Visual Studio

Microsoft Visual Studio 2013 and MSDN Licensing

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Introduction

Microsoft Visual Studio 2013 provides a comprehensive, highly flexible set of application lifecycle management (ALM) tools. Visual Studio 2013 provides enhancements within developer IDE making desktop, web, cloud, and Windows Store development more productive than ever. Team Foundation Server 2013 has added important new capabilities like Agile Project Portfolio Management, Team Rooms, Work Item Charts and Release Management that will help organizations manage agile teams and foster cross communications within teams. Visual Studio with MSDN offers customers high-value MSDN benefits such as development/test use rights for Microsoft platform software like SQL Server/Windows/Windows Server, monetary credits to use Azure resources, developer accounts on the Windows Store, Windows Phone Store and an O365 Developer subscription.

The remainder of this paper provides an overview of the Visual Studio product line and the licensing requirements for those products in common deployment scenarios. If you're a volume licensing customer for a definitive guide to licensing terms and conditions, see the Microsoft Licensing Product Use Rights (PUR) and Product List, and the licensing program agreement. For retail customers the license terms are specified in the Retail Software License Terms included with your product.

Visual Studio 2013 Licensing Overview

With the primary Visual Studio 2013 offerings there are essentially three things for which you purchase licenses:

1. Users
2. The Visual Studio Team Foundation Server environment
3. Servers receiving automated deployments through Visual Studio Release Management capabilities

Additionally, there are Visual Studio Online services that you can purchase.

Users

The primary way to license users is by purchasing the appropriate level MSDN subscription for each user who will be participating in software development projects. The software, services, and support included with MSDN subscriptions varies by level, so you should consult the MSDN subscription comparison to determine the right level for the needs of each team member. The Visual Studio and other Microsoft software that the MSDN subscriber can install and run is defined by what is available for that MSDN subscription level in MSDN Subscriber Downloads while the user's subscription is active.

MSDN subscription options:

- Visual Studio Ultimate with MSDN
- Visual Studio Premium with MSDN
- Visual Studio Test Professional with MSDN
- Visual Studio Professional with MSDN
- MSDN Platforms
- MSDN Operating Systems

Alternatively, for users who do not need to use any Microsoft platforms like Windows, Windows Server, SQL Server, etc. as part of their development efforts, who do not need use of Windows Azure, who do not need technical support, who do

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not need e-learning, who do not collaborate with other development team members via Team Foundation Server, and who do not need access to new versions of the software, you can purchase a stand-alone Visual Studio Professional license.

The Team Foundation Server Environment

The Team Foundation Server environment is where the software developers, testers, project managers, stakeholders, and other participants in the software development team collaborate, manage source code, manage and prioritize work, generate builds of the application, and much more. You purchase Windows Server and Team Foundation Server licenses for each server in this environment, plus Windows Server and Team Foundation Server Client Access Licenses (CALs) for each user connecting to these servers. Microsoft SQL Server 2012 Standard is included with the Team Foundation Server license for use with Team Foundation Server.

Release Management Capabilities

Visual Studio 2013 provides a continuous deployment solution to Microsoft's ALM and DevOps solutions through Release Management capabilities, helping customers deliver applications faster, better and more efficiently. The Release Management continuous delivery solution will automate the development-to-production release process from Visual Studio Team Foundation Server, helping enable faster and simpler delivery of applications. Each node or endpoint to which an application is being deployed to must have a Visual Studio Deployment license.

Visual Studio Online

Visual Studio Online offers a broad and growing set of cloud-based Application Lifecycle Management capabilities. With Visual Studio Online, you purchase a plan or an MSDN subscription for each user accessing your Visual Studio Online account—based on the capabilities needed for that user—and you purchase shared resources for use by the account overall. With shared resources you pay for what you use, such as minutes of cloud build time or virtual user minutes of cloud load testing.

Since eligible MSDN subscribers can join a Visual Studio Online account at no additional charge, it is only the users who join an account who do not have MSDN subscriptions to whom a Visual Studio Online user plan needs to be assigned. There are three Visual Studio Online user plan options:

- Visual Studio Online Advanced
- Visual Studio Online Professional
- Visual Studio Online Basic

How to Buy

Visual Studio products are offered through a variety of sales channels as outlined below. Except for direct purchases through the MSDN.com/buynow site or Microsoft Store, license purchase are made through a software reseller.

Visual Studio 2013 Offerings and Purchasing Channels

MSDN Offerings

	Purchasing Channels	Ultimate 2013 with MSDN	Premium 2013 with MSDN	Test Professional 2013 with MSDN	Professional 2013 with MSDN	Platforms	Operating Systems 2012
Microsoft Volume Licensing	Enterprise, Enterprise Subscription	✓	✓	✓	✓	✓	
	Select, Select Plus	✓	✓	✓	✓	✓	✓
	Open Value, Open Value Subscription	✓	✓	✓	✓	✓	✓
	Open	✓	✓	✓	✓		✓
	Campus, Enrollment for Education Solutions	✓	✓	✓	✓	✓	✓
Retail Channel	Full Packaged Product (FPP)	✓	✓	✓	✓		✓
	Microsoft Store (online only)	✓	✓	✓	✓		✓
	MSDN.com/buynow (direct)	✓	✓	✓	✓		✓

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Non MSDN Offerings

	Purchasing Channels	Professional 2013	Professional 2013 Upgrade	Team Foundation Server 2013	Deployment Standard 2013	Deployment Datacenter 2013
Microsoft Volume Licensing	Enterprise, Enterprise Subscription			✓	✓	✓
	Select, Select Plus	✓		✓	✓	✓
	Open Value, Open Value Subscription			✓	✓	✓
	Open	✓		✓	✓	✓
	Campus, Enrollment for Education Solutions			✓	✓	✓
Retail Channel	Full Packaged Product (FPP)	✓	✓	✓		
	Microsoft Store (online only)	✓	✓	✓		
	MSDN.com/buynow (direct)					

Each Microsoft Volume Licensing program has specific rules and benefits which your software reseller can help you understand so you can make the right choice. More information on Volume Licensing and the above programs can be found at: www.microsoft.com/licensing.

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MSDN Subscription Renewals and Upgrades

MSDN subscriptions that are due to expire can be renewed cost effectively. Renewal pricing is considerably lower than purchasing a new MSDN subscription because the customer only pays for the ongoing right to receive new versions of the software, access to new product keys plus other expiring MSDN services, but not for a new license of the Visual Studio development tool, which the customer already has.

Retail Renewals

Retail MSDN subscriptions must be renewed annually. The renewal grace period—that is, the period from when the MSDN subscription expires to the point where the customer loses the option to renew at the renewal price—is 30 days for Retail Licenses.

Volume Licensing Renewals

MSDN subscriptions purchased under most Volume Licensing programs are valid until the Volume License Agreement or Enrollment terminates. However, the Select Plus Agreement (which does not expire) is an exception. Purchases under Select Plus last for 3 years from the date of purchase and there are also options for aligning the subscription term end date with an Agreement anniversary date.

For all Volume Licensing Programs, MSDN subscriptions must be renewed by purchasing the Software Assurance (SA) version of the product by the deadline specified under the Volume Licensing agreement. These deadlines vary by program, and may also vary depending on the terms in place when the agreement was signed.

MSDN Subscription Upgrade Options

You can upgrade an active MSDN subscription either at renewal (in which case you must purchase both the subscription renewal at the former level and a "step-up" license which upgrades the subscription) or at another point during the term of the subscription.

		Upgrade from:	Premium 2012 with MSDN	Test Professional 2012 with MSDN	Professional 2012 with MSDN
		Upgrade to:	Ultimate 2012 with MSDN	Premium 2012 with MSDN	Premium 2012 with MSDN
Microsoft Volume Licensing	Enterprise, Enterprise Subscription		✓	✓	✓
	Select, Select Plus		✓	✓	✓
	Open Value, Open Value Subscription		✓	✓	✓

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Upgrades are not available in other programs, but retail and Open License customers (where Step-up Licenses are not available) can still take advantage of Step-up Licenses by renewing into the Open Value program and immediately buying a Step-up.

Renewing Down

Customers may "renew down" from a higher-level MSDN subscription to a lower-level MSDN subscription—effectively trading one license for another. In doing so, the customer forfeits all rights associated with the old MSDN subscription and must immediately discontinue using any products that were available as part of that subscription but that are not available under the new subscription.

Example: An organization has been using Visual Studio Premium with MSDN subscriptions across their development team. The organization decides to renew all their subscriptions down to Visual Studio Professional with MSDN due to budget constraints. When the organization renews down, subscribers must immediately discontinue using and uninstall Visual Studio Premium—and thus can no longer benefit from the features in Visual Studio Premium. Subscribers also lose rights to use Microsoft Office, Microsoft Dynamics, SharePoint Server, and many other products included in Visual Studio Premium with MSDN but not in Visual Studio Professional with MSDN.

Visual Studio Online Purchasing

In many cases, no purchase is necessary for using Visual Studio Online services. There is no extra charge for eligible MSDN subscribers who join the account, and there are five free users with the Visual Studio Online Basic user plan per account. Additionally, there are free amounts of certain shared resources available per account.

When Visual Studio Online user plans and shared resources need to be purchased, this is done through Windows Azure. The Windows Azure Management Portal enables customers to link an existing Visual Studio Online account or create a new one, after which it is possible to purchase Visual Studio Online services using the pre-paid funds or the payment method set up within the Windows Azure subscription. Discounts are available depending on the size of Windows Azure spending commitment, and these discounts apply to all services purchased, including Visual Studio Online services.

Other Channels

Certain Visual Studio products are available for purchase through other Microsoft programs, including:

- Service Provider Licensing Agreement (SPLA): Visual Studio Team Foundation Server, Visual Studio Ultimate, Visual Studio Premium, Visual Studio Professional, and Visual Studio Test Professional are available on a subscription basis through participating hosters. The hoster offers the software running on its own hardware that you connect to remotely. These are not MSDN subscription offerings. Use terms for the SPLA are covered in the Services Provider Use Rights (SPUR) document.
- Microsoft ISV Royalty Licensing Program for ISVs wishing to include Visual Studio or other Microsoft products within their finished software applications and distribute them to customers.

Additionally, MSDN subscriptions or Visual Studio are provided as program benefits under certain Microsoft programs:

- Microsoft Partner Network: Partner MSDN subscribers may use the software in accordance with the MSDN subscriptions not for resale (NFR) retail license terms. MSDN subscriptions offered as benefits of the Microsoft Partner Network, including those provided through Microsoft Action Pack Development and Design, cannot be used for direct revenue-generating activities, such as providing consulting services, customizing a packaged

application for a specific customer, or building a custom application for a customer, for a fee. Partners can use MSDN subscriptions for indirect revenue-generating activities, such as building a packaged application on the Microsoft platform, which they can then market and sell to customers. Partners can also purchase MSDN subscriptions separately for use in direct revenue-generating activities.

- Microsoft BizSpark: Microsoft BizSpark is a global program that helps software startups succeed by giving them access to Microsoft software development tools, connecting them with key industry players, including investors, and providing marketing visibility to help entrepreneurs starting a business. The Visual Studio Ultimate with MSDN subscriptions offered through BizSpark are subject to the MSDN subscriptions not for resale (NFR) retail license terms.
- Microsoft DreamSpark: provides tools to students, faculty, and staff at academic institutions for instructional use (e.g., for instruction, coursework, and non-commercial research) for a small charge per institution. Academic institutions participating in the Campus Agreement/EES and OVS/ES programs in Microsoft Volume Licensing receive an online subscription to DreamSpark at no additional cost. The software licensed through DreamSpark includes Visual Studio Professional, Windows Server, and SQL Server among other software. In addition, Science, Technology, Engineering, and Math (STEM) departments in higher education institutions may qualify for an online DreamSpark Premium subscription (formerly known as MSDN AA) which offers access to a wider range of Microsoft software titles. To take advantage of their DreamSpark subscription benefit (DreamSpark or DreamSpark Premium depending on eligibility), academic customers need to enroll at http://www.dreamspark.com/institution/subscription.aspx using their Academic Volume Licensing agreement number and the appropriate DreamSpark promotion code that are included in their Academic Volume Licensing subscription Welcome Letter. Students at institutions that do not have a DreamSpark subscription can verify their student status on the DreamSpark site for no-cost access to the software: https://www.dreamspark.com/Account/CreateAccount.aspx

Please consult the terms for each program for specific MSDN subscription use right additions or exclusions.

User Licensing

Licensed for Design, Development, Testing, and Demonstrating Your Programs

All MSDN subscriptions and Visual Studio Professional are licensed on a per-user basis. Each licensed user may install and use the software on any number of devices to design, develop, test, and demonstrate their programs. MSDN subscriptions also allow the licensed user to evaluate the software and to simulate customer environments in order to diagnose issues related to your programs. Each additional person who uses the software in this way must also have a license.

What Software is Included and Downgrade Rights

For MSDN subscriptions, the software that is included is defined as any software that is available to the subscriber via MSDN Subscriber Downloads while the user's subscription is active, plus downgrade rights to prior versions of any of that software (for legacy software versions that are not available in MSDN Subscriber Downloads). MSDN subscriptions include both current version software plus many prior versions dating back over a decade, and often carry multiple different editions (Standard, Enterprise, Datacenter, etc.) of the same product to support a variety of software development and testing scenarios. Plus, MSDN subscribers are regularly gaining access to new versions of the software as it is released.

Anyone can visit MSDN Subscriber Downloads, search for a particular download, and then click on the details to see what date the download was published and what subscription levels have access to download it. It is not necessary to be a subscriber to review this, though it is necessary to be a subscriber in order to download. For a more general view of what software is included with each MSDN subscription, you can compare MSDN subscriptions.

For Visual Studio Professional, the software included in the license is the current version of the software, Visual Studio Professional 2013, plus downgrade rights to simultaneously run prior versions of Visual Studio Professional to which you may otherwise have access.

For purposes of this User Licensing section, we will refer to the software included with the license as "the software."

Different Licensed Users Can Run the Same Software

Each member of the development team that will use (install, configure, or access) the software must have his or her own MSDN subscription. Two or more individuals may use the same software if each has an MSDN subscription.

Example 1: A development team consists of 6 software developers, 1 architect/developer, and 3 testers. The team is building an in-house Web-based accounting system, and wants to use the software to set up a test environment running Windows Server 2012 and Microsoft SQL Server 2012. If all 10 team members will be accessing the development or test environment then each will require an MSDN subscription. The minimum subscription levels including both of these products are Visual Studio Professional with MSDN and Visual Studio Test Professional with MSDN.

Example 2: An organization has two development teams—one based in Seattle and the other in Singapore. Because of the time difference, the two teams are never working at the same time. However, because MSDN subscription licenses cannot be shared, each team member in each location must have his or her own MSDN subscription.

Example 3: A systems engineer from the organization's IT department is installing the software needed for a development team—each member of which is licensed with an MSDN subscription—on centrally-managed hardware.

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This systems engineer is not doing any software development or testing. Because a license is required for any use of Microsoft software (installing is a use of the software), they must either acquire production licenses for all software being used in this environment or they must acquire an MSDN subscription for the systems engineer that includes the software he or she is installing.

Where the Software Can be Installed and Run

The licensed user can install and use the software on any number of devices. The software can be installed and used on your devices at work, at home, at school, and even on devices at a customer's office or on dedicated hardware hosted by a 3rd party. Most MSDN software can also be run in Windows Azure VMs and on VMs hosted by Qualified MSDN Cloud Partners. However, the software is otherwise not licensed for use in production environments.

A production environment is defined as an environment that is accessed by end users of an application (such as an Internet Web site) and that is used for more than Acceptance Testing of that application or Feedback. Some scenarios that constitute production environments include:

- Environments that connect to a production database.
- Environments that support disaster-recovery or backup for a production environment.
- Environments that are used for production at least some of the time, such a server that is rotated into production during peak periods of activity.

Example: A developer with an MSDN subscription uses MSDN software at work during the day, but occasionally needs to develop at home as well, using a different computer. Under the MSDN license, there is no difference between a PC at work and a home PC; the home PC is just another device on which the developer is entitled use the MSDN software.

However, the restrictions for the MSDN software running on the developer's home PC remain the same as in the work environment: the MSDN software installed on the home PC must only be used for design, development and testing purposes; and only other users with an appropriate MSDN subscription can use the software.

Additional Use Rights and Benefits for MSDN Subscribers

Production use of Office Professional Plus 2013

Office Professional Plus 2013 can be used by licensed users of Visual Studio Ultimate with MSDN and Visual Studio Premium with MSDN on one device for production use.

Production Use of Visual Studio Team Foundation Server

Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN, Visual Studio Professional with MSDN, Visual Studio Test Professional with MSDN, and MSDN Platforms subscriptions include a server license and one Client Access License for Visual Studio Team Foundation Server 2013. More information is provided later in this paper under the section on Visual Studio Team Foundation Server 2013 Licensing.

Windows Azure MSDN Benefits

Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN, and Visual Studio Professional with MSDN subscriptions include a certain amount of Windows Azure services. Availability varies and the amount of service included

is subject to change, please see http://www.windowsazure.com/en-us/pricing/member-offers/msdn-benefits/ for details. To use these services, the MSDN subscriber must sign up and accept the Windows Azure Agreement. The MSDN subscriber may not run production applications using this Windows Azure MSDN benefit; all use of this benefit is limited to development and testing. Also, Windows Azure benefits from multiple MSDN subscriptions cannot be combined onto a single account.

Visual Studio Online MSDN Benefits

Eligible MSDN subscribers who have activated their subscription can create or join a Visual Studio Online account at no additional charge. The eligible MSDN subscription levels include: Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN, MSDN Platforms, Visual Studio Test Professional with MSDN, and Visual Studio Professional with MSDN. These benefits apply both to purchased MSDN subscriptions as well as those offered through programs such as BizSpark and the Microsoft Partner Network.

MSDN Cloud Use Rights: Running the MSDN Software on Windows Azure VMs and VMs on Shared Servers Run by 3rd Parties

MSDN subscribers who have activated their subscription can run most MSDN software in VMs on Windows Azure and VMs on shared servers run by third parties that are Qualified MSDN Cloud Partners. The cloud use right is only to design, develop, test or demonstrate software. The cloud use right applies to Visual Studio and all other software included in the user's MSDN subscription, except Windows client and Windows Server. This use does not require a separate Remote Desktop Services (RDS) license to access the VM.

Activating the MSDN subscription involves the subscriber associating their Microsoft account with the subscription. Activation is required in order to gain access to MSDN benefits including MSDN Subscriber Downloads, Windows Azure MSDN benefits, and more. MSDN subscribers must validate their MSDN subscription is current and active with any qualified MSDN cloud partners prior to uploading and installing MSDN software onto Windows Server VMs running at this 3rd party.

Windows client (Windows 7, Windows 8, etc.) is not eligible to be run in any cloud environment so MSDN subscribers should continue using local devices, such as those with touch screens and local peripherals, to develop and test their applications on Windows for the highest fidelity experience.

MSDN subscribers *can* run Windows Server in VMs on Windows Azure and on shared servers run by Qualified MSDN Cloud Partners, but since Windows Server is not licensed as part of these MSDN cloud use rights, subscribers will be charged for this use at the established Windows Server VM rates. MSDN subscribers can use their Windows Azure MSDN benefit toward the cost of running these Windows Server VMs on Windows Azure.

Example 1: A team of five developers are licensed for different levels of MSDN: three have Visual Studio Premium with MSDN and the other two have Visual Studio Professional with MSDN. One team member with Visual Studio Premium with MSDN sets up a Windows Azure subscription using their Windows Azure MSDN benefit to act as the team's development environment. This team member deploys a VM with Microsoft SharePoint Server to be used for development and testing by the team members with Visual Studio Premium with MSDN. The other two team members with Visual Studio Professional with MSDN cannot use this VM because their level of MSDN does not provide rights to use SharePoint Server.

Example 2: A developer who is licensed for Visual Studio Professional with MSDN has deployed SQL Server in a VM running on a qualified MSDN cloud partner in order to develop new stored procedures for a database application. While the work is proceeding, the MSDN subscription expires. Because the subscription is expired, the MSDN cloud use rights also expire and the developer must cease use of SQL Server within this VM.

Example 3: A developer who is licensed for Visual Studio Premium with MSDN has deployed Visual Studio and SQL Server in a VM running on a qualified MSDN cloud partner in order to develop new stored procedures for a database application. Using Visual Studio to write code is allowed through MSDN cloud use rights for developing and testing software. Developer could access this VM without requiring an additional RDS CAL license. Developer would now also like to install Office in the VM to access his emails and Lync to communicate with other developers. Using Outlook to access emails or using Lync to communicate with other users in the VM is not allowed as MSDN cloud rights allows user only to design, develop, test or demonstrate his software.

Lab Management

Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN, and Visual Studio Test Professional with MSDN subscribers may install and run System Center – Virtual Machine Manager (SCVMM) for the purpose of creating, deploying and managing lab environment(s) using Microsoft Test Manager. A lab environment is a virtual operating system environment used solely for the purpose of developing and testing your programs. All other production use of SCVMM, such as managing virtualized production servers, requires separate management licenses. The Visual Studio Agents 2012 software, which includes the Test Controller 2012 is also included with these subscription levels to be used in this scenario. SCVMM and Team Foundation Server can share the same SQL Server database without needing to purchase a separate SQL Server license.

Storyboarding

Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN, and Visual Studio Test Professional with MSDN subscribers can use the storyboarding add-in for PowerPoint to create storyboards in order to represent potential application designs. Others who do not have the storyboarding add-in can view and edit a PowerPoint file that was designed using the add-in. A PowerPoint license is required for using PowerPoint, though it is included with Visual Studio Ultimate with MSDN and Visual Studio Premium with MSDN subscriptions as part of Production use of Certain Office Applications.

Load Testing

Visual Studio Ultimate with MSDN subscribers can use the software to execute load tests with any number of virtual users, including load tests that run in a production environment.

SQL Server Parallel Data Warehouse Developer

Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN, Visual Studio Professional with MSDN, and Visual Studio Test Professional with MSDN subscriptions include a license for SQL Server Parallel Warehouse Developer. The Parallel Data Warehouse appliances required to run this software are sold through OEMs.

IntelliTrace

IntelliTrace enables the recording and playback of application execution to help facilitate debugging. This is accomplished by deploying the IntelliTrace diagnostic data adapter (DDA) to the target system as part of the Visual Studio Test Agent, by deploying the IntelliTrace.exe command-line utility, or by running a test using Microsoft Test Manager. Microsoft Test Manager is included as a part of Visual Studio Test Professional, Visual Studio Premium, and Visual Studio Ultimate.

IntelliTrace files—the output from running the IntelliTrace DDA or IntelliTrace.exe—can only be opened and debugged using Visual Studio Ultimate. IntelliTrace files *may* be shared among two or more companies. For example, a company can share IntelliTrace files with an external development consultant. Similarly, a company can use an external company for testing purposes and debug IntelliTrace files provided by that vendor.

Example 1: Finding a defect in a test environment

Company A is building a Web application. All the developers are licensed for Visual Studio Ultimate with MSDN, and the testers are licensed with Visual Studio Test Professional with MSDN. During a test run a defect is discovered in the test environment that is difficult to reproduce in a development environment. The test machines have previously been configured with the Visual Studio Test Agent, which includes the IntelliTrace DDA. The tester uses Microsoft Test Manager (a feature of Visual Studio Test Professional, Visual Studio Premium, and Visual Studio Ultimate) to execute the test case with the IntelliTrace diagnostic data adapter (DDA) enabled. When the defect is encountered, the tester files a new bug, with the IntelliTrace files from each of the test machines is automatically attached to the bug. When a developer opens the bug using Visual Studio Ultimate, he or she can open the IntelliTrace files and use this to debug the problem.

Example 2: Working with an external consultant

In Example 1, Company A uses an external consultant to help with development. If the external consultant is licensed for Visual Studio Ultimate, he or she can open and debug the IntelliTrace files provided by Company A.

When the Software Included is Subject to its Own Terms

Prerelease and Trial Software

MSDN subscriptions include access to prerelease and trial versions of Microsoft software products. If the software is made available as part of the user's MSDN subscription, then it can be installed and used on any number of devices.

However, prerelease and trial versions of software provided via MSDN are subject to their in-product licensing terms.

SDKs, DDKs, Feature Packs, and patterns & practices Releases

MSDN subscriptions include access to Software Development Kits (SDKs), Driver Development Kits (DDKs), Visual Studio Feature Packs, and patterns & practices releases, which are subject to their in-product licensing terms.

Windows Embedded

Windows Embedded products have additional software license terms that are governed by the specific product end user licensing agreement (EULA). Windows Embedded software cannot be used to run business operations or to distribute the Windows Embedded software for commercial purposes (e.g., licensing, leasing or selling the Windows Embedded software, distributing it in a product to customers for evaluation purposes or distributing it for use with commercial

products). Additional steps are necessary to distribute the Windows Embedded software for commercial purposes. Microsoft Embedded Authorized Distributors can guide the subscriber through the licensing, certifying and shipping requirements.

IntelliTrace Collector and Microsoft Management Agent

The IntelliTrace Collector (offered in the Visual Studio 2012 product line) and Microsoft Management Agent (offered starting with the Visual Studio 2013 product line) are free downloads. The IntelliTrace Collector and Microsoft Management Agent can be installed on any number of machines, including those in a production environment, to collect historical logs that can be used to debug application issues. Use of the IntelliTrace Collector and Microsoft Management Agent is subject to the in-product licensing terms, though the IntelliTrace output can only be read by Visual Studio Ultimate with MSDN subscribers.

Remote Tools

Visual Studio Remote Tools, formerly known as the Remote Debugger, is subject to the in-product licensing terms provided. The Remote Tools can be used in a production environment to debug an application in real time.

Scenarios in which Unlicensed Users can Use the Software

Demonstration Using Terminal Services

MSDN subscriptions permit the use of the Windows Server Remote Desktop Services for up to 200 simultaneous, anonymous users to access an online demonstration of your programs. These anonymous users do not need an MSDN subscription. Nonetheless, an MSDN subscriber can use Remote Desktop Services for development and testing as they can for any other software included in their subscription.

Acceptance Testing

At the end of a software development project, **end users** (or team members such as a business sponsor or product manager acting as proxies for end users, particularly in cases where it's infeasible or impossible for the actual end users of the program to participate) typically review an application and determine whether it meets the necessary criteria for release—a process often called user acceptance testing or UAT. The software may be accessed by end users who do not have an MSDN subscription for purposes of acceptance testing, provided that the use of the software otherwise complies with all MSDN licensing terms. It is rare that someone whose primary role is designing, developing, or testing the software would also qualify as an "end user."

Acceptance testing must not use live production data. If a *copy* of any live production data is used, then that copy of the data must be discarded after the testing is complete and cannot be incorporated back into the live production data.

Feedback

End users can download the free Feedback Client for TFS and access the software to review your application and provide feedback. An MSDN subscription is not needed for end users accessing the software in order to provide feedback. The end user is not testing the application, which would require an MSDN subscription.

How Certain Software Can Be Distributed to Others within Your Applications

Some software, such as the Microsoft .NET Framework, can be distributed.

Components of software products included in MSDN subscriptions that can be distributed (either within an application or as separate files) without royalty are identified in the REDIST.TXT file associated with the product. Components that can be distributed to non-Microsoft platforms are identified in the OTHER-DIST.TXT file associated with the product. Code identified as distributable that has the extension .lib cannot be directly distributed; it must be linked into the application. However, the resulting output can be distributed.

You may also:

- Modify and distribute source code and objects for code marked as "sample" or "Code Snippet".
- Distribute the unmodified output of Microsoft Merge Modules for use with an application's .msi file.
- Distribute the MDAC_TYP.EXE file containing core data access components (such as the Microsoft SQL Server OLE DB provider and ODBC driver).
- Distribute the object version of C++ libraries (Microsoft Foundation Classes, Active Template Libraries, and C runtimes).

For a complete list of components that can be distributed and the restrictions that apply, see Distributable Code in the Universal License Terms section of the Microsoft Licensing Product Use Rights (PUR) or the Distributable Code section of the Microsoft End User License Agreement (EULA) for MSDN subscriptions.

Other Guidance

When Windows on the "Developer Desktop" Requires a Separate License

In most situations, Windows used for the main PC (or set of PCs) must be licensed separately from MSDN due to mixed use—both design, development, testing, and demonstration of your programs (the use allowed under the MSDN subscription license) and some other use. Using the software in any other way, such as for doing email, playing games, or editing a document is another use and is not allowed under the MSDN subscription license. When there is mixed use the underlying operating system must be licensed normally by purchasing a regular copy of Windows such as the one that came with a new OEM PC.

Example: A developer with a Visual Studio Premium with MSDN subscription builds a PC using spare hardware and intends to use this for development and testing of applications. The developer installs a copy of Project Professional 2013 (licensed separately) on the machine to use for managing project timelines, which is its normal production use. Because Project is being used for production, the PC is under mixed use and the Windows operating system on which Project runs must also have a normal production license. The developer is not licensed through the MSDN subscription to use Windows for this PC.

When Virtual Environments Require a Separate License

If a physical machine running one or more virtual machines is used entirely for development and test, then the operating system used on the physical host system can be MSDN software. However, if the physical machine or any of the VMs hosted on that physical system are used for other purposes, then both the operating system within the VM and the operating system for the physical host must be licensed separately. The same holds true for other software used on the

system—for example, Microsoft SQL Server obtained as MSDN software can only be used to design, develop, test, and demonstrate your programs.

Monitoring and Managing Development and Testing Environments Requires Management Licenses

Often Microsoft System Center is used to monitor or manage machines running in a development or testing environment. This is the normal use of System Center and requires normal System Center management licenses, which are acquired separately. This use—monitoring and managing machines—is not allowed under any MSDN subscription. The installation of the System Center agents on these development and testing machines must be performed by a licensed MSDN subscriber (because any use of the software, including the operating system, requires a license), but System Center operators can remotely monitor these machines without an MSDN subscription.

Additionally, for MSDN subscriptions that include System Center, MSDN subscribers can use the System Center software to design, develop, test, and demonstrate their programs.

Example 1: A company uses System Center – Operations Manager to manage both the servers running in its production datacenter and those running in its development and testing labs. The development and testing team members who each have MSDN subscriptions must perform all software installations in the development and testing labs, including installation of the System Center agents software, because the software running in this environment is licensed per user and only these individuals have MSDN subscriptions permitting this use. Once installed, the normal System Center operators who do not have MSDN subscriptions can monitor and manage these servers remotely using the System Center software.

Example 2: An ISV is writing an application that queries Microsoft System Center – Operations Manager via the APIs exposed in System Center and then generates a customized report. This is development and is allowed for Visual Studio Ultimate with MSDN and Visual Studio Premium with MSDN subscribers, whose subscriptions include the System Center software.

Perpetual Use Rights

MSDN subscriptions purchased through certain channels provide perpetual use rights that allow subscribers to continue using certain software products obtained through an active subscription after the subscription has expired. However, subscribers are *not* entitled to updates for that software after the subscription has expired, nor do they continue to have access to software or product keys through MSDN Subscriber Downloads or to other subscription services that are a benefit of having an active subscription. Product keys that were acquired while the subscription was active can continue being used until all activations for those keys have been exhausted. If an MSDN subscription is transferred or sold, any perpetual use rights are transferred to the new party and the seller can no longer use the software.

Generally, MSDN subscriptions that do ***not*** provide perpetual use rights include:

- MSDN subscriptions purchased through Enterprise Agreement Subscription, Open Value Subscription, Campus Agreement, or other "subscription" Volume Licensing programs
- MSDN subscriptions offered through the Microsoft Partner Network including the Microsoft Action Pack Development and Design subscription.

In the above cases, subscribers can no longer use *any* software provided through the MSDN subscription after it expires.

Reassignment of the License

The MSDN subscription or Visual Studio Professional license can be reassigned to another user—such as when a person leaves the team—but not within 90 days of the last assignment.

Distribution of the Software as Part of an Installation Image

Physical or virtual machine images provide a quick and convenient way to set up client or server machines. However, when the software is used to create images and the MSDN subscription through which that software is licensed was purchased through a retail channel, then those installation images cannot be distributed to others. This restriction holds true even if the target users that will install and/or use the image also have appropriate MSDN subscriptions for the software contained within the installation image. These users can, of course, download the software from MSDN directly and create their own installation image.

If the MSDN subscription was obtained by an organization through a Volume Licensing program, then the installation image may be distributed among users licensed for the appropriate MSDN subscription level within the same organization only, including to external contractors working for the organization who have been temporarily assigned an MSDN subscription from the organization's available licenses. Redistribution of the software to 3rd parties is not allowed in any form, including physical and virtual machine images, DVDs and ISO files.

Example: Company A subcontracts with Company B. Part of the work involves creating an image for installing machines in a test server environment. Because individuals from Company B cannot distribute Microsoft software to individuals in Company A, the only options for Company B to "distribute" the resulting image back to Company A are:

- Company A assigns spare (unallocated) MSDN subscriptions to the individuals in Company B that will be creating the image. This enables the software to be transferred within the same organization (and thus is not a distribution of Microsoft software to a 3rd party), *OR*
- Company B provides instructions for building the image to Company A, which then builds the image internally.

Microsoft currently offers a Virtual Hard Disk (VHD) Test Drive program. ISVs wishing to distribute Windows Server-based virtual machines along with evaluation versions of their software can find out more at http://www.microsoft.com/vhd/.

Assigning MSDN Subscriptions to External Contractors

If an organization hires external contractors to work within their development team, then the contractors must have appropriate MSDN subscriptions for any software that they will be using. MSDN subscriptions offered as benefits of the Microsoft Partner Network, including those provided through Microsoft Action Pack Development and Design, cannot be used for direct revenue-generating activities, such as providing consulting services, customizing a packaged application for a specific customer, or building a custom application for a customer, for a fee.

Example: An external contractor is to work temporarily within a client organization's development team. Each development team member at the client has a Visual Studio Premium with MSDN subscription. If the contractor has a Visual Studio Premium with MSDN subscription too, then, like the existing team members, the contractor can use the software in the development environment. If the contractor does not have an MSDN subscription, or has an MSDN subscription at a lower level that does not include all of the software they will be using, then either:

- The contractor must obtain an appropriate (higher-level) MSDN subscription.

- The organization must assign one of their spare (unallocated) MSDN subscriptions—again, of a sufficient level to include the software they need to use—to the contractor for the duration of the contract.

Additionally, if the contractor is using the client's Team Foundation Server then the client must supply a Team Foundation Server CAL for the contractor's use. This could be a CAL purchased separately or a CAL that is included with the MSDN subscription that the client assigns to the contractor temporarily. Team Foundation Server CALs are only valid for accessing a Team Foundation Server acquired by the same organization.

Example: An external contractor is to work temporarily within a client organization's development team. The contractor has a MSDN Premium subscription as a benefit of his firm being a Microsoft Partner Network (MPN). Since MSDN subscription obtained as a benefit of MPN cannot be used for consulting services:

- The contractor must obtain an appropriate (non MPN benefit) MSDN subscription.
- The organization must assign one of their spare (unallocated) MSDN subscriptions—again, of a sufficient level to include the software they need to use—to the contractor for the duration of the contract.

Product Keys and Installation Software

MSDN subscribers can use any installation software as long as that software is from an authorized source (such as MSDN Subscriber Downloads, Volume License Service Center, or official Microsoft DVDs) and the software product is covered under the user's MSDN subscription. For example, an MSDN subscriber could choose to use his organization's Volume Licensing media for installing Windows in a test lab, which may be more convenient due to the Volume Licensing product key having higher activation limits than the key made available through MSDN Subscriber Downloads.

Using Software *Sourced* from MSDN but *Licensed* Under a Production License

Often, it is more expedient to deploy a server running a fully-tested application directly into production. Normal licenses must be acquired for this use (such as a Windows Server license and Client Access Licenses) because the MSDN license is per user and is generally limited to development and testing. However, the *installed software* and the *product key* used to activate that software, where applicable, can be from MSDN, even though the *licenses* to use that software in production must be acquired separately from MSDN.

Software Activation

Many software products offered via MSDN require activation, a process which validates that the software being installed is genuine Microsoft software (and not a corrupted copy) by connecting to Microsoft servers online. Activation happens after the product key has been entered and has been validated for the product being installed. Be careful to not confuse activation with licensing; activation has no way of determining whether you are licensed to use the product (such as Windows 8, offered through an MSDN subscription) or whether you're using the software in a way that is allowed under your license (such as using Windows 8 for developing an application). For more information, see Product Keys and Activation resources on MSDN.

Visual Studio Team Foundation Server 2013 Licensing

Microsoft Visual Studio Team Foundation Server 2013 is the backbone of Microsoft's Application Lifecycle Management (ALM) solution, providing core services such as version control, work item tracking, reporting, and automated builds. Through its deep integration with Visual Studio 2013 development tools, Team Foundation Server helps organizations

communicate and collaborate more effectively throughout the process of designing, building, testing, and deploying software—ultimately leading to increased productivity and team output, improved quality, and greater visibility into the application lifecycle.

Microsoft licenses Team Foundation Server under the Server/Client Access License (CAL) licensing model—that is, organizations must have a license for each running instance of Team Foundation Server (i.e., the server) and, with certain exceptions, a Team Foundation Server 2013 CAL for each user or device that accesses Team Foundation Server.

Obtaining Visual Studio Team Foundation Server 2013

Visual Studio Team Foundation Server 2013 can be obtained in three ways:

- **MSDN subscriptions.** Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN, Visual Studio Professional with MSDN, Visual Studio Test Professional with MSDN, and MSDN Platforms subscribers can download and deploy one instance of Team Foundation Server 2013. These same MSDN subscribers are granted a Team Foundation Server 2013 CAL to be used within their organization (it is not valid for use of Team Foundation Server acquired by a different organization).
- **Volume Licensing.** Team Foundation Server is offered through Microsoft Volume Licensing programs, as outlined in the How to Buy section above.
- **Retail.** Team Foundation Server 2013 purchased in retail channels allows up to five users to connect to that same instance of the software without requiring a Team Foundation Server 2013 CAL. The sixth and further users each need a CAL.

Example: An organization has purchased two retail server licenses for Team Foundation Server 2013. They have 10 people needing access to a single instance of Team Foundation Server (the other server license is currently not in use) and none of them has an MSDN subscription. Five people accessing this one instance of Team Foundation Server don't need a CAL, so the organization only needs to purchase CALs for the other five people.

Alternately, if the organization installed both instances of Team Foundation Server 2013, they could have 5 people use one instance and the other five people use the other instance. In this case, the organization would not need to purchase CALs.

While this section of the document focuses on Team Foundation Server 2013 licensing, these terms also relate to the new free Team Foundation Server 2013 Express offering which was introduced with this product release, except as noted and except for features that are not included in Team Foundation Server 2013 Express.

General Guidance for Licensing Team Foundation Server

There are a number of points to understand when planning to license Team Foundation Server:

- **For each server license of Team Foundation Server 2013 that you acquire, you must assign that license to one of your servers**. You may run one instance of the server software in one physical or virtual operating system environment (OSE) on the licensed server.
- **The Team Foundation Server license also includes certain additional software which can be run on any number of machines** (physical or virtual). Additional software includes:
    - Team Foundation Build Services (for running a build server)

    - Team Foundation Server SharePoint Extensions (for installing on a SharePoint Server)
    - Team Foundation Server Project Server Extensions (for installing on a Project Server)
    - Team Explorer (for installing with Visual Studio to connect to Team Foundation Server)
- **You must acquire an operating system license for each machine running Team Foundation Server 2013**, any of the additional software, or the SQL Server database for Team Foundation Server. You must acquire an operating system license even when your use of Team Foundation Server is licensed as part of an MSDN subscription. For Windows Server-based deployments where Windows Server is licensed on a Server/CAL basis, each user or device that accesses Team Foundation Server data (on a read or write basis) must also have a Windows Server CAL.
- **One instance of the Microsoft SQL Server 2012 Standard software can be used as the Team Foundation Server 2013 database, except for Team Foundation Server 2013 Express which uses SQL Server 2012 Express**. Team Foundation Server 2013 uses Microsoft SQL Server as its data repository and provides the right to deploy one instance of SQL Server 2012 Standard software per Team Foundation Server 2013 server license. This is not a separate SQL Server license. This instance of SQL Server can run on a separate server but can only be used by Team Foundation Server—not for any other purposes. If you do use the SQL Server software for purposes other than Team Foundation Server, then you must license that use separately.
- **SQL Server Enterprise can be used for Team Foundation Server 2013, but must be licensed separately**. If you wish to use a different edition of SQL Server (such as Enterprise) as the Team Foundation Server 2013 database, then you must acquire that license separately.
- **SQL Server Reporting Services for Team Foundation Server 2013 can be accessed without a SQL Server CAL**, using the SQL Server software supplied under the Team Foundation Server license. Normally, accessing SQL Server Reporting Services requires a separate SQL Server CAL, but access to Team Foundation Server 2013 reports under the Team Foundation Server 2013 license is allowed without a SQL Server CAL as long as the SQL Server software running is the version and edition supplied under the Team Foundation Server license (i.e., SQL Server 2012 Standard) or is licensed separately per core. In all cases, Team Foundation Server CALs are not required for users who are only accessing Team Foundation Server reports.

Server Licensing Requirements for Team Foundation Server

For each Team Foundation Server license you acquire, you can run one instance of the server software in one physical or virtual operating system environment. Before you run the software, you must assign the Team Foundation Server license to one of your servers.

Reassignment of the Server License

The Team Foundation Server 2013 license can be reassigned to another server, but not within 90 days of the last assignment. However, in the event of a permanent hardware failure, it can be reassigned sooner.

Using Visual Studio on the Build Server

If you have one or more licensed users of Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN, or Visual Studio Professional with MSDN, then you may also install the Visual Studio software as part of Team Foundation Server 2013 Build Services. This way, you do not need to purchase a Visual Studio license to cover the running of Visual Studio on the build server for each person whose actions initiate a build.

Client Licensing Requirements for Team Foundation Server

With certain exceptions, each user or device directly or indirectly accessing Team Foundation Server must have a User CAL or a Device CAL.

When a Client Access License is Not Required

A Team Foundation Server CAL is not required in the following scenarios:

- **Entering work items through any interface, and viewing and editing work items you created**. This enables users to enter and edit their own work items of any type.
- **Accessing Team Foundation Server reports**. Any read-only data that comes from the Team Foundation Server SQL data warehouse or is surfaced through SQL Server Analysis Services would be a report, but custom reports could also be written to call into Team Foundation Server APIs and could also join that data with other data sources.
- **Accessing Team Foundation Server using Microsoft System Center Operations Manager**. This enables operations staff to take operational issues encountered in production and raise them as issues to the development team, automatically creating a work item in Team Foundation Server.
- **Accessing Team Foundation Server using the Feedback Client for TFS**. This allows the user to provide Feedback about an application into Team Foundation Server.
- **Viewing static data that has been manually distributed outside of Team Foundation Server**.
- **Up to two devices or users that only access Team Foundation Server to perform system administration**, such as creating Team Projects or Project Collections.
- **Up to five users when Team Foundation Server is purchased through the retail channel or for the free Team Foundation Server Express**. However, a CAL is required for the 6th user and any subsequent user.
- **Accessing Team Foundation Service via a Team Foundation Server 2013 Proxy.** This enables Team Foundation Service subscribers with bandwidth latency issues to deploy Team Foundation Server 2013 Proxy to access the service
- **Providing approvals to stages as part of the Release Management pipeline**

In all cases, however, the user must still have the necessary CALs for Windows Server (when Windows Server is used as the operating system for Team Foundation Server, and where Windows Server is licensed under Server/CAL), SharePoint Server (when the user accesses a Team Foundation Server Project Portal running SharePoint Server), or SQL Server (when Team Foundation Server uses a version or edition of SQL Server other than SQL Server 2012 Standard), where applicable.

Server Features Requiring More than a CAL

In order to use the Request and Manage Feedback, the Test Management features, Agile Portfolio Management, Team Rooms, and Work Item Chart Authoring tools of Team Foundation Server 2013, the user must be licensed for either Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN, Visual Studio Test Professional with MSDN or MSDN Platforms. A CAL is not sufficient to use these features. Details on managing access to these features are available in the MSDN Library.

Note that using the Backlog and Sprint Planning Tools in Team Foundation Server 2012 required more than a CAL. However in Team Foundation Server 2013 only a CAL is required to use those capabilities. The following table illustrates the changes -

Features available with Team Foundation Server 2013 2013 CAL	**Features requiring Test Pro, MSDN Platforms, Premium or Ultimate**
Task Boards and Kanban Boards Backlog Management and Sprint Planning Tools	Request and Manage feedback Test Case Management Agile Portfolio Management Team Rooms Work Item Chart Authoring

External contractors with Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN, or Visual Studio Test Professional with MSDN subscriptions supplied by their organization can also access these features in Team Foundation Servers running at other organizations. However, a Team Foundation Server CAL purchased by the organization that licensed the Team Foundation Server must be assigned to each of these users.

Choosing between User CALs and Device CALs

Organizations may choose to purchase *User CALs* or *Device CALs,* or a combination of both. User CALs may be appropriate when one user accesses Team Foundation Server from multiple devices or locations; device CALs are typically used when multiple individuals share a single device to access Team Foundation Server. Although a Device CAL permits multiple users on a single device, it may only be used by a single user at a time.

Example: A training facility that is teaching Team Foundation Server to a group of classes needs to license Team Foundation Server. The teaching facility should purchase a Device CAL for each computer in their classroom. In this case, any number of students can use these machines, as each Device CAL allows any number of users to access the server software from a single device.

Multiplexing and Pooling Do Not Reduce the Need for CALs

Hardware and software that reduce the number of users or devices that directly access Team Foundation Server (sometimes referred to as "multiplexing" or "pooling") do not reduce the number of Team Foundation Server CALs that are required. End users or devices that access Team Foundation Server in any way–other than the When a Client License is not Required scenarios noted above–are required to have the appropriate licenses, regardless of whether they are using a direct or indirect connection to the software.

Example 1: An organization implements an intranet Web site that connects to Team Foundation Server in a way that enables users to add work items, resolve bugs, or trigger builds through the Web site. Even though only one device (the Web server) is directly connecting to Team Foundation Server, each person *who uses the Web site to access Team Foundation Server* for purposes other than entering defects and enhancement requests must have a CAL. (A device CAL may not be used for the Web server because the Device CAL only supports one user logged-into the specified device at any given time.) A CAL is not required for accessing a second Web site that runs on the same physical Web server but does not access Team Foundation Server.

Example 2: Multiple people simultaneously remote into a server running Terminal Services to access a development environment. Even though those multiple users are "sharing" one device, each user must have a CAL. (A device CAL may not be used because the Device CAL only supports one user logged-into the specified device at any given time.)

Downgrade Rights for Team Foundation Server

Microsoft provides downgrade rights for Visual Studio Team Foundation Server 2013. This enables you to use an earlier version of Team Foundation Server (such as Team Foundation Server 2005, 2008, 2010 or 2012) in place of the licensed version of Team Foundation Server 2013, and an earlier version of SQL Server 2012 Standard as the database supporting Team Foundation Server. The downgrade rights also apply to Team Foundation Server CALs, so a Team Foundation Server 2013 CAL can be used for accessing earlier versions of Team Foundation Server.

Team Foundation Server under Software Assurance

As is standard with Software Assurance, if you had a Visual Studio Team Foundation Server 2010 license and CAL that was under Software Assurance as of the availability of Visual Studio Team Foundation Server 2013 in Volume Licensing, then your server and CAL become a Visual Studio Team Foundation Server 2013 server and CAL; otherwise, you are required to purchase a Visual Studio Team Foundation Server 2013 server and CAL to access Visual Studio Team Foundation Server 2013.

Connecting Visual Studio Online to a Local Build Server

It is possible to set up their Visual Studio Online account to run builds on a local server running Team Foundation Build Services. The licensing requirements for the server running the Build server are no different whether it is receiving commands from a local Team Foundation Server or from Visual Studio Online—at a minimum it requires a Team Foundation Server license, an operating system license (plus potentially CALs), and all users whose actions cause builds to to run require Team Foundation Server CALs. Therefore, users who check in code to Visual Studio Online which in turn kicks off a build to the local Build server need Team Foundation Server CALs.

Methods of Accessing Team Foundation Server

The Team Foundation Server 2013 data can be accessed in several ways, including:

- **Visual Studio Team Explorer 2013**, which is included with Visual Studio Ultimate, Visual Studio Premium, Visual Studio Professional, and Visual Studio Test Professional, and available for download to the general public. Team Explorer also can be installed as a standalone client, and on any number of devices.
- **Visual Studio Team Explorer Everywhere 2013**, which enables you to connect to Team Foundation Server from an Eclipse-based environment. Team Explorer Everywhere has been sold separately but is now available for download to the general public.
- **Visual Studio Team Web Access,** which is a browser-based version of the Team Explorer client.
- **Microsoft Office Excel or Microsoft Office Project,** which can access Team Foundation Server using add-ins for those programs that are provided with Team Explorer.
- **Programmatically,** as enabled through the Team Foundation Server 2013 application programming interfaces (APIs) or by other means.

No matter which method you use to access Team Foundation Server you must acquire a license for the client, other than for scenarios noted in the When a Client Access License is Not Required section above.

Deployment Options

Companies can take advantage of the inherent flexibility and scalability of Team Foundation Server to support development teams of all sizes. For example, Team Foundation Server can be deployed on a desktop system, on a single server, or in a two-tier configuration. Regardless of which approach is used, Team Foundation Server requires an operating system and a database, each of which have their own licensing implications.

Multi-Server (Two-Tier) Deployment

You can deploy Team Foundation Server 2013 in a two-tier configuration, where one tier hosts Team Foundation Server and the other tier hosts the SQL Server back-end. As outlined above, the operating system for each tier must be licensed separately, and one instance of SQL Server 2012 Standard can be deployed for each license of Team Foundation Server that you acquire.

Example: An organization deploys Team Foundation Server 2013 to one server running Windows Server 2012 Enterprise, and the corresponding SQL Server 2012 Standard database on a separate instance of Windows Server 2012 Enterprise. In this case, only one Team Foundation Server 2013 server license is in use (comprising the Team Foundation Server and the SQL Server data tier collectively), but two server licenses of Windows Server 2012 Enterprise are required. Team Foundation Server Client Access Licenses may be needed.

When deployed in a two-tier environment, you can increase reliability by maintaining a second application-tier server in a warm or cold standby mode. In warm standby mode, the failover machine is running but a system administrator manually activates the failover functionality. In a cold standby setup, the failover system is usually off until an administrator turns it on and activates its failover functionality. Organizations considering warm or cold standby scenarios may want to consider a load-balanced application tier instead, with both servers in an active role by default.

You can increase the availability of Team Foundation Server in a two-tier configuration by using SQL Server clustering on the data tier—in this case comprised of two servers. Supported in SQL Server 2012 Standard and higher, clustering provides high availability by combining several physical SQL Server instances into one virtual instance. In a clustered, two-server data tier configuration, Windows Server and SQL Server 2012 licenses are required for each server but no *additional* Team Foundation Server CALs are required. Each server in the cluster running SQL Server 2012 Standard counts as a separate instance of SQL Server, so you need to have enough Team Foundation Server 2013 licenses to cover the number of instances, or acquire licenses for SQL Server separately.

Team Foundation Server Project Portal

A Team Foundation Server Project Portal is a SharePoint site that is created to present data from a Team Foundation Server team project, using the Team Foundation Server SharePoint Extensions. When it uses either SharePoint Foundation (available for download to the public) or Windows SharePoint Services, the use is covered under the Windows Server license. Since the Windows Server used to run Team Foundation Server must be acquired separately (this use is not included with MSDN subscriptions), this use is already covered.

As an alternative, organizations may choose to host Team Foundation Server Project Portals on the full version of SharePoint Server. In this case, SharePoint Server and SharePoint Server CALs must be licensed separately. This use of SharePoint Server is also not licensed under MSDN subscriptions.

Team Foundation Build Services

Build automation functionality in Team Foundation Server enables the software to run automated builds on the same server or a separate system, along with the ability to run quality or performance tests as part of the build process. Implementing a "build server" is accomplished using the build agent which is included with Team Foundation Server 2013. The build server can be separate from the server running Team Foundation Server, and no Team Foundation Server CAL or server license is required for the build server.

Lab Management Licensing

Microsoft's Visual Studio Lab Management solution extends the existing Visual Studio Application Lifecycle Management platform with integrated Hyper-V based virtual machine management. Lab Management automates complex build-deploy-test workflows to optimize the build process, decrease risk and accelerate time to market. It helps reduce development and testing costs associated with setup, tear down and restoration of virtual environments to a known state. Lab Management streamlines the collaboration between development, QA and operations to help achieve a higher ROI and realize the benefits of Microsoft's entire ALM solution.

Learn more about Visual Studio 2013 Lab Management functionality: http://go.microsoft.com/fwlink/?LinkId=198956

Lab Management Components

Different pieces of software work in harmony across multiple machines to enable the Lab Management functionality. A typical configuration includes:

1. **Virtual Machine Host**:
    a. Operating system: Windows Server 2008 R2 or 2012
    b. Other software: System Center – Virtual Machine Manager 2008 R2 or 2012
    c. On the virtual machines: Visual Studio Agents 2013
2. **Team Foundation Server**:
    a. Operating system: Windows Server 2008 R2 or 2012
    b. Other software: Visual Studio Team Foundation Server 2013, SQL Server 2012 Standard, and Visual Studio Test Controller 2013 (part of Visual Studio Agents 2013 which is available to Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN, and Visual Studio Test Professional with MSDN subscribers for this use).
3. **Client**:
    a. Operating system: Windows 8 or other Microsoft operating system capable of running the Visual Studio software
    b. Other software: Visual Studio Ultimate 2013, Visual Studio Premium 2013, or Visual Studio Test Professional 2013

While it is possible to consolidate the Virtual Machine Host and the Team Foundation Server, this may not be ideal in terms of performance. It may also be preferable to deploy Team Foundation Server in multiple tiers (*see Multi-Server (Two-Tier) Deployment*).

Lab Management Licensing

To utilize the Lab Management functionality in Visual Studio 2013, you must acquire licenses for the following:

1. Each person using Microsoft Test Manager 2013 to configure and manage the lab environment must be licensed for either **Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN,** or **Visual Studio Test Professional with MSDN**, depending on the product they're using. Microsoft Test Manager is installed with Visual Studio Test Professional, Visual Studio Premium, and Visual Studio Ultimate. Interacting with the Visual Studio Agents 2012 software running on the virtual machines (which is done through Microsoft Test Manager 2012 and uses Microsoft System Center Virtual Machine Manager 2008 R2 or 2012) is also licensed under Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN, or Visual Studio Test Professional with MSDN.
2. **The operating system(s) running Team Foundation Server**. Use of Team Foundation Server 2013 (which includes use of SQL Server 2012 Standard) is provided to most MSDN subscribers. (*See Visual Studio Team Foundation Server 2013 Licensing for more details, including details on Client Licensing Requirements for Team Foundation Server.*) However, the operating system(s) used to run Team Foundation Server, including the server, the build server, and the database—which can each be run on a separate operating system—must always be acquired separately.
3. **Each person accessing the Virtual Machine Host** (or accessing a virtual machine on that host) **must have an MSDN subscription** that contains the software they are using to develop or test the application. When these people do not need to create the lab environments or interact with the Visual Studio Agents software running on the virtual machines, then a lower-level MSDN subscription may be sufficient. The host operating system for the Virtual Machine Host, Windows Server 2008 R2, does not need to be licensed separately as long as the software running on this host is only used by MSDN subscribers for development and testing.

Visual Studio Release Management Licensing

Visual Studio 2013 provides a continuous deployment solution to Microsoft's ALM and DevOps solutions through Release Management capabilities, helping customers deliver applications faster, better and more efficiently. The Release Management continuous delivery solution will automate the development-to-production release process from Visual Studio Team Foundation Server, helping enable faster and simpler delivery of applications.

Learn more about Visual Studio 2013 Release Management solution: http://www.visualstudio.com/explore/release-management-vs

Release Management Solution Components

Different pieces of software work in harmony across multiple machines to enable the Release Management solution. The three components include:

1. **Release Management Client for Visual Studio 2013**
2. **Release Management Server for Team Foundation Server 2013**
3. **Microsoft Deployment Agent**

To utilize the Release Management solution in Visual Studio 2013, you must acquire licenses for the following:

1. Each person using the Release Management Client for Visual Studio 2013 for creating, updating or deleting a release pipeline sequence must be licensed for either **Visual Studio Ultimate with MSDN, Visual Studio Premium with MSDN, Visual Studio Test Professional with MSDN or MSDN Platforms**
2. Each person triggering the release pipeline sequence must be licensed with a **Team Foundation Server CAL.** However a Team Foundation Server CAL is not required to approve stages or sign off on a release.
3. **Each node or endpoint to which an application is being deployed to must be licensed with one of the two Visual Studio Deployment offerings**

    - Visual Studio Deployment Standard 2013
    - Visual Studio Deployment Datacenter 2013

Edition	Ideal for…	Licensing Model
Visual Studio Deployment Standard 2013	Low density or non-virtualized environments	processor-based license with each license covering two physical processors and up to two endpoints (virtual machines) per license on either private or public cloud
Visual Studio Deployment Datacenter 2013	Highly virtualized private and hybrid cloud environments	processor-based license with each license covering two physical processors and an **unlimited** number of endpoints (virtual machines) per license on private cloud or up to eight virtual machines per license on public cloud

Note that a node or endpoint at any stage (including all pre-production stages) requires a Visual Studio Deployment license.

A subscriber of Visual Studio Ultimate with MSDN receives a grant of one license of Visual Studio Deployment Standard 2013.

Determining the number of Visual Studio Deployment licenses

The number of Visual Studio Deployment Licenses required for each server is determined by the number of physical processors in the server for Datacenter Edition and either number of physical processors in the server or number of OSEs

being managed for Standard Edition (whichever is greater). If you choose the Standard Edition license, you can add more licenses to a server to manage a greater number of virtual OSEs.

Example	Datacenter licenses required	Standard licenses required
One 1-processor, non-virtualized server	1	1
One 4-processor, non-virtualized server	2	2
One 2-processor server with 3 virtual OSEs	1	2
One 4-processor server with 8 virtual OSEs	2	4

Example: An organization has a non-virtualized testing environment of 10 servers each having two-processors and a highly virtualized production environment of 500 servers each having four-processors. The organization installs Microsoft Deployment Agent on each of the 10 servers on the testing environment and every virtual machine on the production environment so that it can deploy an application to any of those servers. Each server on the testing environment, since it has two processors, would need at least one Visual Studio Deployment Standard licenses that will cover two end-points (virtual machines). If there are more than 2 virtual machines on any of those 10 servers then customer would have to purchase additional Standard licenses. Each server on the production environment, since it has four processors and would be highly virtualized, would need 2 Visual Studio Datacenter licenses. The number of virtual machines running on each server does not matter since Visual Studio Deployment Datacenter covers unlimited number of virtual machines on-premise or on private cloud.Thus the organization would need at least 10 Visual Studio Deployment Standard licenses and 1000 Visual Studio Datacenter licenses.

Appendix

For More Information

Visual Studio: www.microsoft.com/visualstudio

MSDN subscriptions home: msdn.microsoft.com/subscriptions

Compare MSDN subscription options and benefits: msdn.microsoft.com/subscriptions/subscriptionschart.aspx

Product Use Rights: www.microsoftvolumelicensing.com/userights

Microsoft

Evaluating Visual Studio 2013 Products

90-day trial versions of Visual Studio 2013 products can be downloaded at www.microsoft.com/visualstudio. Microsoft Volume Licensing customers under a Select or Enterprise Agreement can download, install, and evaluate any of the Visual Studio products for 60 days before requiring a purchase. Applications built using trial software cannot be deployed into production.

Visual Studio Express 2013 Products

A number of free development tools are also available, including Visual Studio Express 2013 for Windows 8, Visual Studio Express 2012 for Web, Visual Studio Express 2012 for Windows Desktop. These tools provide a subset of the functionality available in Visual Studio Professional 2012 and are specific to writing applications targeting these platforms. Each of these Visual Studio Express 2012 products is licensed per user and subject to the use terms included with the product. Visual Studio Express can be used to build production applications.

Licensing Training Environments

Organizations providing training services to third parties that include Visual Studio or other Microsoft software must be active in the Learning competency in the Microsoft Partner Network. Earning this competency provides the partner with rights to classroom licenses for any software that they have legally acquired, such as separate purchases or licenses that are a benefit of their membership in the Microsoft Partner Network.

Organizations that have signed an Enterprise, Select or Select Plus agreement are allowed to use up to 20 licenses of any product offered through Microsoft Volume Licensing programs in a dedicated training facility on the organization's premises.

Outside these two options, customers need to either use trial software available from Microsoft.com, or purchase licenses for the software being used for training.

Historical MSDN Subscription Transitions

At certain releases of Visual Studio, the MSDN subscription offerings have changed and existing subscribers at that point have been converted to the new subscription level, often providing significantly improved capabilities and benefits.

Visual Studio 2013

There were no MSDN subscription transitions with the release of Visual Studio 2013.

Visual Studio 2012

Customers who had active Visual Studio Professional with MSDN Embedded (also called MSDN Embedded) subscriptions as of August 2012 were automatically converted to Visual Studio Professional with MSDN. All other subscriptions mapped directly to their successors.

2010 Subscription Levels:	**Converted to these 2012 Subscription Levels in August 2012:**
Visual Studio 2010 Ultimate with MSDN	Visual Studio Ultimate 2012 with MSDN
Visual Studio 2010 Premium with MSDN	Visual Studio Premium 2012 with MSDN

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Visual Studio Test Professional 2010 with MSDN	Visual Studio Test Professional 2012 with MSDN
Visual Studio 2010 Professional with MSDN	Visual Studio Professional 2012 with MSDN
Visual Studio 2010 Professional with MSDN Embedded	Visual Studio Professional 2012 with MSDN
MSDN Operating Systems	MSDN Operating Systems

Visual Studio 2010

Customers who had active MSDN subscriptions when Visual Studio 2010 launched in April 2010 were transitioned according to the logic below.

2008 Subscription Levels:	**Converted to these 2010 Subscription Levels in April 2010:**
Visual Studio Team System 2008 Team Suite with MSDN Premium	Visual Studio 2010 Ultimate with MSDN
Visual Studio Team System 2008 Architecture Edition with MSDN Premium	Visual Studio 2010 Ultimate with MSDN
Visual Studio Team System 2008 Development Edition with MSDN Premium	Visual Studio 2010 Ultimate with MSDN
Visual Studio Team System 2008 Test Edition with MSDN Premium	Visual Studio 2010 Ultimate with MSDN
Visual Studio Team System 2008 Database Edition with MSDN Premium	Visual Studio 2010 Ultimate with MSDN
Visual Studio 2008 Professional Edition with MSDN Premium	Visual Studio 2010 Premium with MSDN
Visual Studio 2008 Professional Edition with MSDN Professional	Visual Studio 2010 Professional with MSDN
MSDN Operating Systems	MSDN Operating Systems

This transition was referred to as "The Ultimate Offer." Additional details can be found here: http://msdn.microsoft.com/subscriptions/ff625864.aspx

Visual Studio 2008

The Visual Studio 2008 product line did not have any special transitions, so the 2005 subscriptions mapped directly to their 2008 successors.

Visual Studio 2005	**Visual Studio 2008**
Visual Studio 2005 Team System Team Suite with MSDN Premium	Visual Studio Team System 2008 Team Suite with MSDN Premium
Visual Studio 2005 Team Edition for Software Architects with MSDN Premium	Visual Studio Team System 2008 Architecture Edition with MSDN Premium
Visual Studio 2005 Team Edition for Software Developers with MSDN Premium	Visual Studio Team System 2008 Development Edition with MSDN Premium
Visual Studio 2005 Team Edition for Testers with MSDN Premium	Visual Studio Team System 2008 Test Edition with MSDN Premium
Visual Studio 2005 Team Edition for Database Professionals with MSDN Premium	Visual Studio Team System 2008 Database Edition with MSDN Premium
Visual Studio 2005 Professional Edition with MSDN Premium	Visual Studio 2008 Professional Edition with MSDN Premium

Visual Studio 2005 Professional Edition with MSDN Professional	Visual Studio 2008 Professional Edition with MSDN Professional
MSDN Operating Systems	MSDN Operating Systems

Visual Studio 2005

Visual Studio 2005 was a significant transition, including the launch of Microsoft's ALM offerings, branded Visual Studio Team System.

Pre-Visual Studio 2005 MSDN Subscription Level	**Transition Path**
MSDN Universal	Customers had the choice of Visual Studio 2005 Team Edition role: • Visual Studio 2005 Team Edition for Software Architects with MSDN Premium • Visual Studio 2005 Team Edition for Software Developers with MSDN Premium • Visual Studio 2005 Team Edition for Testers with MSDN Premium • Visual Studio 2005 Team Edition for Database Professionals with MSDN Premium
MSDN Enterprise	All active MSDN Enterprise subscribers were automatically transitioned to Visual Studio 2005 Team Edition for Software Developers with MSDN Premium.
MSDN Professional	All active MSDN Professional subscribers were automatically transitioned to Visual Studio 2005 Professional Edition with MSDN Professional.

Licensing White Paper Change Log

Release Date	**Scope of Changes**
October 2013	• First version covering Visual Studio 2013 licensing
November 2013	• Updates covering Release Management licensing • Updates covering Visual Studio Online