

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

www.IT-Visions.de

Dr. Holger Schwichtenberg

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
Company	Microsoft, USA	Microsoft, USA	Microsoft, USA	Telerik Bulgaria (before: Vanatec)	Open Source	HoT - House of Tools Development GmbH, Germany	Tech Talk GmbH, Austria
Website	http://msdn.microsoft.com/en-us/library/esbykkzb(VS.71).aspx	http://msdn2.microsoft.com/en-us/library/bb425822.aspx	http://msdn2.microsoft.com/en-us/library/aa697427(VS.80).aspx	http://www.telerik.com	http://www.nhibernate.org	http://www.netdataobjects.com	http://www.genome.com
Price	Free	Free	Free	Free (Express)/ 399 \$ (599 \$ with Source Code)	Free	Free (for Open Source Projects)/ 798 Euro (for commercial projects)	299-1800 Euro
Former Products	None	None / "ObjectSpaces"	None / "ObjectSpaces"	Ported from Java (JDO)	Ported from Java (Hibernate 2.1)	None (First beta of NDO in 2002)	None (First Beta of Genome in 2001)
First RTM Release	January 2003	November 07	August 2008	March 2005	October 2005 (1.0)	April 2005	November 2002 (v1.0)
Current Version	3.5.1 (August 2008)	1.0 (November 2007)	1.0 August 2008 (2.0 Beta 1)	Q2 2009 (July 2009)	2.1 (July 2009)	2.0	3.3
Requirements							
Supported Database Management Systems (DBMS)	Supported from Microsoft: MSSQL MSSQL Compact Supported from other Vendors: Oracle SQLLite	MSSQL MSSQL Compact	Supported from Microsoft: MSSQL MSSQL Compact Supported from other Vendors: DB2 Informix	MSSQL Server 200, 2005, 2008 Oracle MySQL Sybase SQL Anywhere, ADS Firebird Planned:	MSSQL DB2 Ingres Postgres MySQL Oracle Sybase Firebird SQLLite	Sql Server Access Oracle Firebird MySql Postgres WebDB	MSSQL, MSSQLCE Oracle DB2 (LUW+AS/400)

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
	DB2 Sybase		MySQL PostgreSQL Progress Oracle Ingres Sybase VistaDB Sybase SQLite Firebird Synergex Virtuoso Any Database with ODBC or JDBC driver	MSSQL Azure MS SQL Server CE VistaDB SQLite Postgres			
SQL Server 2008 data types	Y	Y	Y	planned	Y	?	?
Is the Code Provider neutral? (can you easily change the DBMS)	N	N	Y	Y	Y	Y	Y
Minimum required .NET version	1.0	3.5	3.5 SP 1	2.0	2.0	2.0	1.1 (for Genome 2.x) 2.0 (for Genome 3.x) 3.5 (for Genome 3.x with

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

www.IT-Visions.de

Dr. Holger Schwichtenberg

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
							LINQ)
Support for Mono	N	N	N	N (planned)	Y	Y	N
Other software requirements	N	N	N	N	N	N	N
Supported .NET languages	VB, C#	VB 9.0, C# 3.0	VB 9.0, C# 3.0	All	All	All	VB, C# All other (without Visual Studio integration)
Scope							
Use in Windows Desktop Applications	Y	Y	Y	Y	Y	Y	Y
Use in Web Applications	Y	Y	Y	Y	Y	Y	Y
Use in Compact Framework Applications	Y	N	N	N	N	N	N
Use in SQLCLR Code	N	N	N	N	N	N	N
Tools							
Visual Studio Project Templates	N	N	N	N	N	N	Y (mapping project, web application project)
Visual Studio Element	Y	Y, LINQ-to-SQL classes (.dbml)	Y, ADO.NET Entity Data Model (.edmx)	N	N	Y	Y

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
Templates							
Visual Studio Add-In	Y	Y (VS 2008)	Y (VS 2008)	Y (VS 2005, 2008, 2010)	Y (VS 2005)	Y (VS 2005, 2008)	Y (VS 2005 and VS 2008)
Designer	Y	Y	Y	N (planned)	Y (nHibernate Add-In)	Y	N
Wizard	Y	N	Y Entity Data Model Wizard	Y Enable Project Wizard Mapping Wizard Data Form Wizard Backend Configuration Wizard Reverse Engineering Wizard FetchPlan Browser	N	Y	Y Genome web application project wizard ASP.NET CRUD pages wizard (list page, details page) Database Reverse Engineering
Other GUI Tools	N	N	eSqlBlast (Entity SQL Console)	OQL Query Browser (test Queries and shows generated SQL and results)	SmartCode Studio CodeSmith MyGeneration	N	Genome Query Analyzer
Commandline Tools	xsd.exe	SQLMetal.exe	EdmGen.exe	VEhance VSchema	Hbm2ddl Hbm2net	Y	ddsc (mapping)

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

www.IT-Visions.de

Dr. Holger Schwichtenberg

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
					MapGenerator		schema compiler) wopc (data transfer object compiler) gas.exe (pessimistic locking server console)
Documentation	CHM HTML	CHM HTML	CHM HTML	CHM HTML HxS	PDF HTML HxS	CHM	CHM PDF
Mapping Techniques							
Internal Data Access API	ADO.NET	ADO.NET	ADO.NET	ADO.NET	JDBC	ADO.NET	ADO.NET
ORM Base Technique	Code Generation (Design Time)	Reflection + Runtime Code Generation	Reflection + Runtime Code Generation	Enhancing (Compile Time)	Reflection + Runtime Code Generation	Enhancing (Compile Time)	Additional Assembly Generation during compile time (MSBuild integrated, custom Visual Studio project type)
Forward Engineering Mapping / Code First	N	Y (Runtime only)	N / Y in EF 2 (SQL Script Generation in VS)	Y	N	Y	Y

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
Reverse Mapping / Database First	Y	Y	Y	Y	Y	Y (NDA Class Generator Beta)	Y
Merge Schema Changes / Round Trip Engineering	Y (manual selection)	N	N	Y	N	Y	N (planned for v3.5)
Default Naming of generated BO classes	Table Name + "Row"	Table Name	Table Name	Table Name (underscores are removed) Plural to Singular Conversion	Table Name	Table Name	Table Name (configurable with strategies: singularisation, unchanged, regular expressions)
Default Naming of generated BO collections	Table Name + "DataTable"	Table Name + "s" (+ "s" get be switched off)	Table Name	Table Name + "s"	Table Name	Table Name	Table Name (configurable with strategies: singularisation, unchanged, regular expressions)
DAL							
Generated (low-level)	Y	Y	Y	N	N	?	?

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
DAL							
DAL base class	TableAdapter	DataContext	ObjectContext	n/a	n/a	?	?
DAL separated from BO declarations	Optional	N	N / Optional in EF 2	n/a	n/a	?	?
Business Objects							
Support for POCO (plain old CLR objects) / Persistence Ignorance	N	N	N	N	Y	Partially (Only as part of a persistent class).	N Genome WOP (WireObjectProtocol) can be used for transforming persistent objects into POCO data transfer objects.
BO class requires specific base class	Y (System.Data.DataRow)	N	Y (System.Data.Objects.DataClasses.EntityObject)	N	N	N	N
BO class requires Annotation	N	Y	Y	Y	N	Y	N
BO class requires a parameterless ("no-args") constructor	N	Y	Y	Y	Y	Y	N

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
BO class must be abstract	N	N	N	N	N	N	Y
Generated BO classes have Data Binding support for Windows Forms	Y, INotifyPropertyChanged (über DataRowView)	Y, INotifyPropertyChanged, INotifyPropertyChanged	Y, INotifyPropertyChanged, INotifyPropertyChanged, IListSource	Y, Object View.	N	Optional	N
Generated BO classes have Data Binding support for ASP.NET Object Data Source	Y, ObjectDataSource	Y, LinqDataSource	Y, EntityDataSource	Y, OpenAccessDataSource	N	N	Y, GenomeDataSource
Generated BO classes are annotated as [Serializable]	Y (DataSet, DataTable)	N	Y	Y (optional)	Y	N	Y (optional)
Generated BO classes have WCF DataContract support	N	Y (optional)	Y	Y (optional)	N	N	N (planned)
Serialization of Single Objects	Y	Y	Y	Y	Y	Y	Y
Serialization of Object Trees (Graph	Y	N	Y	Y	Y	Y	Y

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

www.IT-Visions.de

Dr. Holger Schwichtenberg

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
Serialization / Serialization of Assoziations)							
Generated BO classes are partial classes	Y	Y	Y	Y	Y	N	N
Supported Mappings							
Persisting fields and/or properties	n/a	Fields	Fields	Fields	Properties	Fields (Version 2.0: Properties too)	Properties
Support for Nullables	Partial (no support for System.Nullable)	Y	Y	Y	Y (with System.Nullable from Version 2.0 on)	Y	Y
Mapping 1 class <-> 1 table	Y	Y	Y	Y	Y	Y	Y
Mapping 1 class <-> n tables	N	N	Y	Y	Y	N	Y (with views and instead-of-triggers)
Mapping n classes <-> 1 table	N	N	Y	Y	Y	Y	Y (with views and instead-of-triggers)
Mapping n classes m tables	N	N	Y	Y	Y	N	Y (with views and instead-of-triggers)
BO Associations	Y	Y	Y	Y	Y	Y	Y

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
0/1:1							
BO Associations 0/1:N	Y	Y	Y	Y	Y	Y	Y
BO Associations 0/N:M	N	N	Y	Y	Y	Y	Y
Requirements for 0/1:1 Associations	Y, DataRow	Y, EntityRef	N / EntityReference	N (POCO)	N (POCO)	N	N
Support collection types	DataTable	EntitySet	EntityCollection	ArrayList, IList, ICollection, IDictionary, TrackedList<T>, TrackedBindingList<T>	IList, ISet, IDictionary, ICollection	IList	IEnumerable<T>, ICollection<T>
Code-based Mapping (based on Annotations)	N	Y	N	N	Y (optional, with NHibernate Mapping Attributes)	Y (optional – creates mapping file)	N
XML-based Mapping	Y	Y	Y	Y	Y	Y	Y
Mapping File Generation	Y	Y	Y	Y	Y	Y	Y
Compile time processing and error checking of mapping	Y	N	N	Y (during schema update)	N	N	Y
Filtered Mapping, Inheritance	N	Y	Y	Y	Y	N	Y

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
(alias: Single-Table inheritance, Table per Hierarchy (TPH), Shared Mapping (Diskriminator), Flat Polymorphism)							
Vertical Mapping (alias Joined Mapping, Inheritance Table per (concrete) Type (TCT), Vertical Polymorphism)	N	N	Y	Y	Y	N	Y
Horizontal Mapping (alias: Inheritance, Table per Subclass, Table per Leaf,	N	N	Y	Y	Y	Y	Y (with views and instead-of-triggers)

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
Horizontal Polymorphism)							
Table Access without Object Mapping	Y (System.DataSet)	N	Y (Entity Client)	Y (direct SQL)	N	N	N
Composite Keys	Y	Y	Y	Y	Y	Y	Y
Associations by Key (Associations can be constructed by the key attributes)	Y	Y	N	Y	Y	Y	Y
Associations by Object (Associations can be constructed by object references)	Y	Y	Y	Y	Y	Y	Y
Views	Y	Y	Partial	Y	Y	?	?
Data Query							
Name of Container	DataSet	DataContext	ObjectContext	ObjectScope	Session	PersistenceManager	DataDomain
Query Languages	SQL (LINQ only client-side)	LINQ SQL	Entity SQL (eSQL) LINQ	OQL (OMG) LINQ SQL	HQL SQL LINQ (since 2.1) API	Own SQL-like Query language SQL LINQ planned	LINQ OQL SQL
Query API for dynamic	N	Y (optional DynamicLINQ)	Y (QueryBuilder)	Y (DynamicLINQ)	Y (Criteria API. Planned:	?	?

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
Queries					QueryOver API)		
SQL-Support	Y	Y	N	Y	Y	Y	Y
LINQ-Support	Y (only client-side)	Y	Y (LINQ-to-Entities)	Y	Planned	Planned	Y
Generates SQL Queries are parameterized	Y	Y	Y	Y	Y	Y	Y
User provided ADO.NET Connections	Y	Y	Y	N, own connection pool for better handling and sharing; using ADO.NET connections	Y	Y (optional)	Y
Compiled Queries	N	Y	Y	Y	Y	N	Y
Lazy Loading / Deferred Loading / Delayed Loading	Y	Y, default	Y, default	Y, default	Y, default	Y, default	Y, default
Transparent Lazy Loading	N	Y	N	Y	Y	Y	Y
Eager Loading / Immediate Loading	N	Y	Y (Query Paths)	Y (Fetch Groups/Fetch Plans)	Y	Y	Y
Eager Loading Scope	n/a	Context	Query	Query	Query	Query	Query

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
Data Update							
Storing changed Data	Y	Y	Y	Y	Y	Y	Y
Change Tracking (Single Object)	Y	Y	Y	Y	Y	Y	Y
Change Tracking (Collection)	Y	Y	Y	Y	Y	Y	Y
Change Tracking on individual properties	N (although a primitive dataset does this with the commandbuilder)	Y	Y	Y	Y		
Rejections	Y	N	N	?	?	?	?
Save all changes	Y	Y	Y	Y	Y		
Save an individual object	Y	N	N	N	Y	?	?
Send multiple updates in a batch	Y	N	N	Y	Y	?	?
Support for Auto Increment Columns (including auto loading of values)	Y	Y	Y	Y	Y	Y	Y
Support for Versioning Columns	?	Y	Y	Y	Y		

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
(including auto loading of values)							
Support for Columns with default values (generated by the database)	N	N	N	Y	Y	?	?
Transactions supported	Y	Y	Y	Y	Y	Y	Y
Automatic Transactions when Saving	N	Y	Y	Y	Y	?	?
Integration with System.Transactions	Y	Y	Y	Y	Y	Y	Y
Explicit Transactions required for all write operations	N	N	N	Y	Y	N	Y
Pessimistic Locking	Y, with transactions	Y, with transactions	Y, with transactions	Y, with transactions	Y, with transactions	Y, with transactions	Y, with transactions or with pessimistic lock server (Genome Application Server)
Conflict	Y	Y	Y	Y	Y	Y	Y

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
Detection (Optimistic Locking)							
Conflict Detection – Original Values ("Dirty Columns")	Y	Y	Y	Y	Y	N	Y
Conflict Detection – Original Timestamps	Y	Y	Y	Y	Y	Y (own Guid-based mechanism)	Y
Conflict Detection – Version Field	Y	Y	Y	Y	Y	N	Y
Lazy Loading of scalar properties of object instances / Partial Object Population	N	Y	Partial (only with anonymous types or different entities)	Y	Y	Y	Y
Multi-Tier and Remoting							
Multi-Tier-Support (Disconnect/detached Objects)	Y	Partial	V1: Partial V2: Y	Y	Y	Y	Y (with Wire Object Protocol (WOP))
Container for Disconnected Objects	DataSet	N	Y, with EntityBag (EF 2: self-tracking Entities)	ObjectContainer	?	?	?
Change Tracking for Disconnected	Y (Method GetChanges())	N	Y (EntityBag (AddOn)) (EF 2: self-tracking)	Y	N	N	N

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
/Detached Objects			Entities)				
JSON Serialization	N	Y	N	N	Y	?	?
Support for ADO.NET Data Services (IExpandProvider, IUpdateable)	N	Partial (read only)	Y	N (planned)	Y	?	?
Stored Procedure Support							
Stored Procedure Support for loading Data	Y (including a Stored Procedure Generator)	Y	Y	Y	Y	Y	Y
Stored Procedure Support for updating Data	Y (including a Stored Procedure Generator)	Y	Y	Y	Y	Y	Y
Call Stored Procedures as Methods	Y	Y	Y	Y	?	?	?
Stored Procedure Support with multiple result sets	N	Y	Y	N	N	N	N
Support for Table-Valued Functions	N	N	Y	AutoInc	Y	Partial	Y (can be generated automatical

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

www.IT-Visions.de

Dr. Holger Schwichtenberg

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
							ly from LINQ or OQL expressions)
Caching							
First-Level-Cache (Session Level)	Y	Y	Y	Y	Y	Y	Y
2 nd Level Caching	N	N	N	Y	Y	Y	Y
2 nd Level Caching in Memory	N	N	N	Y	Y (MemCache)	Y	Y
2 nd Level Caching in ASP.NET Cache	N	N	N	N	Y (SysCache)	N	N
2 nd Level Caching in Database	N	N	N	N	Y	N	N
2 nd Level Caching in File System	N	N	N	N	Y	N	N
Distributed Caching	N	N	N	Y (MSMQ)	Y (NCache (commercial))	N (planned)	N
Custom Caching	N	N	N	N (vendor will provide implementations on request)	Y	N	Y
Monitoring							
Logging/Tracing	N	Y	Y	Y (TraceSources)	Y (log4net)	Y	Y

Comparison of Object Relational Mapping Tools for the .NET Framework

Author: Dr. Holger Schwichtenberg, www.IT-Visions.de

Version 2.0 **BETA**, 25. September 2009

	Typed DataSet (TDS)	LINQ-to-SQL (formerly "DLINQ")	ADO.NET Entity Framework Object Services	Telerik OpenAccess (VOA)	NHibernate	.NET Data Objects (NDO)	Genome
Performance Counter	N	N	N	Y	N	N	N
Extensibility							
Interception / Lifecycle Events / Hooks / Custom Code	Y	Y	Y (some)	Y	Y	Y	Y
Custom DB Providers	Y (ADO.NET Provider)	N (DB Provider API not documented)	Y (ADO.NET Entity Framework Provider)	N	Y	Y	N
Custom Code Generators	Y	Y	Y V1: SingleFileCodeGenerator V2: T4 templates	N (planned)	?	?	?
Other Extensibility	N	N	N	N	Other Persistence mechanisms SQL Dialect SQL Language Substitutions ID Generator Code Generator Caching Provider, Support for dependency injection	Various callbacks, Own NDO Provider, Own Persistence Handler	Caching Provider