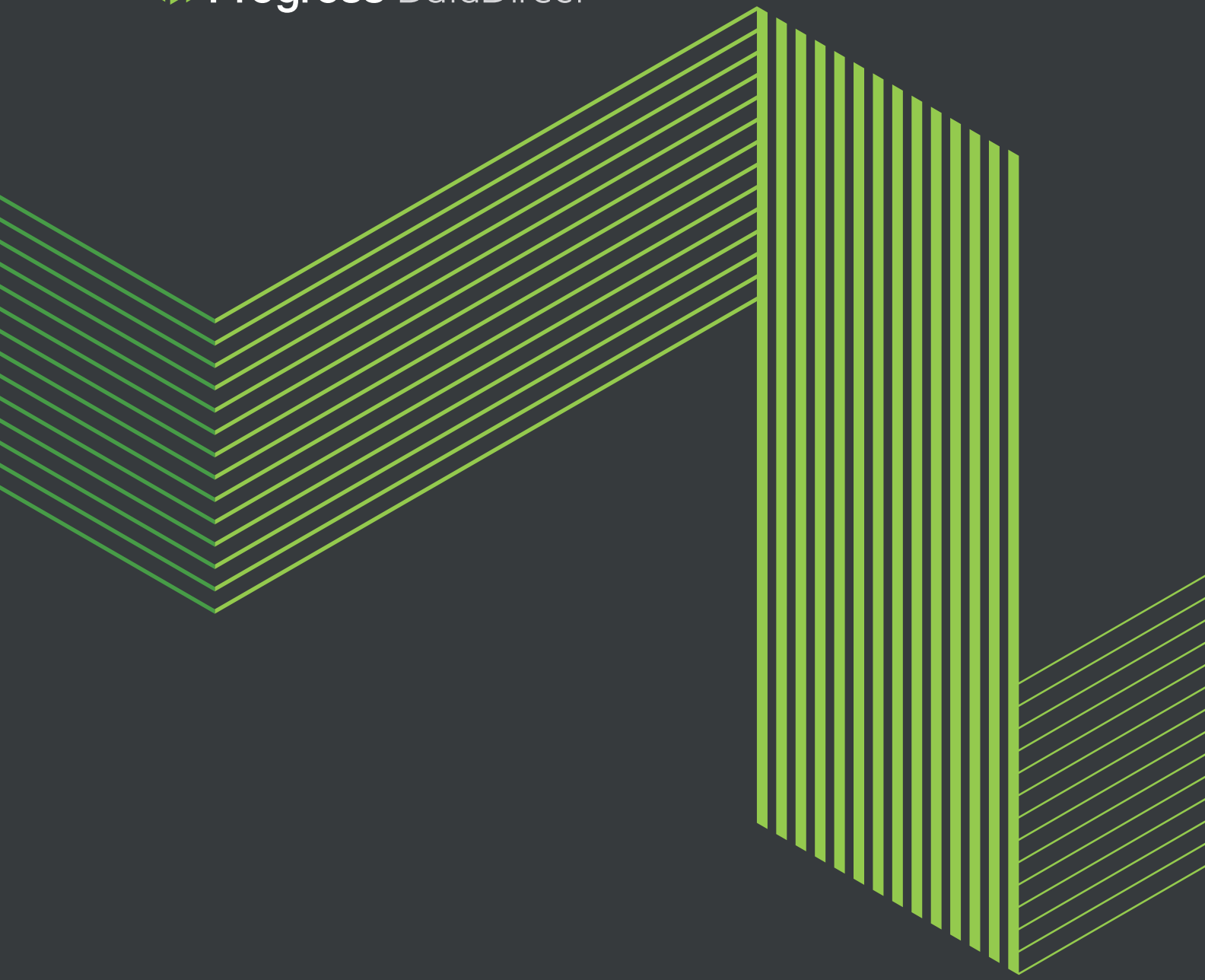
Progress® DataDirect



DATA ACCESS FOR MICROSOFT SQL SERVER LINKED SERVERS AND BUSINESS INTELLIGENCE SUITE

Table of Contents

This document provides guidelines for data connectivity so you can get the most from your SQL Server 2005 or 2008 investment, and leverage other data sources such as Oracle, DB2, and Sybase with Microsoft SQL Server Business Intelligence (BI) solutions. It describes each SQL Server BI solution, their limitations relating to data connectivity, and the specific Progress® DataDirect® product to use for optimum results—as follows:

- Microsoft Linked Servers
- Microsoft Business Intelligence Suite

  SQL Server Analysis Services (SSAS)

  SQL Server Integration Services (SSIS)

  SQL Server Reporting Services (SSRS)

  - Difference in SQL Server 2005 Editions
  - Difference in SQL Server 2008 Editions
  - DataDirect Supported Data Sources and Platforms
  - DataDirect Data Connectivity Products

Microsoft Linked Servers (Distributed Queries)

With linked servers you can create a “SQL Server view” of non- SQL Server data sources such as Oracle, Sybase, and any other data source. See the MSDN article, “Linked Servers,” for an overview and configuration diagram. Accessing a data source through a linked server connection requires issuing a statement such as:

```
SELECT p.Name, sod.SalesOrderID

FROM SEATTLESales.AdventureWorks. Production.
Product p

INNER JOIN SEATTLESales.
AdventureWorks.Sales.SalesOrderDetail sod ON
p.ProductID = sod.ProductID ORDER BY p.Name ;
```

The above query references the tables called "Production. Product" and "Sales. SalesOrderDetails" in the AdventureWorks database on the linked server called "SEATTLESales."

Data Access Options

Data access through linked servers is OLE DB-based, and the architecture is tied to the architecture of the database installation (i.e., 32-bit installations require 32-bit OLE DB, 64-bit installations 64-bit OLE DB). This is true irrespective of whether you're using SQL Server 2005 or 2008.

Recommended Progress® DataDirect ® Products

1. **Progress® DataDirect Connect® for ODBC or Connect64® for ODBC with MSDASQL (the OLE DB-to-ODBC bridge**)—Supports full functionality of linked servers. **NOTE:** The bridge and driver architecture must match the SQL Server database installation (all 32- bit or all 64-bit). Note also, that while Windows 2008 (32- and 64-bit) comes with MSDASQL by default, it must be downloaded separately as a third-party add-on for Microsoft for Windows 2003.

2. **Progress® DataDirect® SequeLink®**—For 32-bit, use the SequeLink client for ADO, and for 64-bit use the SequeLink client for ODBC with MSDASQL (the OLE DB-to-ODBC bridge). Supports full functionality of linked servers. **NOTE:** The bridge and SequeLink ODBC client architecture must match the database installation (all 32-bit or all 64-bit).

3. **Progress® DataDirect® OpenAccess™ SDK**—For 32-bit, use the OpenAccess SDK client for ADO and for 64-bit, use the OpenAccess SDK client for ODBC with MSDASQL (the OLE DB-to-ODBC bridge). Supports full functionality of linked servers.

Microsoft Business Intelligence Suite

Microsoft Business Intelligence Suite is a collection of query, reporting, and analysis solutions that include the following Microsoft technologies: SQL Server Analysis Services (SSAS), SQL Server Integration Services (SSIS), and SQL Server Reporting Services (SSRS). The following sections describe these components in more detail. For more information, see Microsoft Business Intelligence on the Microsoft website.

SQL Server Analysis Services (SSAS)

This is Microsoft's online analytical processing (OLAP) and data mining tool for BI applications. Data access for SSAS consists of connecting an SSAS-based OLAP cube to a non-SQL Server database. For more information, see SQL Server Analysis Services and Accessing External Data Sources with Microsoft SQL Server Analysis Services 2005 on MSDN.

Data Access Options

Connectivity is ADO.NET 2.0-based and OLE DB-based. For OLE DB, the architecture is tied to database installation (i.e., 32-bit installations require 32-bit OLE DB; 64-bit installations require 64-bit OLE DB). This applies to both SQL Server 2005 and 2008.

Recommended DataDirect Products

1. **DataDirect Connect for ADO.NET**—Supports full functionality of SSAS.

2. **DataDirect SequeLink**—Use SequeLink client for ODBC with the Microsoft ODBC .NET Data Provider.

3. **DataDirect Open Access SDK**—Use OpenAccess SDK client for ODBC with the Microsoft ODBC .NET Data Provider. Supports full functionality of SSAS.

SQL Server Integration Services (SSIS)

SSIS is Microsoft's extraction, transform, and load (ETL) application for data warehousing. For more information, see the SSIS Connectivity Wiki and SQL Server Integration Services and Connectivity and SQL Server 2005 Integration Services (by Bob Beauchemin) on MSDN.

Data Access Options

Full SSIS functionality (pulling data from a non-SQL Server source as well as pushing it to a non-SQL Server destination) requires OLE DB-based or ADO.NET 2.0-based data connectivity and is dependent on whether SSIS 2005 or SSIS 2008 is being used.

"Off the shelf" OLE DB providers may not work without modifications because SSIS doesn't use standard OLE DB behavior in many situations.

- Packages can be executed in 32-bit or 64-bit mode, but the architecture of the OLE DB provider used during execution must match the mode selected: 32-bit mode requires a 32-bit OLE DB provider, and 64-bit mode requires a 64-bit OLE DB provider.

- If executing in 64-bit mode, the 32-bit OLE DB provider you use to develop the package being executed must have an equivalent 64- bit OLE DB provider (i.e., the 32-bit and 64- bit version of the same provider).

- MSDASQL (the OLE DB-to-ODBC bridge) may not be used with SSIS due to restrictions imposed by Microsoft.

- With SSIS 2005, a matched set of 32-bit and 64-bit OLE DB providers is required to use full functionality in 64- bit environments. With SSIS 2008, you can use ADO.NET 2.0-compliant data providers to get full functionality.

- With SSIS 2005, partial SSIS functionality (pulling data from a non- SQL Server source) is what most SSIS customers seem to be satisfied with and can be achieved with ADO.NET 2.0-based data connectivity.

Recommended DataDirect Products

SSIS 2005

1. **DataDirect Connect for ADO.NET**—Partial support for SSIS 2005 where pulling data from a non-SQL Server source is fully supported.

2. **DataDirect SequeLink**—If DataDirect Connect for ADO.NET connectivity does not meet your needs, you can use the SequeLink client for ODBC with the Microsoft ODBC .NET Data Provider (for both 32-bit and 64-bit).

3. **DataDirect OpenAccess SDK**—If DataDirect Connect for ADO. NET connectivity does not meet your needs, you can use the OpenAccess client for ODBC with the Microsoft ODBC .NET Data Provider (for both 32-bit and 64-bit).

4. **DataDirect Connect for ODBC**—If Connect for ADO.NET connectivity does not meet your needs, you can use the DataDirect Connect for ODBC drivers with the Microsoft ODBC .NET Data Provider (for both 32-bit and 64-bit).

SQL Server Reporting Services (SSRS)

SSRS is Microsoft's report designing and publishing tool for BI applications. For more information, see SQL Server Reporting Services on MSDN.

Data Access Options

SSRS is ADO.NET 2.0-based only. It's possible to use the Microsoft ODBC .NET data provider and OLE DB .NET data provider to get to other data sources, but these bridges require some manual configuration before showing up in the list of available data sources.

Recommended DataDirect Products

1. **DataDirect Connect for ADO.NET**—Supports full functionality of SSRS.

2. **DataDirect Connect for ODBC**—If DataDirect Connect for ADO. NET connectivity does not meet your needs, you can use DataDirect ODBC drivers with the Microsoft ODBC .NET Data Provider (for both 32-bit and 64-bit).

3. **DataDirect SequeLink**—If DataDirect Connect for ADO.NET or DataDirect Connect for ODBC connectivity does not meet your needs, you can use the SequeLink client for ODBC with the Microsoft ODBC .NET Data Provider (for both 32-bit and 64- bit).

4. **DataDirect Open Access SDK**—If DataDirect Connect for ADO. NET or DataDirect Connect for ODBC connectivity does not meet your needs, you can use the OpenAccess client for ODBC with the Microsoft ODBC .NET Data Provider (for both 32-bit and 64-bit).

Difference In SQL Server 2005 Editions

The following summarizes the high-level differences between the various SQL Server 2005 editions as they pertain to their internal data connectivity requirements. For more information, see Hardware and Software Requirements for Installing SQL Server 2005 on MSDN and SQL Server 2005 Features Comparison on the Microsoft website.

SQL Server Enterprise Edition

- The "full" SQL Server—Supports all functionality and components of SQL Server Linked Servers and Business Intelligence Suite
- Supports true 64-bit functionality supported
- Only supported on Windows Server platforms

SQL Server Developer Edition

- Functionally equivalent to Enterprise Edition
- Supports most of the Windows OS versions, not just server
- Licensed only for development and test use

SQL Server Standard Edition

- Supports true 64-bit functionality
- Supports Windows Vista Ultimate, Business and Enterprise 64-bit x64 editions
- Limited SSIS support—no advanced transforms such as data mining and data cleansing

SQL Server Workgroup Edition

- Limited SSIS support—Import/Export features only
- SQL Server Express Edition
- No support for SSIS

Difference In SQL Server 2008 Editions

The following summarizes the high-level differences between the various SQL Server 2008 editions as they pertain to their internal data connectivity requirements.

SQL Server Enterprise Edition

- The "full" SQL Server—Supports all functionality and components of SQL Server Linked Servers and Business Intelligence Suite
- Supports true 64-bit functionality
- Only supported on Windows Server platforms

SQL Server Developer Edition

- Functionally equivalent to Enterprise Edition
- Supports most of the Windows OS versions, not just server
- Licensed only for development and test use

SQL Server Standard Edition

- Supports true 64-bit functionality
- Supports Windows Vista Ultimate, Business and Enterprise 64-bit x64 editions
- Limited SSIS support—no advanced transforms such as data mining and data cleansing

SQL Server Workgroup Edition

- Limited SSIS support—Import/Export features only

SQL Server Express Edition

- No support for SSIS

About Progress

Progress (NASDAQ: PRGS) is a global leader in application development, empowering the digital transformation organizations need to create and sustain engaging user experiences in today's evolving marketplace. With offerings spanning web, mobile and data for on-premises and cloud environments, Progress powers startups and industry titans worldwide, promoting success one customer at a time. Learn about Progress at www.progress.com or 1-781-280-4000.

Worldwide Headquarters

Progress, 14 Oak Park, Bedford, MA 01730 USA Tel: +1 781 280-4000 Fax: +1 781 280-4095
On the Web at: www.progress.com
Find us on facebook.com/progresssw twitter.com/progresssw youtube.com/progresssw
For regional international office locations and contact information, please go to www.progress.com/worldwide

Rev 2016/12 | 161124-0012

Progress®