Modern software development with the Microsoft DevOps platform

Lukas Pollmann
Microsoft Germany
GOING DIGITAL

1 million/hour new devices coming online by 2020

50% of the current S&P 500 corps will be replaced by 2026

60% computing in the public cloud by 2025
« Every company is a software company »
Every company is a software company

<table>
<thead>
<tr>
<th>Company</th>
<th>Years</th>
<th>Revenue</th>
<th>Market Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netflix</td>
<td>7</td>
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<tr>
<td>HBO</td>
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<td>ABC</td>
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<td>Marriott</td>
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<table>
<thead>
<tr>
<th>Company</th>
<th>Years</th>
<th>Employees</th>
<th>Revenue</th>
<th>Net Income</th>
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<td>Ford</td>
<td>114</td>
<td>199000</td>
<td>13000</td>
<td>$44,9B</td>
</tr>
</tbody>
</table>

*Financial reports status Q3/Q4 2015*
But for a majority of organizations, it still takes weeks - or months - to deliver new software.
Evolution of engineering

**Waterfall-Project**
- Long planning phases
- Customer feedback late in process
- Unflexible for changes

**Agile project**
- Short development cycles
- Short feedback loops
- Accepting customer changes
Agile challenges

Silo-mentality between development, operations and business

Short delivery cycles

Manual delivery pipelines
THE MICROSOFT DevOps Story
Implementing a One Engineering System

If you want to go fast, go alone. If you want to go far, go together.

“One in order to deliver the experiences our customers need for the mobile-first and cloud-first world, we will modernize our engineering processes to be customer-obsessed, data-driven, speed-oriented and quality-focused...”
A new value system and new structures
Microsoft's DevOps transformation within our Developer Division
DevOps habits and practices

Based on our experiences from our own transformation to a DevOps culture, we have identified DevOps habits and related DevOps practices that will lead to a true shift to DevOps in organizations of any size.
DevOps at Microsoft
Products and guidance based on our own learnings when moving to the cloud

stories.visualstudio.com | microsoft.com/devops
Visual Studio Team Services

Features & Benefits
Software delivery challenges

Friction

Delays

Lack of insights
“DevOps is the union of people, process, and products to enable continuous delivery of value to our end users.”

Donovan Brown
Principal DevOps Program Manager
The converged DevOps lifecycle

Development

Plan + Track

Release

Production

Moniter + Learn

Develop + Test
The DevOps cycle

1 Plan

Development

2 Develop + Test

3 Release

4 Monitor + Learn

Operations
Tools and services for a DevOps world

Open, flexible and extensible cross-platform DevOps tools

Unlocks a greater ecosystem and works with what you already use

More agility and flexibility for continuous value delivery
Tools and services for any developer, any app

Windows
Linux
iOS
Android

.NET
C++
JavaScript
PHP
Python
Node.js
R
Cordova
Unity
Plan & Track Work
Source Code Management
Package Management
Quality Management
Cross-platform Build
Continuous Deployment
Release Management
Feedback Management
Application Telemetry
Extend, Customize & Integrate
Team Foundation Server
Visual Studio Team Services
Overview & Features
Plan & Track Work

Visual Studio Team Services and Team Foundation Server give you the tools you need to effectively create, manage and deliver against your backlog.

Enterprise collaboration
Agile planning tools
Dashboards & charts
Plan

It starts with an idea - and a plan how to turn this idea into reality...

Develop + Test

Track progress

Plan

Manage work

Project starts

Monday JUN 1
Agile planning

Tools for the entire team

Monitor all your team’s work - including operational issues - using built-in Kanban boards. Track work in progress to ensure you’ve got a streamlined channel from idea to delivery.
Agile project management

Scrum? Absolutely!

Scrum teams will feel right at home. Plan sprints using team-based capacity planning, assign work by dragging and dropping, and monitor progress with real-time burndown charts.
Dashboards and charts

Dashboards

Build dashboards that provide visibility to your team and stakeholders. Stop worrying where to find things and instead use Visual Studio Team Services or Team Foundation Server to get everyone on the same page.
Demo: Sprint Planung mit VSTS
Source Code Management

VSTS and TFS provide unparalleled flexibility for your evolving codebase. All your code is linked directly to the story, bug, or task driving the work.

Flexible version control

Collaborate on code

Any IDE, any code
Develop + Test

Once the iteration starts, developers turn great ideas into features...

2

- Write code
- Unit testing
- Version control
- Build
- Build verification

Release
Flexible and modern source control

Centralized or distributed

Use Git for distributed version control to maximize collaboration or use Team Foundation Version Control (TFVC) for centralized version control. VSTS and TFS offer you not only choice, but also massive scale for large projects and security for your repos via permissions.

Command & control

Sometimes a development project can feel like chaos. Control the chaos with code policies - enforce best practices by requiring all code submissions have code reviews, and eliminate build breaks with gated builds.
Modern code workflows

Branch and pull requests
Branches isolate risk in a development project. Pull requests provide tools that facilitate collaboration and code reviews for changes being merged back into main.

Effortless collaboration
Rich web experiences for leaving comments in code and approving changes make code reviews simpler and more productive than ever.

Package Management
Share and re-use code across the organization with packages. Private, hosted and authenticated feeds let you share, discover & maintain packages and dependencies.
Any IDE, any code

Eclipse, Xcode, and more

Use your favorite language and development tool. VSTS and TFS version control support any language, as well as any Git client (including Xcode). Java teams can access code and work items through free plugins for Eclipse and IntelliJ – and run continuous integration builds based on configuration files from Ant or Maven.

Code search

Semantic code search with syntax highlighting enables you to quickly find code across your repositories, as well as the history and when it was changed and by whom.
Demo: Code Management mit VSTS
Quality Management

A toolset optimized for QA professionals, giving them flexibility in how they work while at the same time keeping them in sync with the rest of the team.

Test planning and tracking

Manual and exploratory testing

Performance and load testing
Test planning and tracking

Single pane of glass

Coordinate all test management activities including test planning, authoring, execution, and tracking from a central location. The test hub in VSTS and TFS gives product owners and business analysts critical insight into progress against the defined acceptance criteria and quality metrics.
Manual and exploratory testing

Browser-based testing

Improved browser-based manual testing tools helps testers author, manage and execute test cases in any modern web browser.

Exploratory testing

Perform ad-hoc and exploratory testing on multiple devices using our integrated 3rd party services without predefined test cases or test steps. The exploratory testing tool includes action recording, screenshots with annotations, video capture and bug-reporting capabilities. Easily create test cases from exploratory test recordings and add them to test plans or suites for subsequent test runs.
Performance and load testing

Unlimited load testing

VSTS and TFS make integrating load testing into your development process easy and will help you avoid nasty surprises in production.

Use cloud-based load testing capabilities to validate and assess application performance under real-world conditions before you deploy. Generate hundreds of thousands of connections in minutes and run tests from one of many global Azure datacenter locations to minimize latency and simulate users' real-world conditions.
Demo: Build Pipeline mit VSTS
Continuous Delivery

Streamline and automate the workflow between development and IT Ops and deliver higher quality software more frequently with less risk.

Continuous Integration

Release Management

Continuous Quality
Release

When all tests pass, the build is deployed to testing environments for each stage in the release process.
Continuous Integration

Build automation
Create and manage build processes that automatically compile and test your application in the cloud or on premises, either on demand or as part of an automated continuous integration strategy.

Integrated
Link builds to test results, work items, code and releases and stop wondering if a bug was fixed in a particular build. By associating work items to code, the work items are listed in the build summary along with code changes and test results.
Release Management

Ship better apps, faster

The Release Management capabilities in VSTS and TFS make it easier to automate deployment and testing of your applications in multiple environments. Teams can author release definitions and automate deployment in repeatable, reliable ways while tracking simultaneous in-flight releases all the way to production.

Full traceability with audit trails

Track the status of recent deployments in each of the environments and retain detailed audit history of all activities performed on a release. Connect to code to see commits and work items that are associated with each release.
Continuous Quality

Test automation

Choose the technologies and frameworks and test changes continuously in a fast, scalable, and efficient manner. Whether your app is on-premises or in the cloud, you can automate build-deploy-test workflows. Build your TFVC, Git, and GitHub projects from a rich gallery of reusable open source and extensible build tasks that support Ant, Maven, Gradle, etc., and run JUnit, NUnit, xUnit, MSTest, Jasmine, and other types of test frameworks. Use continuous delivery to automatically deploy applications or websites that pass automated test runs and model your release pipelines to match your existing release processes.
Demo: Release Pipeline zu Azure
Monitor + Learn

Learn and understand how users use your app, how it reacts and quickly fix issues and bugs

Plan the next iteration

Feedback

Monitor

4
Extend, Customize & Integrate

Customize and extend the Visual Studio platform and create the perfect development environment that you'll love as much as your code.

Open platform

Extensions

Visual Studio Marketplace
Open platform

Extend the power of VSTS and TFS

Industry-standard **RESTful APIs** allow you to integrate from virtually any device, platform or stack, including Windows, Android, iOS, Node.js, and more.

**Web UI extensibility** enables you to create immersive and tailored experiences that are indistinguishable from built-in features and functionality.

**Service hooks** enable robust and fast integration between VSTS and TFS and services.

Target both VSTS and TFS at the same time with common APIs between cloud and on-premises.
Extensions

Create new experiences

Extensions enable individual developers, partners, and teams to create first-class, integrated experiences within Visual Studio Team Services. Users and customers can discover and install extensions through the new Visual Studio Marketplace.

Partner program

The Visual Studio Partner Program enables you to maximize your commercial success by providing you with extensive technical resources, previews of upcoming technologies, and a broad marketing reach for your Visual Studio platform extensions.
Visual Studio Marketplace

Browse, discover and install

The **Visual Studio Marketplace** is a new destination and the exclusive place for purchasing subscriptions and for discovering extensions for Visual Studio Team Services and Visual Studio Code. You can find extensions from within the product or on the web and you can install them with a few clicks.
Demo: Extensions & VSTS
Open, flexible and extensible cross-platform DevOps tools

Unlocks a greater ecosystem and works with what you already use

More agility and flexibility for continuous value delivery
A
(Selected) feature slides
Enterprise agile

Alignment and autonomy

Agile is not just for your team, it’s for your whole organization. Map every story on your backlog to a business scenario – ensuring you understand how the value being delivered contributes to the needs of your business now and in the future.
Release visibility

Continuous delivery

Eliminate uncertainty, lower risk and get visibility on deployments with Release Management. Easily create automated and repeatable workflows and integrate with any build system to release applications faster with less risk. Audit progress of your release at every stage of the deployment pipeline, all the way to production.
Test case management

Streamline quality

Take advantage of a toolset optimized for the needs of testers, giving them flexibility in how they work while at the same time keeping them in sync with the rest of the team. Improved web-based test case management helps testers author, manage and execute test cases using any modern web browser. Microsoft Test Manager further empowers your testers by giving them tools for automated and manual testing in a desktop application optimized for the needs of today’s agile QA professional.
Manual testing

Run, record, play back

Capture detailed records of steps performed, behaviors observed, and the status of each test step with the fully instrumented and configurable Test Runner. Pause testing at any time to report a bug, even if it’s not directly related to the current test case. High-fidelity defect reports go directly to the development team, including all the data needed to reproduce and resolve the error quickly. Record tests for later playback to speed up test sessions and enable test automation.
Exploratory testing

Testing, super-charged

Test without a pre-defined list of test cases and test steps with exploratory testing. Create action recordings, capture rich comments and screenshots and quickly report bugs. Testers can easily create test cases, complete with test steps, from exploratory test recordings which can then be added to test plans and suites for future testing activities. Simultaneous test design and execution saves time and effort and allows testers to create real-world test scenarios, fast.
Feedback management

Actionable feedback

Once you have working software, you're ready to get feedback from your stakeholders. You can ask reviewers to provide videos, screenshots, written comments and ratings. Their feedback is captured into work items that you can review and use to create a bug or suggest a new backlog item.
Application Insights

Track usage and performance

Get a 360° view of your app that includes availability, performance and user behavior. Use a powerful and easy-to-use experience to track and improve the success of your application. Analyze data across dimensions and make informed decisions about your product’s future.
Release Management

Ship better apps, faster

Visual Studio Release Management makes it easy to automate deployment and testing of your applications in multiple environments. Teams can create release definitions and automate deployment in repeatable, reliable ways while tracking simultaneous in-flight releases. Easily incorporate automated functional tests or manual approvals in a release definition to automate the release process all the way to production.
Cloud Dev/Test environments

Agile, flexible, scalable

React faster to business changes and keep up with dev and test infrastructure demands. Reduce effort and lower cost for dev and test infrastructure resources. Get the compute, storage, and network resources you need, in minutes instead of hours or days. Test applications in a ‘production-like’ environment to uncover bugs and issues earlier in the development cycle.
## Visual Studio... now with Xamarin

### Visual Studio Community
- **Tools for non-Enterprise scenarios**
- **Key scenarios**
  - Hobbyists, students, OSS, small teams
  - Create applications for Android, iOS, and Windows
  - Runs on Windows
  - Share code across devices
  - Debugging code
- **Key IDE features**
  - Build (incl. remote Mac agent)
  - Native designers
  - Debugger
  - Xamarin.Forms
- **New Dev Essentials benefits**
  - Access to recorded Xamarin University classes

### Xamarin Studio Community
- **Tools for non-Enterprise scenarios**
- **Key scenarios**
  - Hobbyists, students, OSS, small teams
  - Create applications for Android and iOS
  - Runs on OS X
  - Share code across devices
  - Debugging code
- **Key IDE features**
  - Build (incl. remote Mac agent)
  - Native designers
  - Debugger
  - Xamarin.Forms
- **New Dev Essentials benefits**
  - Access to recorded Xamarin University classes

### Visual Studio Professional
- **Tools for individual developer and small team productivity**
- **Key scenarios**
  - Unrestricted, professional mobile development, code sharing, and debugging
- **Key IDE features**
  - No usage restrictions for Visual Studio
  - No usage restrictions for Xamarin Studio
- **New subscription benefit**
  - Access to advanced content on Xamarin University

### Visual Studio Enterprise
- **Enterprise grade tools for projects of any size and complexity**
- **Key scenarios**
  - Productivity for enterprise applications
  - Enterprise security
  - Enterprise quality
- **Key IDE features**
  - Embedded Assemblies
  - Xamarin Inspector Preview
  - Xamarin Profiler Preview
  - Above enterprise features in Xamarin Studio
  - VSE features used for Xamarin
  - Xamarin Test Recorder – IDE Add-in [Roadmap]
- **New subscription benefit**
  - 25% Test Cloud discount
Visual Studio Professional with MSDN is a comprehensive collection of software, tools and services for building modern applications with maximum productivity for individuals and teams.

**Audience**

Professional developers creating modern applications looking for individual and team productivity.

**Features**

- CodeLens – all code and team indicators
- Cross-platform mobile development (iOS, Android, Windows)
- Windows Desktop and Store Apps
- Web and cloud development
- Office and SharePoint development

**Scenarios**

App development for any device and platform (Windows, iOS, Android) and desktop
Web application and cloud services development
Individual and team productivity

**Subscriber benefits**

- Access to any Visual Studio Team Services account
- Team Foundation Server and one TFS CAL
- Core software for dev/test (Windows, Windows Server, SQL Server)
- $50 monthly Azure credit for dev/test
- Windows Developer account
- Technical Support
- Microsoft eLearning
- MSDN Magazine
- 10 Pluralsight courses for 3 months
- Priority support in MSDN forums
- Partner offers
Cloud Subscriptions

A new, more flexible way of purchasing Visual Studio Professional and Visual Studio Enterprise that provides great options for customers embracing the cloud for software development.

Visual Studio Professional and Visual Studio Enterprise IDEs are offered as monthly or annual subscriptions, sold in the Visual Studio Marketplace.

Monthly subscription

Visual Studio monthly subscriptions are an attractive option for developers who need just the Visual Studio IDE, and already have the necessary licenses for other Microsoft software running in their development and testing environments.

Team collaboration benefits

- Access to any Visual Studio Team Services account
- Team Foundation Server and one TFS CAL

Annual subscription

Visual Studio annual subscriptions are an attractive option for developers who need both the Visual Studio IDE as well as licenses for other Microsoft software running in their development and testing environments. In addition to software for development and testing, there are additional valuable benefits included in annual subscriptions:

Same team collaboration benefits as monthly, plus:

- Core software for dev/test (Windows, Windows Server, SQL Server)
- $50 monthly Azure credit for dev/test
- Windows Developer account
- Technical Support
- Microsoft eLearning
- MSDN Magazine
- 10 Pluralsight courses for 3 months
- Priority support in MSDN forums
- Partner offers
Enterprise-class development

Visual Studio Enterprise with MSDN enables development teams of any size to turn ideas into high-quality, scalable business applications and modern enterprise solutions. Take advantage of state-of-the-art tools and services to achieve enterprise scale, manage complexity and optimize workflows between development and operations teams and deliver powerful solutions optimized for today's business and ready for tomorrow's challenges for every device and platform.

Audience

Developers creating enterprise LOB applications and cross-platform mobile business applications looking for scale, quality and productivity required in organizations of any size.

Features

- IntelliTest
- Exploratory and Manual Testing
- CodedUI Testing
- Code Coverage Analysis
- Unlimited Load Testing
- Lab Management
- Code map
- Design Discovery and Analysis
- IntelliTrace (includes production)
- Release Management
- Xamarin Live Inspection (Preview)
- Xamarin Profiler (Preview)
- Embedded Assemblies
- Xamarin Studio Enterprise for OS X

Scenarios

- Productivity for enterprise application development
- Automated and manual testing
- Unlimited performance and load testing
- Scalable architectural design and discovery
- Manage releases and integrate operations (DevOps)
- Build cross-platform mobile apps (iOS, Android, Windows)

Subscriber benefits

- Access to any Visual Studio Team Services account, includes Test Manager extension
- Virtually all Microsoft software for dev/test
- Team Foundation Server and one TFS CAL
- Office Professional Plus
- Office 365 Developer Subscription
- Power BI
- $150 monthly Azure credit for dev/test
- 30 Pluralsight courses for 12 months
- Additional Microsoft eLearning
- Four technical support incidents
- Additional partner offers
- Xamarin Test Cloud 25% discount
- Access to an extended catalog of Xamarin University on-demand content
Visual Studio

Cloud Subscriptions

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Same team collaboration benefits as monthly, plus:

- Virtually all Microsoft software for dev/test (Exchange, SharePoint, Dynamics, all other Microsoft server products)
- Office ProPlus
- Office 365 Developer Subscription
- Power BI
- $150 monthly Azure credit for dev/test
- 30 Pluralsight courses for 12 months
- Additional Microsoft eLearning
- Four technical support incidents
- Additional partner offers
VSTS & TFS SKU slides
Hosted by Microsoft
Visual Studio Team Services

Cloud services for teams

Hosted in your data center
Team Foundation Server

Team collaboration server
Getting Visual Studio Team Services

**Completely free for small teams**

- **FREE:** 5 users + unlimited stakeholders
- **FREE:** 240 minutes cloud build time/month
- **FREE:** 20k virtual user minutes for load testing/month

**Pricing for additional team members**

<table>
<thead>
<tr>
<th>No. of users:</th>
<th>5</th>
<th>10</th>
<th>20</th>
<th>50</th>
<th>100</th>
<th>200</th>
<th>1000</th>
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<tbody>
<tr>
<td>Cost per month:</td>
<td><strong>FREE</strong></td>
<td>$30</td>
<td>$110</td>
<td>$350</td>
<td>$750</td>
<td>$1,150</td>
<td>$4,350</td>
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</table>

**Free for MSDN and Visual Studio subscribers**

Users with the following subscriptions can be added to an unlimited number of VSTS accounts for free, with “Basic” feature access:

- Visual Studio Enterprise - annual
- Visual Studio Enterprise - monthly
- Visual Studio Enterprise with MSDN - including subscriptions offered through BizSpark and the Microsoft Partner Network
- Visual Studio Professional - annual
- Visual Studio Professional - monthly
- Visual Studio Professional with MSDN
- Visual Studio Test Professional with MSDN
- MSDN Platforms

*Each Team Services paid user also gets a Team Foundation Server CAL (Client Access License).*
Additional services per account

**Cloud Build**

**FREE:** 240 minutes/month on a hosted build agent with 30 mins max runtime for a single build

**FREE:** 1 private agent (new build system) or XAML controller (legacy build system)

**THEREAFTER:**
Hosted build agent for $40/month* (you can upgrade the free agent or buy additional agents)
Private agent for $15/month

**Cloud-based Load Testing***

**FREE:** 20,000 virtual user minutes per month

**THEREAFTER:**
- $0.004/virtual user minute for 20,001-2M VUM
- $0.002/VUM for 2,000,001-10M VUM
- $0.001/VUM for usage above 10M VUM/month

* Requires Visual Studio Enterprise
- Services purchased via Microsoft Azure based on actual usage
- Additional services are accessible to all users on the account and shared among them
- Build time is actual computing time required to run the build, and does not include queuing time (if any)
- Load test runs specify the number of virtual users and duration in minutes
  Virtual users x minutes = virtual user minutes (VUM)
Completely free for individuals and small teams

**Team Foundation Server Express** is free for individual developers and small teams of five or less and can easily be installed on a personal desktop or laptop without a dedicated server.

Pricing for additional team members

With **Team Foundation Server**, you license the server and the users connecting to the server. Users who only need access to work items are free, and other users need a user CAL (client access license) for access to most features in Team Foundation Server.

Free for MSDN and Visual Studio subscribers

Users with the following subscriptions get both a Team Foundation Server license and a Team Foundation Server User CAL:

- Visual Studio Enterprise - annual
- Visual Studio Enterprise - monthly
- Visual Studio Enterprise with MSDN - including subscriptions offered through BizSpark and the Microsoft Partner Network
- Visual Studio Professional - annual
- Visual Studio Professional - monthly
- Visual Studio Professional with MSDN
- Visual Studio Test Professional with MSDN
- MSDN Platforms
# Feature comparison

<table>
<thead>
<tr>
<th>Feature</th>
<th>Visual Studio Team Services</th>
<th>Team Foundation Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan &amp; Track Work</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Source Code Management</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Package Management</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Test Management</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Cross-Platform Build</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Continuous Deployment</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Release Management</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Application Telemetry</td>
<td>Application Insights/HockeyApp</td>
<td>System Center/PreEmptive Analytics</td>
</tr>
<tr>
<td>Reporting</td>
<td>Limited</td>
<td>■</td>
</tr>
<tr>
<td>Extend, Customize &amp; Integrate</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Team Structure</td>
<td>1 Collection – Unlimited Projects/Teams</td>
<td>Unlimited Collections/Projects/Teams</td>
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<tr>
<td>Identity &amp; Permissions</td>
<td>Azure Active Directory, Microsoft Accounts (Live ID)</td>
<td>Active Directory Integration</td>
</tr>
<tr>
<td>Languages</td>
<td>English Only</td>
<td>Multilanguage Support</td>
</tr>
<tr>
<td>Data Location</td>
<td>US, Europe, Australia DCs - India (coming soon)</td>
<td>Data Stored On Premises</td>
</tr>
<tr>
<td>Backup/Data Migration</td>
<td>Limited support, TFS Import (coming soon)</td>
<td>Backup/Restore Tools Available</td>
</tr>
<tr>
<td>Support</td>
<td>Phone, Online and Forums, Engineering Excellence</td>
<td>Phone, Online, Forums, Microsoft Premier Support</td>
</tr>
<tr>
<td>Updates</td>
<td>Frequent Updates (~3 weeks) Automatically Upgraded</td>
<td>Periodic Updates (~3 or 4 months) Planning Required</td>
</tr>
</tbody>
</table>
# Feature comparison

<table>
<thead>
<tr>
<th>Feature</th>
<th>Visual Studio Team Services</th>
<th>Team Foundation Server</th>
</tr>
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<tbody>
<tr>
<td><strong>Version Control</strong></td>
<td></td>
<td></td>
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<tr>
<td>Team Foundation Version Control</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Distributed Version Control with Git</td>
<td>■</td>
<td>■</td>
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<tr>
<td><strong>Agile Planning &amp; Collaboration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrum, Agile, CMMI</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Custom Process Templates &amp; WIT Customization</td>
<td>Limited</td>
<td>■</td>
</tr>
<tr>
<td>Work Item Tagging, Kanban Board, Feedback</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>SharePoint, Project Server, System Center Integration</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td><strong>Build</strong></td>
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<tr>
<td>Automated Builds On-Premises with CI</td>
<td>Support for hybrid scenarios</td>
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<tr>
<td>Hosted Build Service with Continuous Integration</td>
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<tr>
<td>Application/Platform Support</td>
<td>Many Microsoft platforms and growing (Build Server Software)</td>
<td>Fully customizable</td>
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<tr>
<td>Continuous Deployment to Azure</td>
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<tr>
<td><strong>Testing</strong></td>
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<td>Test Case Management</td>
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<tr>
<td>Cloud-Based Load Testing Service</td>
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<tr>
<td><strong>Reporting</strong></td>
<td>Work Item Queries and Favorites/Work Item Charting/Business Intelligence Warehouse</td>
<td>■</td>
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DevOps demo slides