Azure Website Deployment with Visual Studio Ultimate 2013

This HOL will walk you through a day in the life of a web applications developer and implementing a continuous integration development model. The continuous integration environment is created by leveraging the continuous integration features that are part of Visual Studio Online.

During this HOL, you will use Visual Studio 2013 that is connected to your Visual Studio Online (VSO) instance to develop, build, and deploy a modern MVC Web Application. You will walk through the individual steps of creating a web application, adding the web application into a VSO source control repository, and enabling continuous integration deployment when checking in new code changes.

Prerequisites

- In order to complete this lab you will need **Visual Studio 2103 Premium or Ultimate**, **Azure SDK 2.4 RTM Release**, **Visual Studio Online Subscription**, and a **Windows Azure Subscription**.
- Visual Studio 2013 Update 3 - http://www.visualstudio.com/en-us/downloads/download-visual-studio-vs#d-visual-studio-2013-update
- Windows Azure SDK 2.4 RTM Release - http://go.microsoft.com/fwlink/?LinkId=404332
- Visual Studio Online Subscription - http://www.visualstudio.com/
- Windows Azure Free Trial Subscription - http://azure.microsoft.com/en-us/pricing/free-trial

Exercises

1. This hands-on lab includes the following exercises:
2. Connecting Visual Studio Team Explorer to your Visual Studio Online Collection
3. Creating a Source Control Workspace to manage source code
4. Creating a Web Application
5. Integrating Visual Studio Online Source Control with Azure
6. Making Modifications to the Web Application
7. Review Visual Studio Online Build Definition
8. Building and Deploying the Web Application

Expected duration: 60 minutes

Exercise 1: Connecting Visual Studio Team Explorer to your Visual Studio Online Collection

In this exercise, you will configure Team Explorer to connect to your Visual Studio Online hosted TFS Team Project Collection.

1. Launch **Visual Studio 2013** from the taskbar and open **Team Explorer**.

2. Select the **Connect to Team Projects** button.

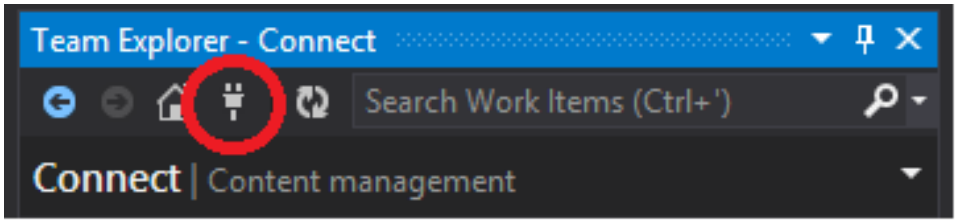

***Figure 1**: Connecting to a different team project*

3. In Team Explorer, click on Select Team Projects.

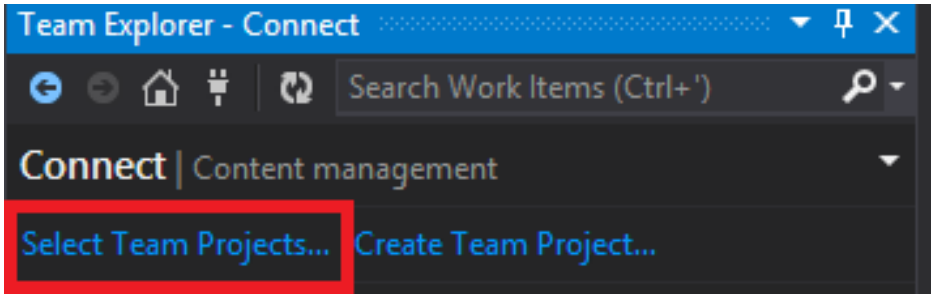

Figure 2: Selecting Team Projects

4. Click the Servers button on the Connect to Team Foundation Server window.

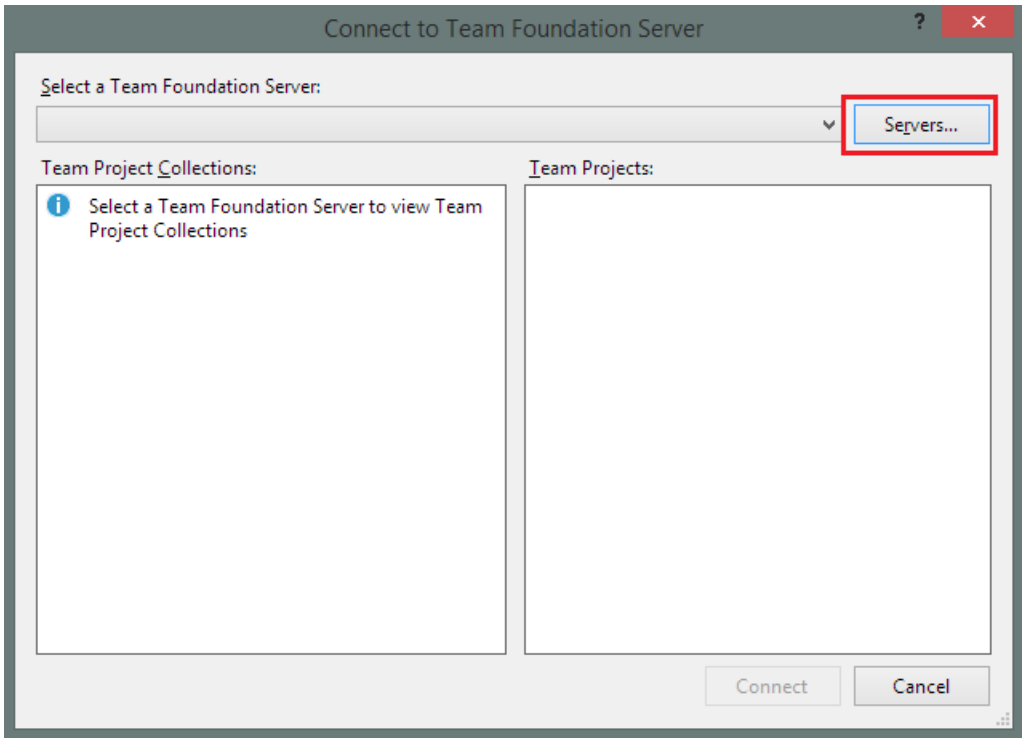

***Figure 3**: Adding new Server*

5. In the Add/Remove Team Foundation Server window, click the **Add** button to add a new TFS Server address.

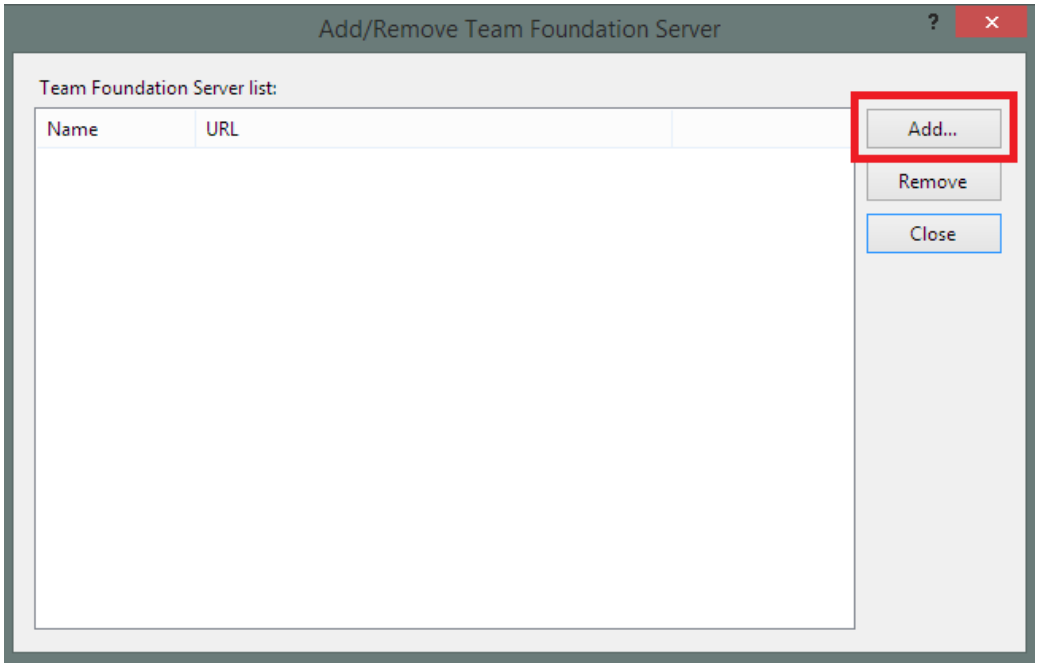

***Figure 4**: Add new TFS Server*

6. In the Add/Remove Team Foundation window, enter the name of your VSO subscription, such as **myvso.visualstudio.com** as the **URL of the Team Foundation Sever**. Select the **OK** button to continue.

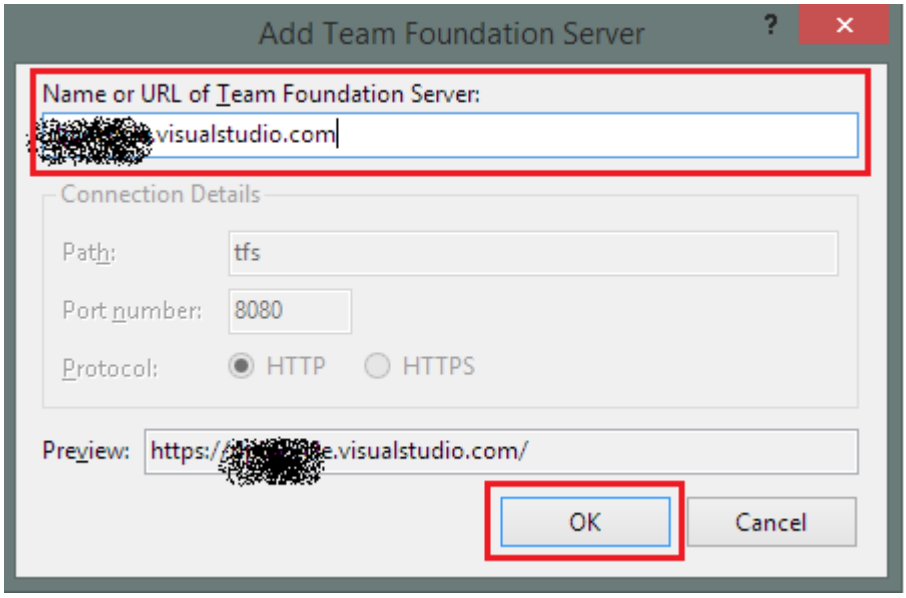

***Figure 5**: New TFS Server Connection Values*

7. If prompted login to your VSO subscription with the Microsoft account used for the VSO subscription.
8. Make sure that **your VSO Subscription URL** is selected in the **Team Foundation Server List** in the Add/Remove Team Foundation Sever window and then click on **Close**.
9. In the Connect to Team Foundation Server window select the **DefaultCollection** in the **Team Project Collections** list and select **(Select All)** project in the **Team Projects** list.
10. Select the **Connect** button to continue.

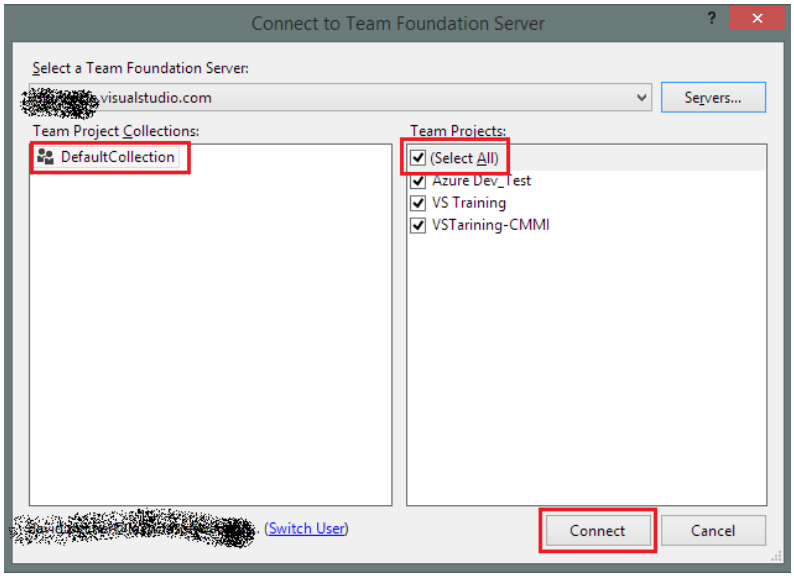

Figure 6: *Connecting to VSO Collection project*

11. In the Team Explorer view, click on **Home** and select Projects and My Teams and then click on New Team Project.

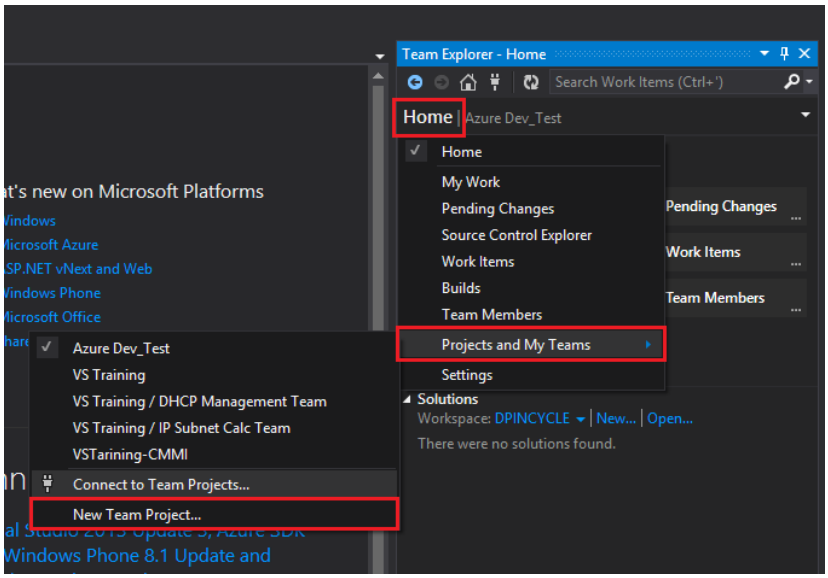

Figure 7*: Create new team project*

12. A new instance of Internet Explorer will open and prompt for login credentials for your VSO subscription, enter the credentials and proceed forward
13. The Create New Team Project web dialog will now be displayed, in the dialog **enter** the value of **Azure-Web-HOL** for the Project name and **select** the **MSF for Agile Software Development 2013.3** Process template and finally **click** on the **Create** project button.

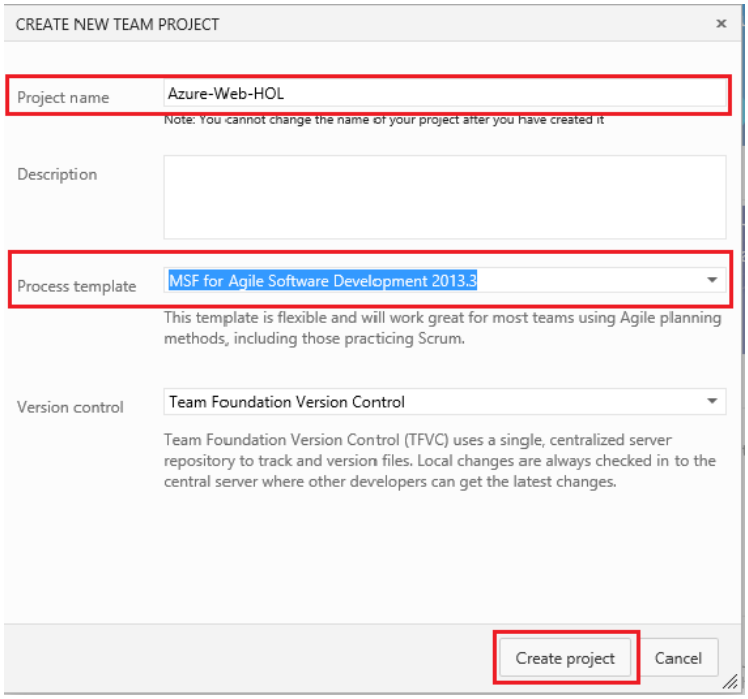

***Figure 8**: New Team Project properties*

14. Once the team project is complete, click the **Close** button.

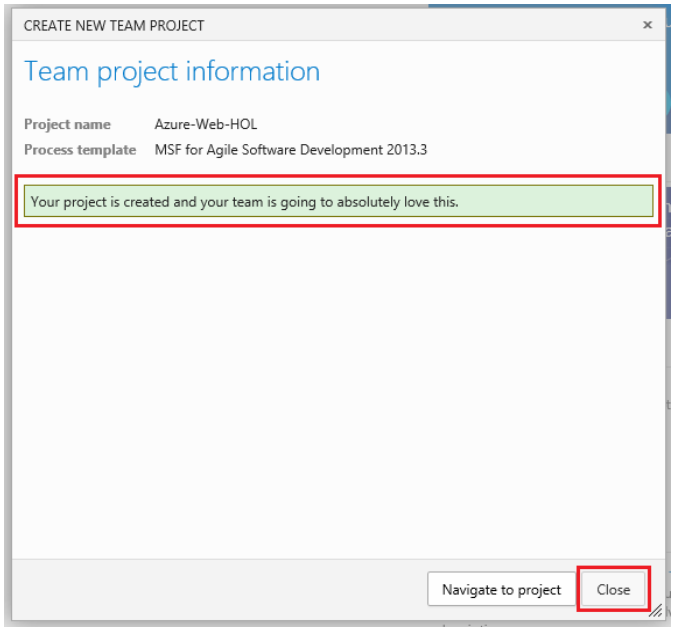

***Figure 9**: Team Project created*

15. Switch back to Visual Studio 2013 and in **Team Explorer** click on **Select Team Projects**.

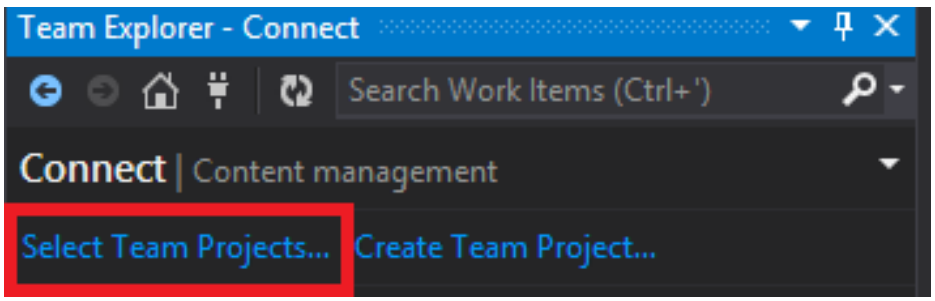

Figure 10: Selecting Team Projects

In the Connect to Team Foundation Server window, de-select all selected projects, then select the Azure-Web-HOL team project from the list of Team Projects, and finally click on the Connect button.

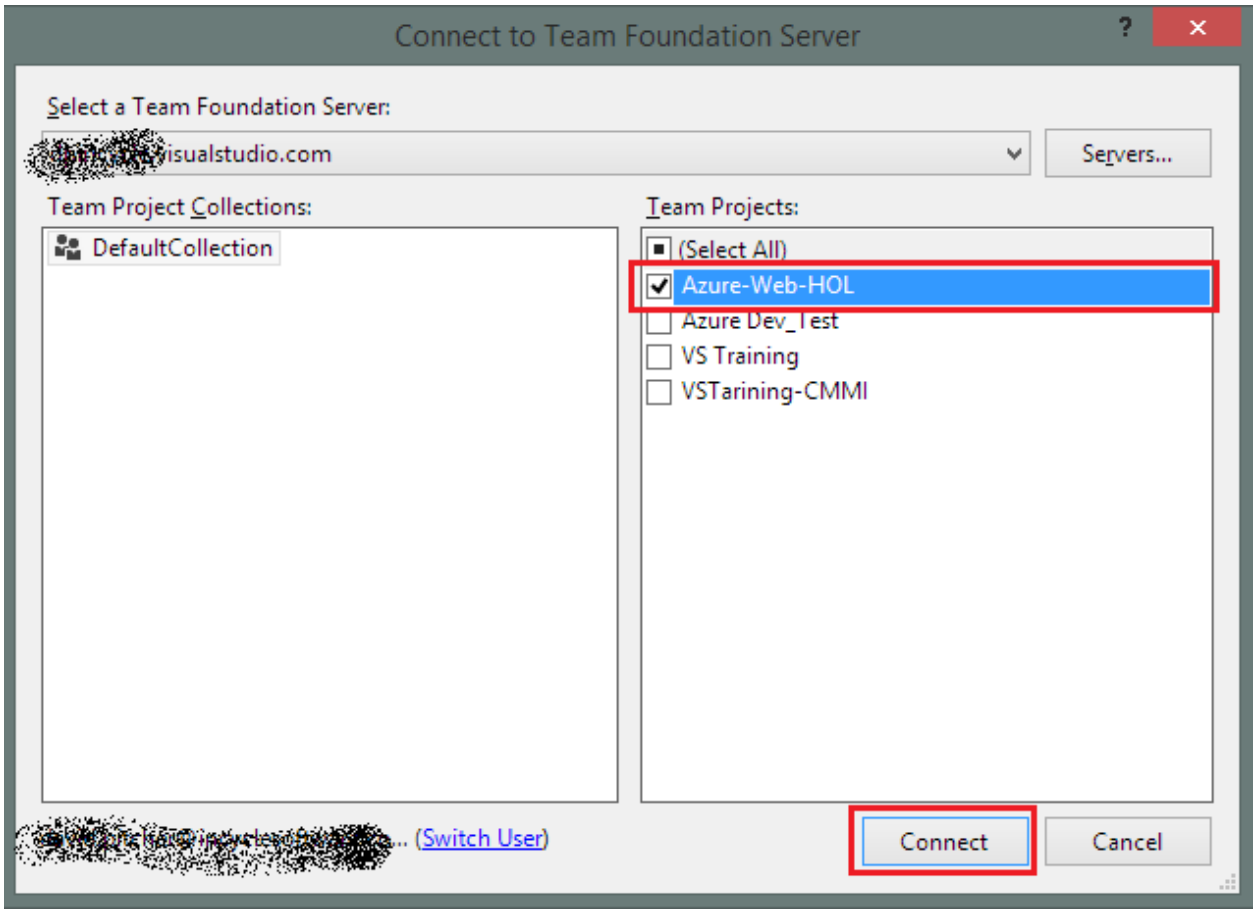

Figure 11: Selecting Azure-Web-HOL project

16. In the Team Explorer window, click on the Home icon.

Exercise 2: Creating a Source Control Workspace to manage source code

In this exercise, you will learn create a mapping between the TFS Source Control repository for the TFS Team Project and your local computer disks.

1. Within Team Explorer click on Configure Workspace located under the Project node.

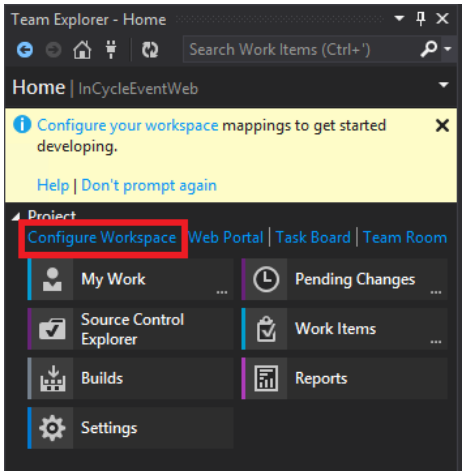

***Figure 12**: Configure new workspace*

2. Click on the Advanced… link to bring up the advanced workspace configuration window.

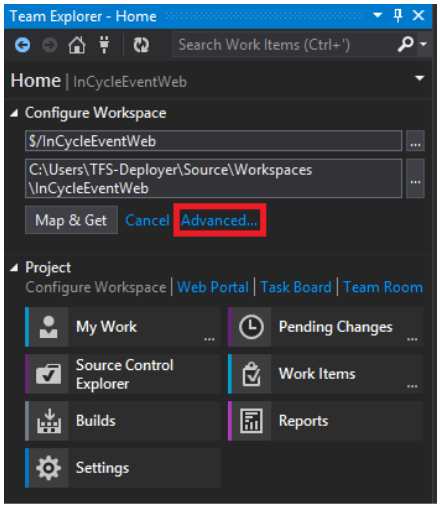

***Figure 13**: Advance Workspace creation*

3. In the Add Workspace window, enter a workspace name value of AzureWeb. In the Working folders grid keep the existing value for **Source Control Folder**. Change the **Local Folder** to a preferred location on your computer. To continue click **OK.**

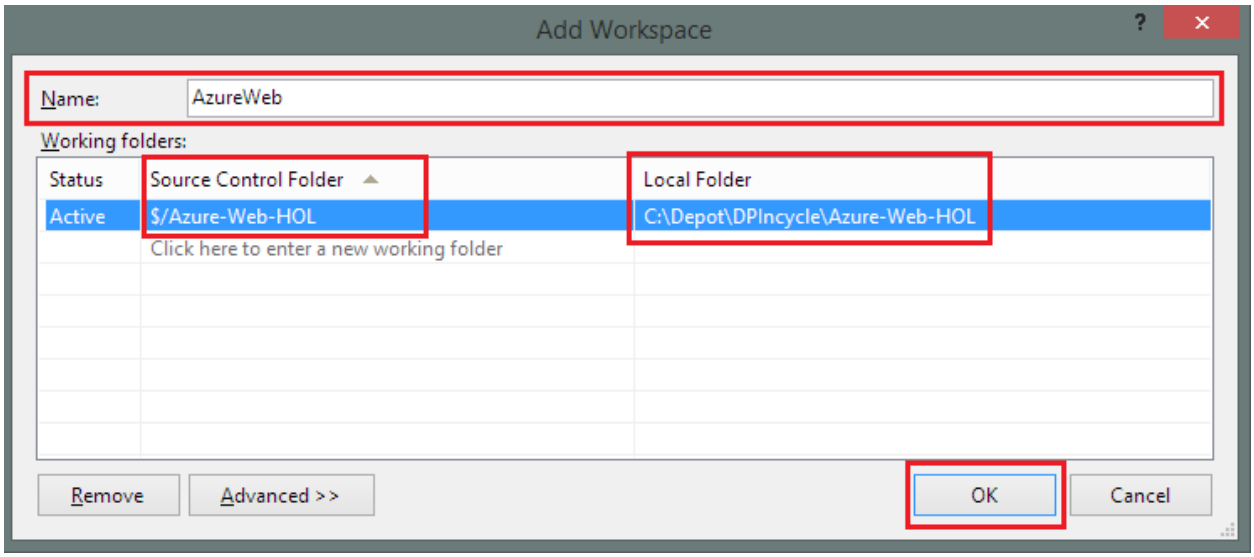

Figure 14: Workspace settings

4. If the Workspace Modified information dialog appears click **No** to continue.

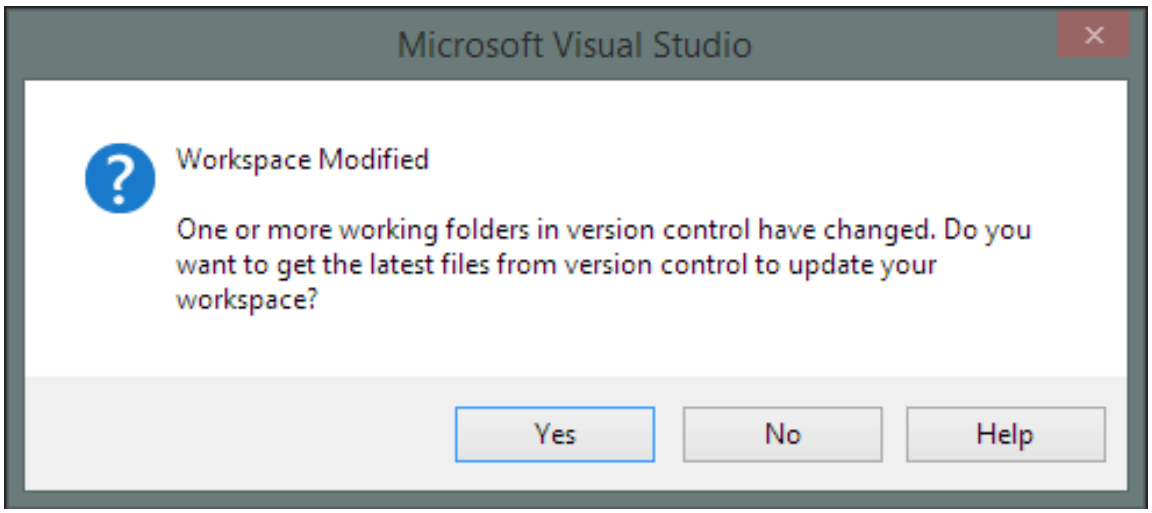

Figure 15: Modified Workspace Information dialog

5. In Visual Studio Open Source Control Explorer by clicking on **View** -> **Other Windows** -> **Source Control Explorer**.
6. In the Source Control Explorer window expand the **DefaultCollection** folder, **right-click** on **Azure-Web-HOL**, and click on **Get Latest Version**.

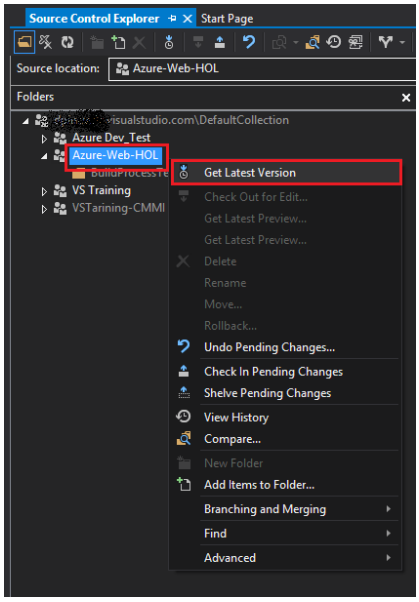

Figure 16: Get Latest Version of source code

7. Next create a folder to contain your web application project. Right-click on **Azure-Web-HOL** and click on **New Folder** name the folder **Main**. **Right click** on the **Main** folder and **click** on **New Folder** again, this time name the folder **AzureWebSite**.
8. Finally **right-click** on your **AzureWebSite** folder and click on **Check In Pending Changes**. In Team Explorer commit the check in by clicking on the **Check In** button.

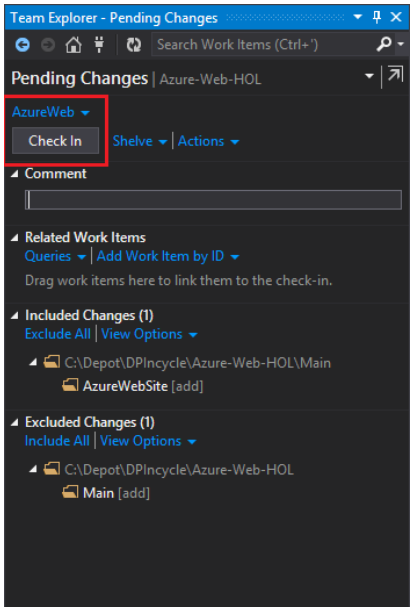

***Figure 17**: Add and Check In a new folder*

Exercise 3: Creating a Web Application

In this exercise, you will create a new MVC Web Application project which will serve as the base project for the remaining exercises to demonstrate continuous deployment to an Azure Web Site whenever code changes are checked into source control.

1. In the **Visual Studio**, click on File -> New -> Project to bring up the new project dialog.

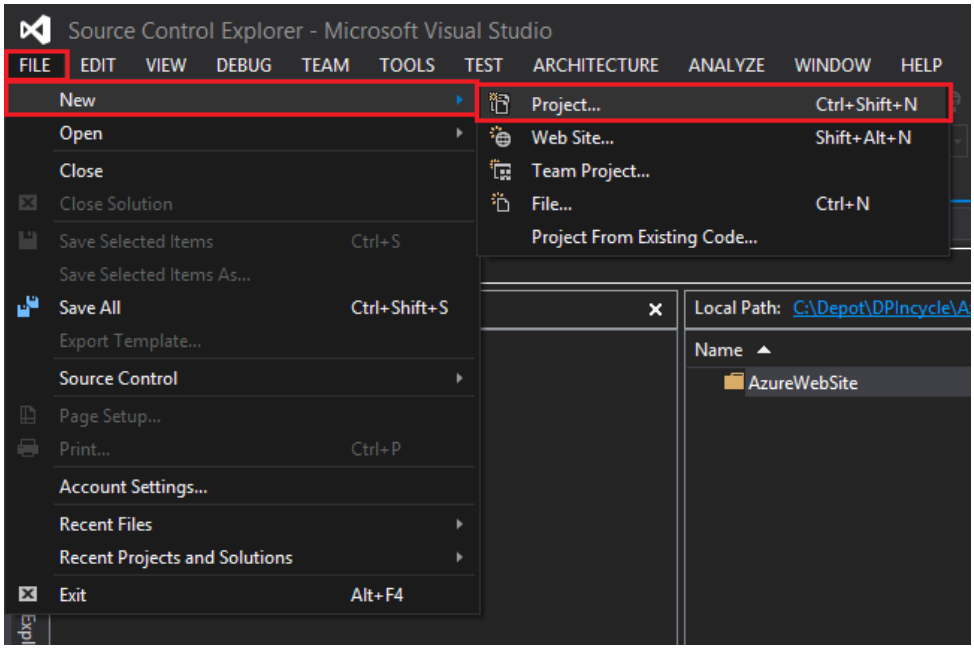

***Figure 18**: Create new project*

2. Expand the **Templates** tree node and click the **Web** tree node. Next make sure **that .NET Framework 4.5** is selected as the default framework version. Next **click** on **ASP .NET Web Application**. For the project name, **enter** a value **of WebMVC-HOL**. **Click** on the **Browse** button to select the location of where your project files are stored.

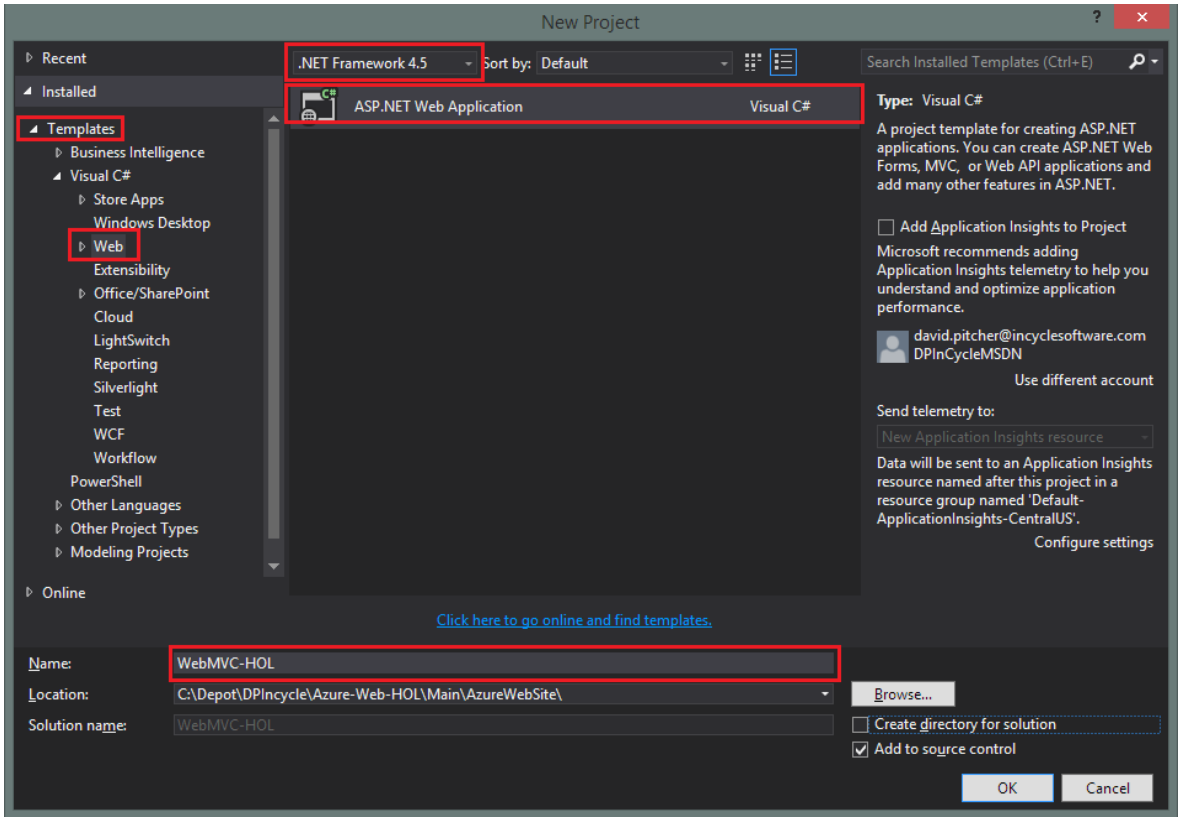

Figure 19: Create New Project Dialog

3. Navigate to the folder on your local machine which you created in step 7 of exercise 1 and click on the Select Folder button

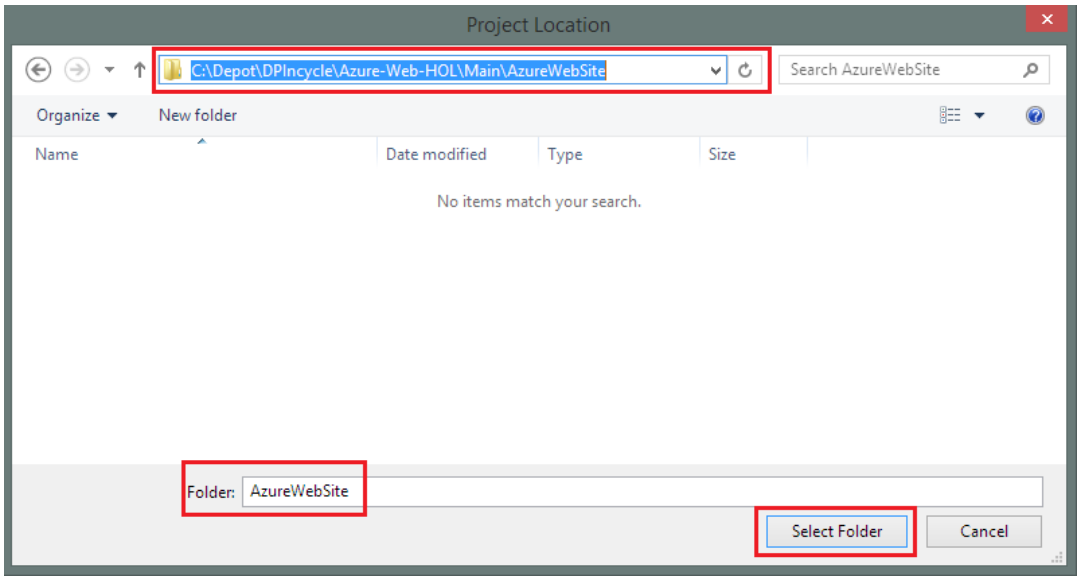

Figure 20: Select folder for MVC Web project

4. In the New Project window, **un-select Create directory for solution** and **select Add to source control**. **Click** the **OK** button to launch the web project wizard.
5. In the New ASP.NET Project window, select the MVC template.

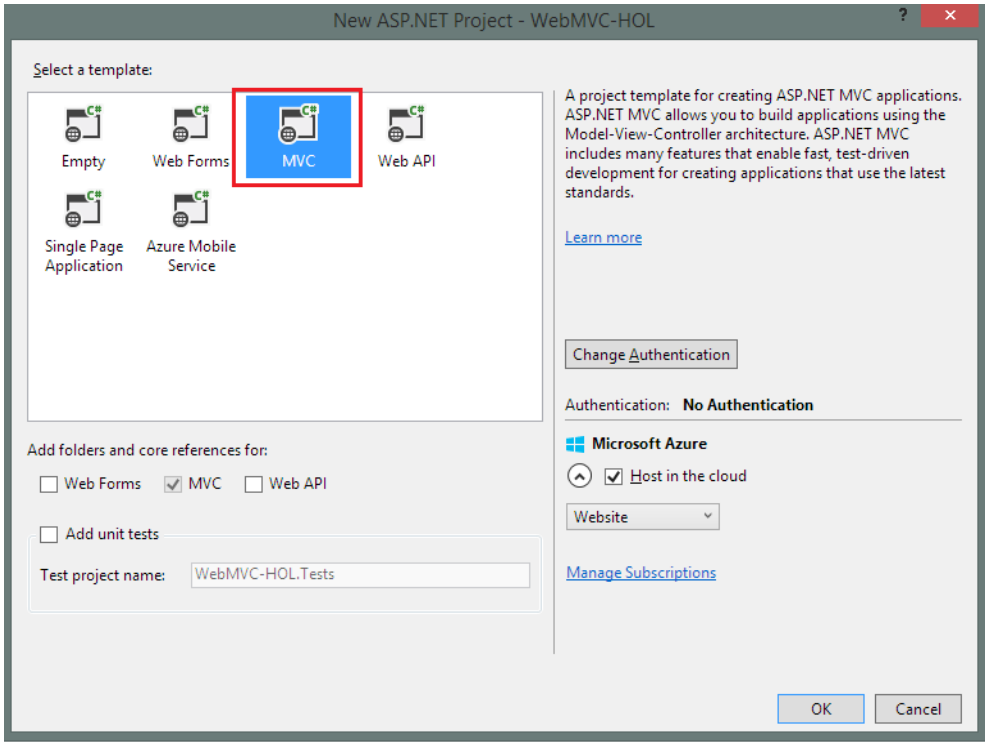

Figure 21: MVC Web Application Template

6. In the New ASP.NET Project window, **click** on the **Change Authentication** button. **Select No Authentication** and **click** the **OK** button.

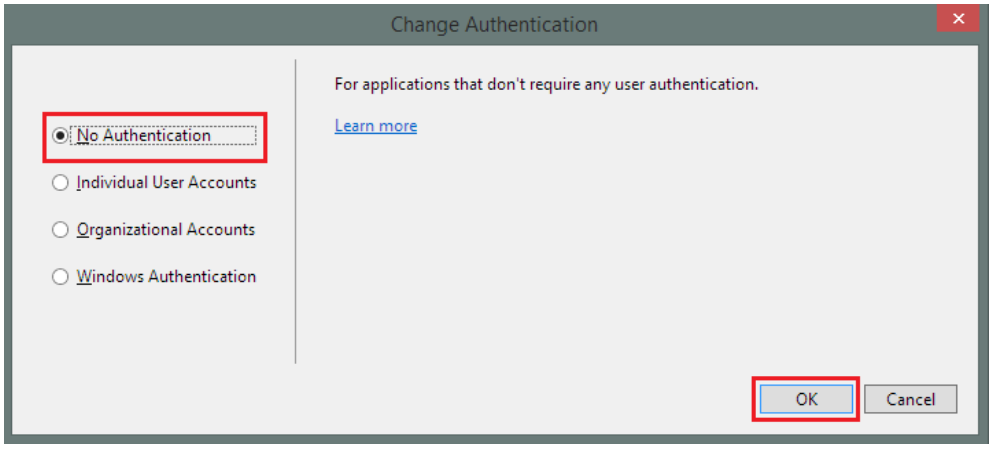

Figure 22: Change to No Authentication

7. In the New ASP.NET Project window, click on Host in the Cloud, select Website from the drop-down menu.

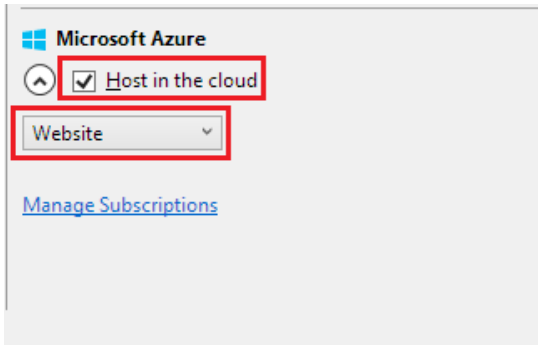

Figure 23: Adding Azure Website as host

8. In the New ASP.NET Project window, **click** on **Manage Subscription** link to configure a connection between Visual Studio and your Azure Subscription.
9. In the Manage Microsoft Azure Subscriptions window, **validate** that the **subscription name** and correct subscription **User Identity** is correct for your Azure subscription. If not click on the Sign In button and enter your Azure Subscription user name and password. **Click** the **Close** button to exit.

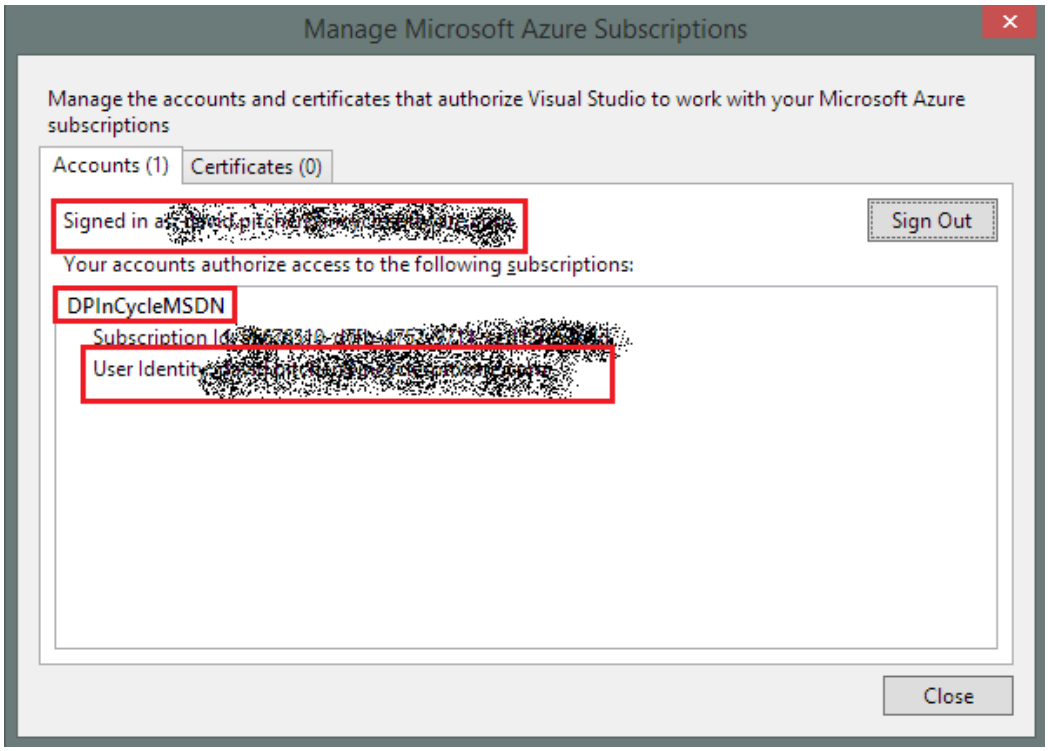

Figure 24: Manage Azure Subscription

10. In the New ASP.NET Project window, reconfirm your settings and click the OK button.

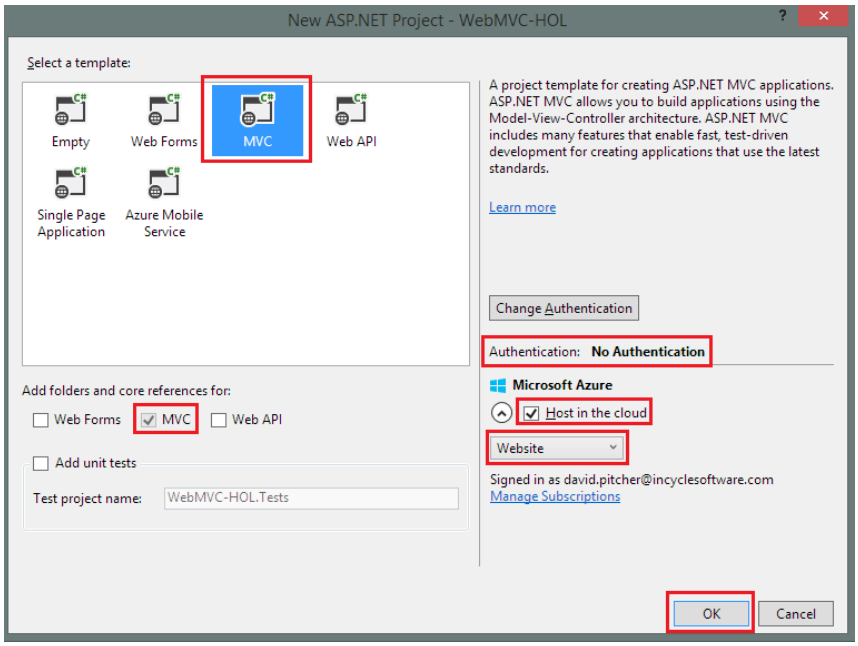

Figure 25: Validate new web project settings

11. This next step will create a new Azure Web site that your MVC Web Application will be deployed to. In the Configure Microsoft Azure Website window, **change** the **site name** to be **prefixed** with your initials. The **first letter** of your **first name**, **middle name**, and **last name** followed by a **dash**. For example **dap-WebMVC-HOL**. All Azure Websites must be uniquely named. Next in the Region drop down menu, **select** the **West US** as the region. Finally **click** the **OK** button.

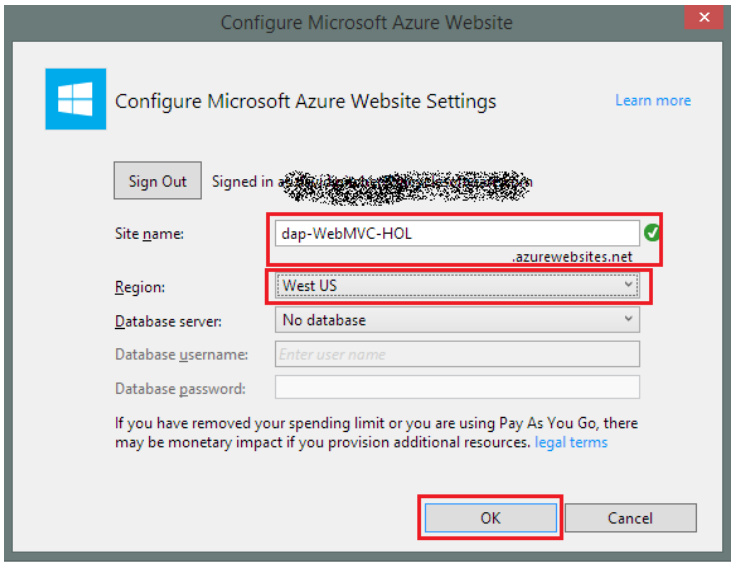

Figure 26: Add new Azure Website

12. Once your project is completed and the associated Azure Website is created review the MVC web project in the Solution Explorer Window. In particular, notice there is a single **Web project** named **WebMVC-HOL** and a **PublishScripts** folder as part of the created solution.

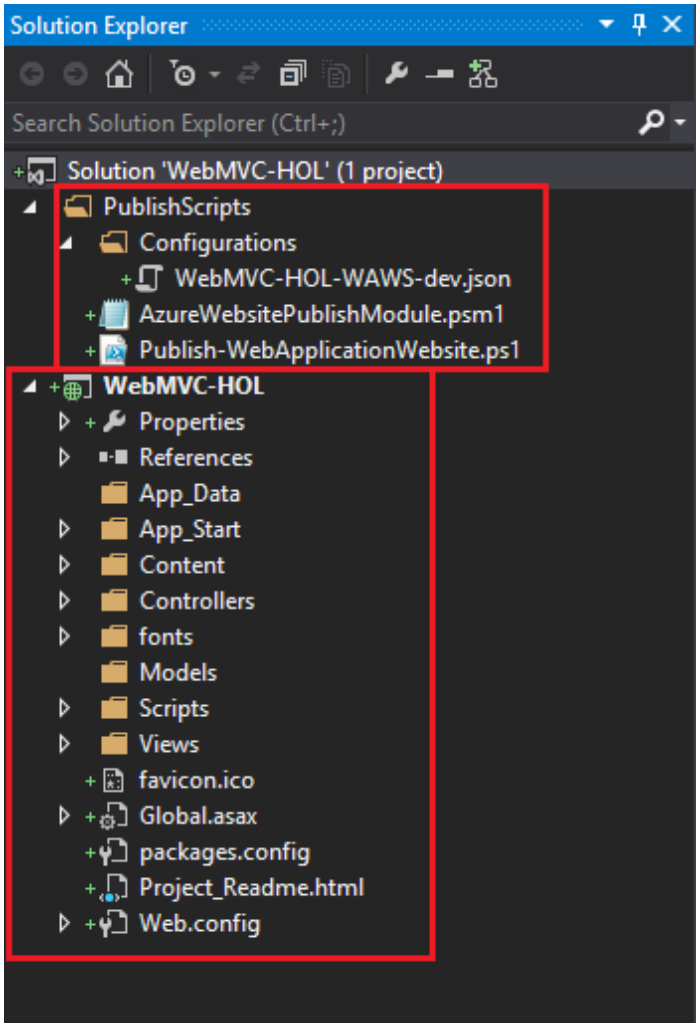

Figure 27: Completed MVC Web Project

13. While in Visual Studio **enter Ctrl + S** or **click** on **File - > Save Solution** to save the current state of the project and solution files.
14. The last step for this exercise will be to check-in all the new project files into source control. You only need to check-in the files because Visual Studio as part of the project creation process already added them. Check-in the source code by **right clicking** on the Solution **WebMVC-HOL** in the Solution Explorer Window and then **click** on **Check In** menu item.

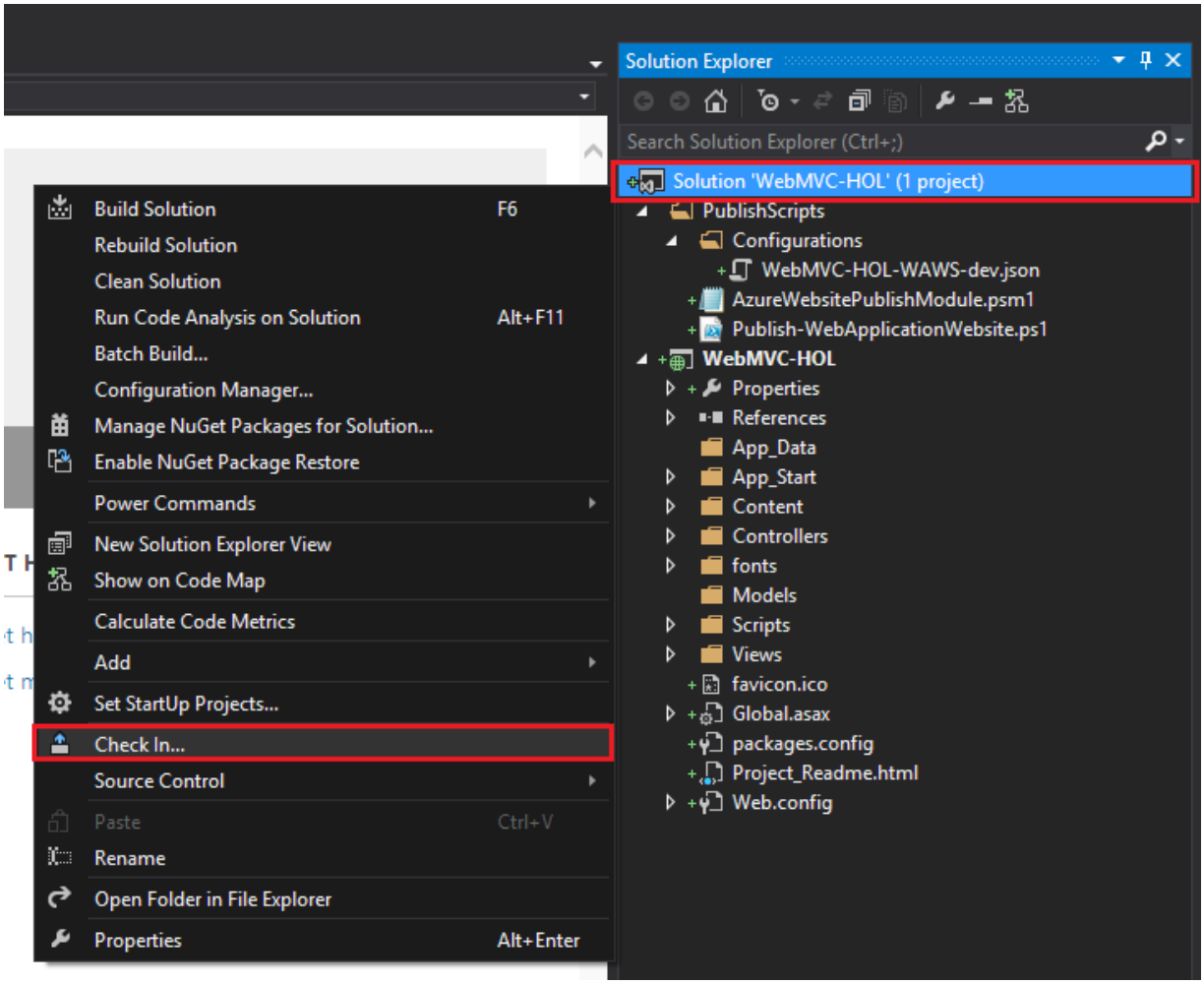

Figure 28: Check in web project

15. In the Team Explorer – Pending Changes window, click on the Check In button to complete the check-in process.

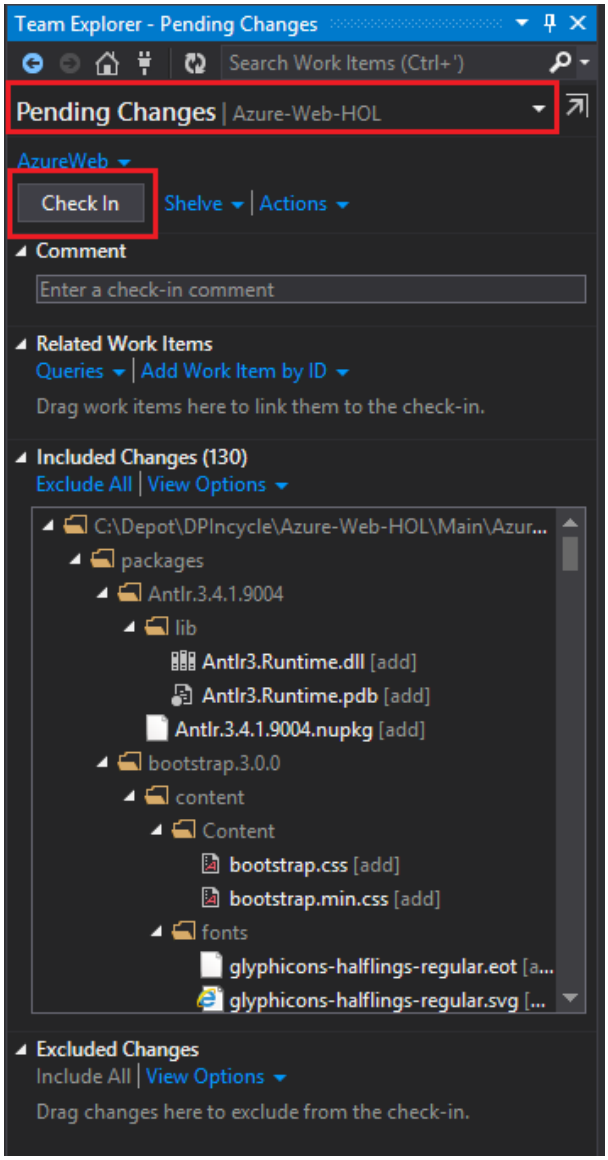

Figure 29: Check In commit changes

Exercise 4: Integrate Source Control with Azure

Now that we have created a new MVC Web application, added it into source control and have an Azure Website ready for deploying our project to, you will configure the Azure Website to integrate with Visual Studio Online Source control to enable continuous integration deployments.

1. In Visual Studio **click** on **View** and then **Server Explorer** to open the Server Explorer window. In the Server Explorer window, expand the Azure Websites tree node and right click on your Azure MVC website that was created in the previous exercise. Select the Open in Management Portal menu item.

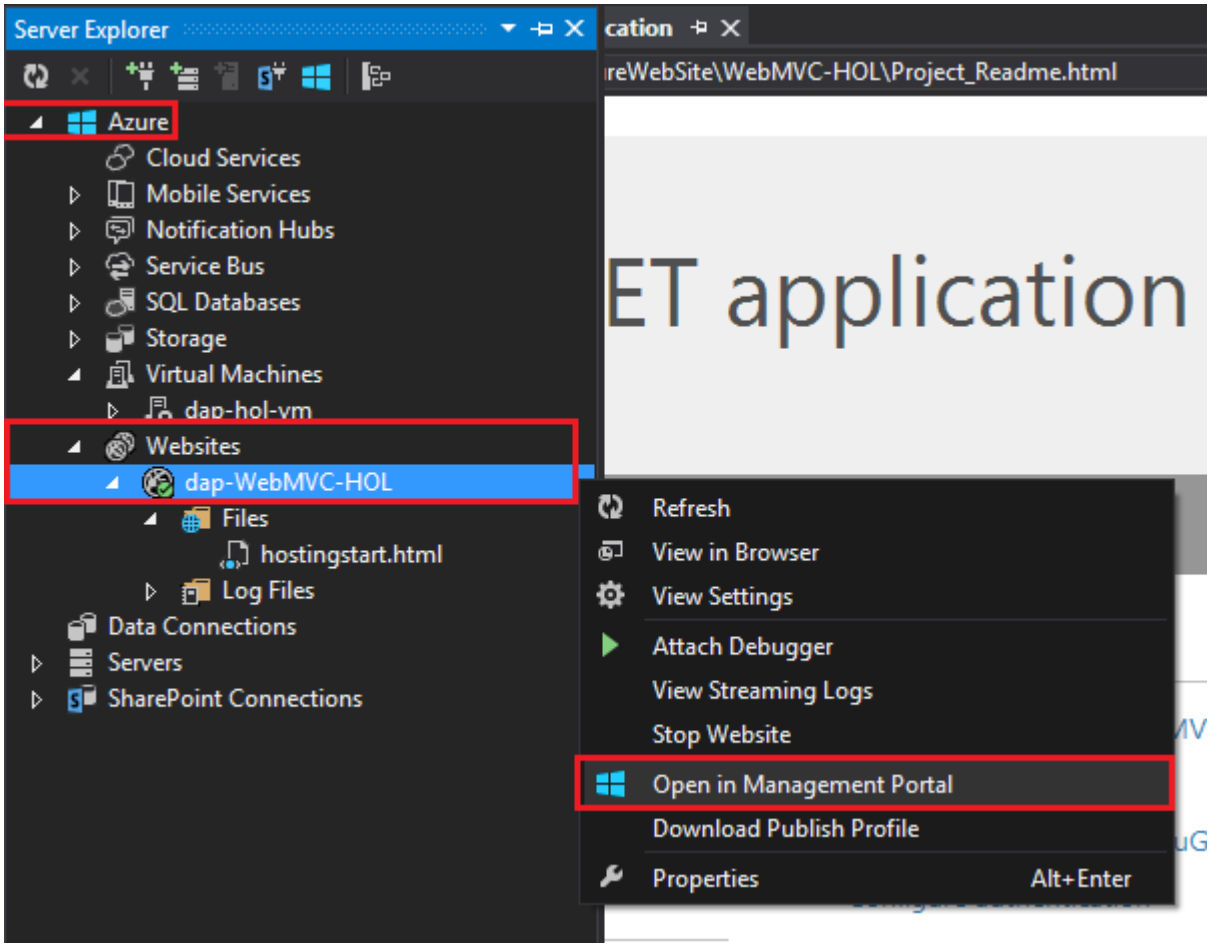

Figure 30: Open Azure Website in Management Portal

2. Your web browser should open with the **Azure Management Portal** loaded and the **Dashboard** page of your **Azure MVC website**. From this page you will begin to configure this website to integrate with VSO source control. In the **quick glance** column **click** on the **Set up deployment from source control** option.

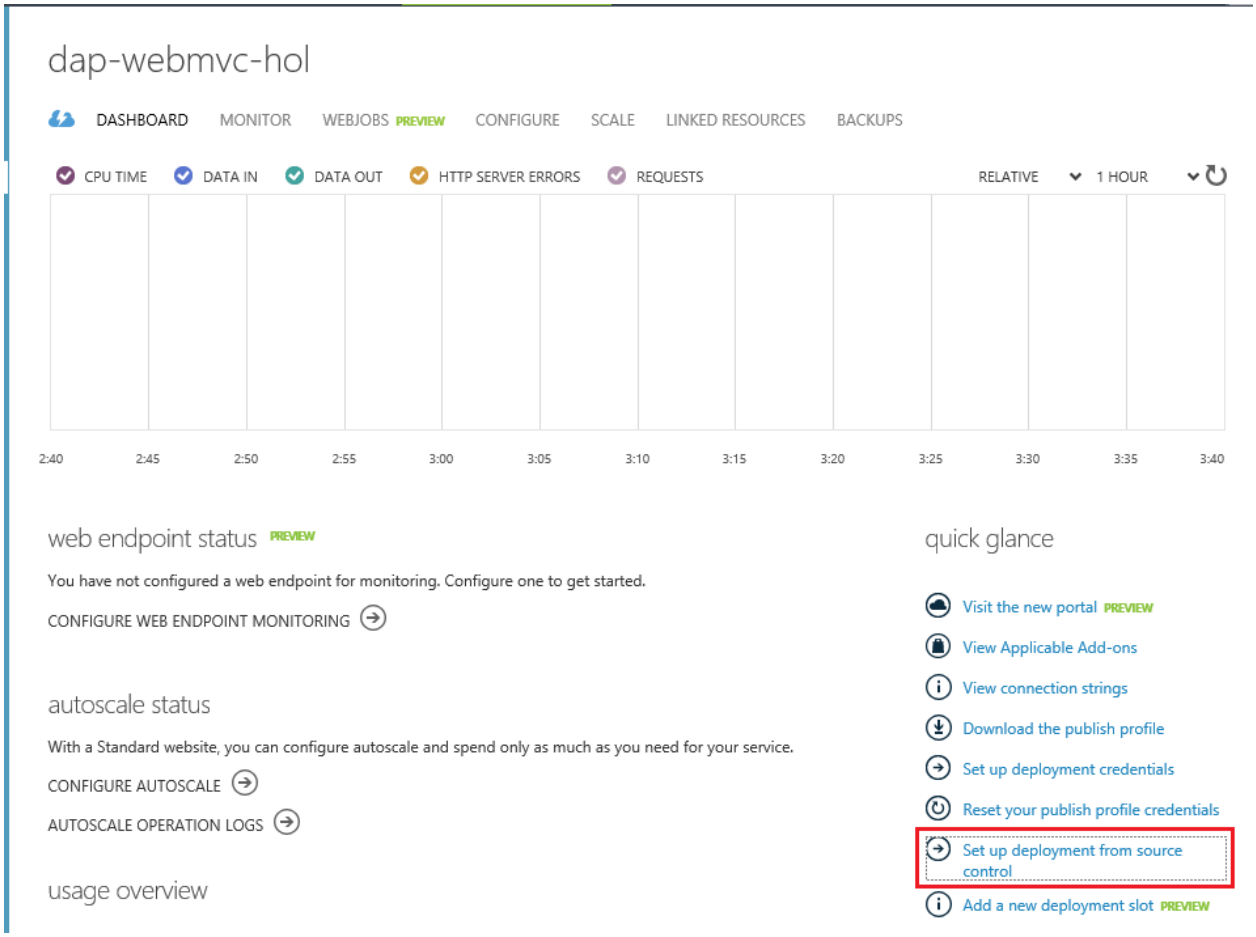

Figure 31: Configure source control integration for website

3. In the Set Up Deployment window, **click** on **Visual Studio Online** option and then **click** on the **next** button.

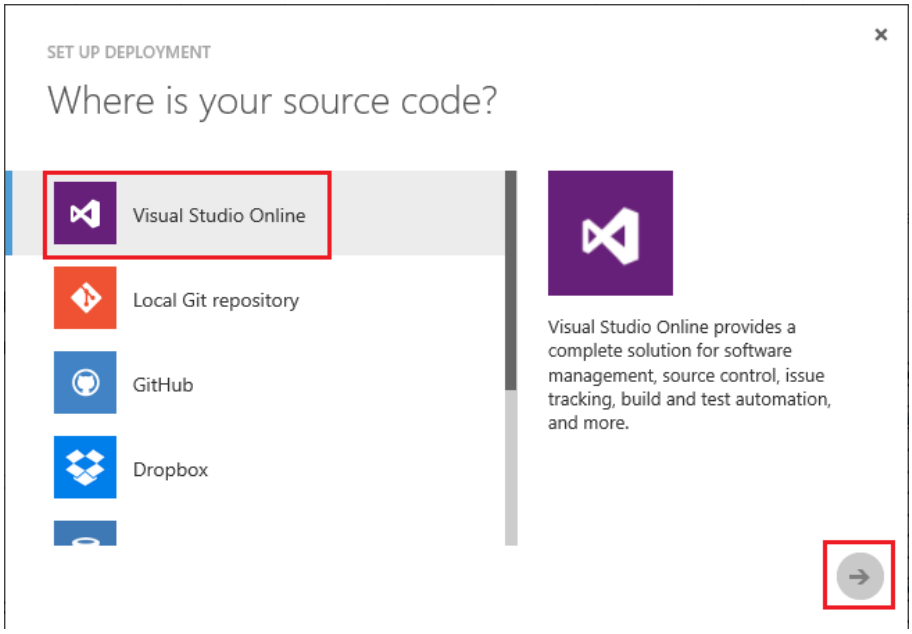

Figure 32: *Select Visual Studio for source code location*

4. In the Set Up Deployment window, **choose Existing user** and **enter** the name of your **Visual Studio Online subscription**. Click on the Authorize Now link to proceed to the next step.

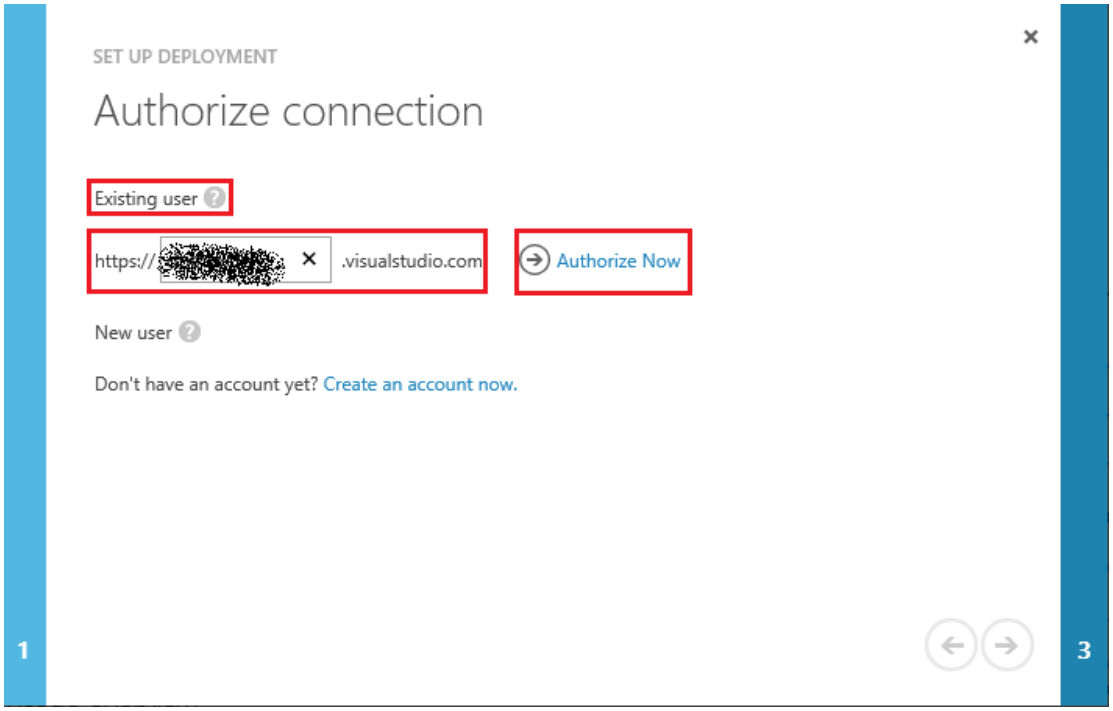

Figure 33: Connect to Visual Studio Online

5. A new browser window is displayed asking for **approval** of an **Azure Connection Request**. **Click** on the **Accept** button to authorize.

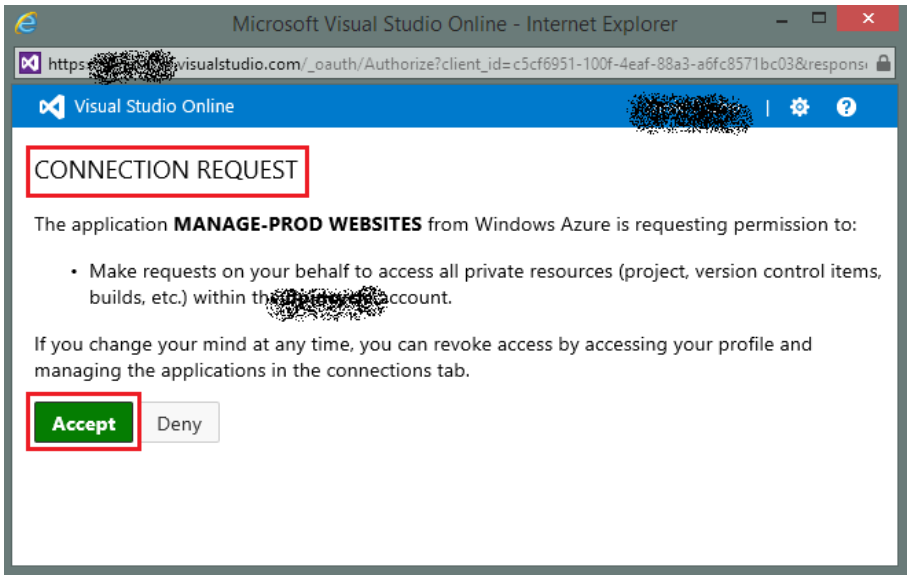

Figure 34: Authorize Azure Connection to Visual Studio Online

6. In the Set Up Deployment window, **select** the **Azure-Web-HOL** source control repository. **Click OK** to complete the process.

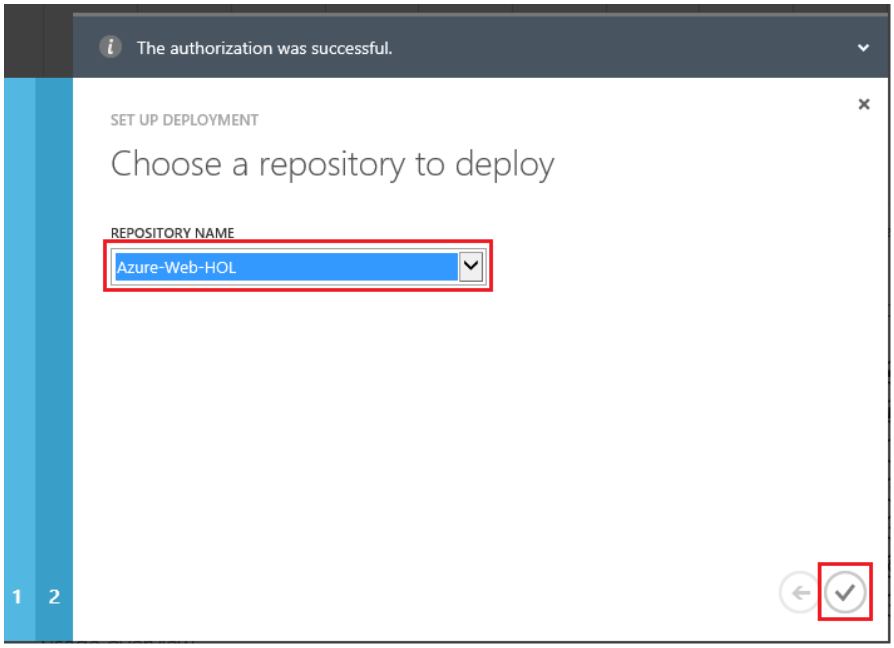

Figure 35: Select Azure-Web-HOL Source Repository

7. The Azure Management Portal will take a few moments to complete the request. Once completed the portal will display a message notifying you the project is now linked.

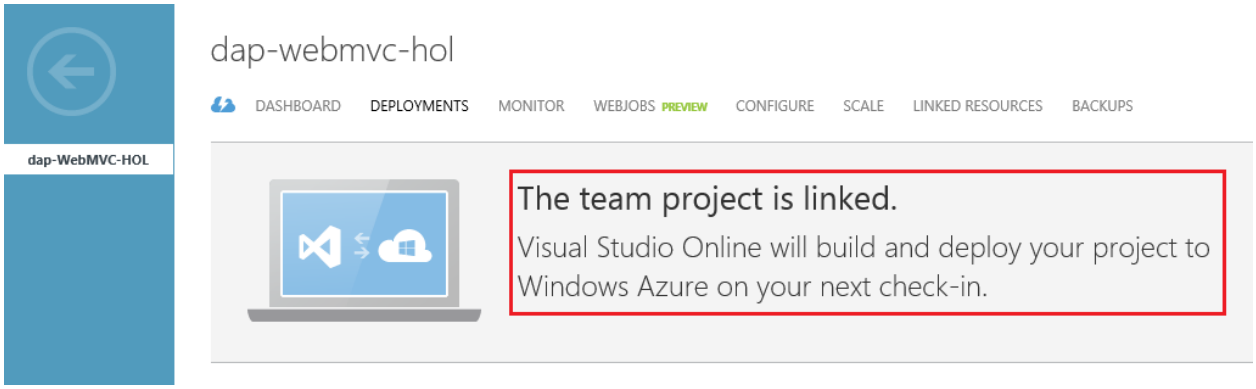

Figure 36: Project linked to Azure

8. Close browser window.

Exercise 5: Making Modifications to the Web Application

In this exercise, you will modify the web application project to customize the contact page to display your contact information.

1. Switch back to Visual Studio and the **Server Explorer** view. Right click on the MVC web site and then click on the **View in Browser** Menu item. A web browser will open and display a generic message alerting you that the web site is created but nothing has been published yet.
2. Close the browser window
3. Switch to the Solution Explorer view and expand the **WebMVC-HOL** web project
4. Underneath the **WebMVC-HOL** project expand the **Views** folder, and then expand the **Home** folder.

5. Double-click on **Contact.cshtml** to open the file in Visual Studio using the default editor.
6. Modify the **address block** to include your contact information. Does not need to be your actual detail any fictitious address will do.

```
<address>
    1111 S. Figueroa Street<br />
    Los Angeles, California 90001<br />
    <abbr title="Phone">P:</abbr>
    (213) 742-7100
</address>
```

Figure 37: Changed contact address

7. Once you have completed the changes, click on File – Save to save the changes to local disk.

Exercise 6: Review Visual Studio Build Definition

In this exercise, you will review the Visual Studio Online Build definition that was automatically created for you by Visual Studio in exercise 4 when you integrated the project's source control with Azure.

1. Switch to the Team Explorer window and **click** on the **Home** icon then **select** the **Builds** link.

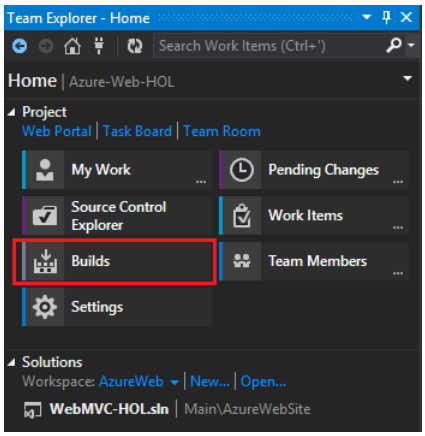

Figure 38: Selecting Team Project builds

2. Under the All Build Definitions Heading you should see a build definition that has the **name** of your Azure MVC **website suffixed** with **_CD**.

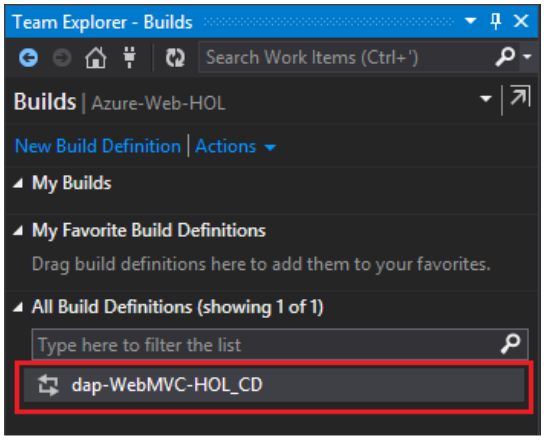

Figure 39: Identify Azure website build definition

3. **Right click** on the build definition name and then **click** on **Edit Build Definition** menu item.

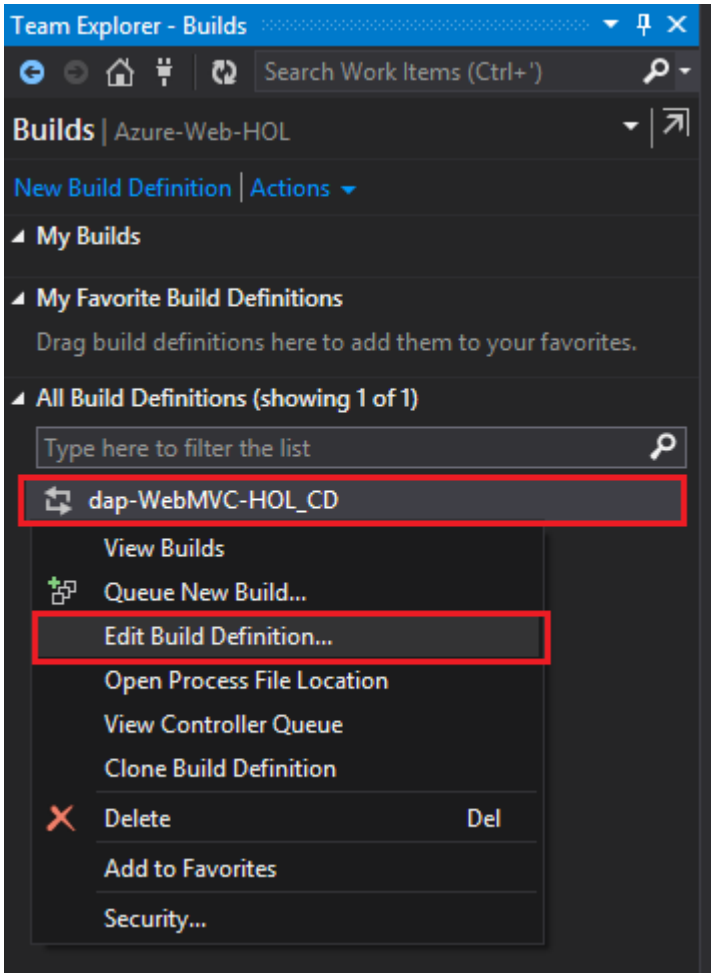

Figure 40: Edit build definition

4. In the build definition window, take time to review and familiarize yourself with the build definition settings and configuration. Pay particular attention to the Trigger and Process tabs of the definition.

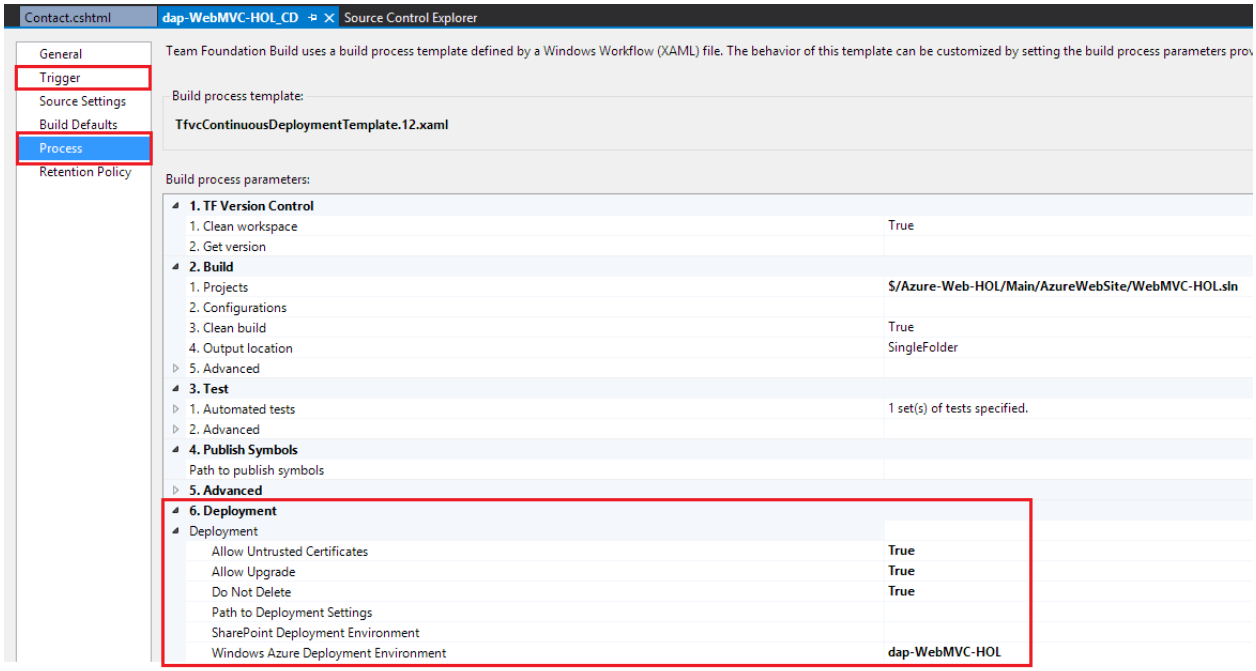

Figure 41: Review build definition

5. When finished reviewing the definition, go ahead and close the definition by clicking File -> Close.

Exercise 7: Building and Deploying the Web Application

In this exercise, you check-in the changes you made to the MVC web application. After completing the check-in you will monitor the automatically triggered build and wait for completion. After the build is completed you will navigate to the Azure website and validate that the changes you made were deployed.

1. Switch back to the Solution Explorer view, **right click** on **Contact.cshtml**, and then **click** on the **Check In** menu item.
2. Complete the check in by **clicking** on the **Check In** button in the Team Explorer Pending Changes window.
3. Click on the Home icon, and Click on the Builds button
4. Double click the first build displayed under My Builds to open up the build execution window to monitor the status of the build.

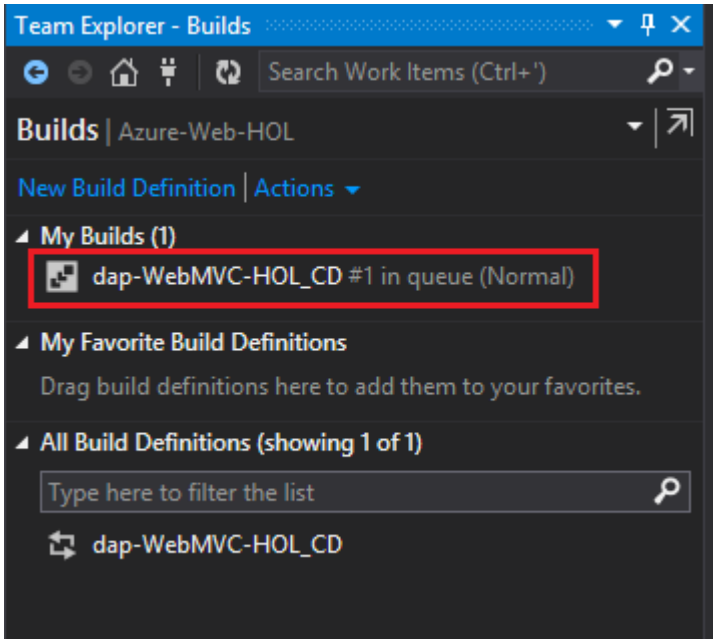

Figure 42: New build queued from check-in

5. Wait for the build to complete.

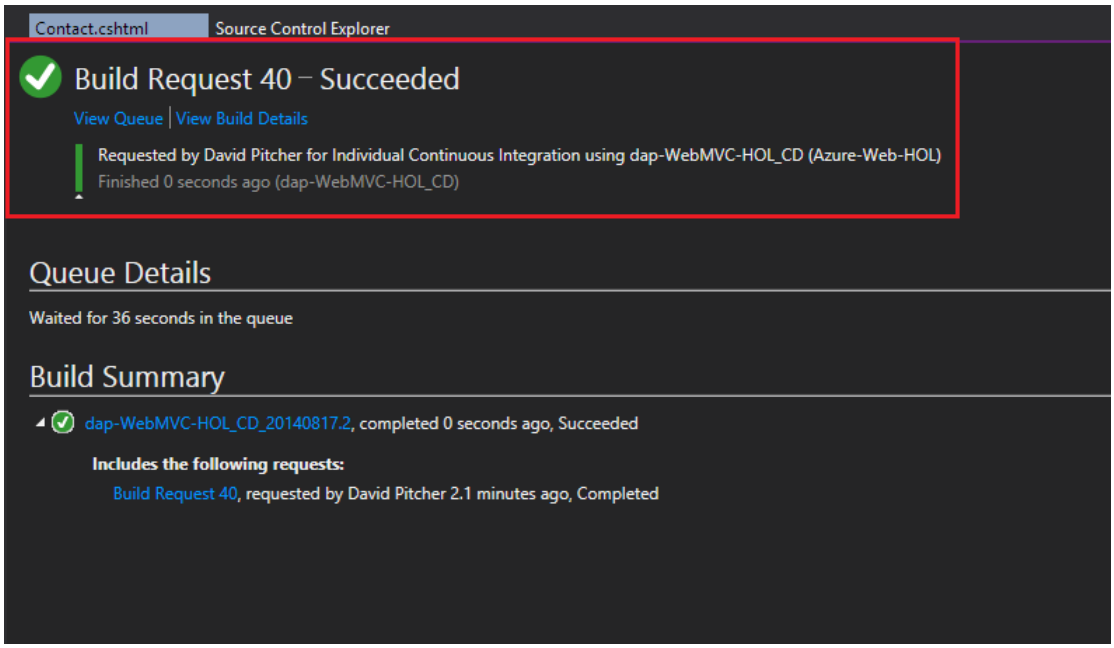

Figure 43: Completed build

6. Click on the View Build Details link to review details about the build, such as changesets and viewing of the build log.
7. In the Deployment Summary section, click on the URL to your Azure MVC website.

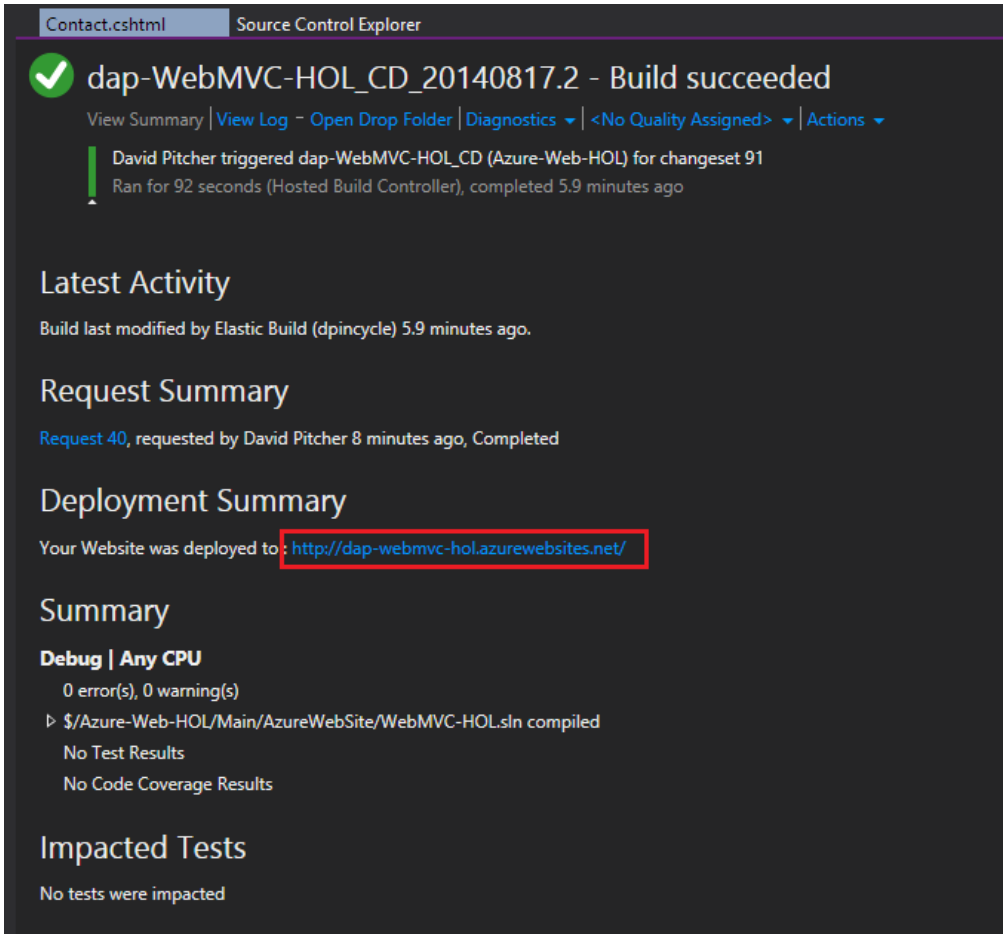

Figure 44: Completed build details

8. Once the website opens click on the Contact menu link and wait for the contacts page to load.

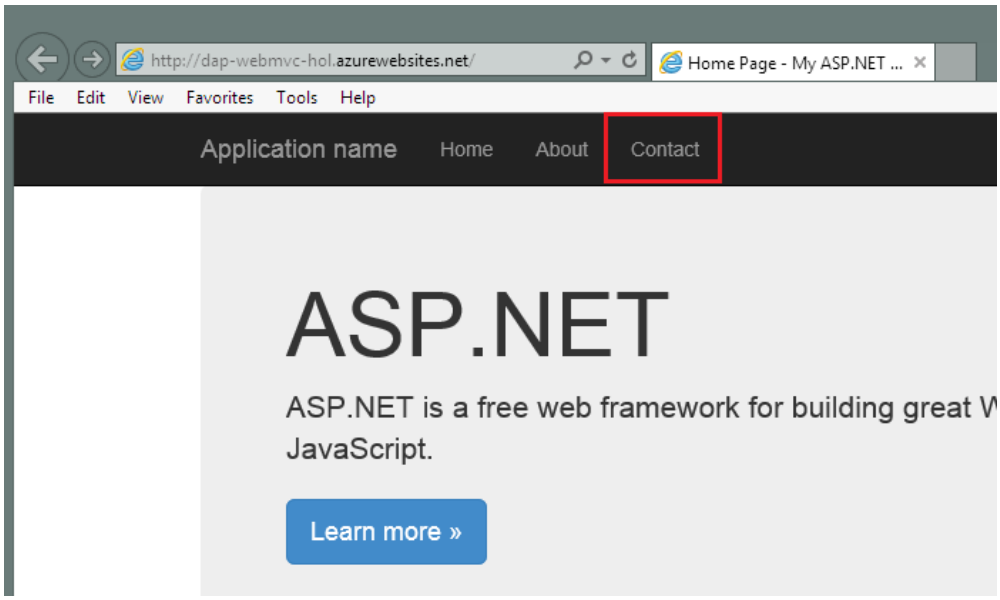

***Figure 45**: Deployed MVC web site*

9. Validate the contact address information displayed is equivalent to the changes you made to the web application in exercise 5.

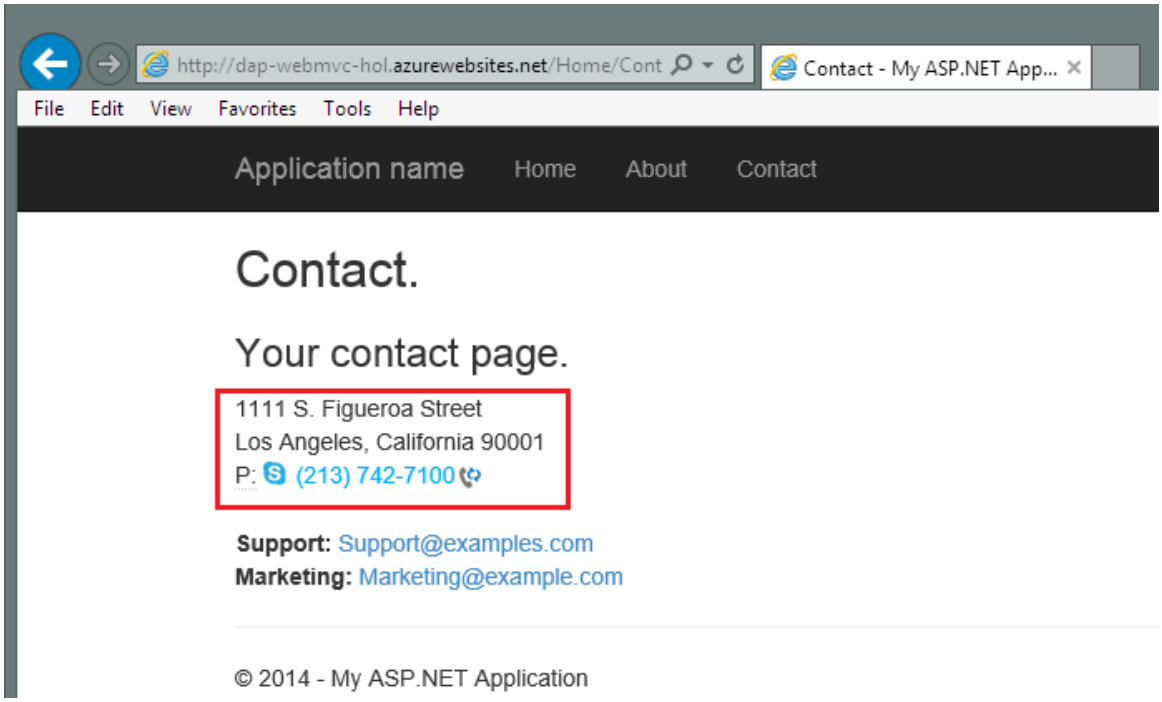

Figure 46: Validate contact information changes

10. Close the Browser.
11. Switch back to Visual Studio and the Server Explorer view, right click on your Azure Website and click on the Stop Website button to stop and disable the website.

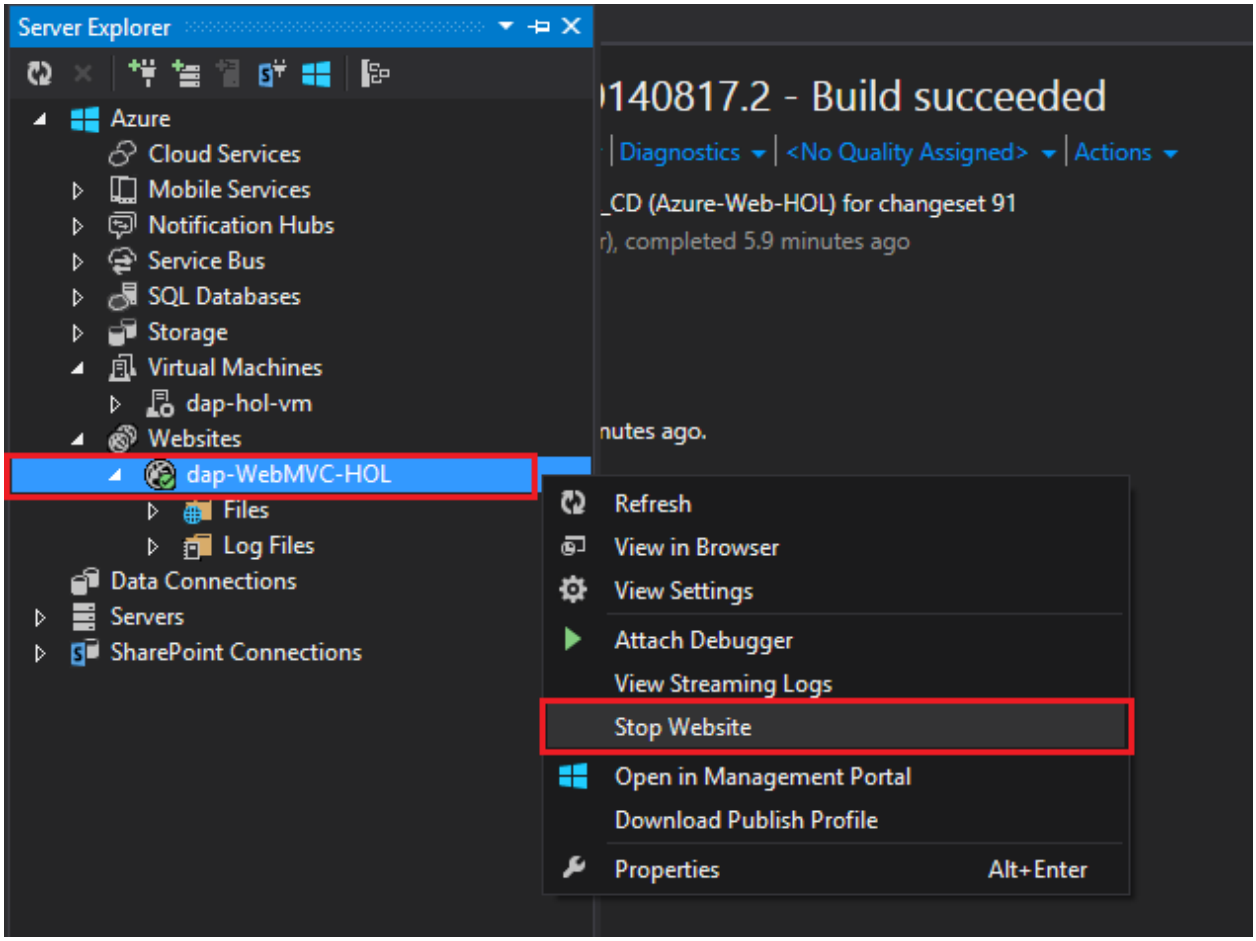

Figure 47: Stopping Azure website