

## DataDirect Connect<sup>®</sup> for ADO.NET, Release 3.1, Service Pack 1

### Overview

DataDirect Connect for ADO.NET is the industry's only suite of ADO.NET data providers with a 100% managed architecture, eliminating the need for database clients, boosting performance, and delivering a flexible, secure connection to Oracle, DB2, Microsoft SQL Server and Sybase.

DataDirect Connect for ADO.NET, Release 3.1 offers:

- **Support for the Microsoft Enterprise Library Data Access Application Block (DAAB)** – Simplifies application development by wrapping common data access tasks into portable code that supports multiple applications and databases. DAAB classes provide access to the most frequently used features in ADO.NET greatly improving developer productivity. DAAB support requires Release 3.1, SP1.
- **Operating System Authentication Support** – Allows organizations to create a Single Sign-On environment that bolsters security, eliminates the need for users to log in separately for each application, and reduces the costs associated with managing user accounts.
- **Data Encryption Support** – Allows critical data to be protected that is transmitted between the application and the database server using SSL, an industry standard encryption technology.
- **New Database and Platform Support** – DataDirect continues to provide comprehensive support for the latest technologies, including 64-bit .NET Framework, .NET Framework 3.0, Vista, DB2 9.1, DB2 V5r4 and IPv6.
- **Extensive Functional Enhancements** – Support for features like the XML Data type, configurable batch update support, and meta data collection throttling enables developers to build compelling applications in minimal time.
- **New Interoperability Features** – DataDirect continues to deliver functionality that makes it easy for an organization to support multiple databases. This release includes support for native parameter markers and binding behavior, consistent security mechanisms (OS authentication and SSL encryption) and interoperable XML support.

A detailed list of new features and enhancements is included below, along with a link to a summary of previous releases.

**Note:** DataDirect Connect for ADO.NET, Release 3.1 has been certified for use with applications running on the .NET Framework 2.0 and 3.0. Applications that need to use the .NET Framework 1.x functionality should use [DataDirect Connect for .NET, Release 2.2 data providers](#).

## What's New in Release 3.1

### **Support for the Microsoft Enterprise Library Data Access Application Block (DAAB)**

The patterns & practices Microsoft Enterprise Library is a library of application blocks designed to assist developers with common enterprise development challenges. The Data Access Application Block (DAAB) is an application block that included reusable and extensible source code-based guidance that simplifies development of common data access functionality in .NET Framework applications. DataDirect now supports the DAAB, which simplifies application development by wrapping common data access tasks into portable code that supports multiple applications and databases. Applications can use the DAAB for tasks such as passing data through application layers and return changed data back to the database. By eliminating the need to keep writing the same data access tasks for each new or revised application, using the Data Access Application Block lets developers spend their time in more productive ways. DAAB support requires Release 3.1, SP1.

### **Enhanced support for Meta-data Schema Options**

In order to handle meta-data queries that result in a large amount of information, DataDirect now provides tunable and fine-grained control of what meta-data is returned to the ADO.NET provider to the application. The developer can configure whether specific collections (e.g., Descriptions, Synonyms, etc.) are returned as the result of a `DBCommand.GetSchema()` method call. This capability requires Release 3.1, SP 1.

### **Improved Integration with Visual Studio 2005**

DataDirect has updated its support for Visual Studio 2005, including integration of the DataDirect Performance Tuning Wizards, DBA tools including Table and View Wizards, as well as developer aids with standard Templates and Toolkits. This capability requires Release 3.1, SP 1.

### **Support for 64-bit .NET Framework**

The Microsoft .NET Framework is available in both a 32-bit and 64-bit version. The 64-bit version is designed for x64 processors such as AMD Opteron and Intel Xeon with Extended Memory 64 Technology (EM64T). Organizations are turning to 64-bit platform solutions for the increased scalability, better performance and reduced query times that result from the greater memory support and greater processing capabilities inherent in 64-bit platforms. DataDirect is the only vendor that provides ADO.NET connectivity in 64-bit environments for all major databases in our standard *Connect for ADO.NET* product version. DataDirect installs the components necessary to support both 32-bit and 64-bit versions, greatly simplifying the installation process and making it easier to develop a common application image that supports both platforms.

### **Operating System (OS) Authentication (aka Single Sign-On/Kerberos)**

OS authentication is a trusted third-party authentication service that verifies user identities. The latest release of DataDirect *Connect for ADO.NET* data providers supports NTLM, which delivers a session security mechanism that provides for

message confidentiality (encryption) and integrity (signing). Kerberos is a variety of NTLM.

This feature can be used to integrate the authentication of users for an application with the authentication mechanisms provided by the environment the application runs in. Organizations can create a Single Sign-On environment that bolsters security, eliminates the need for users to log in separately for each application, and reduces the costs associated with managing user accounts. DataDirect's OS authentication features allow the ADO.NET data provider to integrate seamlessly into that environment.

The following authentication features are supported:

- **Delegated credentials** – Provides the ability for the application to act on behalf of the user. For web-based applications, the application or web server can use the delegated credential that represents the user vs. the credential that represents the server administrator. This bolsters security because the application can base permissions on the actual end-user. In addition, the application audit trail can associate usage with the end-user vs. a generic system administrator ID.
- **Re-authentication** – DataDirect provides the ability to re-associate a pooled connection with a different authenticated user. Applications that use connection pooling can use this feature to more efficiently re-use connections while minimizing the number of connections required in the pool. Support for re-authentication is dependent on the database.
- **Comprehensive KDC (Kerberos Key Distribution Center) support** – Includes support for both Active Directory and MIT.

**Support for Secure Socket Layer (SSL) Encryption** – SSL is an industry-standard protocol for sending encrypted data over database connections. SSL secures the integrity of your data by encrypting information and providing client/server authentication. DataDirect Connect *for* ADO.NET data providers support SSL to protect data that is transmitted between the database and the application, data that could otherwise be compromised. Support for data encryption and encryption algorithm is dependent on the database.

**XML Data Type Support** – The database vendors have started to add support for a native XML data type that will allow you to store native XML data. A database table can now be created that contains one or more XML data type columns. XML data type columns are stored as large binary objects enabling the XML model to support document order and recursive structures. Unfortunately, the data type implementation approaches used by the database vendors vary, making it difficult to develop interoperable database access code. In this release, DataDirect is adding support for XML data types in the Oracle and DB2 ADO.NET providers. DataDirect is providing a consistent mechanism to interact and manage XML data across databases and across DataDirect products (ADO.NET, JDBC and ODBC).

#### **Support for Database Vendor Parameter Binding & Syntax**

DataDirect has long since provided [interoperability capabilities](#) that make it easy to support multiple databases (e.g., Oracle & SQL Server) in a .NET environment. The latest release of Connect *for* .NET complements this interoperability support by allowing organizations to leverage their existing code base while taking advantage of DataDirect's superior data providers. DataDirect now includes

support for parameter markers and binding behavior that is specific to the syntax used by the database vendor data providers. This approach makes it possible to reuse database vendor provider-specific code and simplifies migration effort to the DataDirect data providers.

### **DataAdapter Batch Update Support - applications can now manage the update batch size for more efficient updates**

The DataDirect providers have been enhanced to support the ability to update DataSets using configurable batches. Using the DataAdapter class, the developer can configure updates to be performed using the largest batch size supported by the data source or with a specific batch size. Support for single row updates are still provided. DataDirect's support for batch updates is an industry first and builds upon a 100% managed architecture that delivers best in class performance. Applications that leverage this new batch update capability will realize an immediate improvement in terms of performance. Better yet, these performance gains can be realized without costly changes to application logic.

**IPv6 Support** – The pool of IPv4 Internet addresses is shrinking rapidly. IPv6 (Internet protocol version 6) opens up a large number of additional Internet addresses and is supported by the latest version of all major databases. The U.S. government has mandated that federal agencies use IPv6 by June 2008. In Release 3.1, IPv6 is supported by all DataDirect Connect *for* ADO.NET DB2, SQL Server, and Sybase providers.

### **Databases Supported**

- Oracle 8i 8.1.6, 8.1.7
- Oracle 9i R1, R2
- Oracle 10g R1, R2
- Oracle 11g
- Sybase ASE 11.x, 12.0, 12.5, 12.5.1, 12.5.2, 12.5.3, 12.5.4 and 15
- DB2 LUW 7.x; 8.x, 9.1
- DB2 7.x, 8.1, 9.1 for z/OS
- DB2 V5R1; V5R2, V5R3 and V5R4 for iSeries
- SQL Server 2000 and 2005

For information on releases prior to 3.1, visit

<http://www.datadirect.com/products/net/net-previous-releases/index.ssp>

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**We welcome your feedback! Please send any comments concerning documentation, including suggestions for other topics that you would like to see, to:**

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