



Unlock the Value of Your Microsoft and SAP® Software Investments



The Best-Run Businesses Run SAP™

Bridging the integration gap between SAP and Microsoft environments

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How can your organization enable business users to access and consume SAP® data from Microsoft Office – the desktop tools they use every day? How can you maximize the value of your investments in Microsoft and SAP software? The key is to **bridge the technical gap** by integrating the world's leading business productivity and enterprise software.

SAP Gateway technology for Microsoft accomplishes that objective. It's an interoperability framework enabling developers to create solutions that bring a precise and secure set of data from SAP applications to the desktop of every Microsoft user. SAP Gateway technology provides the foundation for provisioning Open Data Protocol (OData) services (industry-standard RESTful services) to the Microsoft .NET Framework component to be consumed by Microsoft Office, including Microsoft Outlook, Microsoft Word, Microsoft

Excel, Microsoft Visio, and more. The resulting solution connects Microsoft productivity applications to SAP software and brings the powerful business logic to the Microsoft application front end.

A solution developed with SAP Gateway for Microsoft is available as an add-on to the Microsoft productivity applications – enabling end users to realize greater efficiency and flexibility in executing critical business processes.



An overview of the architecture

An overview of the architecture

A few examples of workflows using the accelerator

Developer and business-user experience

Enterprise readiness

SAP Gateway for Microsoft delivers an add-on component for Microsoft .NET that is deployed in Microsoft Visual Studio as a design-time component. The generated application in Visual Studio is deployed to the Microsoft environment as a runtime component – for example, as an add-on to Microsoft Outlook 2010. The runtime component of SAP Gateway for Microsoft takes care of the data consumption of OData services in SAP Gateway from the Microsoft client application. In addition, it enables enterprise readiness functions such as single sign-on, security, supportability, and integration of logging and monitoring with the SAP Solution Manager application management solution.

The basic architecture of the interoperability framework using SAP Gateway for Microsoft consists of the following components:

- SAP Gateway
- SAP Gateway for Microsoft – .NET add-on
- Microsoft Visual Studio environment
- Microsoft productivity application environment

The architecture of the .NET add-on for SAP Gateway for Microsoft encompasses the .NET add-on server and the .NET add-on client, which serves as the component to integrate Microsoft client software such as Office 2010. See the [figure](#) on the next page.

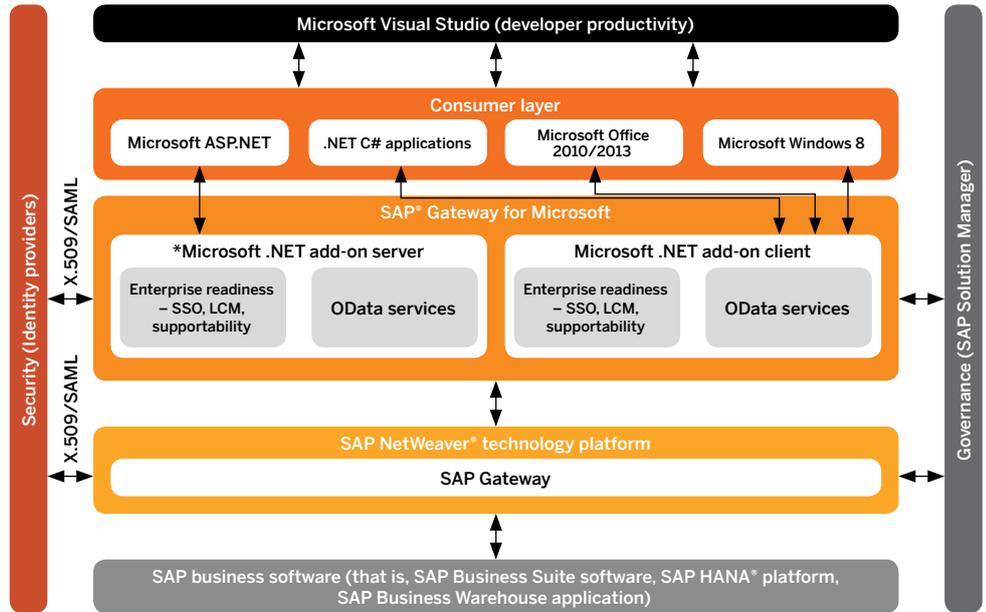


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SSO = Single sign-on; LCM = Lifecycle management

*In planning stage

Figure: An overview of the software architecture



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Developer and business-user experience

Enterprise readiness

Applications based on SAP Gateway for Microsoft are installed as part of the C#-based application and use OData to connect to a system running SAP Gateway.

The following are examples of flows using SAP Gateway for Microsoft:

- User A opens Microsoft Outlook 2010 and clicks on *Fetch Contacts* from the SAP ERP application. The add-on to SAP Gateway for Microsoft makes sure that a related X.509 certificate is sent to the system via HTTPS, where the call is authenticated. In response, the user's contacts in SAP ERP are retrieved and displayed in Outlook.

- During the rollout of an application based on SAP Gateway for Microsoft, an IT administrator wants to monitor and capture any possible issues. The administrator only needs to change the log level maintained in the Microsoft global group policy for the specific user group. SAP Gateway for Microsoft can then retrieve this information dynamically from the entries controlled in the registry by Microsoft global group policy. No changes in the Visual Studio code are required.

With the integration of SAP Solution Manager in SAP Gateway for Microsoft, end-to-end tracing can be evaluated to determine the root cause of a network-related performance issue – for example, for a time-tracking application created with SAP Gateway for Microsoft.



Developer and business-user experience

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The add-on for Microsoft Visual Studio provides a configuration-driven user interface to allow developers exploring the data feed exposed through the SAP Gateway catalog service without logging into the SAP system. The function significantly reduces the developer's effort to explore or discover SAP data and services consumable for Microsoft productivity applications.

SAP Gateway for Microsoft leverages SAP expertise to provide developer templates in the Visual Studio add-on, which are ready to

use at installation for creating Outlook add-on applications. These templates include:

- Calendar template – to create leave request and time-tracking types of applications in the Outlook calendar
- Contact template – to surface SAP data such as business partners and customer contacts in Outlook contacts
- Workflow template – to approve decision-making workflow such as purchase order approval in Outlook tasks without logging on to SAP software

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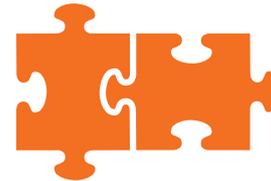
Developer and business-user experience

Enterprise readiness

In addition to the developer-focused scenarios, SAP Gateway for Microsoft provides an add-on to allow business users to read, update, create, and delete SAP data directly in Microsoft Excel. With just a few clicks, essential business data such as vendor and material master can now be handled in Microsoft Excel together with the powerful Excel chart and graphic tools. This add-on includes features for:

- Conflict resolution, which allows users to work on the same set of data in the back end at the same time
- Batch functions, which allow the combination of multiple actions into one call
- End-to-end tracing or security aspects such as cross-site request forgery (CSRF) token handling

All these features help save time and effort for business users to update and add SAP data without logging in to SAP business software.



SAP Gateway for Microsoft preserves SAP standards for enterprise readiness with features embedded into Visual Studio.



Enterprise readiness

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Enterprise readiness

SAP Gateway for Microsoft enables enterprise readiness functions including the following.

Single sign-on and security (SSO) – SAP Gateway for Microsoft uses standards-based authentication mechanisms for consuming OData services. This mechanism is featured in the single-sign-on authentication so that users can log on to a Windows desktop once and then access the OData services through SAP Gateway for Microsoft without having to reenter SAP credentials.

The SSO library of SAP Gateway for Microsoft handles different authentication mechanisms supported by SAP applications, including X.509, SAML2.0, and basic authentication for secure data transfer. In addition, a CSRF token-based protection has been introduced for all modifying requests to deliver extra security for updates and create scenarios across the SAP Gateway infrastructure. As a result, data transactions within software based on SAP Gateway for Microsoft leverage the robust safety provisions of SAP business software.

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Objectives

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Quick Facts

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Supportability and maintenance – An end-to-end trace can be activated on the SAP Gateway for Microsoft client to perform higher logging severity on the different components, using SAP Solution Manager as the central collection component. An SAP passport is used to ensure tracing across SAP Gateway and SAP business software components. A unique object ID is used to identify the object during logging and tracing.

Error handling – Error and exception handling is an important aspect of SAP Gateway for Microsoft. Based on the return of error and

information from SAP Gateway, SAP Gateway for Microsoft surfaces that information, which enables developers and IT administrators to resolve business and technical issues in a secure and timely manner.

Language and localization – SAP Gateway for Microsoft supports multiple languages and localization. For the generated solutions, all the external-facing texts are read from the resource files, where the text can be translated and converted to any languages selected by the customer.



Greater efficiency for developers, IT staff, and business users

Greater efficiency for developers, IT staff, and business users

SAP Gateway for Microsoft creates tremendous value for developers, IT organizations, and business users, including the following:

- The software provides developers an unprecedented level of convenience to consume and program business processes and data supported by SAP software in the Microsoft Visual Studio environment.
- Existing enterprise-readiness functionality can be preserved, and the various services and tools offered by both SAP and Microsoft can be reused.

- IT organizations can enjoy greater efficiency by using existing Microsoft and SAP tools to deploy scalable solutions created with SAP Gateway for Microsoft, support and monitor the data flow from SAP to Microsoft, and vice versa.
- For business users, it eliminates redundant tasks and provides a new level of productivity, convenience, and data accuracy.

Simpler system management and better business agility are the key benefits of using SAP Gateway for Microsoft.



Objectives

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Summary

SAP® Gateway technology for Microsoft is a set of tools and templates for enabling tight interoperability between SAP and Microsoft technologies. The combination of tools and templates helps developers quickly create high-impact solutions that greatly improve business-user engagement and productivity, support decision making, and deliver sustainable financial benefits.

Objectives

- Increase business agility
- Better support business users in their daily work
- Improve developer productivity and lower cost of development
- Simplify system management and lower total cost of ownership
- Leverage existing investments in SAP and Microsoft software

Solution

- Smooth integration of SAP and Microsoft technologies
- Built-in enterprise tools for governance aligned with back-end SAP systems
- Ready-to-use plug-ins, toolkits, predefined templates, and wizards integrated in Microsoft Visual Studio

Benefits

- Improve efficiency and accuracy on programming SAP data and business logic
- Build reliable, scalable applications with simplified architecture and native integration with SAP Gateway technology and Microsoft .NET Framework
- Simplified IT maintenance and support, leveraging tools from existing SAP and Microsoft infrastructure

Learn more

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