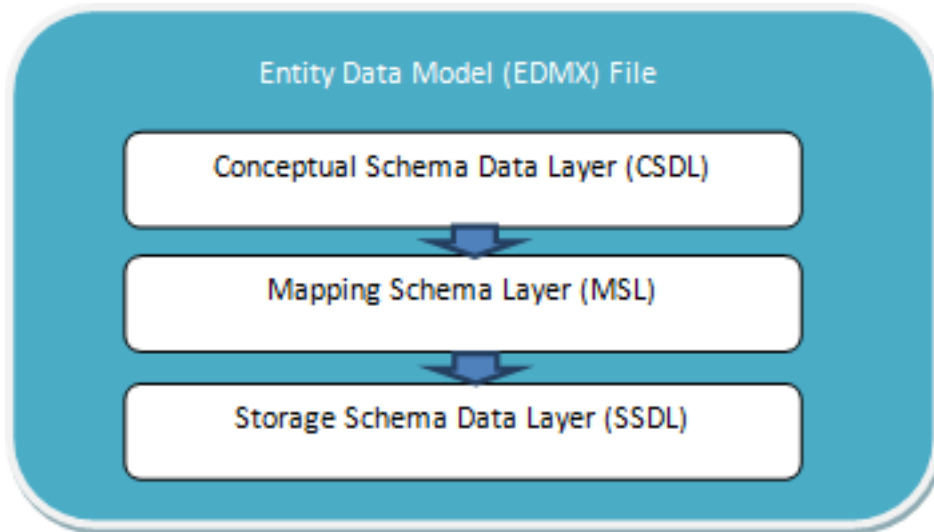


The [Entity Framework](#) relies on an XML representation of the EDM (**EDMX**) with three layers.



The top CSDL layer defines the entities, the bottom SSDL layer defines the database schema, and the middle MSL mapping layer aligns the CSDL and SSDL. The three layers can be exported as three free-standing XML files with file extensions .csdl, .msl, and .ssdl.

Most developers won't see these files; they'll work with the composite EDMX file which has four sections as seen here:

```
<?xml version="1.0" encoding="utf-8" ?>
<edmx:Edmx Version="2.0" xmlns:edmx="http://schemas.microsoft.com/edmx/2004/01/datamodel.xml" ?>
  <!-- EF Runtime content -->
  <edmx:Runtime>
    <!-- SSDL content -->
    <edmx:StorageModels>...</edmx:StorageModels>
    <!-- CSDL content -->
    <edmx:ConceptualModels>...</edmx:ConceptualModels>
    <!-- C-S mapping content -->
    <edmx:Mappings>...</edmx:Mappings>
  </edmx:Runtime>
  <!-- EF Designer content (DO NOT EDIT MANUALLY BELOW HERE) -->
  <Designer xmlns="http://schemas.microsoft.com/2003/11/Designer" ?>...</Designer>
</edmx:Edmx>
```

The screenshot shows a code editor window titled 'SimpleNorthwind.edmx'. The XML content is displayed with line numbers on the left. The XML structure is as follows: The root element is <edmx:Edmx> with Version="2.0" and a namespace. It contains a <!-- EF Runtime content --> comment, followed by a <edmx:Runtime> element. Inside <edmx:Runtime>, there are three elements: <!-- SSDL content --> followed by <edmx:StorageModels>...</edmx:StorageModels>, <!-- CSDL content --> followed by <edmx:ConceptualModels>...</edmx:ConceptualModels>, and <!-- C-S mapping content --> followed by <edmx:Mappings>...</edmx:Mappings>. The <edmx:Runtime> element is closed with </edmx:Runtime>. After this, there is a <!-- EF Designer content (DO NOT EDIT MANUALLY BELOW HERE) --> comment, followed by a <Designer> element with a namespace and content, which is closed with </Designer>. Finally, the root element is closed with </edmx:Edmx>.

SSDL – Storage Schema Definition

Describes the database schema (tables and columns).

CSDL – Conceptual Schema Definition

Describes entities (types and properties).

C-S – Conceptual-Storage Mapping

The MSL that maps conceptual entities to storage objects.

Designer – ignore it

Records layout of entity graphics on the designer canvas.

The storage schema defines a Storage Model that describes the database layout. The storage model XML language is database-neutral ; it could describe a Microsoft SQL Server schema ... or MySQL schema or Oracle schema. The Entity Framework is open to many database products – any database product for which there is an EF Data Provider. Most popular

relational database products have an EF Data Provider. Of course EF provides its own SQL Server Data Provider out-of-the-box; you can search the web for other providers for other databases.

The conceptual entity schema defines a Conceptual Model that describes entity types and their properties. The conceptual model XML language is implementation-neutral. It doesn't prescribe a particular representation. Anyone can read the conceptual schema and interpret it as they see fit.

The typical Conceptual Model interpreter is a tool that generates .NET entity classes. The Entity Framework ships with a primary code generator that runs automatically every time you save changes to the EDM. You can replace that default generator with your own code generator ... and DevForce [does just that](#).

Although you can edit the EDMX with a text editor that is far from ideal. Most developers turn to the graphical editor in Visual Studio called the [EDM Designer](#).