



CityGRID® Database setup
MS SQL Server 2012-2016 (32/64 bit)

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This document describes the installation of a CityGRID® database to SQL Server 2012-2016 Express, but can also be applied to SQL Server 2017.

1. Installation of SQL Server

- Select “New SQL Server stand-alone installation”. Accept terms and Product Updates and start installation.

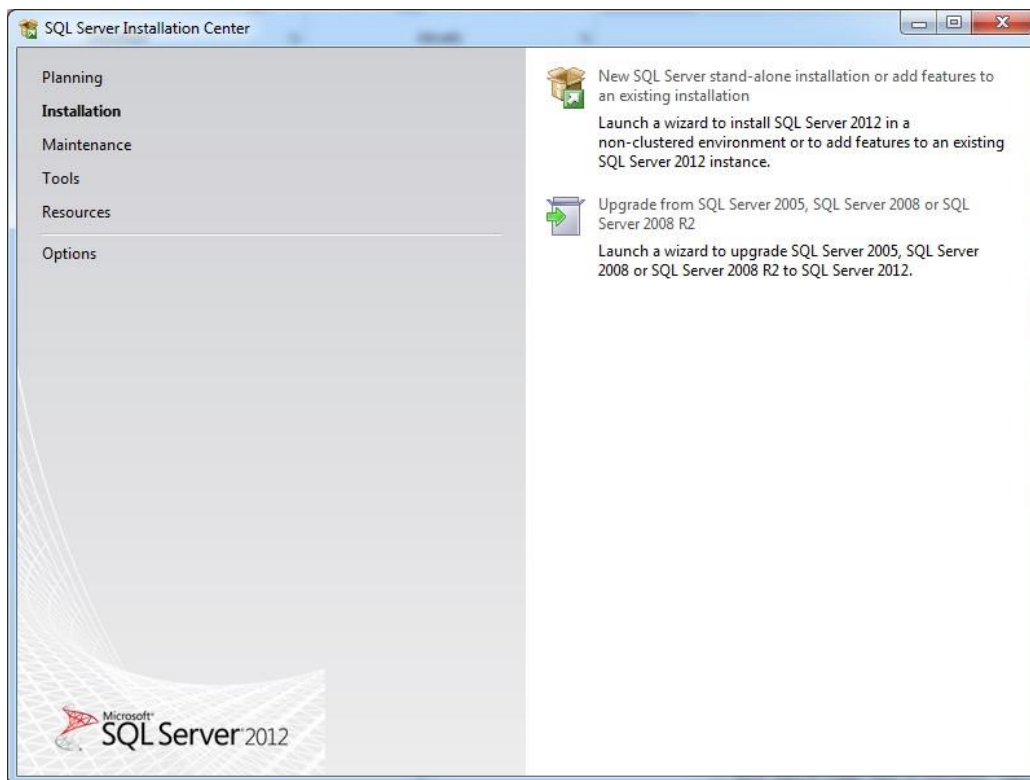


Fig. 01: SQL Server Installation

- Accept license terms, click next.
- Use Microsoft Updates to check for Updates, click next
- SQL Installation – Feature Selection: Database Engine Services, SQL Server-Replication, SQL Server Client Connectivity SDK and Management Tools-Basic.

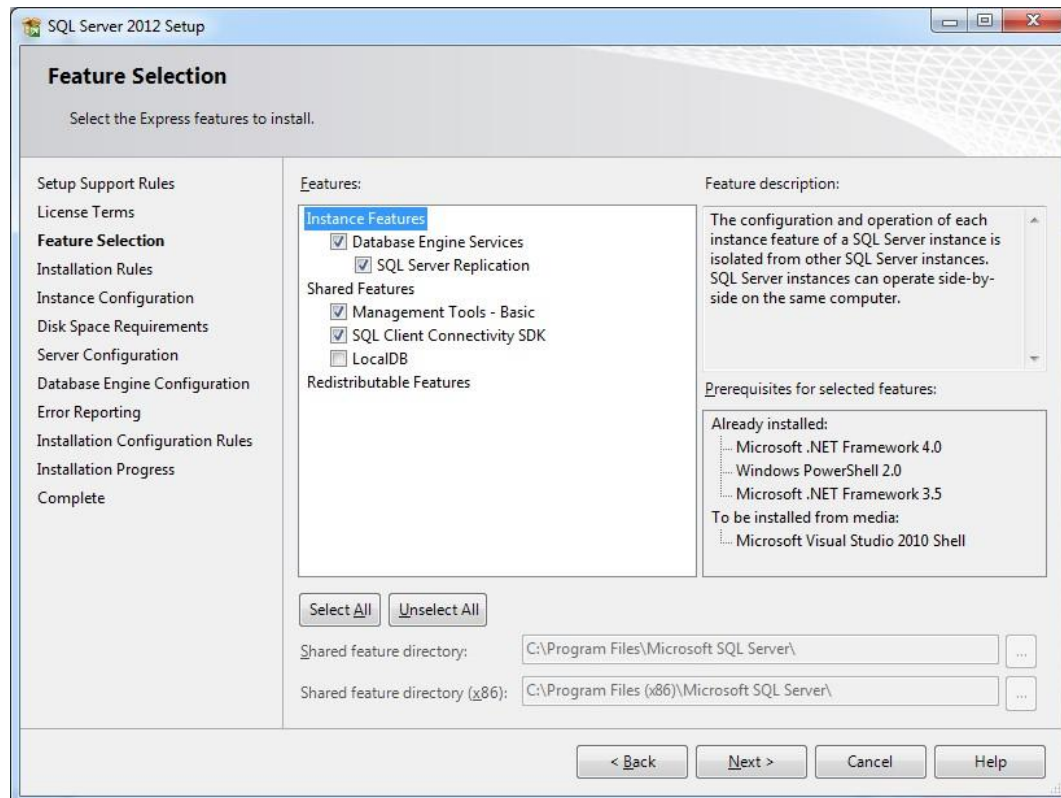


Fig. 02: Feature Selection

- Define Instance Name, ID and Install directory for MSSQL Server instance. (Use default settings)

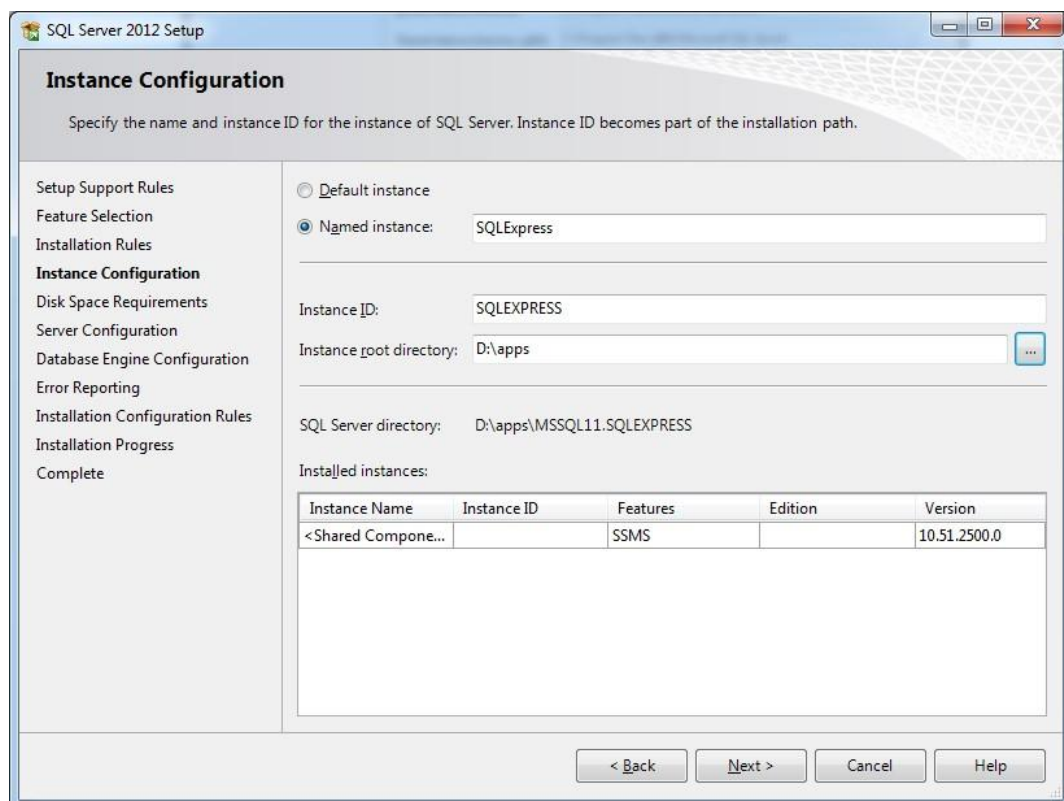


Fig. 03: Instance Configuration

- Keep Default settings for initial user accounts.

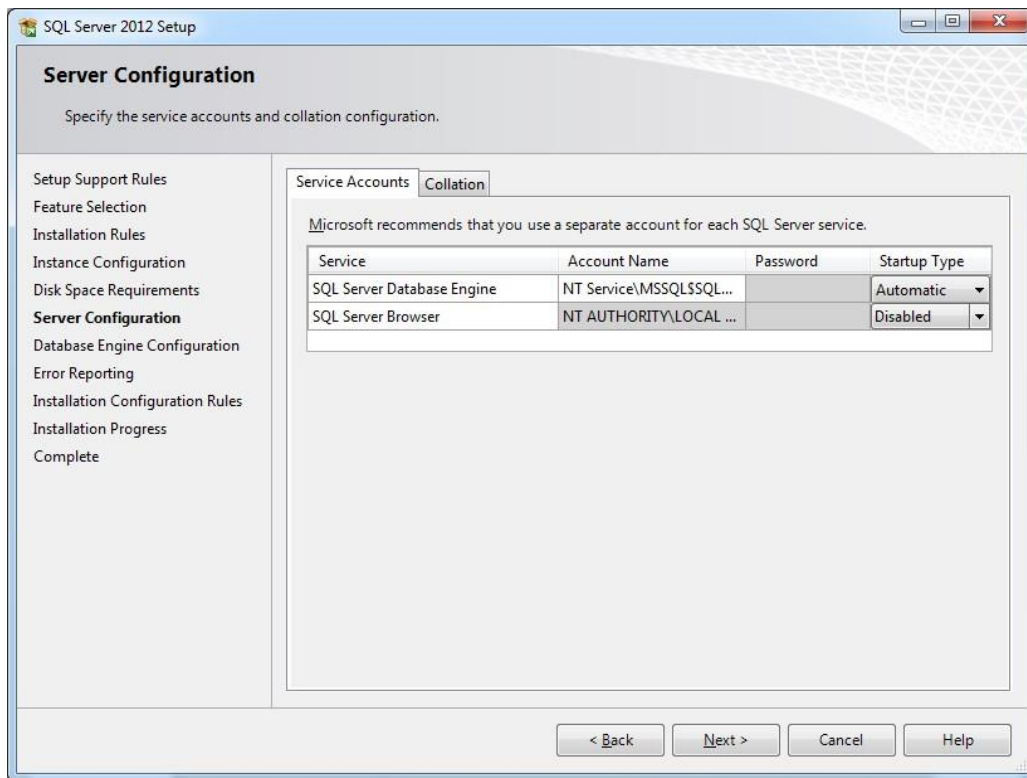


Fig. 04: Server Configuration

- Specify *Authentication Mode*, define *System Password* and *User*: Select *mixed authentication mode*, create System Password (e.g. C1ty@grid) and add all SQL Server administrator users. Then carry out installation with the default settings until the end.

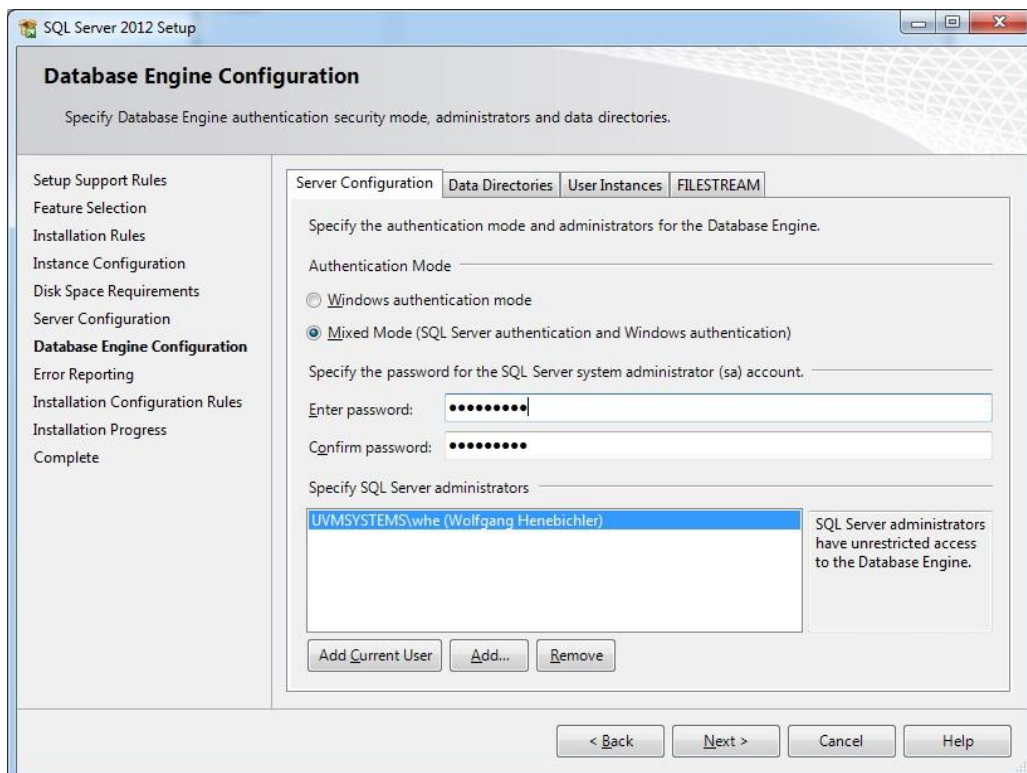


Fig. 05: Database Engine Configuration

2. Setting up database instance with SQL Server Management Studio.

- If necessary, install *SQL Server Management Tools* from the *SQL Server Installation Center*

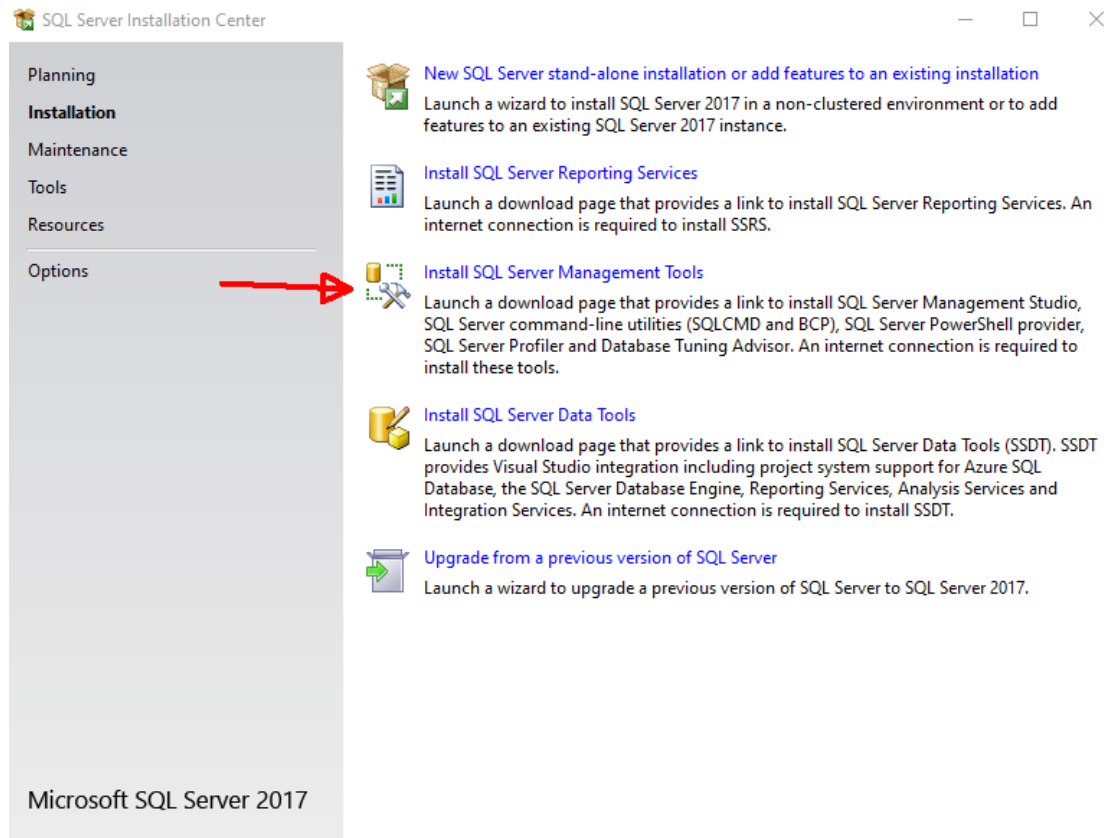
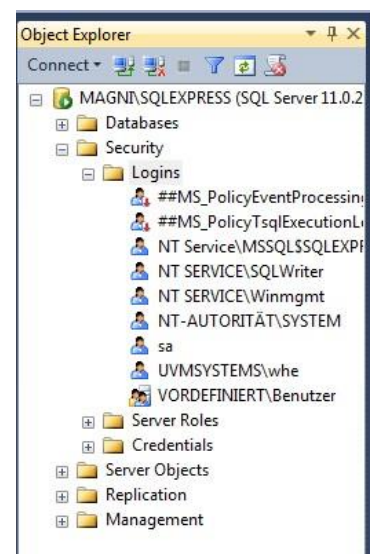


Fig.06 Install SQL Server Management Tools

- Start *MS SQL Server Management Studio Express* from Windows Start Menu and use Windows Authentication to log in.
- Right click on *Security* → *Logins* and select *New Login* (e.g. cityman owner). Choose *SQL Server Authentication*. In case an easy to remember password should be used, uncheck *Ensure password policy*.

The login gets default schema of *dbo* assigned automatically, which is created during installation. This cannot be changed later. For this reason, a second login is created and it is possible to assign this login a self-created schema or user. Leave *Default Database* temporarily to *master*. (Fig. 06) Skip this action if cityman_owner user has already been created during a previous installation!



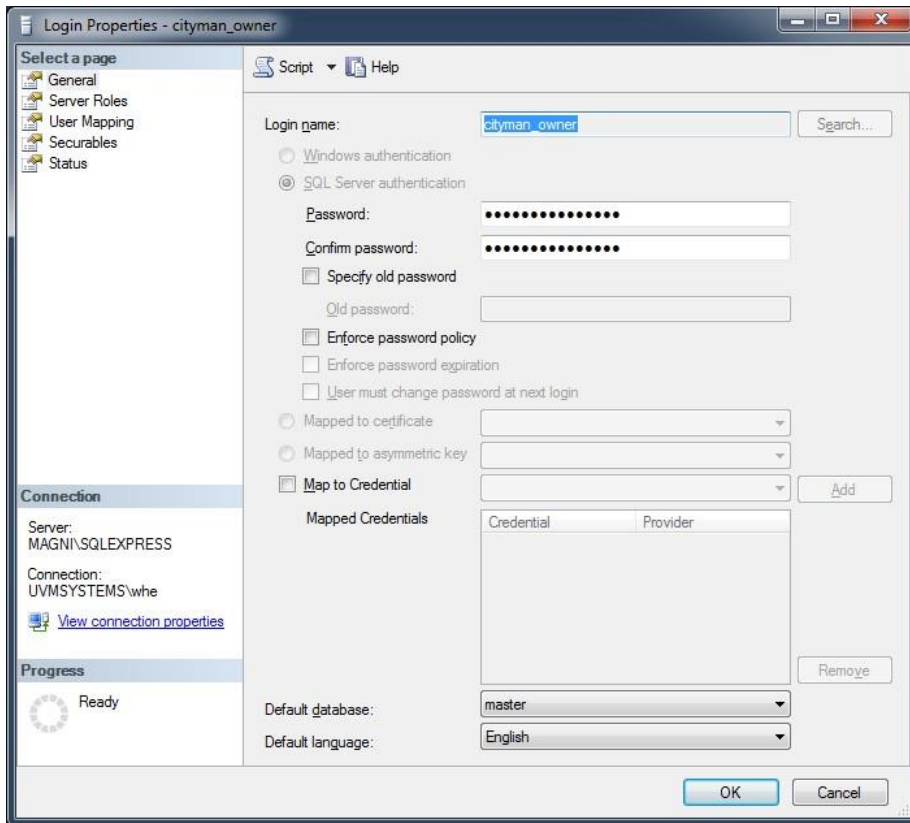


Fig. 07: Login properties

- Right click on *Security* → *Logins* and select *New Login* to create a second Login (e. g. cityman). Use *SQL Server Authentication* again uncheck *Ensure password policy*. Use your previously specified password.

Skip this action if cityman user has already been created during a previous installation!

- Right click on *Databases* and select *New Database:* (e. g. cg_test):
- Use cityman_owner as *Owner*. (Fill in in corresponding form and click *Browse*)
- Set *Initial Size* to 500 MB.
- Optionally change *Path* to a different location. Mind that folders have to be created *outside MSSQL Management Studio*!

- **IMPORTANT!!** Switch to page *Options* and set *Collation* to a case sensitive (CS) entry (e. g. Latin1_General_100_CS_AS)

- Klick *OK* to finish database creation process.

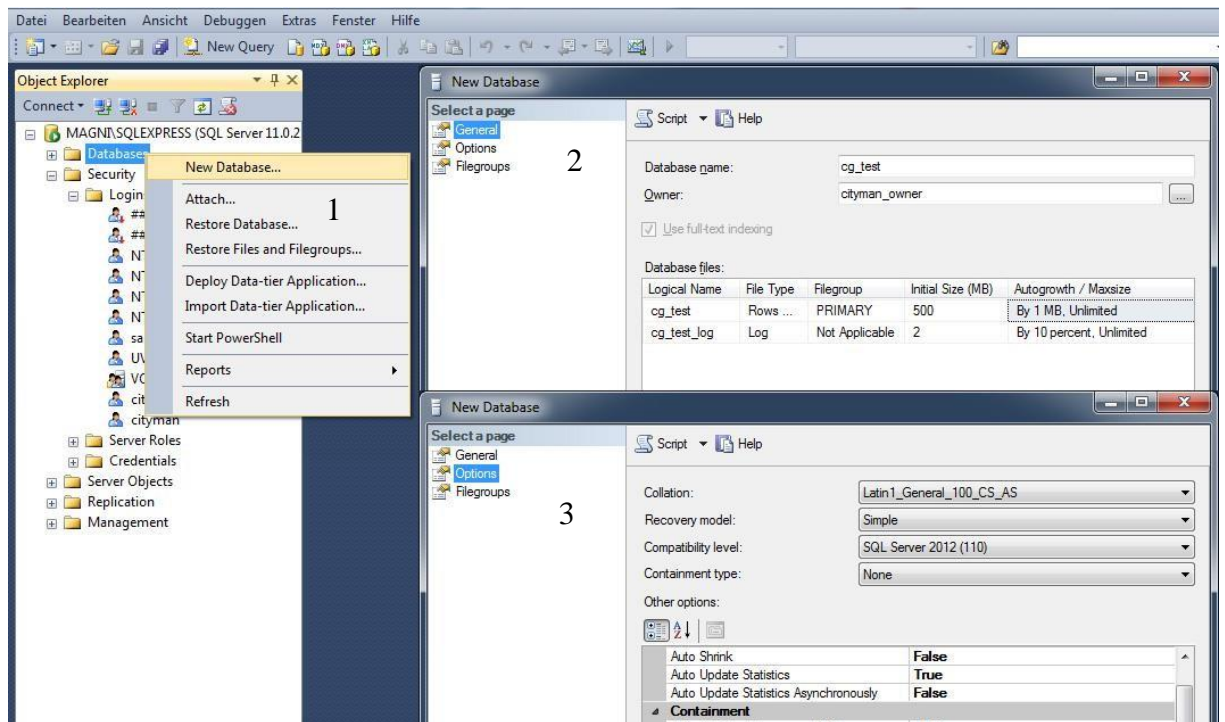


Fig. 08: Create Database

- Open newly created database in *Object Explorer* and right click on *Security*→*Schemas*. Select *New Schemas* and assign „CITYMAN“ as name (mind case sensitivity!!). Leave *Owner* empty for the moment.

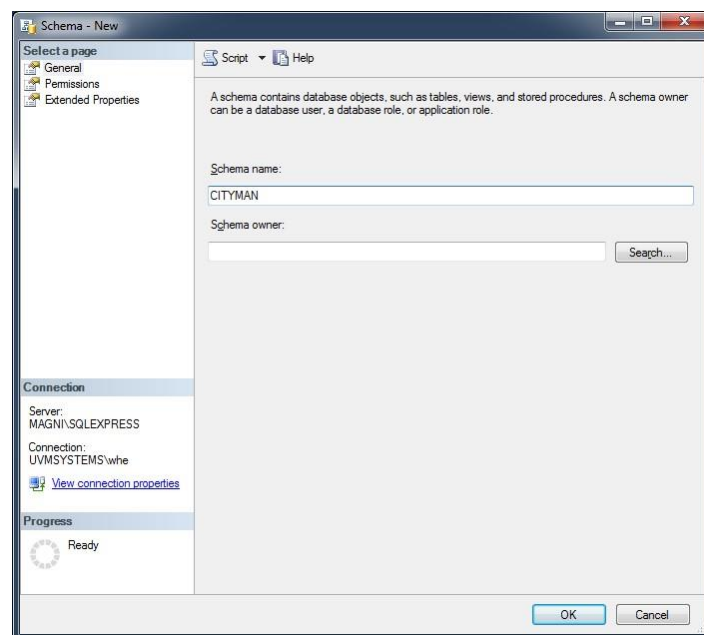


Fig. 09: Define Schema

- Right click on *Security*→*User* in the newly created database and create *New User* (e. g. citymanDB):
 - Set Login name as defined in step 9 (cityman).
 - Set *Default Schema* of new User to schema defined in step 10 (CITYMAN)
 - Switch to page *Owned Schemas* and obtain ownership for schema CITYMAN.

- Switch to page Membership. Important!!: User must have roles of db_backupoperator and db_ddladmin to have all needed rights for usage in CityGRID®.

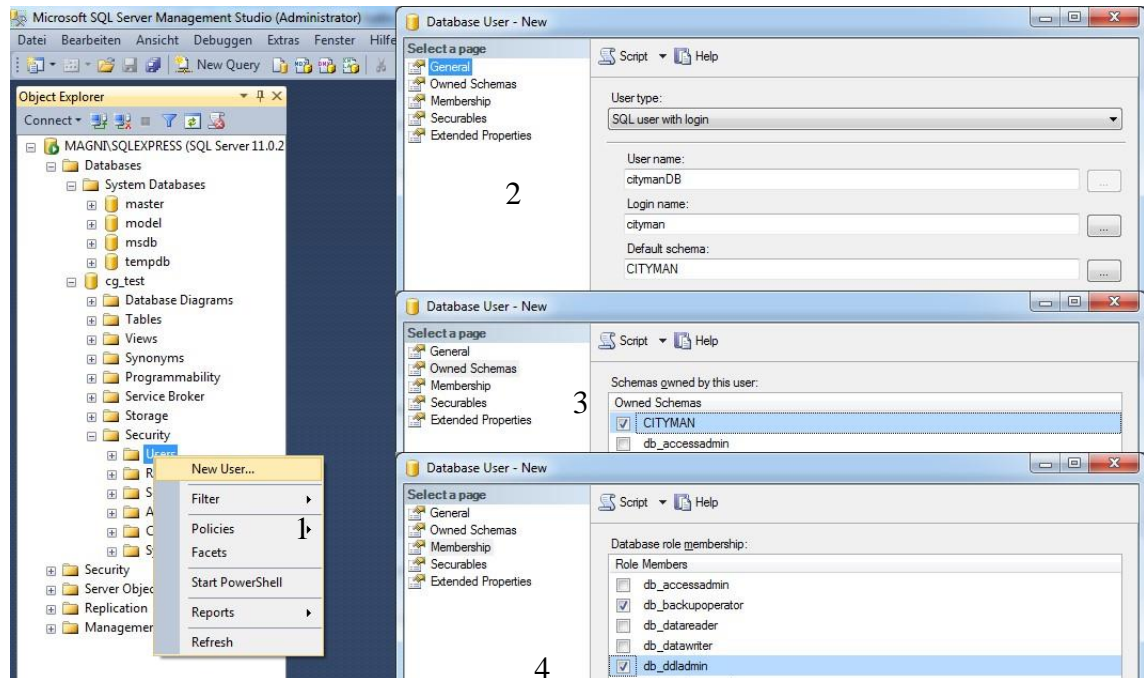


Fig. 10: Define User

- Right click on *Security*→*Logins* and the Login created in step 8 (cityman) and select *Properties*. Assign created database (cg_test) as *Default Database*.

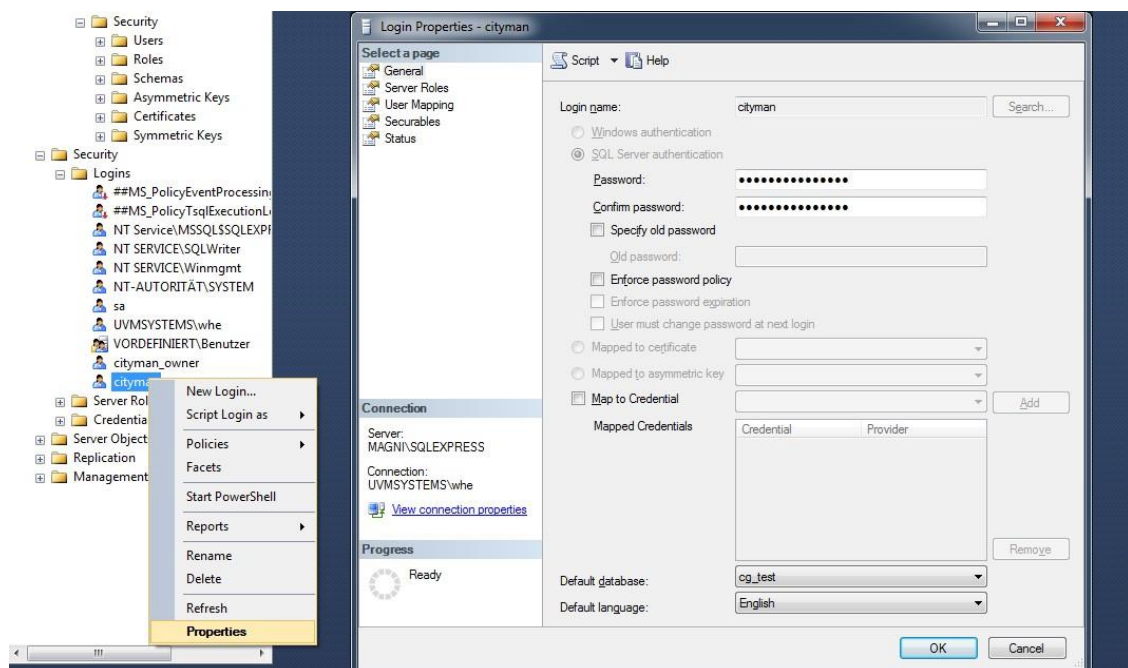


Fig. 11: assign default database

3. Creating Tables and importing schema

Import CityGRID® Schema by usage of create_schema.bat

- Navigate to the folder containing the create_schema.bat with cd
- Select the create_schema.bat with TAB
- use your login data in this format:

```
username password server databasename texturepath
```

for example:

```
create_schema.bat youruser yourpassword yourpc\sqlexpress cg_test
\\yourpc\D\textures_CityGRID_test
```

```
D:\Temp\DB\Schema SQL Server>create_schema.bat cityman city magni\sqlexpress cit
ygrid_test \\magni\D\Texturen-citygrid_test
installing schema...
schema.sql
synonyms.sql
views.sql
procedures.sql
defaults.sql
finished
check install_sql.log
Drücken Sie eine beliebige Taste . . .
D:\Temp\DB\Schema SQL Server>
```

Fig. 12: Run create_schema.bat

- Mind that server typically has got „\SQLEXPRESS“ attached to the machine name itself! –
- Textures of CityGRID® models are not stored directly into database, only the reference to the images is inserted. Images are all stored in specified texture folder (e.g. \\mycomputer\Data\Textures\Textures_CityGRID_test) The images folder can be defined on every machine, as long as the folder can be addressed in network and CityGRID® software has got read/write privileges. Application of UNC path is recommended.

After schema installation has come to an end, the log file will open up in default text editor. Check logfile for any errors and continue with further steps only for log is error free!

4. First connection with CityGRID Administrator

Establish connection to database by help of CityGRID® Administrator and apply schema update. Don't create a database dump! Click Yes at all further questions.

Import Default DTM in CityGRID® Administrator under Import→CityGRID XML.
See Manual Administrator for further assistance.



Datenbankanmeldung

Provider: SQL Server OLEDB

Server: magni\sqlexpres

Datenbankname: citygrid_test

User: cityman

Passwort: ****

Schema: CITYMAN

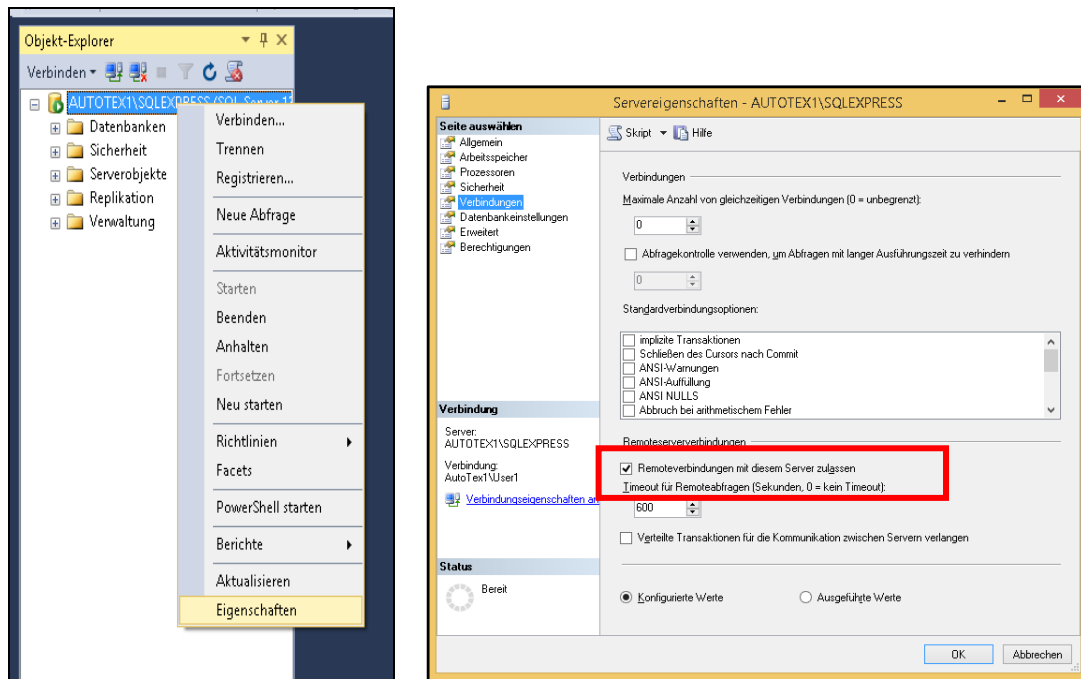
Anmelden Schließen

If necessary further users can be created (with restricted rights). Authentication has to be set to *SQL Server Authentication* every time.

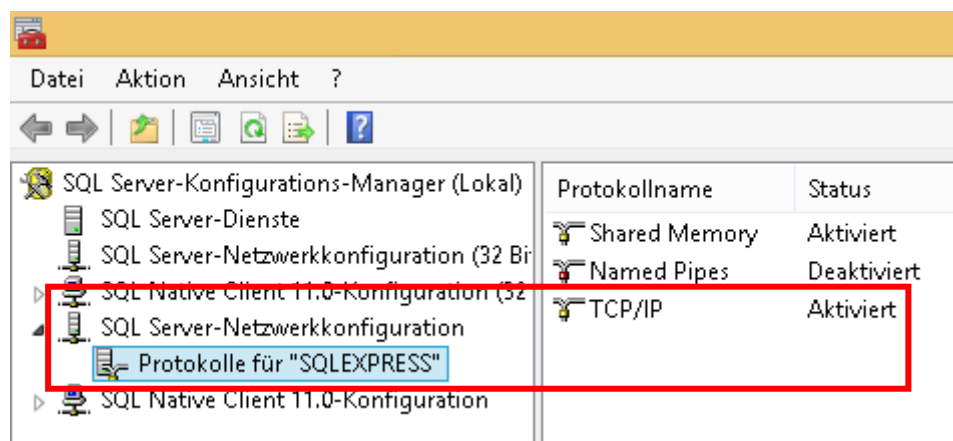
5. Possible Issues

In case remote access to the Database is not possible check

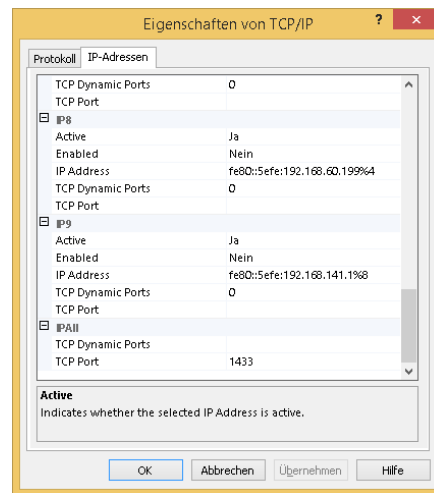
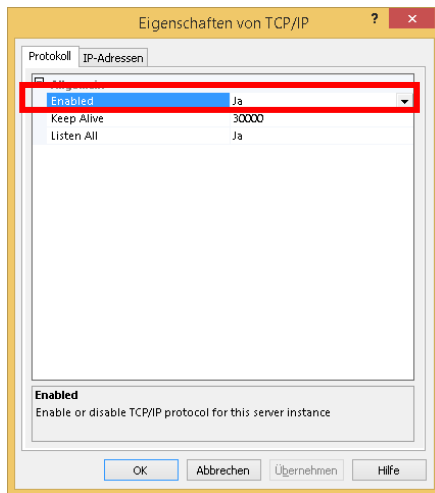
- Remote Access is enabled in Management Studio
 - Right click on *SQLExpress Instance* and select *Properties*
 - Check the Checkbox *Remote connections* is set



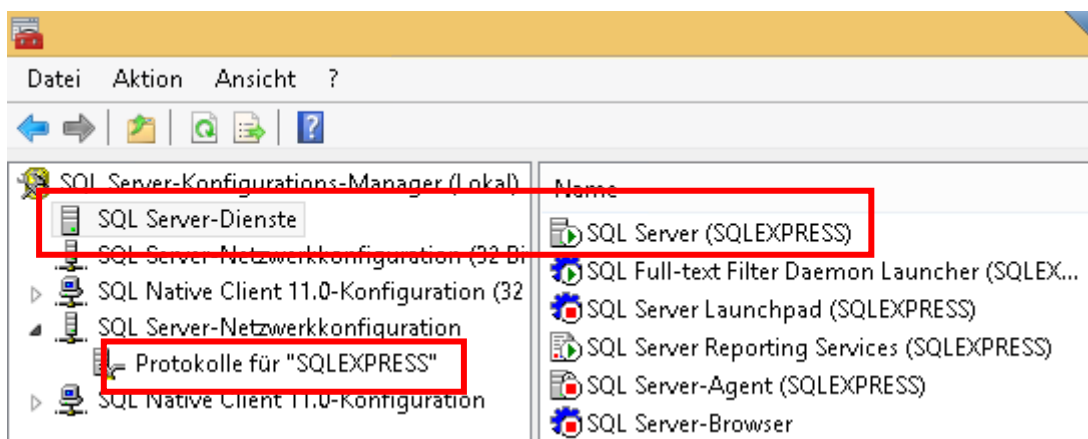
- Enable *TCP/IP Connection* and static Port in *SQL Configuration Manager*
 - Launch *SQL Configuration Manager* from Windows Start Menu (Start→ Microsoft SQL Server XXX→ *Configuration Tools*)
 - Select *SQL Server Network Configuration* → *Protocols for SQLEXPRESS*



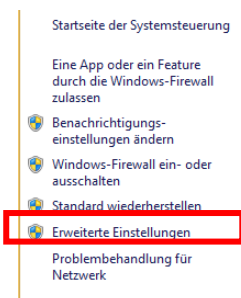
- Double Click *TCP/IP*



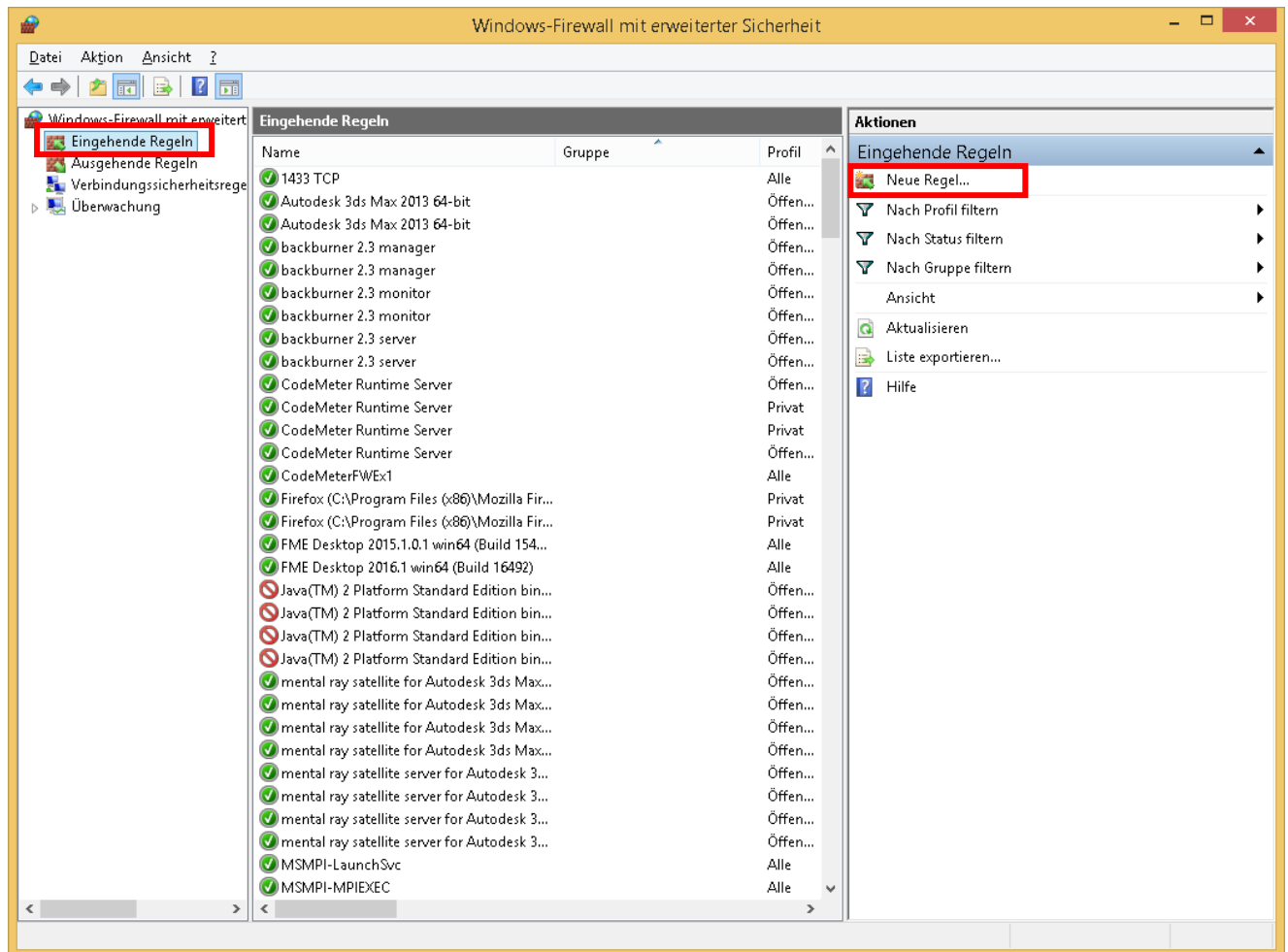
- Double Click *TCP/IP*
- Switch *Enabled* to "Yes"
- Click "Apply" and "OK"
- Change to Tab *IP-Addresses*
- Scroll down to section *IPALL* and delete value for *TCP Dynamic Ports* and set *TCP Port* to 1433
- Switch to *SQL Server Services* and restart *SQL Server (SQLEXPRESS)*



- Prepare Windows Firewall
 - Open Firewall from Windows Control Panel
 - Click *Advanced Settings*



- Click Inbound Rules and click on New Rule



- Select *Program* and use Path "C:\Program Files\Microsoft SQL Server\MSSQL13.SQLEXPRESS\MSSQL\Binn\sqlservr.exe". Allow any connection for all three Network situations in the following dialog and assign a name to the rule (SQL - sqlservr.exe)
- Repeat this procedure for TCP und UDP Port 1433. Select *Port* instead of *Program* on the first window of *Rules* wizard