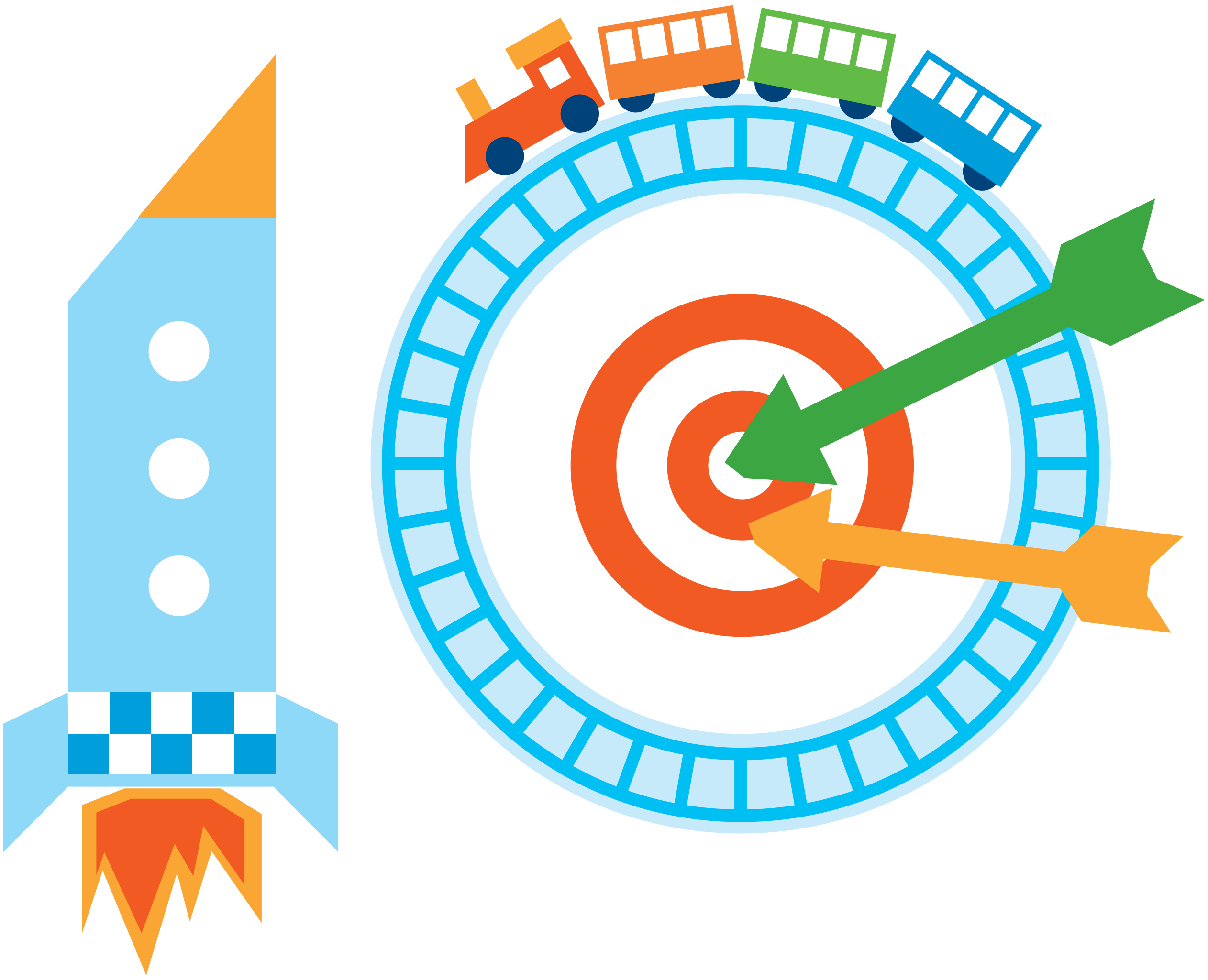
10 Game-changing Features in Visual Studio 2013 for the ASP.NET Developer



A publication of telerik

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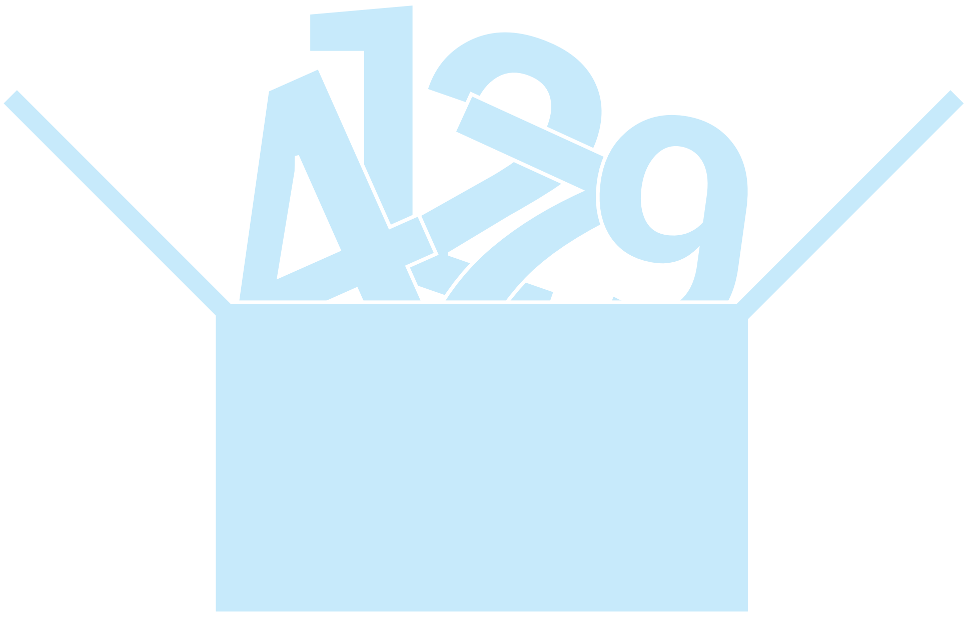
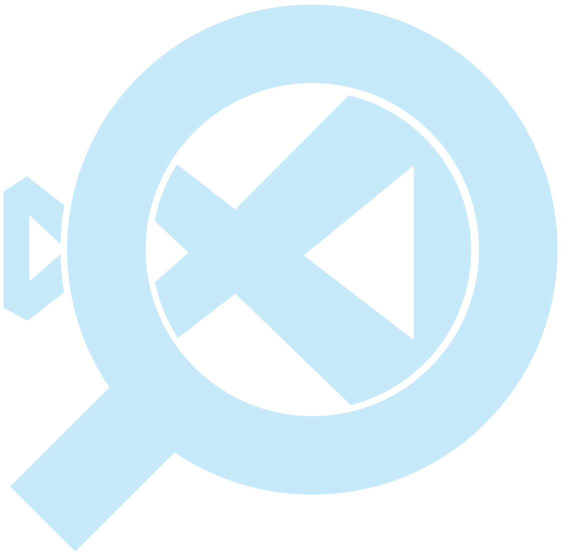


Overview



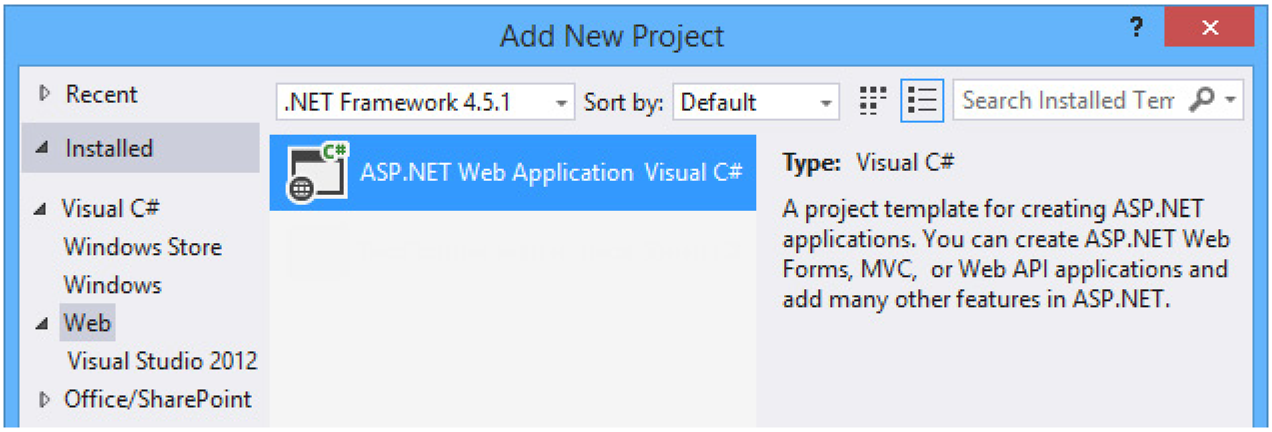
October 2013 brought a new release of Microsoft's Visual Studio. As with each Visual Studio update, there are framework enhancements and language enhancements for all project types and environments. In this edition, we see some of the most dramatic changes to ASP.NET since the introduction of the web development framework in .NET 1.0

This whitepaper will review 10 of the most important changes, and explain what makes them so valuable for ASP.NET developers. You will learn why Visual Studio 2013 is the version of Visual Studio to upgrade to, no matter if you are currently running in version 2012, 2010, 2008, or 2005.

1. One ASP.NET

Since the release of the ASP.NET MVC framework in 2009, web programming with .NET became something of a guessing game. At the beginning of any project a choice would have to be made: should one build with Web Forms or MVC? There have always been options to use the two project types together, but developers would combat the features of Visual Studio to be most efficient with their tools.

Starting with Visual Studio 2013, the project type guessing game is over. There is now only one web project type in Visual Studio.

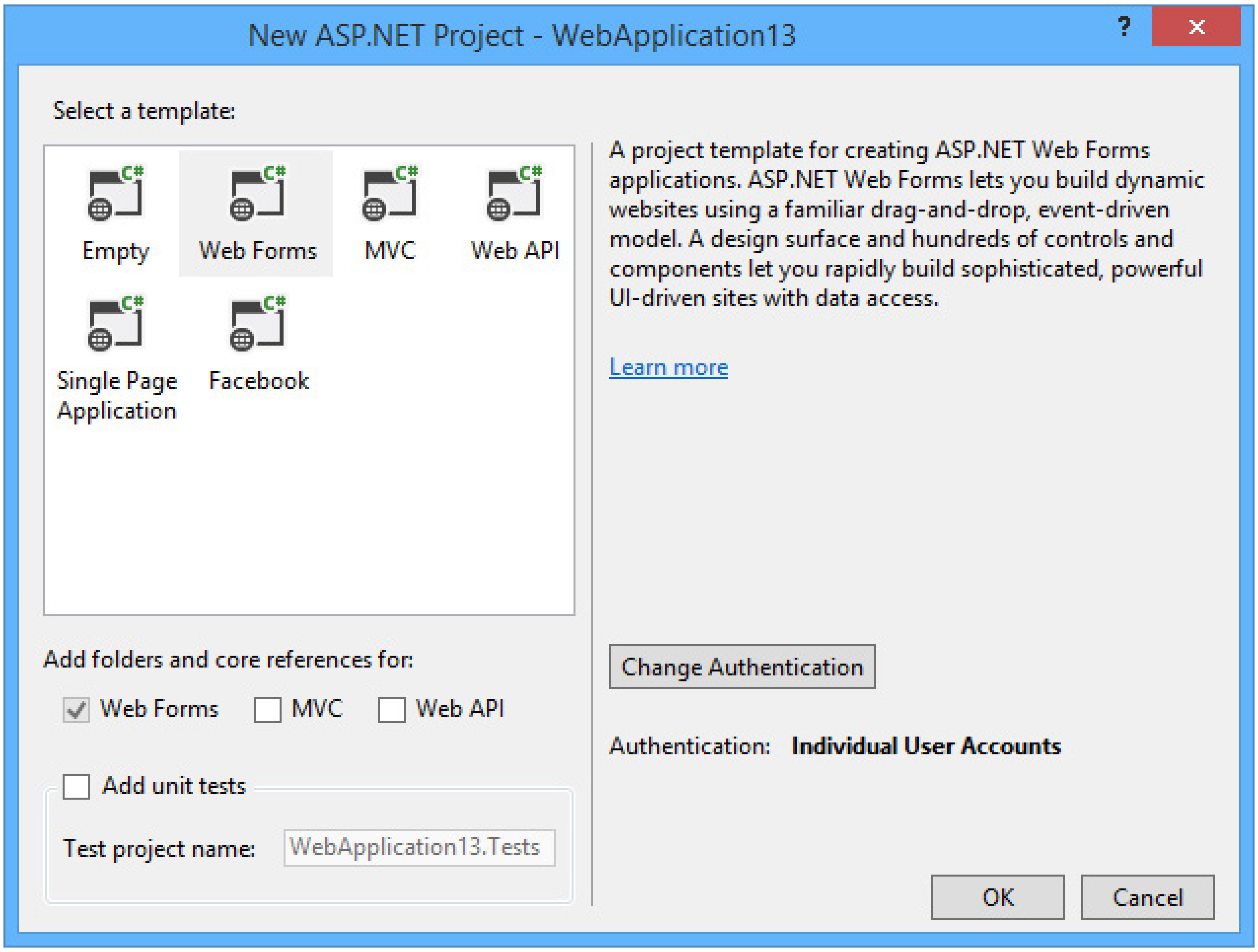


Type: Visual C#

A project template for creating ASP.NET applications. You can create ASP.NET Web Forms, MVC, or Web API applications and add many other features in ASP.NET.

FIGURE 1 - ONE ASP.NET PROJECT TYPE

In this model, we have features and functionality that allow us to utilize the entire ASP.NET toolbox available to us. When you begin working with this project type, you will be prompted with additional configuration options to begin working with your project:



A project template for creating ASP.NET Web Forms applications. ASP.NET Web Forms lets you build dynamic websites using a familiar drag-and-drop, event-driven model. A design surface and hundreds of controls and components let you rapidly build sophisticated, powerful UI-driven sites with data access.

Add folders and core references for:

[✓] Web Forms ☐ MVC ☐ Web API

☐ Add unit tests

Test project name: WebApplication13.Tests

Authentication: **Individual User Accounts**

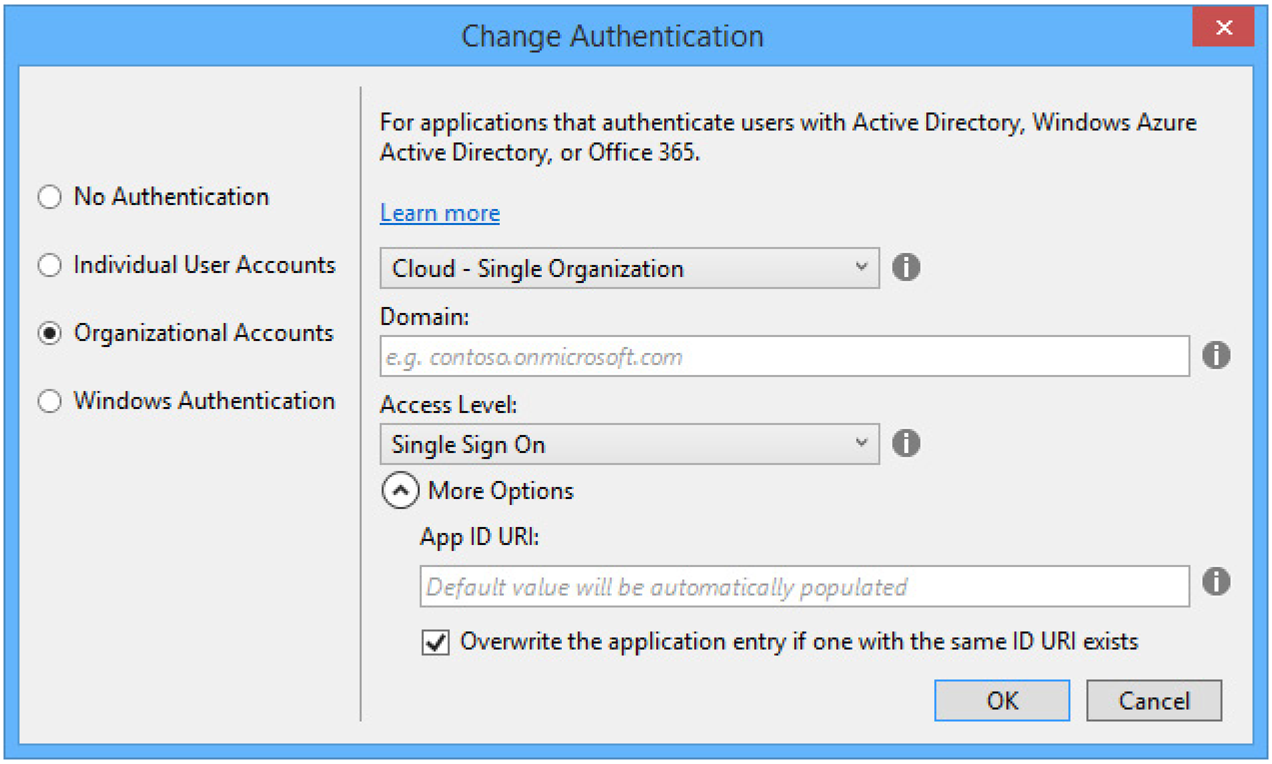
FIGURE 2 - PROJECT TEMPLATE CONFIGURATION

As you can see from the list of templates, we can choose to start with a standard Web Forms, MVC, or Web API project type. The other project types from the old MVC template dialog are still here. The interesting part is the checkboxes underneath the list of templates. Here, we can choose to add Web Forms references and folders to an MVC project, or MVC references and folders to a Web Forms project. This is the project gateway to using more of these features in concert with each other.

2. Security Configuration Made Simple

One of the trickier parts of ASP.NET is the configuration of authentication capabilities for your project. In previous versions, you needed a good understanding of the syntax of your web.config file to configure options properly. If you misconfigured something, there was no immediate feedback from Visual Studio. You only learned of a misconfiguration while debugging your application, when a white-screen error appeared indicating the error.

Starting with the One ASP.NET configuration dialog in this version of Visual Studio, we have a configuration wizard that will walk you through the security configuration and output the correct settings for you in your project files.



Change Authentication

- ○ No Authentication
- ○ Individual User Accounts
- ● Organizational Accounts
- ○ Windows Authentication

For applications that authenticate users with Active Directory, Windows Azure Active Directory, or Office 365.

Learn more

Cloud - Single Organization

Domain: *e.g. contoso.onmicrosoft.com*

Access Level: Single Sign On

More Options

App ID URI: *Default value will be automatically populated*

☑ Overwrite the application entry if one with the same ID URI exists

FIGURE 3 - AUTHENTICATION CONFIGURATION SCREEN

This wizard has steps configured to assist in configuring even the most complex of authentication scenarios – Single Sign On using Active Directory from a foreign domain. These first Visual Studio wizard steps will get your project started correctly, and you will be able to easily build on those steps for the life of your application.

3. Scaffolding on Steroids

In previous versions of Visual Studio, the scaffolding capabilities of ASP.NET MVC were a huge benefit. You could point to an Entity Framework context, a collection in that context, and Visual Studio would generate from templates a set of views, a controller, and appropriate actions to complete basic read and write operations. In this new version of the application, we have significant options available to us when we want to scaffold out objects in our ASP.NET project.

You can begin to scaffold objects with the new "Add – New Scaffolded Item" menu option.

This new option removes many of the ugly sub-menus and child menus that were confusing to not just developers, but Visual Studio integrators as well. How many options of "Add" items do we really need in this menu before it becomes unwieldy and annoying to consume?

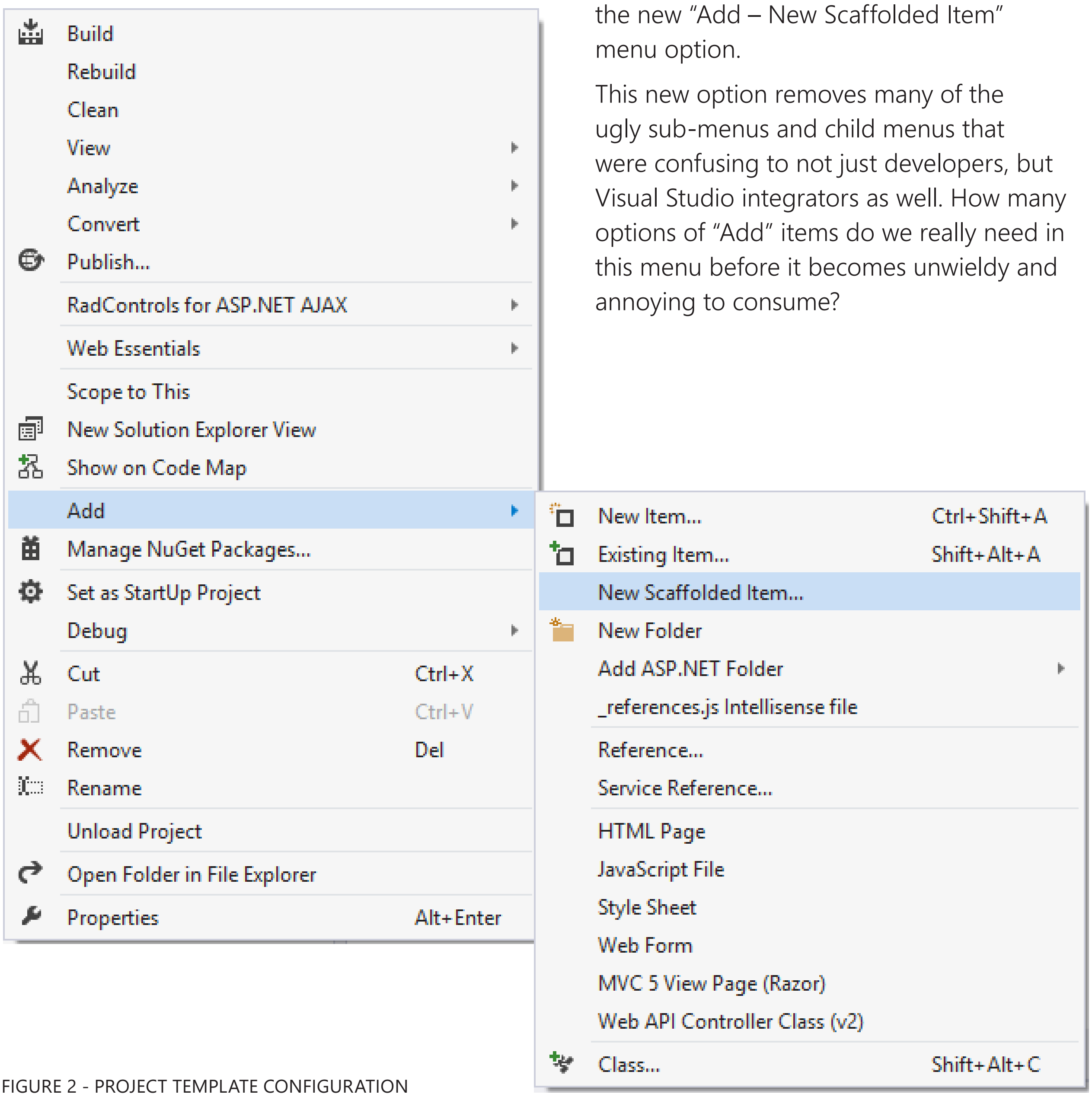
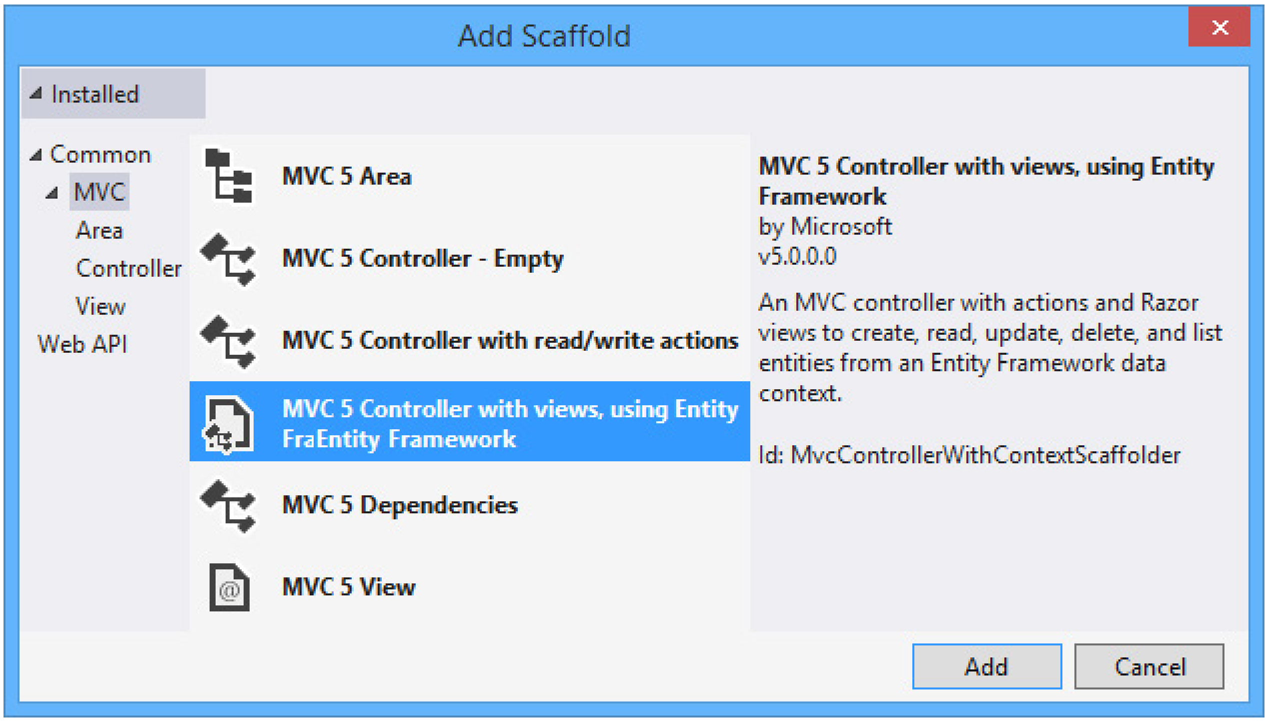


FIGURE 2 - PROJECT TEMPLATE CONFIGURATION

By choosing the "New Scaffolded Item" option, the following window opens, giving a large selection of great templates you can build on:



MVC 5 Controller with views, using Entity Framework
by Microsoft
v5.0.0.0

An MVC controller with actions and Razor views to create, read, update, delete, and list entities from an Entity Framework data context.

Id: MvcControllerWithContextScaffolder

FIGURE 5 - SCAFFOLD OPTIONS

These options in the MVC selection should look familiar, except for one near the bottom: "MVC 5 Dependencies." With this option, the MVC 5 framework can be added to a project that was started without the MVC folder structure and configuration. This option is SIGNIFICANTLY easier than the project file hacking and folder modifications that we formerly had to do in prior versions of Visual Studio.

The other templates for MVC in this box lead to similar configuration windows that were present in prior versions of Visual Studio. You will be able to configure the naming for your objects and Entity Framework options appropriately.

New templates are being created and can be added to this dialogue. Microsoft wants you to be able to extend Visual Studio by using more templates. Check with your favorite software vendor to learn what templates are available to scaffold content.

4. Say Goodbye to Design View and Hello to BrowserLink

One of the coolest new features for web developers in Visual Studio is the Browser Link feature. This capability was code-named “Artery.” When you see it in action, you will understand the code-name reference, as this is now the way you will want to work with designing your web pages.

BrowserLink connects Visual Studio to any browser that is actively working with your web content, and provides a live connection from Visual Studio to that browser. Consider a situation where we need to support our website on many browsers and a mobile device or two:

We may end up looking at screens similar to what is presented in Figure 6. As we make changes to our page content in Visual Studio, it is difficult and tedious for developers to attempt to keep all of these browsers and emulators in sync. However, after changes to our content in Visual Studio we can click the BrowserLink refresh button or use the hotkey combination of Ctrl + Alt + Enter and force a refresh all of these browsers at once. This rapid return on browser feedback is a tremendous productivity boost for developers.

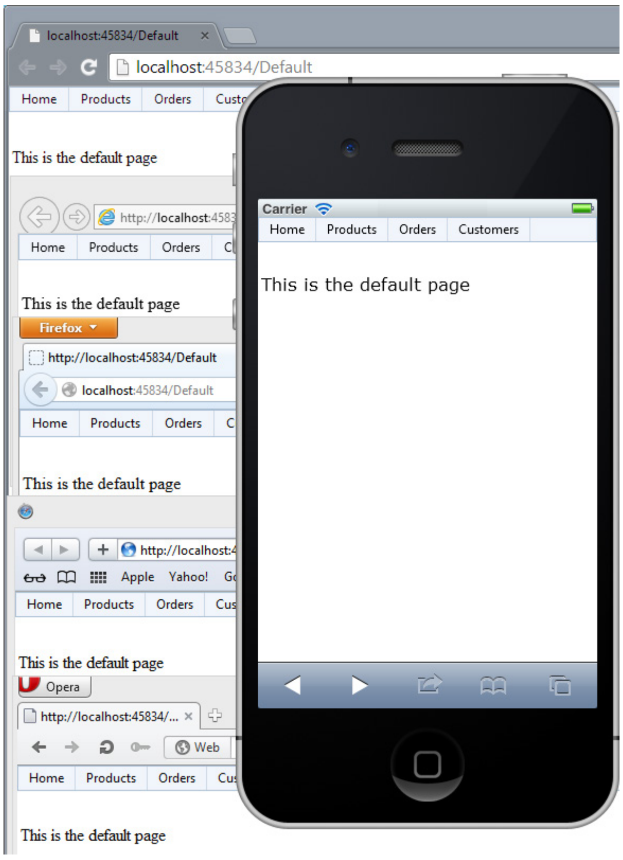


FIGURE 6 - TESTING ON MANY BROWSERS AT ONCE

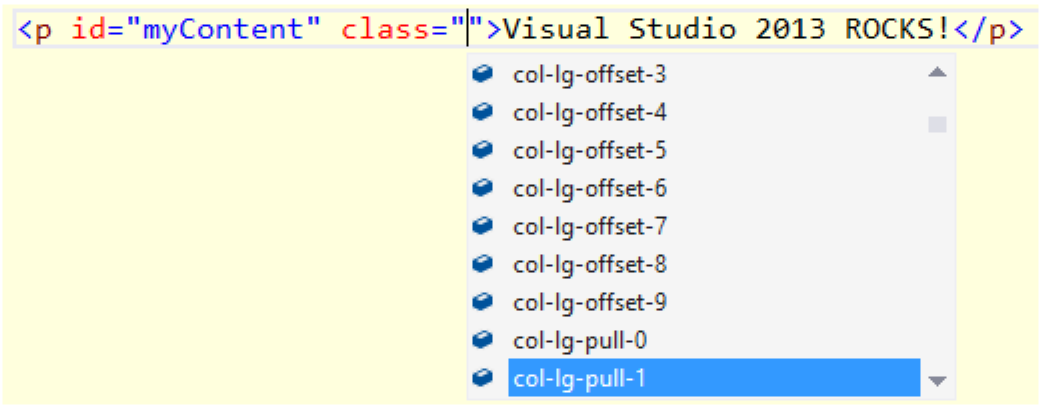
For an extra productivity boost, try installing the Web Essentials 2013 package. This collection of add-ons and extensions for Visual Studio adds extra features to BrowserLink, including Inspect and Design mode for MVC views. With this option, you can press Ctrl + Alt + D in your favorite browser and enter “Design Mode.” You can now start typing and changing content on the page, and BrowserLink will keep your MVC view’s content in sync. Text will immediately appear in the Visual Studio editor as you are typing it in the browser. How’s THAT for WYSIWYG programming?

BrowserLink has a number of extensions already available, and a growing community of plugins and extensions. Check the BrowserLink section of www.asp.net to see how you can further enhance your development experience.

5. Web Editor Intellisense – Not Just for HTML Tags Anymore

Prior versions of Visual Studio had a good text editor for HTML content. You could begin typing a tag name and it would give you intellisense options to complete the tag, some information about the attributes to place on that tag, and of course add a default closing tag. These were simple options to add for almost any tag in HTML, but with the new version of Visual Studio, this functionality is improved ten-fold.

If you are working with an HTML element, and start typing the CSS class attribute, Visual Studio will now parse all CSS sheets that are references and make available to you in an intellisense drop-down all of the classes that are currently defined in the CSS references by your page:

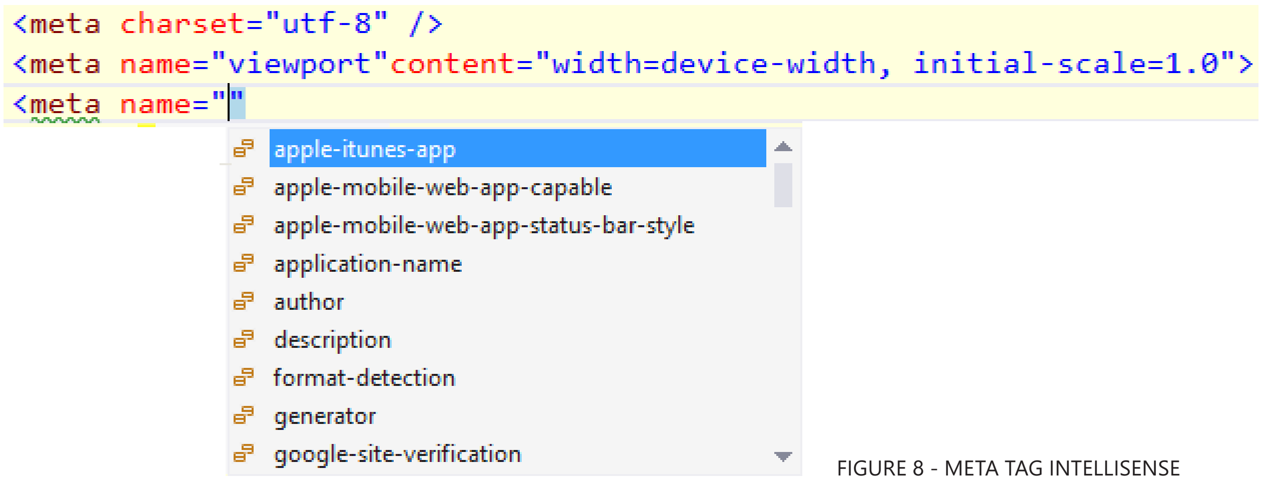


```
<p id="myContent" class="">Visual Studio 2013 ROCKS!</p>
```

FIGURE 7 - CSS CLASS INTELLISENSE

In this example, we are referencing the Bootstrap framework, and all of the appropriate formatting classes from Bootstrap.css are available to us.

CSS is not the only intellisense in the browser for us; Visual Studio will also detect and present content for META tags. Microsoft has done us a favor here, and they do not limit the intellisense to features for Bing, Windows Phone, or SharePoint. Check this out:

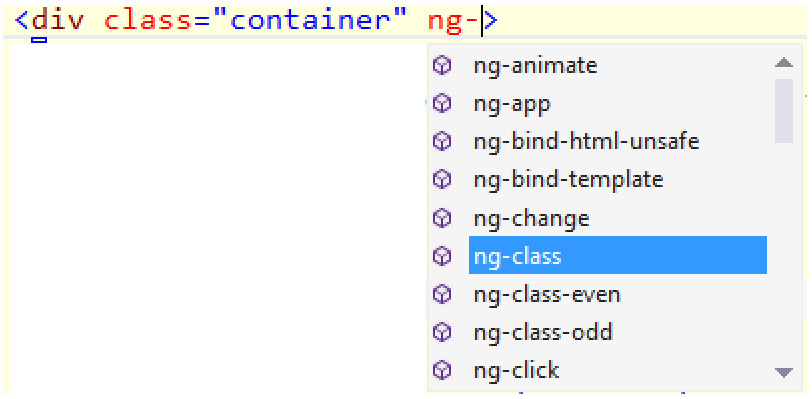


```
<meta charset="utf-8" />
<meta name="viewport"content="width=device-width, initial-scale=1.0">
<meta name=""
```

FIGURE 8 - META TAG INTELLISENSE

There are options to configure META elements for Apple, Google, Twitter, and Microsoft. The content attribute of this tag has similar automatically detected options available after you choose a name attribute. This makes the configuration of options for these public sites that much easier to maintain and ensure you have configured properly.

What about JavaScript? Oh yes, and in JavaScript there are MANY features for intellisense available. Starting from the HTML markup, there are now autodetection and autocomplete options available for Angular and Knockout markup:



```
<div class="container" ng->
```

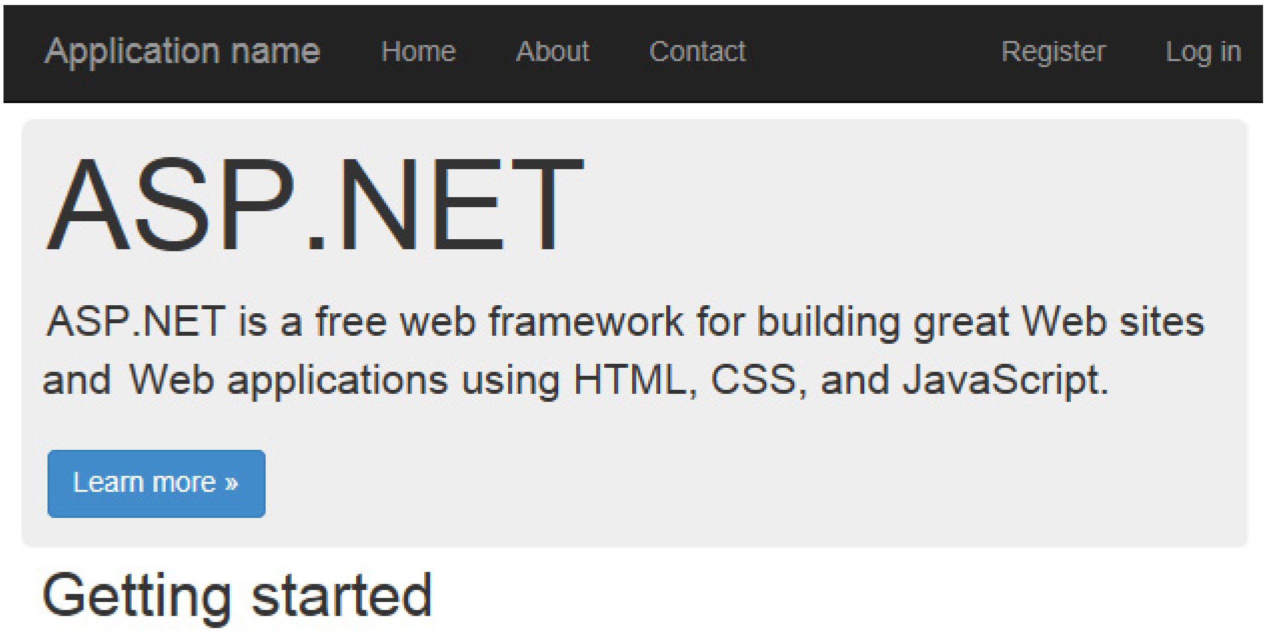
FIGURE 9 - AUTOCOMPLETE INTELLISENSE FOR ANGULARJS

The JavaScript editor has been completely re-written as well. You will find reference management and new “GoTo Definition” capabilities in the JavaScript editor. When editing JavaScript inline on an HTML page, you will find that the script knows about the entire DOM being presented. ASP.NET AJAX developers shouldn’t feel left out, as they get similar features when writing script inside of the ScriptManager object.

6. Bootstrap Templates

The web of 2013 is evolving into a collection of sites that need to support not just multiple browsers but also multiple browser sizes and shapes on mobile and tablet devices. To meet this demand, Microsoft had previously provided us with a default web site template that was responsive, but difficult to build any serious content on.

In this version of Visual Studio, we now start ASP.NET projects with a Bootstrap-enabled template site. For those not familiar, Bootstrap (formerly Twitter Bootstrap) is a responsive CSS framework that contains markup and script that provide for simple and elegant application behavior on browsers of all sizes.



ASP.NET

ASP.NET is a free web framework for building great Web sites and Web applications using HTML, CSS, and JavaScript.

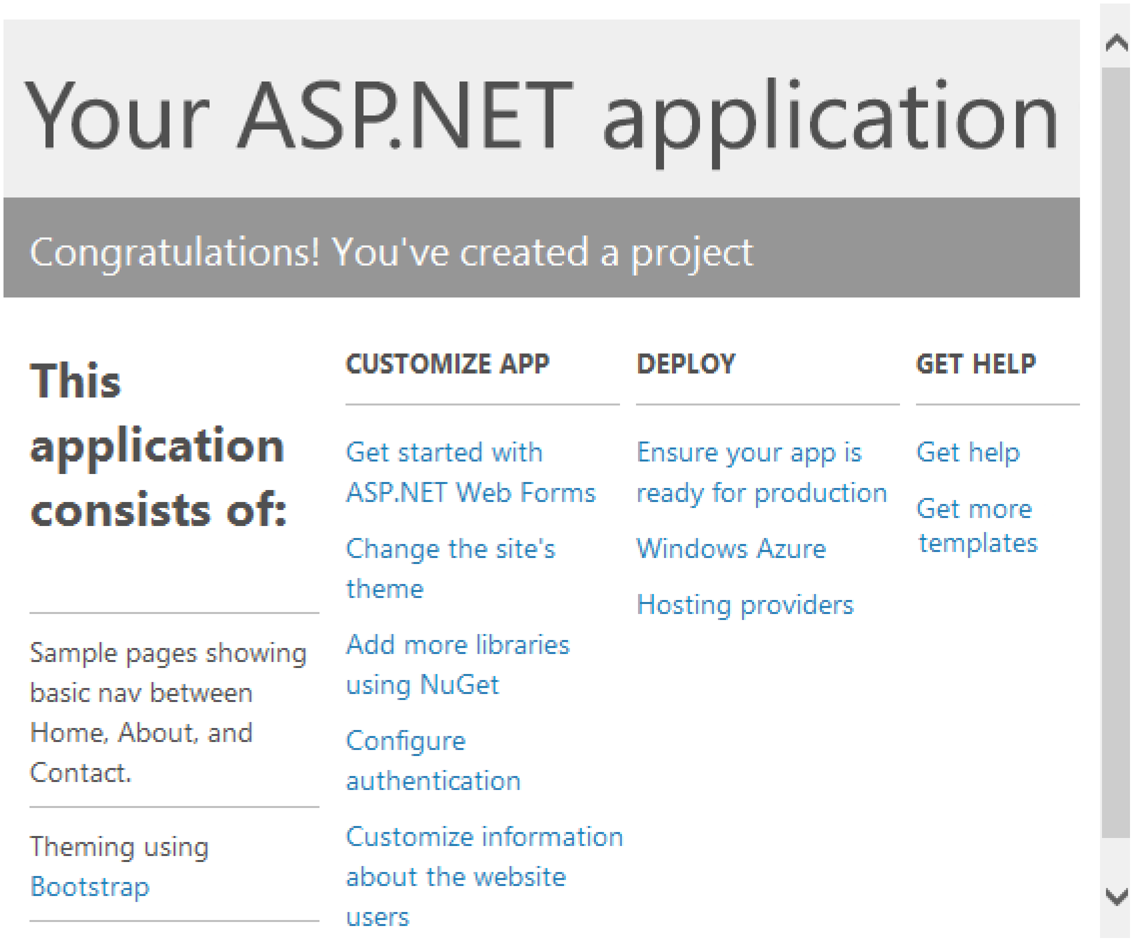
Getting started

FIGURE 10 - BOOTSTRAP DEFAULT TEMPLATE

It does not matter which ASP.NET framework you choose to begin working with, all ASP.NET sites now begin with this framework. Using information from the Bootstrap home page you can quickly add elements that will be responsive and look great on browsers of all sizes. If you want to quickly apply a theme to your site, visit a CSS site like Bootswatch to download styles that will make your site look great.

7. How Do I Get Started? Project_Readme to the Rescue!

It does not matter which ASP.NET framework you choose to begin working with, all ASP.NET sites now begin with this framework. Using information from the Bootstrap home page you can quickly add elements that will be responsive and look great on browsers of all sizes. If you want to quickly apply a theme to your site, visit a CSS site like BootSwatch to download styles that will make your site look great.



Your ASP.NET application

Congratulations! You've created a project

This application consists of:

Sample pages showing basic nav between Home, About, and Contact.

Theming using Bootstrap

CUSTOMIZE APP

Get started with ASP.NET Web Forms

Change the site's theme

Add more libraries using NuGet

Configure authentication

Customize information about the website users

DEPLOY

Ensure your app is ready for production

Windows Azure

Hosting providers

GET HELP

Get help

Get more templates

FIGURE 11 - PROJECT README - A GREAT START FOR NEW DEVELOPERS

This page will give you ideas and quick start tasks like changing the site's theme, configuring authentication, and even steps to help you deploy to Windows Azure. This is a huge step to make the very complex ASP.NET landscape much easier for developers to navigate, and I think you'll find it very beneficial.

8. Integrated Azure Management

Microsoft makes a big deal about how easy it is to get started with Windows Azure. They've already simplified and made deployment to the cloud drop dead simple with the enhancements to that service, and they have brought those enhancements into Visual Studio.

With a new Windows Azure element in the Server Explorer, you can import your subscription information from Azure and manage your websites, SQL databases and Azure Mobile Services data:

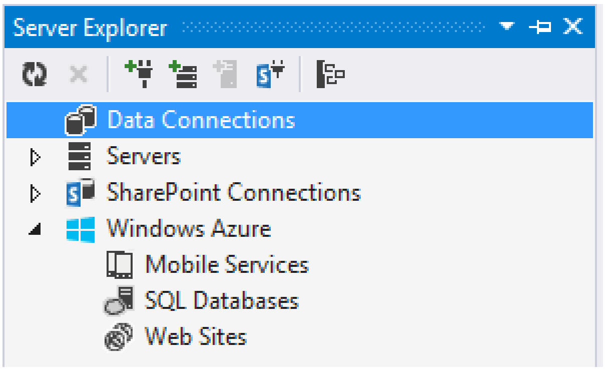


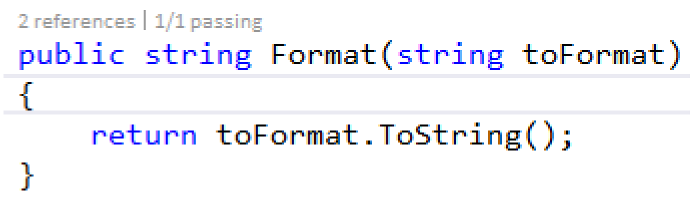
FIGURE 12 - WINDOWS AZURE MANAGEMENT ELEMENTS IN SERVER EXPLORER

Right click on the Windows Azure node and select "Import Subscription" to begin connecting Visual Studio to your Windows Azure account. There is a handy "Download Subscription File" link in the subsequent dialog window that you can use to acquire a settings file from the Windows Azure service. Once you have that file, you can browse for it and use it to configure Visual Studio.

With the connection to Azure established, you will be able to manage your tables of data in Mobile Services, work with JavaScript trigger scripts, open your SQL databases in SQL Object Explorer, manage the running state of your websites and watch the running logs of your websites. If you are running a production web site in Windows Azure, you must activate this functionality to simplify your workflow.

9. CodeLens Saves the Day!

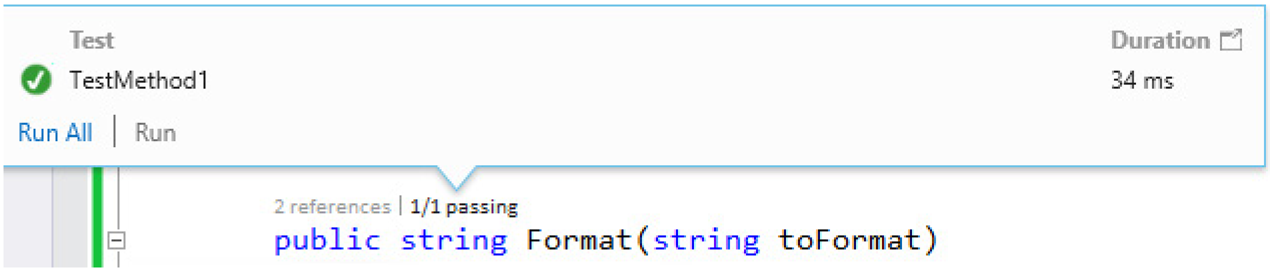
A new feature that many beta testers did not fully understand is coming into its own. You may have heard about the "references" indicators that appeared in code during beta testing. These indicators are just the tip of the iceberg, with a TON of cool functionality hiding underneath them.



```
2 references | 1/1 passing
public string Format(string toFormat)
{
    return toFormat.ToString();
}
```

FIGURE 14 - CODELENS UNIT TEST INFORMATION

The references popup is similar and allows you to quickly see exactly how the method is used:



```
Test                                    Duration
✓ TestMethod1                           34 ms
Run All | Run

2 references | 1/1 passing
public string Format(string toFormat)
```

FIGURE 15 - CODELENS REFERENCES

It is very cool to be able to get such in depth of information from the code editor.

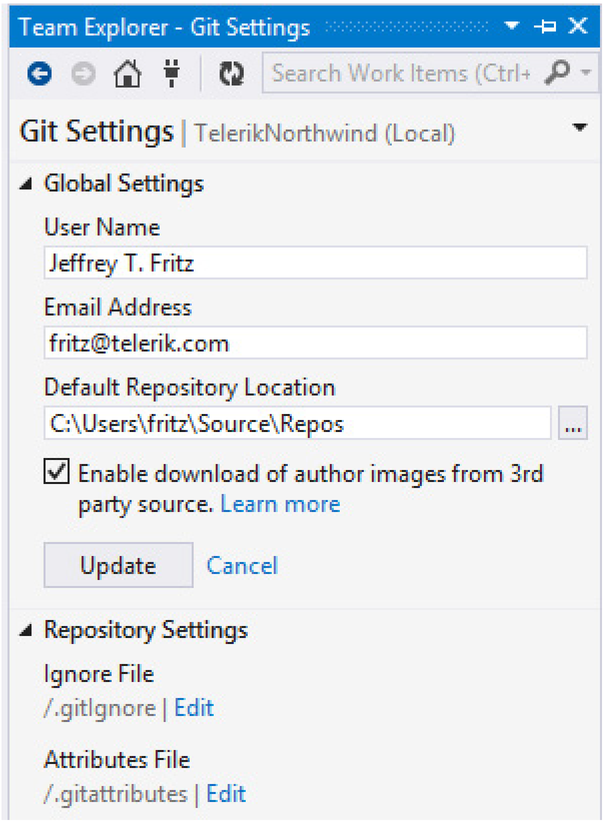
The REAL power of CodeLens is unleashed when you pair Visual Studio with Team Foundation Server. In this configuration, you will see information about the change history, who was the last editor of the method, the number of bugs, and the number of work items that reference the method. These tools will aid your productivity, and make the management of your projects significantly easier, all without leaving the comfort of your code editor.

If these indicators are distracting, you can easily turn off CodeLens from the Options – Text Editor window.

10. Integrated Git Source Control

Visual Studio has always favored Microsoft's Source Safe and Team Foundation Server for source control. Third party providers would have to adhere to an ugly interface to integrate and function inside of Visual Studio. If your provider did not have similar functionality to Source Safe, your source control provider would feel clumsy and awkward in Visual Studio. In particular, Git always felt a little goofy to use in Visual Studio.

In the service packs released for Visual Studio 2012, Microsoft began to embrace Git, and added tooling support. Now, in Visual Studio 2013, Git is available for all users to work with.



Git Settings | TelerikNorthwind (Local)

Global Settings

User Name
Jeffrey T. Fritz

Email Address
fritz@telerik.com

Default Repository Location
C:\Users\fritz\Source\Repos

☑ Enable download of author images from 3rd party source. Learn more

Update Cancel

Repository Settings

Ignore File
/.gitIgnore | Edit

Attributes File
/.gitattributes | Edit

FIGURE 16 - GIT SETTINGS IN TEAM EXPLORER

Not only does the Team Explorer integrate cleanly with Git, the configuration options allow you to extract information about the authors in your project from third party sources. You will get photos and names of your co-authors when you review changesets.

Visual Studio is also adapted to the Git local commit and push changes to other locations. The configuration and changes within Visual Studio to adhere to the workflow that developers are accustomed to when using a distributed source control system are a welcome addition. Independent web developers and open source developers will find this as a very welcome addition to the standard Visual Studio toolbox.

Want to Save Even More Time in Visual Studio 2013?

Try RadControls for ASP.NET AJAX for 30 days!

The toolset offers 70+ feature-rich controls, 20 built-in skins—including two for mobile devices—and productivity add-ons, all backed by Telerik's legendary support.

Telerik controls can help you easily create awesome-looking projects, without having to worry about cross-browser compatibility, standards compliance or touch-device support because it's all taken care of. The result: you spend less time developing common functionality and more time focusing on the business logic of your app.

See for yourself by downloading a free 30-day trial with unlimited dedicated support.

Conclusion

Visual Studio 2013 is a massive leap forward for ASP.NET developers. We have returned to the original days of ASP.NET with a single web application project model, and we now have significant new tools and features to help you keep pace with the trends and technologies of the evolving web.

Start downloading Visual Studio 2013 now, and let these new features change your life!