Positioning SAP Enterprise Services vs. Microsoft BizTalk Adapter 3.0 for mySAP Business Suite

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Author

Suresh Natarajan, Senior Program Manager Lead, Microsoft

Stefan Korn, Premier Field Engineer, Microsoft EMEA

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**Applies to**

Microsoft® BizTalk® Server 2009

For additional information, see [***Q&A: What’s Next for BizTalk Server***](http://www.microsoft.com/presspass/features/2008/sep08/09-05BizTalk.mspx)**1**available in PressPass - Information for Journalists.

Microsoft BizTalk Server 2006 R2

<http://www.microsoft.com/biztalk/en/us/default.aspx>

Microsoft Office SharePoint® Server 2007 (MOSS)

<http://www.microsoft.com/Sharepoint/default.mspx>

Microsoft BizTalk Adapter Pack

<http://www.microsoft.com/biztalk/en/us/adapter-pack.aspx>

Windows Communication Foundation (WCF)

<http://msdn.microsoft.com/en-us/library/ms735119.aspx>

Microsoft Windows Communication Foundation (WCF) Line of Business (LOB) Adapter SDK (WCF LOB Adapter SDK)

<http://www.microsoft.com/downloads/details.aspx?FamilyId=0F8007D7-F0C9-4169-8B9C-BA55F8F4C153&displaylang=en>

**Keywords**

BizTalk Server 2009, BizTalk Server 2006 R2, Microsoft Office SharePoint Server 2007, Windows Communication Foundation (WCF), SAP NetWeaver, SAP NetWeaver ECC, Microsoft SQL Server, Visual Studio, Microsoft .NET, SQL Server 2005 Integration Service, SQL Server 2005 Reporting Services, Adapter Pack

**Audience**

IT Management, Technical Architects, Technical Consultants, Developers

**Contact**

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**1*Q&A: What’s Next for BizTalk Server***

[**http://www.microsoft.com/presspass/features/2008/sep08/09-05BizTalk.mspx**](http://www.microsoft.com/presspass/features/2008/sep08/09-05BizTalk.mspx)

# Abstract

Microsoft and SAP deliver software solutions to enable a flexible integration and application infrastructure. It is well known that connecting a Line of Business (LOB) system has become an important task to many customers and the area of SAP is of particular importance and relevance today.

In the next sections we first give an overview of the integration components and then we describe usage scenarios for setting up interoperability between SAP and other software solutions using Microsoft® BizTalk® Adapter Pack.

# BizTalk Adapter Pack - SAP Adapter

Microsoft offers the BizTalk Adapter Pack which is best suitable to connect to Line of Business systems. It includes Microsoft BizTalk Adapter for mySAP Business Suite (SAP adapter) to integrate with a Line of Business system like SAP. An objective is to unify an open approach on the technology of Microsoft Windows Communication Foundation (WCF) programming model. Microsoft BizTalk Adapter for mySAP Business Suite uses the SAP RFC SDK to interface with an SAP system. Combined with Microsoft BizTalk Server, leveraging exclusive interfaces, you are able to provide the infrastructure to connect existing applications (regardless of the platform) and to compose, expose, and consume new services. This allows you to get more out of the investments that you have already made and minimize the cost of integrating the new pieces of technology that you have acquired.

<http://www.microsoft.com/biztalk/en/us/adapter-pack.aspx>

# SAP Enterprise Services

SAP intends to take the complexity out of platform-connectivity and application integration. With enterprise services, companies may unify stand-alone processes to quickly compose new end-to-end processes, selectively redesign existing processes and facilitate seamless process design and execution across company boundaries to take advantage of business partners' expertise.

<http://www15.sap.com/about/press/factsheets/esoa.epx>

SAP Enterprise Services bundles (ES bundles) enhance, for example, functions of SAP ERP 6.0. Each ES bundle provides a new set of enterprise services along with documentation on how to use the services to extend and reconfigure processes in a specific business scenario.**2**

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| --- |
| **http://i.msdn.microsoft.com/Aa560657.note(en-us,MSDN.10).gifNote**  |
| With SAP Web Application Server 6.10, SAP provides support for native web technologies like HTTP, HTTPS, SMTP, XML and SOAP.SAP Web Application Server 6.20 (available since June 2002) is enhanced through a 1.2 compliant J2EE Server and enables the development and deployment of ABAP-based or J2EE-based applications on the same machine.Since SAP NetWeaver AS 6.40 it is WS-I compliant and comes with a Web service creation wizard.Support for WS-Security 1.0 was added with SAP NetWeaver AS 6.40 SP2. |

***2More Information on SAP Enterprise Services can be found at*** [***https://www.sdn.sap.com/irj/sdn/enterprisesoa***](https://www.sdn.sap.com/irj/sdn/enterprisesoa)

# View on Legacy SAP

Typically SAP Enterprise Services might not be available to all customers and if an enterprise’s existing SAP interfaces require the use of legacy endpoints like BAPIs, RFC calls, or IDOCS which a legacy application cannot access, you have to find ways to provide access to the kind of connectivity required.

In many cases there are different ways to access an SAP system:

* BizTalk Server 2004, BizTalk Server 2006 and BizTalk Server 2006 R2 leveraging the Microsoft BizTalk Adapter v2.0 for mySAP Business Suite via the SAP .NET Connector.
* BizTalk Server 2004, BizTalk Server 2006 and BizTalk Server 2006 R2 leveraging the Microsoft BizTalk Adapter v2.0 for mySAP Business Suite via the SAP .NET Connector.
* BizTalk Server 2006 R2 leveraging the Microsoft BizTalk Adapter 3.0 for mySAP Business Suite from the BizTalk Adapter Pack.
* .NET applications using Microsoft BizTalk Adapter 3.0 for mySAP Business Suite from the BizTalk Adapter Pack.
* Microsoft SQL Server® 2005 Integration Services leveraging the .NET Framework Data
Provider for mySAP Business Suite (Data Provider for SAP) from the BizTalk Adapter Pack.
* .NET applications using ADO.NET and the .NET Framework Data Provider for mySAP Business Suite (Data Provider for SAP) from the BizTalk Adapter Pack.
* Microsoft SQL Server 2005 Reporting Services with SAP NetWeaver Business Intelligence
Web browser at: <http://technet.microsoft.com/en-us/library/bb508810.aspx>
* SAP .NET Connector.
* Third-Party components and providers.

If you want to get the most out of your investment on open integration, BizTalk Adapter Pack is the preferred solution to handle SAP system endpoints. It provides utmost features and compatibility with an SAP system.

Why you should make your decision on the BizTalk Adapter Pack - SAP adapter:

* Performance
* Security
* Rock solid RFC interface, reliability
* Future updates

The SAP adapter that comes with BizTalk Server does not provide design time support for newer releases of Microsoft Visual Studio® and SAP does not support the SAP .NET Connector anymore. It is highly recommended to use the SAP adapter available with the BizTalk Adapter Pack 1.0. The SAP adapter provides design time support for Visual Studio 2005 and, as of BizTalk Adapter Pack 2.0 has support for Visual Studio 2008. Please notice that this may not be aligned with the development of Microsoft BizTalk Server, which can be bound to a specific version of Visual Studio.

|  |
| --- |
| **http://i.msdn.microsoft.com/Aa560657.note(en-us,MSDN.10).gifNote** |
| Microsoft BizTalk Adapter v2.0 for mySAP Business Suite will be deprecated once Microsoft BizTalk Server 2009 is released. |

# View on SAP NetWeaver BI

SAP NetWeaver BI brings together different analysis tools and data-warehousing functionality. This often is about multidimensional data which can become a challenging task for applications to unload data from SAP NetWeaver BI. Microsoft will release a certified BI Connector for SQL Server 2008 Integration Services at the end of 2008 using the SAP Open Hub Service interface. Today Microsoft offers an SAP certified provider for Microsoft SQL Server 2005 Reporting Services, using the XML/A Web service approach and the SAP certified Microsoft BizTalk Adapter 3.0 for mySAP Business Suite from the BizTalk Adapter Pack using the SAP RFC SDK.

All options do have their advantages and their disadvantages. If you creating an SAP NetWeaver BI ETL task, you can use the upcoming Microsoft Connector for SAP BI released with SQL Server 2008 feature pack which is integrated with SQL Server 2008 Integration Services.

If you want your .NET application to retrieve data from SAP NetWeaver BI, you can do BAPI calls using the Microsoft BizTalk Adapter 3.0 for mySAP Business Suite from the BizTalk Adapter Pack. In this case you might have to transform the data yourself, but this approach should enable you to retrieve data from SAP NetWeaver BW 3.0 through SAP NetWeaver BI 7.1.

Also you can use the Data Provider for SAP from the BizTalk Adapter Pack with SQL Server 2005 Integration Services or any other application where ADO.NET is available.

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| **http://i.msdn.microsoft.com/Aa560657.note(en-us,MSDN.10).gifNote**  |
| Since NetWeaver 7.00 (2004s) SAP changed the naming from BW to BI. As of today, the latest version is SAP NetWeaver 7.10 BI.The SAP provider for Microsoft SQL Server 2005 Reporting Services is specific to the SAP XML/A web service and multidimensional data. This is not a standalone version and is different from the Data Provider for SAP from the BizTalk Adapter Pack. |

Usage of official SAP interfaces or unloading data from SAP NetWeaver BI may imply additional licensing. This might be a reason to consider a legacy interface for data processing tasks. Licensing questions regarding SAP data or similar topics have to be worked out through SAP.

# BizTalk Adapter Pack - SAP Adapter Usage Scenarios

We introduced in previous sections that there is a set of technologies for connecting to SAP, which are different in their capabilities, pre-requisites on infrastructure and overhead in solution complexity. This section should help to determine which approach and technology is most suitable for particular usage scenarios from a Microsoft/SAP context point of view and furthermore to outline how the technologies can be applied to real world applications.

***Figure 1: Integrating Line of Business (LOB) systems***

This figure shows the benefit of using an open unified technology to build robust and flexible applications.

## **From .NET-based Applications to SAP**

Connecting custom .NET applications with an LOB system like SAP is as easy as using any WCF based technology.

 ***Figure 2: Workflow connecting a custom .NET application to SAP***

The only required components for this solution are BizTalk Adapter Pack 1.0 with Microsoft Visual Studio 2005.

**From BizTalk Server to SAP**

***Figure 3: Workflow connecting BizTalk Server to SAP***

The only required components for this solution are BizTalk Adapter Pack 1.0 with Microsoft Visual Studio 2005 and BizTalk Server 2006 R2 or the upcoming BizTalk Server 2009.

This figure demonstrates business aspects which show only a few options to choose from when using a managed middleware product like Microsoft BizTalk Server.

## **From SQL Server 2005 Integration Services to SAP**

 ***Figure 4: Workflow connecting SQL Server 2005 Integration Services to SAP***

The only required components for this solution are BizTalk Adapter Pack 1.0 with Microsoft Visual Studio 2005. This solution is using the Data Provider for SAP, which is part of the SAP Adapter released with the BizTalk Adapter Pack.

For additional information, see [***Using the Data Provider for SAP with SSIS***](http://msdn.microsoft.com/en-us/library/cc185548.aspx)**1** available in the MSDN Library.

## **From SQL Server 2005 Reporting Services to SAP**

***Figure 5: Workflow connecting SQL Server 2005 Reporting Services to SAP***

The only required components for this solution are BizTalk Adapter Pack 1.0 with Microsoft Visual Studio 2005. SSRS compatibility was introduced after the initial release of the BizTalk Adapter Pack 1.0. This solution uses the Data Provider for SAP, which is part of the SAP adapter released with the BizTalk Adapter Pack.

For additional information, see [***Using the SAP ADO.NET Provider from SSRS 2005***](http://blogs.msdn.com/adapters/archive/2008/08/15/using-the-sap-ado-net-provider-from-ssrs-2005.aspx)**2** available in [WCF LOB Adapter SDK and BizTalk Adapter Pack](http://blogs.msdn.com/adapters/default.aspx) blog.

**1*Using the Data Provider for SAP with SSIS***

[**http://msdn.microsoft.com/en-us/library/cc185548.aspx**](http://msdn.microsoft.com/en-us/library/cc185548.aspx)

**2*Using the SAP ADO.NET Provider from SSRS 2005***

[**http://blogs.msdn.com/adapters/archive/2008/08/15/using-the-sap-ado-net-provider-from-ssrs-2005.aspx**](http://blogs.msdn.com/adapters/archive/2008/08/15/using-the-sap-ado-net-provider-from-ssrs-2005.aspx)

## **From Microsoft Office SharePoint Server to SAP**

The only required components for this solution are BizTalk Adapter Pack 1.0 with Microsoft Visual Studio 2005 and Microsoft Office SharePoint Server 2007 with Service Pack 1.

***Figure 6: Workflow connecting Microsoft Office SharePoint Server 2007 to SAP***

In figure 7 we show how different Microsoft Office SharePoint Server components will interact with BizTalk Adapter Pack and SAP.

***Figure 7: Component details connecting Microsoft Office SharePoint Server 2007 to SAP***

For additional information, see:

* [Microsoft SharePoint Team Blog](http://blogs.msdn.com/sharepoint/default.aspx)

Web browser at: <http://blogs.msdn.com/sharepoint/archive/2008/03/24/announcing-the-microsoft-biztalk-adapter-pack-office-developer-program.aspx>

# Highlights

BizTalk Adapter Pack delivers additional value to SAP installations, allowing new usage scenarios based on an open unified technology and flexibility.

Microsoft BizTalk Adapter 3.0 for mySAP Business Suite leverages the RFC SDK from SAP and provides utmost compatibility from SAP R/3 4.6c up to SAP ERP 6.

BizTalk Adapter Pack allows you to span your applications and provide different services hosting scenarios. Windows Communication Foundation (WCF) services can be tightly integrated with Microsoft Internet Information Services (IIS).

BizTalk Adapter Pack integrates additional Microsoft products with Line of Business systems as for example Microsoft Office SharePoint Server or a managed middleware component like BizTalk Server.

BizTalk Adapter Pack offers an ADO.NET interface to SQL Server 2005 Integration Services and SQL Server 2005 Reporting Services.

# Quick Guidance

**When to use Microsoft BizTalk Adapter Pack - SAP Adapter?**

* The SAP system does not provide Web service access.
* Leverage a managed middleware solution like BizTalk Server.
* Integrate Microsoft Office SharePoint Server.
* Integrate applications using Windows Communication Foundation (WCF) technology.
* Performance.
* Security.
* Reliability.

**Can I use SAP Enterprise Services from legacy applications?**

* You can, if your application supports Web service communication
* Your SAP system is ready.
* You have installed and enabled the Enterprise Services you want to connect to

**Is it faster to connect through Enterprise Services?**

We can not make any decision on using SAP Enterprise Services and their performance; it depends on your solution design. Typically an RFC connection might be faster than a Web service call and may result in less overhead in data transfer.

# References

* Microsoft BizTalk Adapter Pack
<http://www.microsoft.com/biztalk/en/us/adapter-pack.aspx>
* BizTalk Adapter Pack/WCF LOB Adapter SDK Poster
<http://download.microsoft.com/download/6/4/3/643401c2-406f-4b7b-b70a-ffc55675b7bd/AdapterPack_ASDK.pdf>
* WCF LOB Adapter SDK and BizTalk Adapter Pack
<http://blogs.msdn.com/adapters/default.aspx>
* Microsoft | SAP Customer Information Center
<http://www.microsoft.com/sap>
* Microsoft SQL Server BI
<http://www.microsoft.com/sql/solutions/bi/default.mspx>
* SAP Help Portal
<http://help.sap.com>

# Conclusion

The deployment of SAP Enterprise Services will enable worldwide Web service-based devices to seamlessly communicate and interoperate in a much more efficient manner. The SAP Enterprise Services bundles enable delivery of high-impact business capabilities. With the existence of the BizTalk Adapter Pack and the Microsoft BizTalk Adapter for mySAP Business Suite, you are free to choose how to leverage any part of an SAP system.

# Bio

Stefan Korn is a Premier Field Engineer working as a dedicated support resource at the SAP HQ based in Walldorf, Germany. He supports and takes care of integrations in regards to SAP and Microsoft components. In detail those components are Microsoft BizTalk Adapter Pack featuring Microsoft BizTalk Adapter 3.0 for mySAP Business Suite and SQL Server Integration Services leveraging the .NET Framework Data Provider for mySAP Business Suite (Data Provider for SAP).