Database Providers

Article • 03/12/2023 • 3 minutes to read

Entity Framework Core can access many different databases through plug-in libraries called database providers.

Current providers

> ⓘ **Important**
>
> EF Core providers are built by a variety of sources. Not all providers are maintained as part of the Microsoft **Entity Framework Core Project** . When considering a provider, be sure to evaluate quality, licensing, support, etc. to ensure they meet your requirements. Also make sure you review each provider's documentation for detailed version compatibility information.

> ⓘ **Important**
>
> EF Core providers typically do not work across major versions. For example, a provider released for EF Core 6 will not work with EF Core 7.

NuGet Package	Supported database engines	Maintainer / Vendor	Notes / Requirements	For EF Core	Useful links
Microsoft.EntityFrameworkCore.SqlServer	Azure SQL and SQL Server 2012 onwards	EF Core Project (Microsoft)		6, 7	docs
Microsoft.EntityFrameworkCore.Sqlite	SQLite 3.7 onwards	EF Core Project (Microsoft)		6, 7	docs
Microsoft.EntityFrameworkCore.InMemory	EF Core in-memory database	EF Core Project (Microsoft)	Limitations	6, 7	docs

NuGet Package	Supported database engines	Maintainer / Vendor	Notes / Requirements	For EF Core	Useful links
Microsoft.EntityFrameworkCore.Cosmos	Azure Cosmos DB SQL API	EF Core Project (Microsoft)		6, 7	docs
Npgsql.EntityFrameworkCore.PostgreSQL	PostgreSQL	Npgsql Development Team		6, 7	docs
Pomelo.EntityFrameworkCore.MySql	MySQL, MariaDB	Pomelo Foundation Project		6, 7	readme
MySql.EntityFrameworkCore	MySQL	MySQL project (Oracle)		6, 7	docs
Oracle.EntityFrameworkCore	Oracle DB 11.2 onwards	Oracle		6	website
Devart.Data.MySql.EFCore	MySQL 5 onwards	DevArt	Paid	6	docs
Devart.Data.Oracle.EFCore	Oracle DB 9.2.0.4 onwards	DevArt	Paid	6	docs
Devart.Data.PostgreSql.EFCore	PostgreSQL 8.0 onwards	DevArt	Paid	6	docs
Devart.Data.SQLite.EFCore	SQLite 3 onwards	DevArt	Paid	6	docs
FirebirdSql.EntityFrameworkCore.Firebird	Firebird 3.0 onwards	Jiří Činčura		6	docs
IBM.EntityFrameworkCore	Db2, Informix	IBM	Paid, Windows	6	getting started
IBM.EntityFrameworkCore-lnx	Db2, Informix	IBM	Paid, Linux	6	getting started
IBM.EntityFrameworkCore-osx	Db2, Informix	IBM	Paid, macOS	6	getting started

NuGet Package	Supported database engines	Maintainer / Vendor	Notes / Requirements	For EF Core	Useful links
EntityFrameworkCore.Jet	Microsoft Access files	Bubi		6	readme
Google.Cloud.EntityFrameworkCore.Spanner	Google Cloud Spanner	Cloud Spanner Ecosystem	Currently in preview	6	tutorial
Teradata.EntityFrameworkCore	Teradata Database 16.10 onwards	Teradata		3	website
FileContextCore	Stores data in files	Morris Janatzek	For development purposes	3	readme
FileBaseContext	Store tables in files	k.D.g	For development purposes	7	readme
EntityFrameworkCore.SqlServerCompact35	SQL Server Compact 3.5	Erik Ejlskov Jensen	.NET Framework	2	wiki
EntityFrameworkCore.SqlServerCompact40	SQL Server Compact 4.0	Erik Ejlskov Jensen	.NET Framework	2	wiki
EntityFrameworkCore.OpenEdge	Progress OpenEdge	Alex Wiese		2	readme

Adding a database provider to your application

Most database providers for EF Core are distributed as NuGet packages, and can be installed as follows:

.NET Core CLI

.NET CLI

```
dotnet add package provider_package_name
```

Once installed, you will configure the provider in your `DbContext`, either in the `OnConfiguring` method or in the `AddDbContext` method if you are using a dependency injection container. For example, the following line configures the SQL Server provider with the passed connection string:

```C#
optionsBuilder.UseSqlServer(
    "Server=(localdb)\mssqllocaldb;Database=MyDatabase;Trusted_Connection=True;");
```

Database providers can extend EF Core to enable functionality unique to specific databases. Some concepts are common to most databases, and are included in the primary EF Core components. Such concepts include expressing queries in LINQ, transactions, and tracking changes to objects once they are loaded from the database. Some concepts are specific to a particular provider. For example, the SQL Server provider allows you to configure memory-optimized tables (a feature specific to SQL Server). Other concepts are specific to a class of providers. For example, EF Core providers for relational databases build on the common `Microsoft.EntityFrameworkCore.Relational` library, which provides APIs for configuring table and column mappings, foreign key constraints, etc. Providers are usually distributed as NuGet packages.

> ⓘ **Important**
>
> When a new patch version of EF Core is released, it often includes updates to the `Microsoft.EntityFrameworkCore.Relational` package. When you add a relational database provider, this package becomes a transitive dependency of your application. But many providers are released independently from EF Core and may not be updated to depend on the newer patch version of that package. In order to make sure you will get all bug fixes, it is recommended that you add the patch version of `Microsoft.EntityFrameworkCore.Relational` as a direct dependency of your application.