

Create SDE Schema Enterprise Geodatabase in Azure SQL database

Chakresh Sahu, chakresh.sahu@esri.in (Esri India)

Azure SQL Database provides the following deployment options for an Azure SQL database.

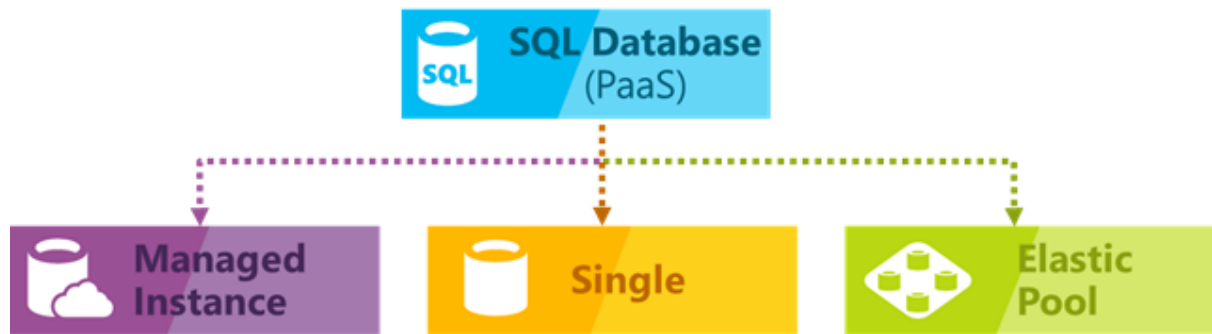


Image source: <https://docs.microsoft.com/en-us/azure/sql-database/sql-database-technical-overview>

We are using Microsoft Azure SQL Database Managed Instance for creating SDE Schema based Enterprise Geodatabase.

1. Connect Azure SQL Server Instance through Microsoft SQL Server Management Studio (SSMS).

2. Instance Level (One-time Job):

i. Open New Query in SSMS and Create **SDE** login

```
CREATE LOGIN sde WITH PASSWORD = 'xxx'
```

ii. Create **SDE** user on **master** database:

```
CREATE USER sde FROM LOGIN sde
```

3. Database level (For every ArcGIS Enterprise database):

i. Add login to the **loginmanager** role.

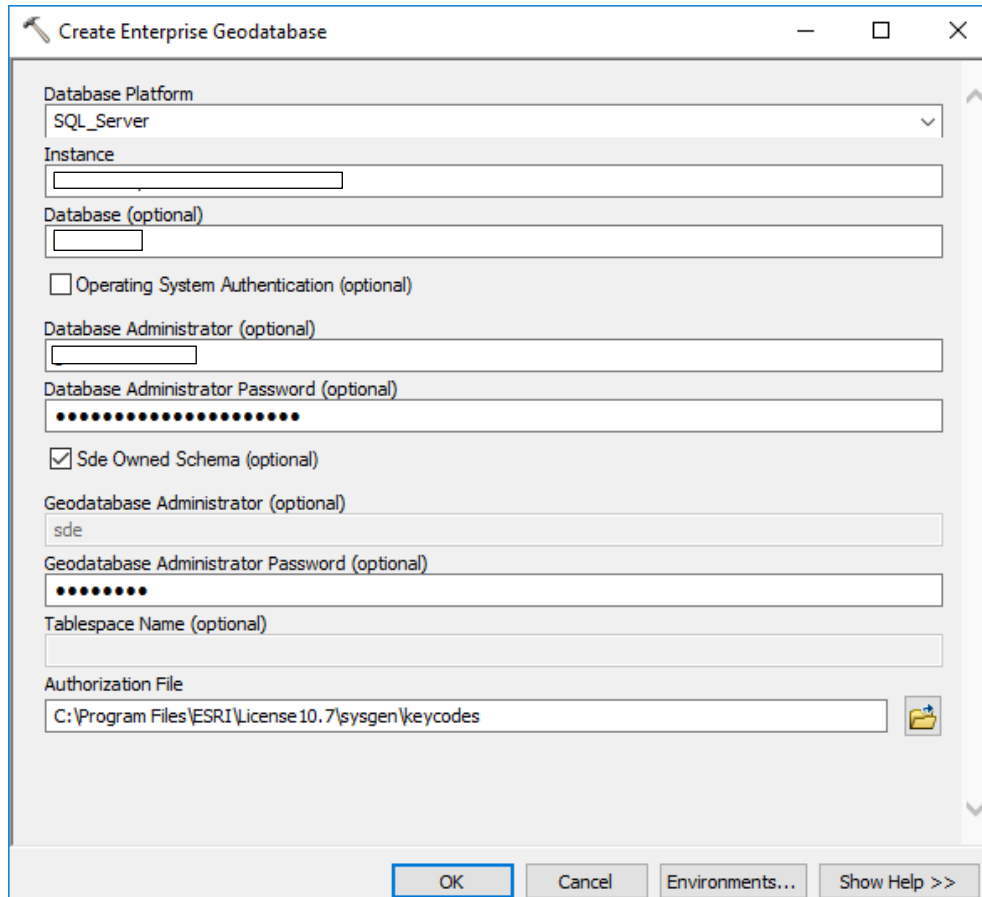
```
ALTER ROLE loginmanager ADD MEMBER sde;
```

ii. Create a database in Azure SQL Server.

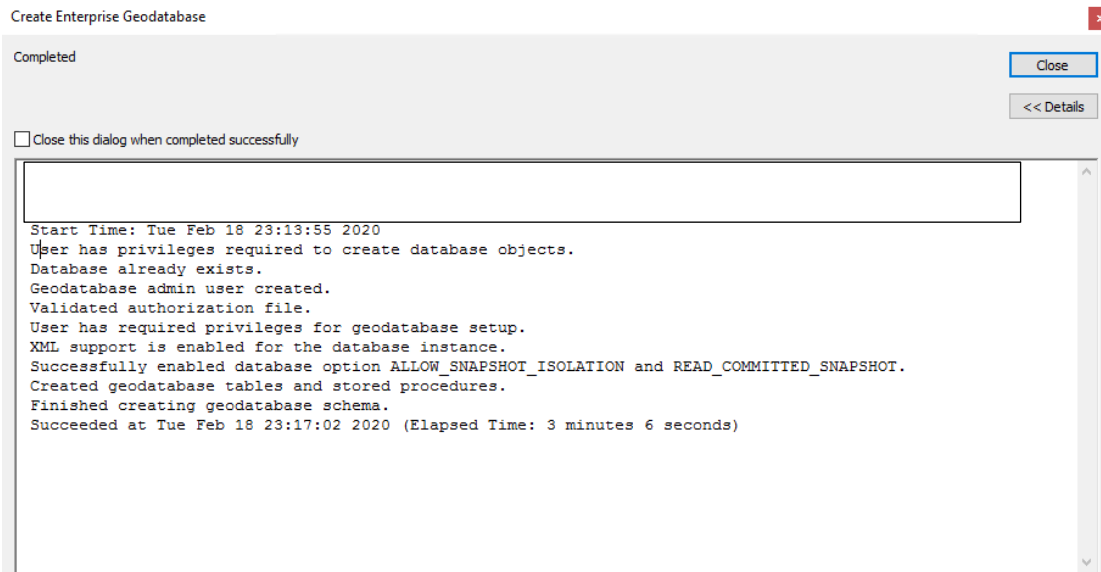
iii. Create a user **SDE** on newly SQL Server database.

```
CREATE USER sde FROM LOGIN sde
```

4. Open ArcCatalog and click **Create Enterprise Geodatabase** tool to create enterprise geodatabase.

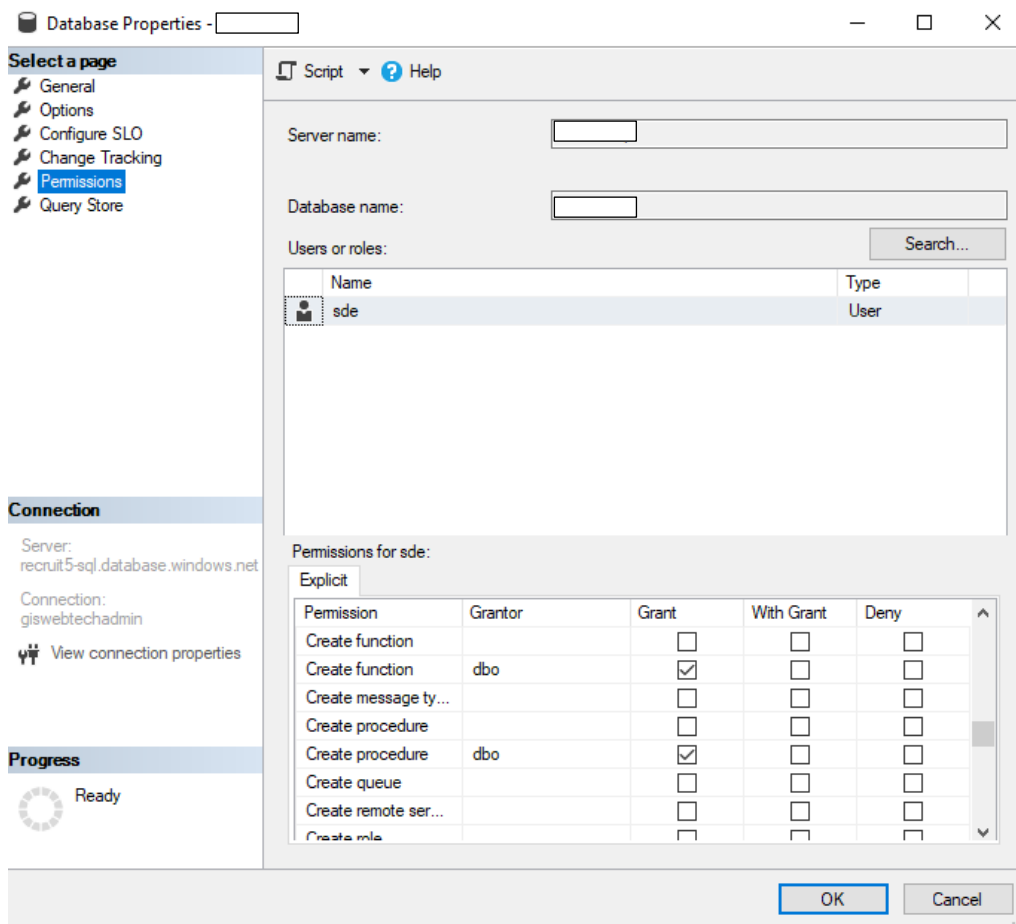


5. Upon successful completion of enterprise geodatabase tool, it will show following message.



6. Verify permissions for user **SDE** in database.

- Right-click the database in which the user was applied > **Properties**.
- Select **Permissions** from the top left corner of the **Database Properties** dialog box under the **Select a Page** heading
- Select the newly added user on the right.
- **SDE** user should have following permission.
 - Connect
 - Create Function
 - Create procedure
 - Create table
 - Create view
 - View database state
 - View definition



7. Check `ALLOW_SNAPSHOT_ISOLATION` and `READ_COMMITTED_SNAPSHOT` and Set them True.

For Checking the value execute following command.

```
SELECT name,
snapshot_isolation_state, snapshot_isolation_state_desc,
is_read_committed_snapshot_on
FROM sys.databases
WHERE name = 'DBName'
```

It will show following result.

name	snapshot_isolation_state	snapshot_isolation_state_desc	is_read_committed_snapshot_on
DBName	1	ON	1

- **1**: `READ_COMMITTED_SNAPSHOT` option is **ON**. Read operations under the `READ COMMITTED` isolation level are based on snapshot scans and do not acquire locks.
- **0** (default): `READ_COMMITTED_SNAPSHOT` option is **OFF**. Read operations under the `READ COMMITTED` isolation level use Shared(S) locks.

8. Create a connection to Azure SQL database through SDE user.

Credit : We have taken great help from <https://community.esri.com/thread/243141-enterprise-geodatabase-in-azure-sql-database> for preparing the document.