**FAQ - Mono Tools for Visual Studio**

**What are you announcing and why is it important?**

We are announcing the general availability of a new product, Mono Tools for Visual Studio. Mono Tools for Visual Studio is an add-in module for Microsoft Visual Studio, a popular integrated development environment (IDE). With Mono Tools for Visual Studio, developers can now stay within their familiar Visual Studio environment and quickly and easily design, code, debug and maintain cross platform .NET applications. They can also create .NET software appliances, even virtual ones, within Visual Studio. Using Mono Tools for Visual Studio helps corporate developers, independent software vendors (ISVs) and development services providers reduce the time and cost of multi-platform development, thus allowing them to expand their market opportunities and deployment options.

**Who might benefit from Mono Tools for Visual Studio?**

Mono Tools for Visual Studio is designed for .NET developers that work 1) in software companies (ISVs); 2) in enterprises (development organizations); 3) in custom development shops; and 4) as consultants. It is designed for anyone who needs to port existing .NET applications, or create new .NET applications, to run on multiple platforms, notably Linux, UNIX, and Mac OS X.

For many .NET developers today, the learning curve to port to Linux, UNIX and Mac OS X is relatively high. While different tools exist to help developers do this, the process is not entirely frictionless, and requires developers to acquire and learn multiple tools and systems.

With Mono Tools for Visual Studio, .NET developers stay and work within their familiar IDE, designing, coding, debugging, testing and maintaining applications that will run on Linux, UNIX and Mac OS X environments. They can continue to leverage the large ecosystem of .NET libraries (e.g. business logic, chart, scientific and data access libraries) and easily identify and correct incompatibilities in their code-base when running .NET on Windows vs. other platforms.

Through a new Mono-specific, pull-down menu and other integration points in Visual Studio, Mono Tools enables developers to leverage the cross-platform coding, testing and debugging functionality of the Mono platform—all from inside their Visual Studio IDE. Developers can also build and test physical and virtual software appliances, using integrated appliance building functionality.

**What problems does Mono Tools for Visual Studio help solve?**

Mono Tools for Visual Studio helps solve several problems developers and organizations might be facing today:

- **Problem: I need to reduce my development costs.** Many organizations and departments today are under pressure to reduce their expenses, and software development is no exception. Many firms are resorting to outsourcing their development activities in an effort to save money. Enterprise developers continue to be asked to do more with less, and bring products to market more cost effectively and efficiently. Mono Tools for Visual Studio saves companies money by helping .NET developers more efficiently port existing .NET applications, or create new .NET applications, for non-Windows platforms like Linux, UNIX and Mac OS X.

- **Problem: I need to reduce my IT infrastructure costs.** Many IT organizations today are being asked to trim their budgets, yet still continue to meet their service-level agreements. Mono Tools for Visual Studio can help firms lower IT infrastructure costs, by providing a path to run their .NET applications on Linux. In many cases, running services on Linux, particularly virtual ones, are more affordable than running them on Microsoft Windows.
Problem: I need to rapidly port my existing .NET applications to Linux, UNIX and Mac OS X. Whether it's a merger, an IT modernization effort, a cost reduction program to standardize on lower cost Linux infrastructure, or the desire to expand the addressable market for their products, many firms find themselves faced with having to quickly port existing .NET applications to multiple platforms—principally Linux, UNIX and Mac OS X. For organizations that have invested in the .NET framework, the learning curve associated with porting to these other platforms can be quite high and time consuming. Mono Tools for Visual Studio enables Windows developers that are familiar with .NET and C# to quickly and easily port their .NET applications to Linux, UNIX and Mac OS X, by integrating the necessary migration analysis tools, debugger, virtual machines and packaging tools directly into their familiar Visual Studio IDE.

Problem: I need to better manage and utilize my development resources. Building and maintaining cross platform applications is difficult and costly. Not only do you need to be knowledgeable about the applications and the business context in which the applications are run, you also need skills and expertise in the languages and tools used for different platforms. Efficiently staffing for a wide variety of languages, tools and platforms can also be a challenge. Because Mono Tools for Visual Studio helps developers design, build and maintain cross platform applications with a single set of tools, they can do more with less, and do it more quickly. And with a more flexible and productive workforce, you can manage your resources more effectively.

Problem: I need to find new markets for my products. Organizations are continuously looking for ways to expand the addressable market for their products and services. Mono Tools for Visual Studio allows .NET ISVs to quickly support non-Windows platforms, making their software available to a larger installed base of potential customers. Integrated appliance building tools allow enterprises and ISVs to build turnkey software appliances, both physical and virtual, increasing deployment options and revenue opportunities.

What are the benefits of using Mono Tools for Visual Studio?

Corporate developers, independent software vendors (ISVs), and development services providers benefit in several ways:

- **Benefit: Save money by reducing the cost of cross platform development, as well as potentially lowering the costs of deploying .NET services.** Companies save money by using a single development environment to design, build and maintain .NET applications for Windows, Linux, UNIX and Mac OS X. And then with more deployment options to choose from, they can also choose the optimal, most cost-effective platform on which to run their .NET applications.

- **Benefit: Save time by eliminating the need to gather and learn additional platform specific tools and frameworks.** For organizations that have invested in the .NET framework, the learning curve associated with porting .NET applications to non-Windows platforms can be relatively high. Becoming proficient in non-Windows tools can take a long time. Mono Tools for Visual Studio saves .NET and C# Windows developers valuable time by bringing the necessary migration analysis tool, debugger, virtual machines and packaging tool directly into their familiar Visual Studio IDE, and eliminating their dependence on Linux-specific expertise.

- **Benefit: More easily and rapidly port both new and existing .NET applications to Linux, UNIX and Mac OS X.** In addition to its integration, which enables multi-platform development from directly within the Visual Studio IDE, Mono Tools for Visual Studio simplifies and streamlines the cross-platform development process by providing developers a porting roadmap. The tools follow a logical, step-wise process, assisting developers who may have limited experience in multi-platform development.

- **Benefit: Staff and manage your development resources more effectively.** Now that your existing .NET staff can easily leverage their existing skills and business knowledge to support the development and deployment of their applications on multiple platforms, you require fewer specialized skills. With more flexible, cross-trained resources, you can more easily match supply with demand and maximize the productivity of your development resources.

- **Benefit: Expand revenue opportunities and deployment options.** Because Mono Tools for Visual Studio allows ISVs to quickly and easily port their .NET applications to non-Windows platforms, ISVs
can now make their software available to a larger installed base of potential customers using Linux, UNIX and Mac hardware. Furthermore, integrated appliance building tools allow enterprises and ISVs to build turnkey software appliances, both physical and virtual, increasing deployment options and revenue opportunities.

**What do you get with Mono Tools for Visual Studio?**

Mono Tools for Visual Studio is an add-in module to Microsoft Visual Studio, and is provided as a Windows installer (.msi) that integrates Mono-specific menus and templates into Visual Studio, thus providing an integrated experience for building, analyzing, testing, debugging and deploying .NET applications on Mono.

Mono Tools for Visual Studio includes the Mono Migration Analyzer (MoMA), a porting analysis tool that you can use to scan your compiled assemblies and highlight potential cross platform development issues. It also includes a debugger for the remote debugging of Mono applications running on Linux within Visual Studio. Pre-configured virtual machines, as well as packaging for openSUSE® and SUSE® Linux Enterprise, are provided to simplify the configuration of target Linux platforms. Finally, included with Mono Tools is the integration of SUSE Studio Online, an innovative, easy-to-use hosted tool that enables users to rapidly build and test appliances based on SUSE Linux Enterprise Server and openSUSE.


Mono Tools for Visual Studio is not free, nor is it an open source product. Although it is based on the open source Mono project, there are some important differences between Mono Tools for Visual Studio and Mono.

The Mono project is an open source initiative sponsored by Novell® to develop a UNIX version of the Microsoft .NET development framework. Hosted at http://www.mono-project.com, Mono has an active and enthusiastic contributing community, and offers free open source software to develop and run .NET client and server applications on Linux, UNIX, Mac OS X and Windows.

Mono Tools for Visual Studio is a commercial implementation of some of the Mono technologies. It also includes some proprietary components, and is therefore distributed under a proprietary, commercial license, and sold for an annual fee, which includes the license and maintenance.

**How much does Mono Tools for Visual Studio cost?**

Mono Tools for Visual Studio is available in three different versions (Professional, Enterprise and Ultimate) with prices starting at $99:

- **Professional ($99):** The Professional Edition is designed to be used by an individual. It includes a non-transferable, single-user license. If you are the only individual planning to use Mono Tools for Visual Studio, then the Professional Edition is right for you. Your non-transferable license costs $99 and entitles you to one year of updates.

- **Enterprise ($249):** The Enterprise Edition is designed to be used by a small company, or firm with limited cross-platform development needs. It includes a non-transferable commercial license, and entitles one developer within the enterprise to use it at any given time. If your organization plans to create or port applications for enterprise deployment or for commercial resale, the Enterprise Edition is right for you. This version costs $249 and includes one year of updates, and allows enterprise deployments of applications, as well as the commercial distribution of applications built with Mono Tools.

- **Ultimate ($2,499):** The Ultimate Edition costs $2,499 and includes everything in the Enterprise edition, as well as a commercial license to redistribute Mono under non-LGPL terms on Windows, Linux and Mac OS X computers for products with revenues under $2M annually. If your organization
intends to redistribute software, which embeds or bundles Mono, but is unable to comply with the
terms of GNU LGPL v2, the Ultimate Edition may be right for you. Additionally, the Ultimate Edition
allows the concurrent use of Mono Tools for Visual Studio by up to five developers at any given time,
and entitles the organization to one year of updates.

**Does Mono Tools for Visual Studio work with all versions of Microsoft Visual Studio? What are the requirements for running it?**

Mono Tools for Visual Studio requires Microsoft Visual Studio 2008 SP1 Standard, Professional, or Team
Edition. The product is supported on Windows XP, Windows Vista, or Windows 7 (32 or 64 bit). If you want to
use the pre-configured Linux virtual machines that come with Mono Tools for Visual Studio, you will also need
VMware Player or Windows Virtual PC.

Microsoft has announced that Microsoft Visual Studio 2010 will be released in March 2010. Our current plans
are to add support for Visual Studio 2010. More details will be announced closer to Microsoft's Visual Studio
2010 product launch.

**Where can I buy Mono Tools for Visual Studio?**

Mono Tools for Visual Studio can be purchased from the Novell eCommerce site, [http://shop.novell.com](http://shop.novell.com). If you
are a Novell Business Partner, and you are interested in reselling Mono Tools for Visual Studio, please contact
Joseph Hill ([jhill@novell.com](mailto:jhill@novell.com)) or Kerry Kim ([kkim@novell.com](mailto:kkim@novell.com)) for more information.

**Where can I get more information about Mono Tools for Visual Studio?**

More information about Mono Tools for Visual Studio is available on the Mono Tools product Web page found
at: [http://www.novell.com/monotools](http://www.novell.com/monotools). A free 30-day trial is currently being offered for Mono Tools. Please visit

**How does Mono Tools for Visual Studio fit into the overall Novell product portfolio?**

The Novell corporate mission is to make IT work as one—to enable our customers to use the very best
proprietary products, and very best open source products, and to use them together. Mono Tools for Visual Studio bridges the gap between Microsoft Visual Studio, one of the world's most popular proprietary
development platforms, with Linux, the world's most popular open source deployment platform.

Mono Tools for Visual Studio is a cross platform development tool that helps drive more interest and
consideration for our Data Center products, specifically SUSE Linux Enterprise Server and SUSE Linux
Enterprise Mono Extension.

Mono Tools for Visual Studio and SUSE Linux Enterprise Mono Extension are two halves of a complete solution.
Mono Tools is the development component and Mono Extension is the runtime component. Mono Tools for
Visual Studio enables developers to more easily target Linux, and port existing .NET applications, or create new .NET applications, to run on Linux. And the best commercially supported Linux environment, to run these .NET applications on, is the combination of SUSE Linux Enterprise Server and SUSE Linux Enterprise Mono Extension. Once you create or port applications to Linux with Mono Tools, you can run them on SUSE Linux Enterprise Server with SUSE Linux Enterprise Mono Extension.
**I recently heard about another commercial Mono product - MonoTouch. What is the difference between Mono Tools for Visual Studio and MonoTouch?**

MonoTouch and Mono Tools are both developer tools targeted at developers, but the main difference is that they target different platforms. MonoTouch is a tool that runs on Mac OS X that uses Mono to help developers build .NET applications that run on Apple's iPhone and iTouch. Mono Tools for Visual Studio is an add-in to Microsoft Visual Studio that runs on Windows and helps developers build applications that run on Linux, UNIX and Mac OS X. C# and .NET applications, built with Mono Tools to run on Mac OS X, will not automatically run on the iPhone, since the iPhone uses its own separate operating system.

**Why did you build Mono Tools for Visual Studio?**

The main reason is our customers have been asking for it. Ever since we launched our commercial cross-platform Mono runtime, SUSE Linux Enterprise Mono Extension, customers have been asking when we were going to provide better integration with Microsoft's Visual Studio—the most popular development environment for .NET. While tools have been available to port .NET applications to Linux and UNIX for some time, the learning curve for Windows developers to port to Linux was relatively steep. Through a pull-down menu and other integration points in Visual Studio, Mono Tools now enables developers to more easily leverage the multi-platform coding, testing and debugging functionality of the Mono platform, all while staying within Visual Studio. And by simplifying and streamlining the cross-platform development process, and by removing the need to develop Linux expertise, we believe Mono Tools for Visual Studio will result in more applications being ported to Linux, significantly expanding the market for Linux deployment.