



Microsoft®

**Visual Studio® 2005**

## **Microsoft® Visual Studio® Team System Licensing**

### **White Paper**

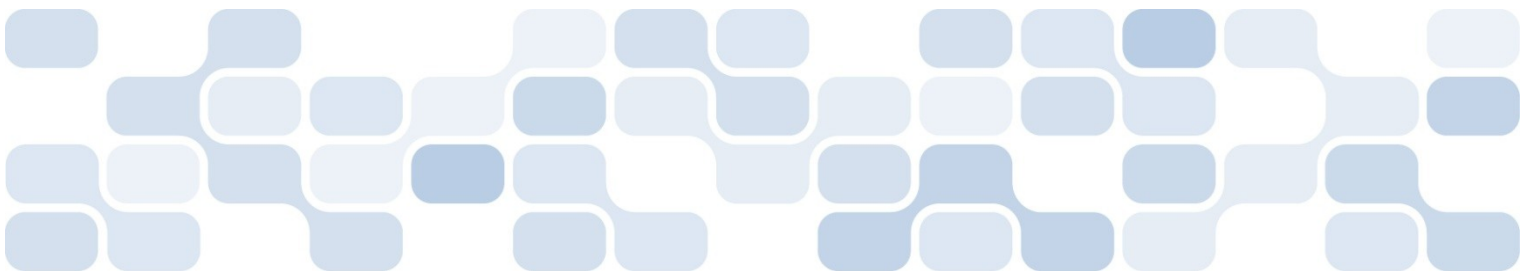
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For the latest information, please see  
<http://www.microsoft.com/teamsystem>



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## Introduction

Microsoft® Visual Studio® Team System expands the Visual Studio product line to include a new set of application life-cycle management (ALM) tools. Team System consists of a set of client products, a server product for asset management and team collaboration, and load generation tools (see Table 1). This white paper provides an overview of the licensing models governing Team System products in common deployment scenarios.

Product	Purpose	Licensing Model
Visual Studio 2005 Team Suite	A suite of life-cycle tools that expands the Visual Studio product line to enable greater communication and collaboration among software development teams.	Microsoft Developer Tools
Visual Studio 2005 Team Edition for Database Professionals	Provides tools to enable change management, testing and deployment for SQL Server databases.	Microsoft Developer Tools
Visual Studio 2005 Team Edition for Software Architects	Provides tools for visually designing service-oriented solutions and validating them against operational environments prior to deployment.	Microsoft Developer Tools
Visual Studio 2005 Team Edition for Software Developers	Provides advanced development tools that enable teams to incorporate quality, early and often throughout the life cycle.	Microsoft Developer Tools
Visual Studio 2005 Team Edition for Software Testers	Provides a set of test tools that are integrated into the Visual Studio environment that help you build high quality applications.	Microsoft Developer Tools
Visual Studio 2005 Team Foundation Server	Provides an integrated server that combines version control, work item tracking, and reporting into a single, secure collaboration platform.	Microsoft Servers – Server/CAL
Visual Studio 2005 Team Foundation Server CAL	Permits access to Team Foundation Server on a per user, or per device basis.	Microsoft Servers – Server/CAL
Visual Studio 2005 Team Foundation Server External Connector	Permits any number of external users (not your or your affiliates' employees, or your or your affiliates' onsite contractors or agents) to access Team Foundation Server without needing CALs for those users.	Microsoft Servers – Server/CAL
Visual Studio 2005 Team Test Load Agent	Generates supplemental test load that enables organizations to simulate more users and more accurately test the performance of Web applications and servers.	Microsoft Servers – Per Processor

**Table 1. Visual Studio Team System Products**

Team Systems provides a highly-integrated approach to solving software development challenges. Through deep integration of Team System features, organizations are able to communicate and collaborate more effectively throughout the process of designing, building, testing, and deploying software. Software teams that deploy Team System products as an integrated system typically see the most significant benefits in terms of increased communication between team members, manageability of products, and increased efficiency. For more information, see the Visual Studio Team System Home Page (<http://msdn.microsoft.com/teamsystem>).

## **Visual Studio Team System Client Product Licensing**

Each of the Visual Studio Team System client products includes the tools found in Visual Studio 2005 Professional Edition, including Visual Studio Tools for Office.

### **Licensing Model**

Team System client products are licensed according to the Microsoft Developer Tools licensing model, which licenses products on a per user basis and each licensed user may install and use the software as many times as they wish on their devices. However, a license for each product is required for each user who uses it on those devices. Through Microsoft Volume Licensing, you can license each of the Team System client products as a standalone product, or with an MSDN Premium Subscription. In retail, Team System client products are only available with MSDN Premium Subscriptions.

### **Software Assurance and MSDN Subscriptions**

Software Assurance (SA) is an expanded maintenance program that provides a broad range of benefits that help organizations maximize the value of Microsoft technology. They help minimize your licensing costs and increase business productivity. MSDN Subscriptions are the SA offering for Team System client products. When purchased with MSDN Premium subscriptions, you also receive the rights to the next released version of your Team System client products if the new version was released during the term of your SA coverage. For more information, see the Volume Licensing Home Page (<http://www.microsoft.com/licensing>).

MSDN Premium subscriptions include developer tools, as well as server and operating system products. Use of these server and operating system products is limited to designing, developing, testing, and demonstrating your applications; however, production use of these products is not permitted.

As an MSDN subscriber, you have access to a comprehensive set of Microsoft products for design, development, test, and demonstration purposes, as well as the same rights to new versions of those products during the term of your subscription. MSDN subscriptions provide access to a broad segment of the Microsoft platform for design, development, and test purposes. You can also access any prior version of Visual Studio.

In addition, each MSDN Premium subscription purchased with a Team System client product includes Visual Studio 2005 Team Foundation Server Workgroup Edition. Unlike the other server products included with MSDN Premium subscriptions, production use rights are granted with this product. For more information, see the Team Foundation Server Workgroup Edition section of this white paper.

## Evaluating Client Products

If you are a Microsoft Volume License customer and you do not currently have an MSDN subscription, you may evaluate Team System client products in two ways:

- Install the 180-day trial of Team Suite, and
- As a Microsoft Volume Licensing customer, you can install and evaluate any of the Team System client products for 60-days before requiring a license.

## Team Foundation Server CAL

Each of the Team System client products integrates seamlessly with Team Foundation Server. You can access Team Foundation Server using Team Explorer, which integrates into the Team System client products, or runs separately as a standalone client in their absence. When you purchase a Team System client product, you also receive a CAL (Client Access License) for Team Foundation Server. You may purchase additional CALs for users who are not licensed users of these client products. More information on Team Foundation Server and CALs can be found in the Team Foundation Server section of this white paper.

## Visual Studio 2005 Team Foundation Server Licensing

Microsoft® Visual Studio® 2005 Team Foundation Server is the backbone of Team System. Team Foundation Server provides a number of core services, including version control, work item tracking, reporting, and automated builds. Team Foundation Server also provides a number of key innovations to solve core problems in team development scenarios, such as complete integration between the client products and the server to facilitate collaboration, flexible process configuration to help deliver predictability, and detailed, metric-based reporting for insight into the development process. Team Foundation Server uses Microsoft® SQL Server™ 2005 as its data repository. A restricted-use version of SQL Server Standard Edition is included with Team Foundation Server, which is installed separately.

## Licensing Model

Microsoft licenses Team Foundation Server under the Server/CAL licensing model. You must purchase a server license for each running instance of the server software, and a Team Foundation Server Client Access Licenses for each user or device that accesses Team Foundation Server. Organizations may choose to purchase user CALs, device CALs, or a combination of both. User CALs are typically used when one user may be accessing the server from multiple devices or locations; device CALs are typically used when multiple individuals share a device to access the server.

You do not need a Team Foundation Server CAL for:

1. Any device running a licensed copy of the server software.
2. Up to two devices or users that only access the server software to administer it.

As noted earlier, each licensed user of a Team System client product receives a Team Foundation Server CAL with their client product license. You may purchase additional Team Foundation Server CALs for users who are not licensed for the client products.

## Software Assurance

With Software Assurance (SA), customers will also receive the rights to the next released version of Team Foundation Server if the new version was released during the term of their SA coverage. For more information, see the Volume Licensing Home Page (<http://www.microsoft.com/licensing>).

In addition to the usual benefits associated with SA, purchasing SA for Team Foundation Server includes “Cold” Disaster Recovery Rights, which permits you (with some limitations) to temporarily run a backup instance in a physical or virtual operating system environment on a server dedicated to disaster recovery.

## **Accessing Team Foundation Server**

You can access Team Foundation Server using Team Explorer, which is available as a standalone client, and integrates with each Visual Studio Team System client product. In addition, you can also use Team Explorer integration with Microsoft Office Excel or Microsoft Office Project to access Team Foundation Server. You may install Team Explorer on as many physical devices as you like; however, you can only use it with Team Foundation Server.

Additional aspects of Team Foundation Server licensing:

- You can buy an external connector license to allow any number of external users to access and use one of your licensed copies of the server software. External users are users that are neither your or your affiliates’ employees, nor your or your affiliates’ on-site contractors or agents.
- Your Team Foundation Server CALs provide you access to earlier versions of the software but not later versions; to access later versions of Team Foundation Server you must buy new licenses, or Software Assurance.
- Hardware or software that reduces the number of devices or users that directly access the server software (sometimes referred to as “multiplexing” or “pooling”) does not reduce the number of Team Foundation Server CALs you need.

## **Team Foundation Server CAL Requirements**

A Team Foundation Server CAL is required for users (or devices) who:

- Directly access Team Foundation Server or SQL Server 2005.
- Indirectly query or write data to Team Foundation Server or SQL Server 2005 through another software application or device.

A Team Foundation Server CAL is not required for users who:

- View static Team Foundation Server data that has been manually distributed outside of the server software.
- Receive Team Foundation Server reports through e-mail and do not indirectly access the server to refresh, create, or update data.
- Receive printed Team Foundation Server reports.

## **Windows Server 2003 and Team Foundation Server**

To install and use Team Foundation Server, you must have a license for Windows Server 2003 for each physical and virtual operating system environment on which the software will run. You may not use the development and test editions of Windows Server 2003 provided in MSDN subscriptions. If you license Windows Server 2003 on a Server/CAL basis, each licensed Team Foundation user also requires a Windows Server 2003 CAL. If you license Windows Server 2003 on a Server/CAL basis with an option to license an external connector, each licensed Visual Studio 2005 Team Foundation user also requires a Windows Server 2003 CAL with an option to license an external connector, as appropriate.

## Scaling-Out with Team Foundation Server

You can use Team Foundation Server across your development organization by leveraging the inherent scalability of the system. Microsoft designed Team Foundation Server to support up to 2000 users and still maintain high performance.

With replication, you achieve gains in performance and reliability. Clients can connect to the closest server to achieve better performance. And, if any server goes down, another one can take its place. However, Team Foundation Server takes a different approach, but still addresses the main benefits of replication – performance and reliability. Team Foundation Server achieves this by leveraging caching in Internet Information Services 6.0 (IIS) and clustering in SQL Server 2005.

### Team Foundation Server Proxy

Team Foundation Server Proxy reduces network activity and demands on Team Foundation Server by caching copies of source control files in a remote location, local to the developer needing the files but away from the main source control location. By storing copies in the remote location, typically connected to the source location through a slower link than the local area network, the proxy helps each user avoid a costly download of the files to their workspace across the slower connection. Instead, Team Foundation Server Proxy generally serves client requests by returning the files from the local cache over the quicker local connection. When a file is not in the local cache, the file is downloaded by the proxy to the local cache from Team Foundation Server, before returning the files to the client.

Team Foundation Server Proxy is licensed on per-device basis. A full Team Foundation Server license is required for installation; however, additional Team Foundation Server CALs are not required. You may not use a license for Team Foundation Server Workgroup Edition to satisfy this requirement.

### SQL Server Clustering

You can increase the availability of Team Foundation Server by using SQL Server clustering on the data tier, which is supported in SQL Server 2005 Standard Edition and higher. Clustering provides high availability by combining several physical SQL Server instances into one virtual one. When used with Team Foundation Server, this requires physically separate application and data tiers, with the data tier hosted on two or more physical servers. Clustering in SQL Server 2005 makes these separate servers appear as one virtual instance. An additional Team Foundation Server license is required for each clustered instance; however, additional Team Foundation Server CALs are not required.

## Using SQL Server 2005 Standard Edition

As mentioned earlier, SQL Server 2005 provides the sole data repository for Team Foundation Server. A restricted-use license of Microsoft SQL Server 2005 Standard Edition is provided under the following terms:

- You may only use the SQL Server software with Visual Studio Team Foundation Server; you may not use it for any other purpose.
- You may only install SQL Server on one physical device per Visual Studio Team Foundation Server license.

## Team Foundation Server Workgroup Edition

Microsoft® Visual Studio® 2005 Team Foundation Server Workgroup Edition contains all of the same features as Team Foundation Server but its use is limited to five (5) user



accounts. Team Foundation Server Workgroup Edition is provided with Team System client products that are licensed with MSDN Premium subscriptions. Team Foundation Server Workgroup Edition is not licensed on a Server/CAL basis, so Team Foundation Server CALs are not required for accessing it.

## **Team Foundation Server Dual-Server Deployment**

You can deploy Team Foundation Server using a dual-server configuration, whereby one server is the application tier that hosts the Team Foundation Server Web Services, and another server is the data tier that hosts the SQL Server back-end. In this scenario, customers need Team Foundation Server licenses for the application tier and separate SQL Server licenses for the data tier.

### **Team Foundation Server Application Tier**

The application tier requires a Team Foundation Server license, and a SQL Server license since SQL Reporting Services is also deployed on the application tier. However, since Team Foundation Server includes a dedicated use license for SQL 2005 Standard, you do not need to purchase additional SQL Server licenses.

When deployed in a dual-server deployment, you can increase the reliability of the system by maintaining a standby application-tier server in warm or cold standby.

- **Warm Standby** - In a warm failover setup, the failover machine is turned on, but an administrator still manually activates the failover functionality. Warm standby requires a separate Team Foundation Server license.
- **Cold Standby** - In a cold failover setup, the failover machine is turned off. When it is needed, an administrator manually turns on the machine and activates its failover functionality. Cold standby also requires a separate Team Foundation Server license. However, if you purchased Team Foundation Server with Software Assurance, you do not need a separate license since SA provides for "Cold" Disaster Recovery Rights.

### **SQL Server Reporting Services**

In a dual-server deployment, you must install the SQL Server Reporting Services that Team Foundation Server uses on a server separate from the data tier; in most situations, you must install SQL Server Reporting Services on the application tier. Separating SQL Server Reporting Services from the rest of SQL Server means that an additional SQL Server license is needed per SQL Server licensing.

### **Team Foundation Server Data Tier**

The Team Foundation Server data tier requires a SQL Server 2005 license. In addition, Team Foundation Server supports clustering on the data tier, which requires a SQL Server license for each node in the cluster. In an active/passive cluster, you must license each node.

## **Team Foundation Build**

The build automation functionality in Team Foundation Server enables automating builds from the physical device hosting Team Foundation Server onto one or more other separate physical devices. A build typically assembles the component pieces of software together along with any prerequisites and compiles them into an application. The automated build process in Team Foundation also includes the ability to run quality or performance tests as part of the build process.

Those users who are authoring tests and including them as part of a Team Build type must be appropriately licensed with the relevant Team Edition product. For unit tests, Team Edition for Software Developers or Team Edition for Database Professionals or Team Edition for Software Testers or Team Suite would be required by the test author. For load and other test types, Team Edition for Software Testers or Team Suite would be required. Similarly, a user who includes code analysis in a Team Build Type must also be appropriately licensed for Team Edition for Software Developers. Users who merely execute and review Team Builds are only required to have a Team Foundation Server CAL.

As the build commences, the physical device will gather the relevant source code as well as required redistributables or compilers, and place them on another physical device. It is important to note here that while there will be server-to-server communication between Team Foundation Server and the device hosting Team Foundation Build, no Team Foundation Server CAL is required for that device as part of the build process as long as the users managing the build process have Team Foundation Server CALs. In addition, Team Foundation Build is considered “additional software” and may be freely redistributed onto build servers without requiring any additional Team Foundation Server licenses for that build server.

As part of the build process, Team Foundation Server may run quality tests and/or analysis on the precompiled or compiled code. These tests rely on functionality found within Team System client products, typically within the Team Edition for Software Developers or Team Edition for Software Testers products. These products may be installed on the build machine by licensed users of those products, as long as they are not directly used by any individuals who are not licensed for those products. Team Foundation Server will gather results of the build as well as any quality tests or analysis and deposit them in the Team Foundation Server data repository.

Team Member Actions	Licensing Implications
Developer checks-in source code.	Team Foundation Sever CAL required.
Developer defines a team build type to include any of: <ul style="list-style-type: none"> <li>Unit Testing</li> <li>Code Coverage</li> <li>Code Analysis</li> </ul>	Team Edition for Developers or Team Suite is required.
Tester defines a team build type to include any of: <ul style="list-style-type: none"> <li>Generic Testing</li> <li>Web Testing</li> <li>Load Testing</li> <li>Manual Testing</li> </ul>	Team Edition for Testers or Team Suite is required.
Team member initiates a build.	Team Foundation Sever CAL required.

**Table 2. Scenario – Team Foundation Build Licensing Implications**

## Accessing Team Foundation Server Project Data

Team Foundation Server assembles all project data generated through work items, quality tests, and other processes in a single data repository. Having the ability to see multi-dimensional views of your projects across a timescale helps team members, development managers, and IT decision makers to understand progress across a number of

dimensions, make better decisions during projects, and better predict outcomes. Project data is stored within Team Foundation Server's data repository in SQL Server and is accessible in a number of ways. As a generalization, accessing data directly from Team Foundation Server requires the user to either have a user CAL or a CAL for the device from which the data is accessed.

Access Scenario	Required Additional Software	Licensing Implications
Viewing reports distributed manually via Microsoft Windows SharePoint Services.	Microsoft Windows Server 2003 Standard Edition, or higher.	A Team Foundation Server CAL is not required; appropriate Windows Server licenses are required.
Viewing and managing work items with Microsoft Office Project 2003.	Microsoft Office Project 2003 or 2007	Users querying Team Foundation Server or SQL Server, or inputting data, must have a Team Foundation Server CAL. Users simply viewing the data within a file that has been sent through e-mail, printed or otherwise manually distributed do not need a Team Foundation Server CAL.
Viewing and managing project data with Microsoft Office Excel 2003.	Microsoft Office Excel 2003 Microsoft Visual Studio 2005 Tools for Microsoft Office	
Viewing reports with SQL Server 2005 Reporting Services.	None	A Team Foundation Server CAL is required.

**Table 3. Scenario – Accessing Team Foundation Server Project Data**

### **Multiplexing**

Hardware or software used to pool connections, reroute information, reduce the number of devices or users that directly access or use a product, or reduce the number of devices or users a product directly manages is sometimes referred to as "multiplexing."

Multiplexing does not reduce the number of Microsoft licenses required. End users are required to have the appropriate licenses, regardless of their direct or indirect connection to the product. Any user or device that accesses the server, files, or data or content provided by the server that is made available through an automated process requires a CAL. Certain circumstances do not require CALs. Generally, if files, data, or content are made available as a result of manual activity (a person uploading a file onto a server or e-mailing the file), a CAL is not required for users or devices accessing those manually transmitted files. You may not use multiplexing to reduce the number of Team Foundation Server CALs required.

As with SQL Server and other products that use Microsoft's Server-CAL licensing model, the application of multiplexing rules to CAL requirements for Team Foundation Server can depend on the degree of automation involved in content, file, or data accessibility and

distribution. Any device/user that accesses or deploys files, content, and data that is made available in an automated way (e.g., directly from a server or automatically posted to a server) requires a CAL. However, if that availability is as a result of manual activity, such as a person loading files onto a server or e-mailing the files, a CAL is not required for users and/or devices then accessing the files, content, and data.

Here are some examples:

- End users submit bugs to user with a Team Foundation Server CAL who in turn files a bug in Team Foundation Server. In this example, manual intervention occurs when filing the bugs in Team Foundation Server, so these end users do not require a Team Foundation Server CAL as they are not accessing the Team Foundation Server directly. Similarly, the user licensed with a Team Foundation Server CAL can e-mail reports from Team Foundation Server back to these end users. The distinction to be made is the manual intervention was required both times by a user licensed with a Team Foundation Server CAL.
- An automated process is set up to load files from Team Foundation Server to a server farm, which then automatically loads those files onto desktops. In this example, each server in the farm and each desktop/user require a Team Foundation Server CAL since there is a continuous automatic link back to Team Foundation Server.
- A business user downloads a report generated by Team Foundation Server that was posted automatically to a server. In this example, that business user requires a Team Foundation Server CAL since he or she is receiving the direct benefit of the automation of Team Foundation Server. Even though the business user is reviewing a report posted to another server, he or she needs a CAL due to the directly realized benefit of the server's automatic posting.

### **Intermittent Users**

This scenario is applicable when an organization has a subset of users that are only intermittent users of Team Foundation Server. Consider a fictional company named AdventureWorks' that produces an expense tracking application called 'AWExpense', which is deployed to all 10,000 employees at AdventureWorks. Of those 10,000 total employees, a team of five developers are responsible for the software development of AWExpense. AWExpense is equipped with a menu that allows end users to submit a bug to the five-person development team responsible for it.

A Team Foundation Server CAL is required for any of the 10,000 employees at AdventureWorks who submit bugs (or for the devices from which such bugs are submitted) if any of the following are true:

- These bugs are fed directly into Team Foundation Server, no matter how few bugs are entered.
- These bugs are fed into an intermediate system which inserts them into Team Foundation Server on a scheduled basis (an example of multiplexing).
- Any automated mechanism is used to insert these bugs into Team Foundation Server.

A Team Foundation Server CAL is not required for any of the 10,000 employees at AdventureWorks (or for the devices from which bugs are submitted) if any of the following are true:

- The bugs are sent to an e-mail distribution list monitored by the development team. If a bug is deemed worthy, this bug is manually entered into Team Foundation Server by the development team members that have CALs.

- Bugs are collected and manually (i.e., human process) entered into Team Foundation Server by a licensed user.
- The 10,000 employees are able to log bugs only using devices that are licensed with a Team Foundation Server device CAL.

### **Classroom**

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 access these machines, as each device CAL allows any number of users to access the server software.

### **Call Center**

Consider a scenario where call center technicians field calls from customers. Issues that arise from these calls occasionally need to be investigated by the development team. To facilitate seamless collaboration between the call center technicians and software developers, the technicians submit a work item into Team Foundation Server to track the issue they have received from their customer call.

In this scenario, all of the technicians in the call center could potentially submit work items into Team Foundation Server and would each require a CAL. Call centers typically have large staffs that work on multiple shifts, so the cost of purchasing a CAL for each technician may be prohibitive.

To alleviate CAL requirements and still enable this scenario, there are a few options. For example:

- You can purchase a set number of device CALs and have all users access Team Foundation Server via those same licensed devices. In many call centers, device CALs are purchased for technicians on shifts sharing devices. This is a viable solution for Team Foundation Server, as well.
- Identify a select group who enter work items into Team Foundation Server on everyone's behalf and purchase an equivalent number of user CALs for that select group.

A user or device CAL entitles the user or device access to any number of Team Foundation Server servers within an organization so long as those instances of the software are properly licensed. However, it does not entitle that user or device to access any Team Foundation Servers outside of the organization for which Team Foundation Server is licensed. You can purchase CALs for external users or you can purchase an external connector license for users who are not part of the organization.

## **Visual Studio 2005 Team Test Load Agent**

Team Test Load Agent, which includes both agent and controller software, is for creating additional, synchronized load. Team Test Load Agent enables users to scale out test load by adding more physical devices, each with the agent software installed, and synchronized by the controller software. Team Test Load Agent is licensed per processor; users must acquire a license for each processor on which Team Test Load Agent runs, regardless of the number of cores those processors have. In addition, Team Test Load Agent requires Team Edition for Software Testers to generate synchronized load and report test results.

Using the recommended hardware configuration for Team Test Load Agent, example load generation scenarios are shown in the following table (note that load is typically measured in concurrent virtual users).

Test Load Required	Team Edition for Testers	Team Test Load Agent
1,000 Virtual Users (VU)	1	-
5,000 VU	1	5
10,000 VU	1	10
25,000 VU	1	25

**Table 4. Typical Load Generation Scenarios**

## Team System Deployment Scenarios

Team System is designed to support a wide range of deployment scenarios. Teams may choose to deploy Team System across their entire development team, or in conjunction with other tools. The following table contains a sample number of scenarios and the Team System licensing implications.

Scenario	Licensing Implications
Full deployment with each team member using a Team System client product and Team Foundation Server.	Each team member will receive a CAL (Client Access License) with Team System Client products, no additional CALs are needed. One Team Foundation Server license is required for each server deployed.
Use of Team Foundation Server without Team System client products or with non-Microsoft tools.	One license is required for each server on which Team Foundation Server is deployed. One Team Foundation Server CAL is required for each user or device accessing Team Foundation Server; CALs can be purchased separately or with client products.
Distributed teams, or off-site development with partners.	One license is required for each server on which Team Foundation Server is deployed, regardless of location. Licensee may buy an external connector, allowing unlimited off-site access to Team Foundation Server by non-employees for a fixed price.
A multi-server deployment of Team Foundation Server.	One license is required for each server on which Team Foundation Server is deployed, including when the application and data tiers are on separate servers. A passive failover (warm stand-by) server requires a separate Team Foundation Server license.

**Table 5. Deployment Scenarios and Team System Licensing Implications**

## Additional Software Licensing Requirements

As noted throughout this white paper, you will need additional software licenses to support a Team System deployment. For more information on Team System software requirements, see the Visual Studio 2005 Team Foundation Installation Guide (<http://go.microsoft.com/fwlink/?linkid=40042>).

## Summary

Organizations will implement Team System in different ways. The licensing terms and provisions outlined in this paper ensure flexibility in deployment for all sizes of teams. Prior to making to make decisions regarding Team System licensing, you should first identify the needs of your team.

For example:

- Will team members perform specific, delineated tasks, or do some perform multiple tasks from design through development and test? For team members who perform multiple tasks, you should acquire Team Suite.
- Will all team members require a Team System client product? If not, you should acquire separate Team Foundation Server CAL for each user who will access Team Foundation Server, but will not be licensed for a Team System client product.
- Is your team geographically distributed? Or, will do you plan to outsource some development work to an off-site team? If so, you should consider purchasing additional Team Foundation Server licenses for using Team Foundation Server Proxy at remote locations.
- How much load will you need to generate in your testing? If you require more than approximately 1,000 virtual users, you should consider using Team Test Load Agent to increase load testing capacity.

## Related Links

For the latest information about Visual Studio Team System, see the Visual Studio Team System site (<http://msdn.microsoft.com/teamsystem>).

For more information about MSDN Subscriptions, see the MSDN Subscriptions site (<http://msdn.microsoft.com/subscriptions>).

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