![Progress DataDirect logo]

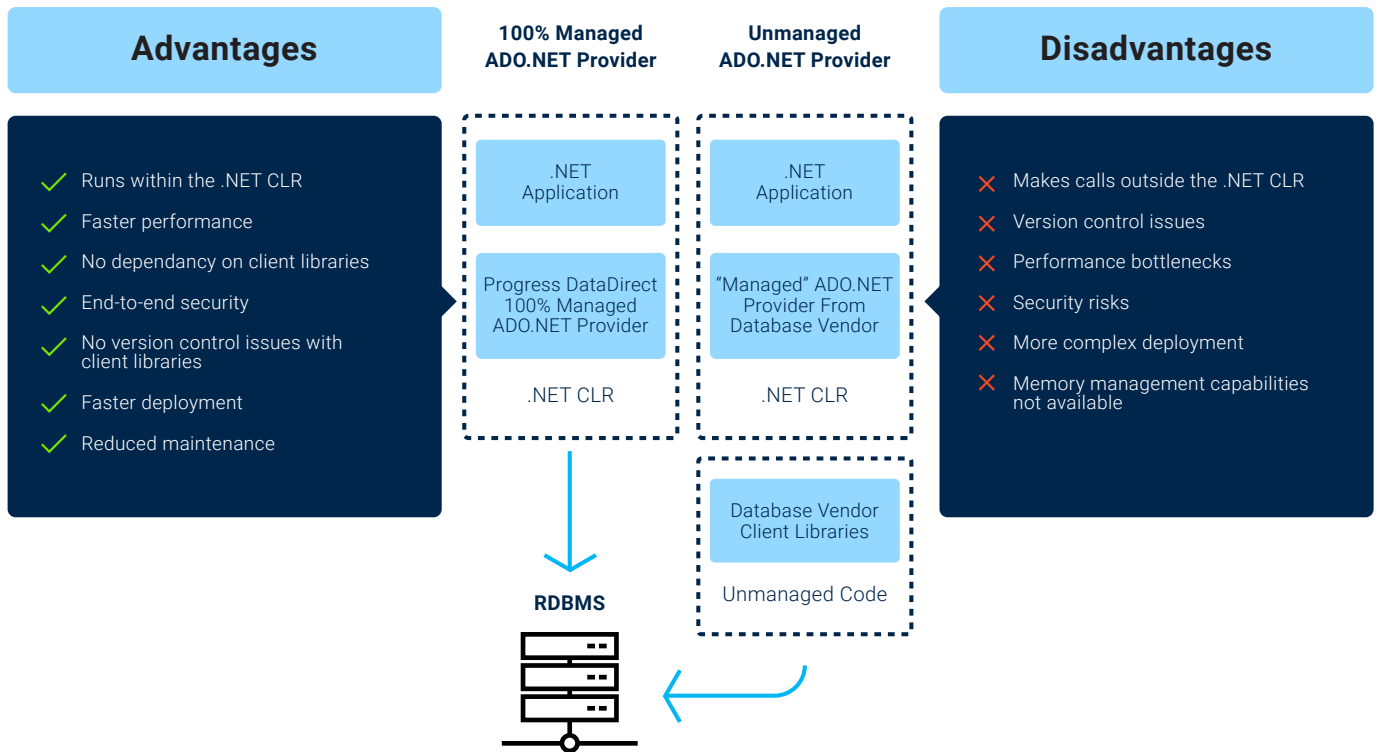# Progress® DataDirect ADO.NET Providers

DATA SHEET

HIGHLIGHTS

✓ 100% managed architecture

✓ Zero need for client database software

✓ Unparalleled .NET throughput and CPU and memory efficiency

✓ Secure connection to Oracle, DB2, Sybase, and Microsoft SQL Server

Progress® DataDirect 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, Sybase, and Microsoft SQL Server.

Zero Need For Database Client Software With 100% Managed Architecture

All Progress DataDirect ADO.NET data providers are 100% managed, which allows .NET applications of all kinds to experience the following benefits:

- Eliminates the need to install, configure, and deploy database client libraries such as Oracle SQL*Net

- Provides superior application performance and scalability while demanding fewer CPU, memory, and network resources

- Leverages the automated memory and object management and Code Access Security features of running entirely within the CLR

- Allows "side-by-side" installation of .NET assemblies that each require connectivity to different versions of a particular database

Advantages	100% Managed ADO.NET Provider	Unmanaged ADO.NET Provider	Disadvantages

Advantages

- ✓ Runs within the .NET CLR
- ✓ Faster performance
- ✓ No dependancy on client libraries
- ✓ End-to-end security
- ✓ No version control issues with client libraries
- ✓ Faster deployment
- ✓ Reduced maintenance

100% Managed ADO.NET Provider

.NET Application

Progress DataDirect 100% Managed ADO.NET Provider

.NET CLR

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RDBMS

Unmanaged ADO.NET Provider

.NET Application

"Managed" ADO.NET Provider From Database Vendor

.NET CLR

Database Vendor Client Libraries

Unmanaged Code

Disadvantages

- ✗ Makes calls outside the .NET CLR
- ✗ Version control issues
- ✗ Performance bottlenecks
- ✗ Security risks
- ✗ More complex deployment
- ✗ Memory management capabilities not available

Why Choose DataDirect ADO.NET Providers

- Increase throughput with less resources with wire protocol architecture
- Reduce security risks by leveraging Kerberos, SSL data encryption and .Net Framework security controls
- Improve application performance and functionality with bulk load and load balancing
- Maintain ADO.NET connectivity regardless of the version or type with complete provider functionality

- ✓ Delivers up to **225%** more throughput over competing data providers

- ✓ Up to **400%** more CPU efficient than competing data providers.

- ✓ Smaller memory footprint than competing data providers—in some cases uses **25%** less memory

KEY FEATURES			
Performance	Security	Enterprise Application Functionality	Provider Functionality
100% managed code architecture delivers more throughput while using fewer CPU, memory, and network resources Visual Studio-integrated Performance Tuning Wizard Multiple connection tuning options Bulk load operations via ADO.NET Bulk APIs Connection pooling and pool management Statement caching Optimized data, data type conversions Tunable socket, array size, and DataSet management Batching and network tuning optimization	End-to-end secure access to sensitive data Operating system authentication (i.e., Single Sign-On or SSO) via Kerberos SSL data encryption Optimal use of .NET Framework security controls	Connection failover and load balancing Bulk load operations via ADO.NET Bulk APIs Side-by-side installation ClickOnce deployment Interoperability between databases and different versions of each database	No need to deploy database client libraries—ever! Support for ADO.NET Entity Framework, LINQ, and Entity SQL Support for Microsoft Enterprise Libraries Seamless integration with Visual Studio One provider supports all versions of a database Statistical counters integrated with Windows Perfmon Full Unicode and ANSI character set support Built-in runtime troubleshooting and tracing capabilities Advanced data type support

Unparalleled .NET Performance And Scalability

Progress DataDirect ADO.NET data providers have been benchmarked against other providers for a variety of database operations. In our test methodology, we compare the capacity and efficiency of the providers by isolating and testing these key variables: throughput, CPU efficiency, and memory usage.

- Superior throughput—Progress DataDirect throughput is unmatched, in some cases delivering up to 225% more throughput over competing data providers. Progress DataDirect provider throughput stays high and even increases as more users are added.

- Greater CPU efficiency—Progress DataDirect providers use considerably fewer CPU cycles to deliver superior throughput than competing data providers. In some cases, Progress DataDirect providers are over 400% more CPU efficient than competing data providers.

- Smaller memory footprint—Progress DataDirect providers are 100% managed, so the overall memory footprint will be significantly less because competing providers require applications to call out to unmanaged code in the database client libraries. In some cases this smaller memory footprint means using less than 25% of the memory of competing data providers.

With a faster, more resource-efficient data provider, you need less hardware to support your applications. This is particularly meaningful when your application is sharing resources with other applications deployed on a single server or running in a resource-limited environment typical of virtualization.

To learn more or download a free, 15 day trial of Progress® DataDirect for ADO.NET, go to www.progress.com/datadirect

About Progress

Progress (NASDAQ: PRGS) is a global leader in application development, empowering enterprises to build mission-critical business applications to succeed in an evolving business environment. With offerings spanning web, mobile and data for on-premise and cloud environments, Progress powers businesses worldwide, promoting success one application at a time.Learn about Progress at www.progress.com or 1-781-280-4000.

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