



# **Key Benefits of Microsoft® Visual Studio® 2008**

White Paper

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## **INTRODUCTION**

Across all types of software, the Microsoft Visual Studio 2008 development system helps individual developers and small development teams accelerate application development, deliver breakthrough user experiences, and collaborate more effectively. The remainder of this document discusses how Visual Studio 2008 provides those benefits while building solutions for the Web, Windows®, the Microsoft Office system, and Windows Mobile® powered devices.

*Note: Visual Studio 2008 Standard Edition supports the development of software for the Web and the Windows operating system, including the Windows Vista® and Windows Server® 2008 operating systems. Visual Studio 2008 Professional Edition supports the development of software for the Web, Windows, the Microsoft Office system, and Windows Mobile.*

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## **WRITE CODE FASTER**

At the core of all software solutions is the code that developers write. Visual Studio 2008 helps developers write code faster through a wealth of productivity-enhancing features, such as IntelliSense® technology, auto-completion, auto-colorization, method lookup, syntax and type checking, code refactoring, code-snippet management, and many more.

### **Avoid Memorizing Syntax**

Introduced by Microsoft more than a decade ago, IntelliSense technology in Visual Studio is a form of automated completion that displays a list of the members that are available for that class or object after a developer types a class or object name and a period. It speeds coding by reducing the number of keystrokes required and the need to reference external documentation. IntelliSense in Visual Studio 2008 adds support for JavaScript to provide the same benefits to Web developers, including those who are using Asynchronous JavaScript and XML (AJAX) programming techniques.

### **Write Less Code**

Visual Studio includes prebuilt building blocks for native and managed code, such as Active Type Library, Microsoft Foundation Class Library (MFC), and the Microsoft .NET Framework. By taking advantage of these, developers can reduce the amount of low-level code they must write and instead focus on solving business problems. Visual Studio 2008 supports the .NET Framework version 3.5, which includes enhancements to the base class libraries, Windows Presentation Foundation, Windows Communication Foundation, Windows Workflow Foundation, and Windows CardSpace™—and delivers improved interoperability between native and managed code.

### **Handle Data More Productively**

Programming against data sources has traditionally meant having to learn a new data access technology or paradigm for each data source. Language-Integrated Query (LINQ), a set of extensions to the C# and Visual Basic® languages and the .NET Framework 3.5, enables developers to employ a consistent approach and write less code when querying and transforming object collections, ADO.NET, XML data, and relational data from Microsoft SQL Server™-based databases. Developers using LINQ benefit from design-time assistance in Visual Studio 2008—such as statement completion, smart compile auto-correction, and IntelliSense technology—enabling them to invest less time in learning how to access the data through syntax for languages like T-SQL or XPATH and instead focus on what to do with the data.

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## **USE INTEGRATED TOOLS**

Visual Studio 2008 also enhances developer productivity by providing an integrated set of tools for activities other than writing code. The Visual Studio project system makes all aspects of a project easy to manage, from writing the first line of code through packaging finished software for deployment. During development, visual designers, server and data explorers, debuggers, automated build tools, background compilation, integration with source code control, an integrated Help system, and a range of third-party extensions for Visual Studio all come together to help developers remain focused on business needs and deliver faster.

### **Program in Multiple Languages**

Visual Studio supports several of the world's most popular programming languages, including Visual Basic, Visual C#, Visual C++, and JavaScript, making it useful to a broad range of developers and for a broad range of applications. Solutions for Visual Studio from more than 200 other companies add support for additional languages and a multitude of other capabilities, enabling developers to continue using the same familiar tools as they learn new languages, grow their skills, address unique business needs, and switch between projects.

### **Manage Project Files and Jump-Start New Projects**

The Visual Studio 2008 project system enhances productivity by tying together the tools and files for a project. When developers select a prebuilt project template, the project system customizes the Visual Studio UI to support the task at hand. (For example, if a developer chooses to create an application for Windows, the project offers a Windows form item.) The Visual Studio project system is compatible with Microsoft Expression® design software, enabling developers to collaborate with UI and Web designers.

### **Target Multiple Versions of the .NET Framework**

With previous versions of Visual Studio, developers could build applications that ran on only one version of the .NET Framework. Visual Studio 2008 provides the ability to target versions 2.0, 3.0, and 3.5 of the .NET Framework from within a single environment, with the editor, designers, and debugger intelligently adapting to the specified version. With this capability, developers can upgrade to Visual Studio 2008 and begin taking advantage of the new benefits it provides without having to upgrade their projects or have multiple versions of Visual Studio installed.

### **Build Higher-Quality Applications**

With the trend toward test-driven development and the importance of quality and security in distributed applications, unit testing is now an integral part of many developers' tasks. Visual Studio 2008 Professional Edition includes integrated support for unit testing, which was previously available only in Visual Studio Team System products.

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## **BUILD SOFTWARE FOR WINDOWS**

Developers can use Visual Studio 2008 to program against core Windows APIs, Microsoft Foundation Classes, the .NET Framework, or any of several software development kits (SDKs), enabling them to use a single tool set to build system services, device drivers, utilities, games, desktop software, line-of-business applications, and more. Regardless of the type of software, Visual Studio helps developers deliver rich user experiences, connect applications and business processes, and accelerate solution delivery.

### **Deliver Rich User Experiences**

Visual designers in Visual Studio 2008 enable developers to create rich, engaging applications based on Windows Presentation Foundation, the graphical subsystem in the .NET Framework 3.5 for taking advantage of today's modern graphics hardware. Developers also can build applications that take advantage of the more than 8,000 new native APIs in Windows Vista, and can take advantage of enhancements in MFC and Visual C++ to easily move applications to the new Windows Vista look and feel.

### **Build Connected Solutions and Streamline Business Processes**

Developers can use the graphical designer and debugger for Windows Communication Foundation in Visual Studio 2008 to easily connect systems or applications, programming to a common API regardless of the underlying transports and protocols used. Similarly, tools for Windows Workflow Foundation enable developers to model real-world business processes in software by providing the means to easily visualize, create, edit, and debug both human and machine-based workflows.

### **Collaborate with UI Designers**

Support for Extensible Application Markup Language (XAML) in Visual Studio 2008 enables developers to collaborate and share design assets with designers who use Microsoft Expression Blend™ design software. The ability to transfer user interface design elements between the developer and the designer means that edits to either the code or UI can be made simultaneously without affecting layout or code adversely. The developer and designer work on their respective tasks without any dependency on each other, and their efforts are then integrated by simply sharing source files.

### **Build Specialized Software**

Visual Studio 2008 supports more than just the development of “mainstream” applications for Windows. When developing Windows drivers to support new hardware or targeting platforms such as the Xbox 360® video game and entertainment system, hardware vendors, software vendors, and others can program directly against the Win32® APIs and take advantage of Microsoft-provided device driver and game development kits to ensure compatibility and accelerate solution delivery.

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## **BUILD SOFTWARE FOR THE WEB**

Most companies that employ Internet technology for public Web sites and/or internal business applications are looking for ways to accelerate solution delivery, enhance the end-user experience, and improve integration. Visual Studio 2008 and ASP.NET 3.5 (part of the .NET Framework 3.5) provide a versatile tool set for building stunning Web sites or for connecting distributed systems using Web services.

### **Build Rich, Responsive Web Sites**

Support for AJAX in Visual Studio 2008 enables developers to deliver richer, more responsive Web applications—and a more interactive user experience—by eliminating the need to reload an entire Web page when a user makes a change. Developers using AJAX can take advantage of IntelliSense technology to discover variables, objects, and their methods, and can debug JavaScript code by setting breakpoints inside Visual Studio—a capability that works with the most popular Web browsers. Developers also benefit from improved designers and editors.

Web developers will also benefit from enhancements in ASP.NET 3.5. The new ListView control provides unprecedented flexibility in how data is displayed (with complete control over the HTML markup generated), and the new DataPager control handles the work of allowing users to page through large numbers of records. The LinqDataSource control makes it easy to create data-driven Web sites by enabling developers to use LINQ to retrieve, filter, order, and group data that can then be declaratively bound to data visualization controls.

### **Connect Systems and Applications Using Web Services**

Developers can use Windows Communication Foundation in the .NET Framework 3.5 to build Web services that are exposed using any number of Internet-standard protocols, such as SOAP, RSS, JSON, POX, and more. Whether developers are building an AJAX application that uses JSON, syndicating data via RSS, or building a standard SOAP Web service, Windows Communication Foundation makes it easy to create service endpoints. Plus, Windows Communication Foundation now supports building Web services in partial-trust situations like a typical shared-hosting environment.

### **Collaborate with Web Designers**

Developers can easily collaborate with designers who use Microsoft Expression Web through the use of cascading style sheets and shared project files. Designers can use Expression Web to design a UI and then turn it over to developers with confidence that the UI design and subsequently developed business logic code will both remain intact.



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## **BUILD APPLICATIONS FOR MICROSOFT OFFICE**

The user interfaces of line-of-business applications can be difficult to learn, respond sluggishly to user input, and require people to be connected to the corporate intranet. Visual Studio 2008 Professional Edition provides a powerful tool set for building Office Business Applications (OBAs), which extend the data in line-of-business systems to end users through familiar Microsoft Office programs. Through such an approach, developers can integrate the front office and back office, making the information in ERP, CRM, and other enterprise systems directly accessible from within everyday business processes.

### **Develop Applications for Microsoft Office Using Existing Skills**

Visual Studio Tools for Office is a fully integrated component of Visual Studio 2008 Professional Edition, giving developers everything they need to target the more than 500 million users of Microsoft Office using the same managed-code development skills that they use to write applications for Windows or ASP.NET applications. Applications built on Microsoft Office are first-class projects in Visual Studio, which includes project templates, designers, and debugging tools to help developers rapidly build solutions based on current and earlier versions of Microsoft Office desktop products, as well as Microsoft Office SharePoint® Server 2007.

### **Take Advantage of the UI in the 2007 Office Release**

With Visual Studio 2008, developers can take advantage of familiar Microsoft Office UI elements to provide users with access to new types of information. Developers can extend the Microsoft Office Fluent™ interface to add buttons to the Ribbon. Outlook Form Regions and Custom Task Panes provide a convenient way to let users view and edit data in back-end systems, and Windows Communication Foundation provides a convenient way to connect OBAs to back-end systems. Developers also can build native C++ applications that use UI elements of the 2007 Office release, such as the Ribbon Bar, Ribbon Status Bar, and Mini toolbar.

### **Easily Deploy and Update Applications**

Companies can easily deploy applications for the Microsoft Office system built with Visual Studio 2008 Professional Edition by using the same ClickOnce deployment method used for other applications for Windows. Development groups can simply copy a new version of an application to a directory on a Web server and send users a link to the application in an e-mail message.

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## **BUILD SOFTWARE FOR MOBILE DEVICES**

Mobile employees are often forced to work inefficiently, such as spending additional time in the office transferring paper-based records to a line-of-business application. Visual Studio 2008 Professional Edition makes it easy to extend the information in existing systems and applications to Windows Mobile powered devices, enabling mobile users to work more productively by putting the capabilities and information that mobile workers need at their fingertips when it is most useful—while they are on the move.

### **Develop Mobile Applications Using Existing Skills**

Visual Studio 2008 Professional Edition makes it easy to extend the information in line-of-business systems to mobile workers. A project template for Windows Mobile-based applications provides a workspace with familiar tools, while the .NET Compact Framework lets developers use existing skills and familiar technologies, such as Windows Forms, Windows Communication Foundation, and LINQ. Enhanced mobile Windows Forms controls make it easy to modify and optimize mobile applications' screens to support the smaller displays of mobile devices.

### **Easily Test and Deploy Mobile Applications**

New device emulators automate testing scenarios, allowing developers to simulate real-world changes in device state, such as signal drop-off or a battery running out of power. Unit-testing support lets developers reuse some of the same unit tests that have been developed for a desktop version of a mobile application, or write new ones where needed. A security-aware IDE makes it easy to understand and manage custom security settings, and to view, add, remove, and manage security certificates on the device.

### **Manage and Synchronize Data**

Visual Studio 2008 Professional Edition provides integrated support for Microsoft SQL Server 2005 Compact Edition, a free, lightweight version of SQL Server 2005 that makes an ideal, high-performance local data store for mobile applications. Developers can keep local data synchronized using the Microsoft Sync Framework, which enables collaboration and offline access for applications, services, and devices, including technologies and tools that enable roaming, sharing, and taking data offline.

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## **SUMMARY**

Microsoft Visual Studio 2008 helps individual developers and small development teams accelerate solution development; deliver breakthrough user experiences; and collaborate more effectively while building solutions for the Web, Windows, the Microsoft Office system, and Windows Mobile. Regardless of which platform is being targeted, Visual Studio 2008 delivers the productivity, performance, and stability required to help developers remain focused on the real business challenges, along with a broad ecosystem that helps ensure they can always find the partners, information, and other community members to help them deliver great software.

For more information on Microsoft Visual Studio 2008, visit the Web site at [www.microsoft.com/vstudio](http://www.microsoft.com/vstudio).