 1 ALTER LOGIN sa enable
- 2 GO



```
C:\Users\Administrator>SQLCMD -Slocalhost
1> ALTER LOGIN sa enable
2> go
1> _
```

If you do not know the "sa" login password, create a SQL server login using the below T-SQL script.

- 1 CREATE LOGIN NewSA WITH PASSWORD = 'Password@1234';

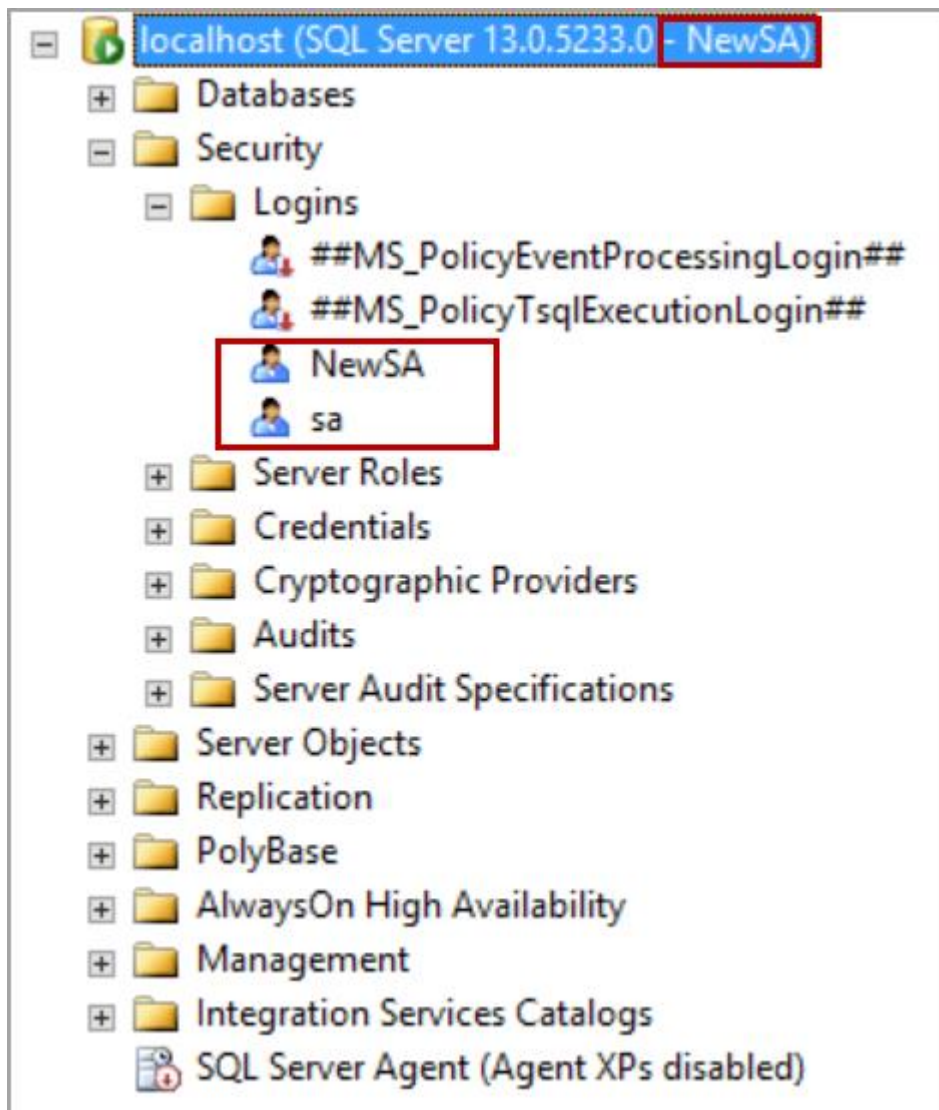
Add the login **NewSA** to the server level role sysadmin. Please use the following T-SQL script to add the SQL Server login to the server level role sysadmin.

- 1 ALTER SERVER ROLE sysadmin ADD MEMBER NewSA

2 GO

```
C:\Users\Administrator>SQLCMD -Slocalhost
1> ALTER LOGIN sa enable
2> go
1> CREATE LOGIN NewSA WITH PASSWORD = 'Password@1234';
2> ALTER SERVER ROLE sysadmin ADD MEMBER NewSA
3> GO
1> -
```

Remove the startup parameter **-m** or **-f** that is added and restart the SQL Server services. Now, SQL Server instance is started in the multi-user mode and has the login that you created above. Please refer to the below image that shows the connection is established using **NewSA** login which is created above.



In some cases, you may have not enabled mixed-mode authentication (i.e. SQL Server and Windows authentication mode). In this situation even though we create a SQL Server login, it does not allow us to log in to SQL Server and throws login failed error.

Create a login from Windows account. Execute the following T-SQL script to create a Windows authentication login in SQL Server.

```
1 CREATE LOGIN [WIN-UA7IGFIKF25\rangach] FROM WINDOWS
2 GO
```

Execute the following T-SQL script to add Windows authentication login to server level role sysadmin:

```
1 ALTER SERVER ROLE sysadmin ADD MEMBER [WIN-UA7IGFIKF25\rangach]
2 GO
```

Replace the computer name and the login name with yours.

```
C:\Users\Administrator>SQLCMD
1>
2> CREATE LOGIN [WIN-UA7IGFIKF25\rangach] FROM WINDOWS
3> GO
1> ALTER SERVER ROLE sysadmin ADD MEMBER [WIN-UA7IGFIKF25\rangach]
2> GO
1> _
```

Remove the startup parameter and restart the SQL Server service. Log in to the computer with the same user as above.

Open SQL Server Management Studio and connect to the SQL Server instance using Windows authentication.



In case you want to create a login from Windows group, execute the following T-SQL script.

```
1 CREATE LOGIN [BUILTIN\Administrators] FROM WINDOWS
2 GO
3 ALTER SERVER ROLE sysadmin ADD MEMBER [BUILTIN\Administrators]
4 GO
```