

Deploying the EasyCore Database - EasyDB

EasyDB - the EasyCore Database - is based on MS SQL Server.

You can install an instance of the database from a command prompt. Change directory to the "easydb" folder of your EasyCore installation, set the environment variable EASYDB_NAME to the name you want for the database and run the batch script "deploy_easydb.bat":



EasyDB will by default be deployed to the localhost where you are running the deployment script.

You can deploy to a different host name by setting the environment variable MS_SQL_NAME to the name of your MS SQL Server.



The deployment script is using the SqlPackage.exe tool, which must be available.

It is part of the DacFramework.msi package, which can be downloaded from Microsoft sites. If installed in a standard location, the deployment script should find the executable.

EasyDB requires FILESTREAM to be enabled on the SQL Server. See next section for enabling FILESTREAM, which should be done before running the deployment script.

Enabling FILESTREAM on MS SQL Server

There are two places where you need to enable FILESTREAM.

First open SQL Server Configuration Manager (SQLServerManager15.msc). Select Properties on your SQL Server service, and enable FILESTREAM.



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Secondly open SQL Server Management Studio, select Properties, select the Advanced page and set FILESTREAM access level to Full access:

Microsoft SQL Server Management Studio File Edit View Project Tools Window He	lp		Qui
🛛 🛪 🗢 🐮 🕶 🦭 🖕 🔛 📔 📲 月 New Query	Server Properties - WIN-24	24CB3LVJUVP —	
Object Explorer Connect * *** ** ** ** ** ** ** ** ** ** ** **	Server Properties - WIN-24 Select a page General Memory Processors Security Connections Advanced Permissions Connection Server: WIN-24CB3LVJUVP Connection: sa WY View connection properties	H4CB3LVJUVP — Image: Script ▼ Pelp Pelp Image: Script ♥ Pelp Pelp Image: Script ♥ Pelp Pelp Image: Script ♥ Proverse Priority False Cursor Threshold -1 Default Pull-Rext Language 1033 Default Pull-Rext Language English Full-Text Upgrade Option Import Max Text Replication Size 65536 Optimize for Ad hoc Workloads False Two Digit Year Cutoff 2049 Use Windows fibers (lightweight pooling) False Network Packet Size 4096 Remote Login Timeout 10 V Parallelism 5 Locks </td <td></td>	
	Progress	Query Wait -1	
	Ready	FILESTREAM Access Level Sets the FILESTREAM access level. Configured values Running values 	
		OK	Cancel

You should restart SQL Server to make sure the changes are in effect.



Enabling the Resource Governor

For best performance, we recommend that the Resource Governor is enabled on the SQL Server.

This can be done in SQL Server Management Studio by a user with administration rights:





Bind EasyDB to a resource pool

To avoid possible out-of-memory issues when using EasyDB, it is recommended to bind the database to a resource pool.

The following example shows how to create a resource pool using 25% of the available memory and binding it to the database 'EasyDB1'.

```
-- set MIN MEMORY PERCENT and MAX MEMORY PERCENT
-- to the same value
CREATE RESOURCE POOL Pool EasyDB
 WITH
  (MIN MEMORY PERCENT = 25,
  MAX MEMORY PERCENT = 25 );
GO
ALTER RESOURCE GOVERNOR RECONFIGURE:
GO
-- bind the database to the just created resource pool
EXEC sp xtp bind db resource pool 'EasyDB1', 'Pool EasyDB'
GO
-- make the resource pool binding effective
ALTER DATABASE EasyDB1 SET OFFLINE
GO
ALTER DATABASE EasyDB1 SET ONLINE
GO
```

Use ALTER RESOURCE POOL to change the memory percentage values on an existing resource pool if needed. Please consult online Microsoft documentation for best practices in determining the needed resource size.



Access to the EasyCore Database - EasyDB

The default setup allows any user acces to all data in EasyDB, as long as they have SQL permissions to Select, Insert, Update, and Delete, which can be set per user in SQL Server Management Studio.

EasyDB comes with some predifined roles to make it easier to set up new users. Simply add a new user with membership to EasyDB_read_write to allow access for both reading from and writing to EasyDB :





Accessing EasyDB from EasyCore

When using the database to Load and Store data, you will on the first access in an EasyCore session be asked for credentials. You can connect using either SQL Server Authentication or Windows Authentication.





Accessing EasyDB FileTable from File Explorer

The files uploaded to EasyDB are stored in the so-called FileTable. These files can be accessed as ordinary files in the Windows file system, using File Explorer.

To locate the FileTable folder, open SQL Server Managemant Studio, and right click the dbo_FileTable in an instance of EasyDB.





Clicking "Explore FileTable Directory", will open File Explorer in the folder containing the files in EasyDB.



The network path is made up of the server name (WIN-24CB3LVJUVP in this example), the name of your SQL Server installation (mssqlserver by default), and the name of your EasyDB instance (a_EasyDB in example).

Any user that can access EasyDB using Windows Authentication, can also browse the files in this location, unless it is specifically disabled on the SQL Server.



The EasyCore Database - EasyDB - table structure

EasyDB is a relational database using generic tables to be able to store any kind of geological data that can be described in EasyCore.

There are a number of central tables to store data in a generic form:

_DataPropertyString: stores all kind of text strings

_DataPropertyInt: stores all integer values

_DataPropertyDouble: stores decimal numbers at "double" precision

The data properties are connected to the projects using a few tables:

_DataEntry : contains top an	d bottom depths	s and connects	s properties
to the data map	DS		

- _DataMap : stores data map names and types and connects them to the data sections
- _DataSection : connects the data to the file table structure
- _FileTable : contains the project names and the tree structure of project and image folders



EasyDB comes with a number of views that can be used to quickly get an overview of the data tables.

A very basic view is LithologyView, which shows all Lithology text strings in the database:

Object Explorer		WIN-24CB3LVJUVP	dbo.LithologyVie	w* ⊕ ×										
Connect · · · · · · · · · · · · · · · · · · ·	*	FielTable_1 (All Columns) path_locator stream_id file_stream file_type rname parent_path_loc cached_file_size	ator	JataSection (All Columns) Streamld TemplateData ProjectVersion ProductVersionName LastCommitUsemame SysStartTime SysEndTime	_	DataM Control Contro Control Control Control Control Cont	ap umns) w ime ne	DataEntry (All Column Id OataMapid TopDepth BottomDept SysStartTime SysEndTime	h	Di Di Constant Constant	ataPropertyString I Columns) eeertyInfold yId tartTime indTime	-	DataPropertyInfo * (All Columns) IId Name DataDictionaryId	_
dbcDataPropertyDoubleView ddcDataPropertyDoubleViewSimple ddcDataPropertyInageView ddcDataPropertyInagView ddcDataPropertyIntView ddcDataPropertyIntView ddcDataPropertyIntView ddcDataPropertyIntView ddcDataPropertyIntView		Column Column ROUND(dbo ROUND(dbo ROUND(dbo Value Name	Alias Project [Top (ft)] [Bottom (ft)] Lithology	Table _FileTable_1 _DataPropertyString	Output	Sort Type	Sort Order	Filter	Or	Or	Or			>
groo_metanticConsemage/lew doo_tedingContact/lew doo.tedingContact/lew doo.trainTgevelvew doo.trainTgevelvew doo.trainTgevelvew doo.trainTgevelvew doo.trainTgevelvew doo.trainTgevelvew doo.trainTgevelvew doo.trainTgevelvew doo.trainTgevelvew doo.StructureView doo.StructureView		SELECT_FileTable_1.n FROM dbo_DataEntr dbo_DataPrope dbo_DataSectic dbo_DataSectic dbo_FileTable / WHERE (dbo_DataMa	ame AS Project, y INNER JOIN DN dboDataEnt rtyString ON dbi n ON dboData rtyInfo ON dbo. s_FileTable_1 C p.Name = N'Lith	ROUND(dbo_DataEntry, ry.DataMapId = dbo_DataEntry, DataEntry,Id = dbo_D Map.SectionId = dbo_D DataPropertyString.Prog N dbo_DataSection.Stro ology')	TopDept ataMap.lo ataPropo ataSectio pertyInfol eamId =	h / 72 / 12, 3) AS I INNER JOIN rtyString.Entryld n.Streamld INNE d = dboDataPro FileTable_1.strea	Top (ft)], ROU! NNER JOIN R JOIN pertyInfo.ld INI n_id	ND(dboDataEntry.l	3ottomDepth / 7	12 / 12, 3) AS [E	3ottom (ft)], dboD	ataPropertyStrin	g.Value AS Lithology	
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Besides these central tables, EasyDB contains a number of other tables to hold image data, metafiles, and more.

The database has been optimized for fast loading of image data, and the EasyCore interface makes it possible to store images in the database, independent of project files, for later usage.

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