

Creating Web Sites with Django and Bing Maps

Overview

In this hands-on lab we will walk you through how to create a Microsoft Azure Web Site with Django. We will also show you how to create a simple page to monitor the latest 20 major earthquakes with Django and check all big earthquakes nearby! We will use an FTP client to manage the web site.

Objectives

In this hands-on lab, you will learn how to:

- Create a new Web Site on Microsoft Azure by using Django.
- Create a Django website to show the latest earthquakes.
- Create a webjob to show all big earthquakes nearby.

Prerequisites

The following is required to complete this hands-on lab:

- A Microsoft Azure subscription - [sign up for a free trial](#)
 - Install FileZilla from [SourceForge](#). You may also use your favorite FTP client.
 - You **must** use one of the following **browsers**: Latest version of **Firefox or Chrome, IE 9, 10, 11**. Browsers like Safari, 360 may have issues with IPython or RDP download.
-

Exercises

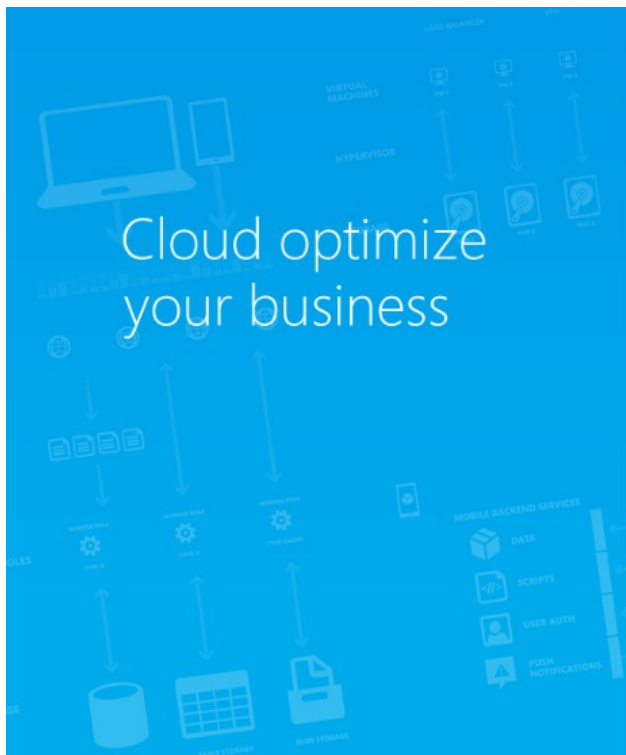
This hands-on lab includes the following exercises:

1. [Exercise 1: Create a Django web site on Microsoft Azure.](#)
2. [Exercise 2: Display earthquake locations on your Django web site.](#)
3. [Exercise 3: Show earthquakes nearby with a webjob.](#)

Estimated time to complete this lab: **45** minutes.

Exercise 1: Create a Django web site on Microsoft Azure.

1. Go to the [Microsoft Azure Management Portal](#) and sign in using the Microsoft credentials associated with your subscription.



Microsoft Azure

Type the email address of the account you want to sign in with.

Continue



Organizational accounts that work here can be used anywhere you see this icon. © 2014 Microsoft [Legal](#) [Privacy statement](#)
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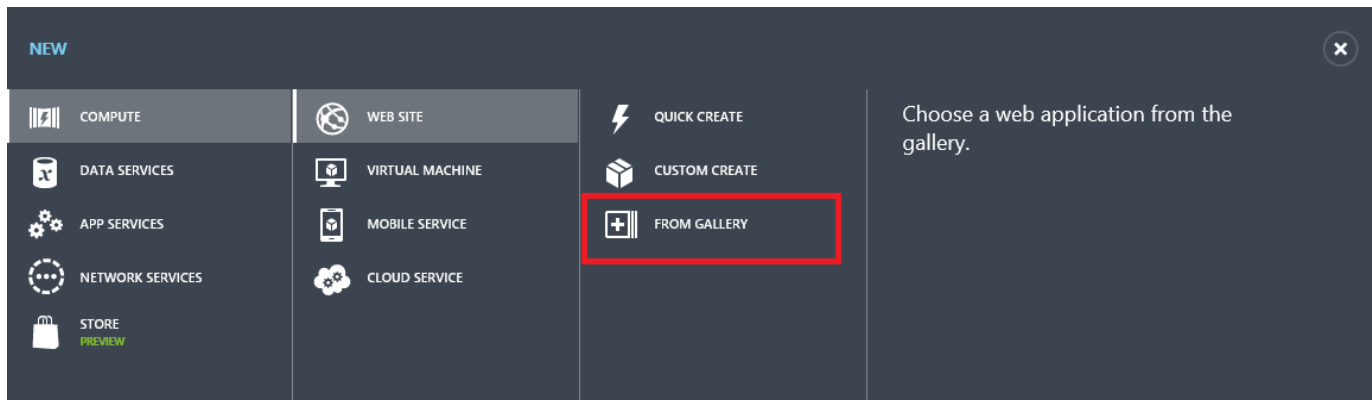
Log on to Microsoft Azure Management Portal

2. Click *New* on the command bar.

The screenshot shows the Microsoft Azure Management Portal interface. At the top, there's a dark blue header bar with the "Microsoft Azure" logo on the left and "Subscriptions" on the right. Below the header, there's a left-hand navigation pane with a list of services: ALL ITEMS, WEB SITES (0), VIRTUAL MACHINES (14), MOBILE SERVICES (1), CLOUD SERVICES (28), SQL DATABASES (7), STORAGE (29), HDINSIGHT (1), MEDIA SERVICES (0), SERVICE BUS (4), and VISUAL STUDIO ONLINE (0). The "WEB SITES" item is selected, and its content is displayed on the right. The right-hand area shows the text "web sites" and "You have no web sites. Create one to get started!" Below this text is a button that says "CREATE A WEB SITE" with a right-pointing arrow. At the bottom of the left-hand navigation pane, there's a dark blue bar with a white plus sign and the word "NEW" in white text, which is highlighted with a red rectangle. In the bottom right corner of the main area, there's a small icon with the number "1" and a question mark.

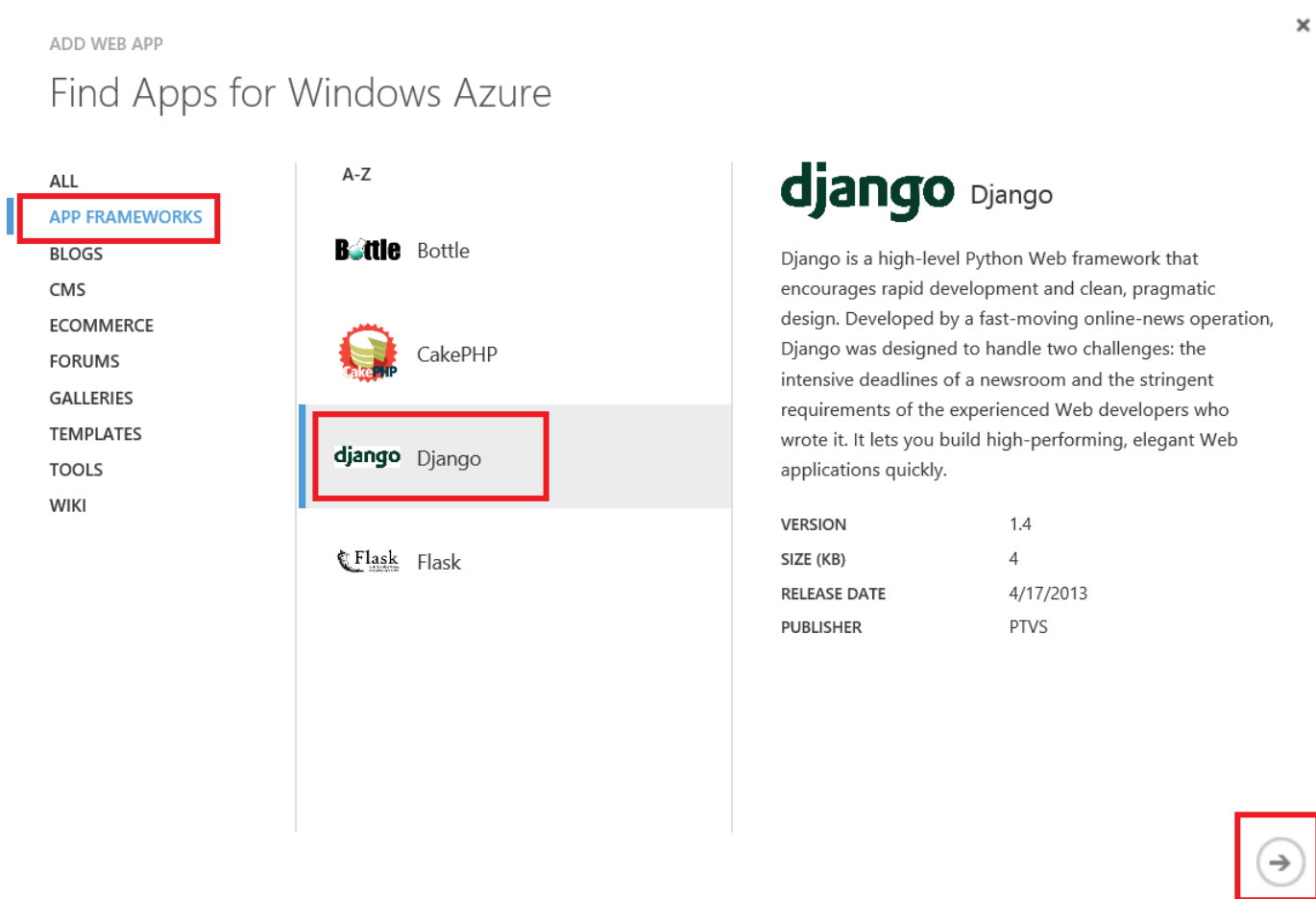
Creating a new Web Site From Gallery

3. Click *Web Site* and then *FROM GALLERY*.



Creating a new web site From Gallery

4. Choose *App Frameworks* category and then select Django. Click on the Next arrow.



Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design. Developed by a fast-moving online-news operation, Django was designed to handle two challenges: the intensive deadlines of a newsroom and the stringent requirements of the experienced Web developers who wrote it. It lets you build high-performing, elegant Web applications quickly.

VERSION	1.4
SIZE (KB)	4
RELEASE DATE	4/17/2013
PUBLISHER	PTVS

Creating Django Webs

5. Enter a site name, such as *a4rdjangoweb site*, and select the region. Click on the check mark to complete the wizard. Your Django web site is now being created and deployed.

Configure Your App

Site Settings

URL



.azurewebsites.net

WEBSCALEGROUP



REGION



LEGAL TERMS

By clicking the Next button, I acknowledge that I am getting this software from PTVS and that PTVS's legal terms apply to it. Microsoft does not provide rights for third-party software.

django Django

Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design. Developed by a fast-moving online-news operation, Django was designed to handle two challenges: the intensive deadlines of a newsroom and the stringent requirements of the experienced Web developers who wrote it. It lets you build high-performing, elegant Web applications quickly.

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SIZE (KB)	4
RELEASE DATE	4/17/2013
PUBLISHER	PTVS



Set Django Website Information

6. You can get the status of the deployment on the portal. The status message is updated once completed:

✓ Creating web site 'a4rdjangowebiste' succeeded.

DETAILS




OK



View Website Deployment Status


7. From the list of web sites displayed in the portal, select your site by clicking on its name. This will take you to its dashboard:



Your site has been created!


Here are a few options to get you started

☐ Skip Quick Start the next time I visit




Get the tools

[Install WebMatrix](#) [Install a Windows Azure SDK](#)



Publish your app.

[Download the publish profile](#) [Reset your deployment credentials](#) [Add a new deployment slot](#) [Learn about staged publishing](#)



Integrate source control

[Set up deployment from source control](#)

[View Django Dashboard](#)

8. From the toolbar at the bottom of the dashboard, click on the Browse button to browse the newly created site:

It worked!

Congratulations on your first Django-powered page.

Of course, you haven't actually done any work yet. Here's what to do next:








- If you plan to use a database, edit the `DATABASES` setting in `DjangoApplication/settings.py`.
- Start your first app by running `python manage.py startapp {appname}`.

You're seeing this message because you have `DEBUG = True` in your Django settings file and you haven't configured any URLs. Get to work!

[View Django Site](#)

9. **Next**, you need to setup your website's credential for use with FTP. If you need to reset the credential later after an initial setup, you will see a reset link instead. Web Site credentials are separated from the Microsoft ID associated with your Microsoft Azure subscription. Web Site credentials are valid for use with all Microsoft Azure web sites associated with your subscription. It is the administrator password for the site that you are creating, this way you don't have to give co-admin of the website your portal password. If you do forget your deployment credentials you can easily reset them again using the management portal. Open the web site **Dashboard** page and click the **Reset deployment credentials** link. Provide a new password and click Ok.

quick glance

-  View Applicable Add-ons
-  View connection strings
-  Download the publish profile
-  Reset your deployment credentials
-  Reset your publish profile credentials
-  Set up deployment from source control
-  Add a new deployment slot **PREVIEW**

Click on Reset deployment credentials on the right hand side of your web site dashboard

New user name and password

Git and FTP cannot use your Windows account to authenticate, so this dialog lets you specify a user name and password that can be used when using those technologies.

This user name and password can be used to deploy to any web site in your subscription. You do not need to set credentials for every web site that you create.

USER NAME

NEW PASSWORD

CONFIRM PASSWORD

Entering the username and password

Note: Don't forget to write your username and password on a paper. If you forget the password, you have to reset the credential again.

Exercise 2 - Display earthquake locations on your Django web site.

Next, we are going to create a Django website and show data of the latest earthquakes around the world on a map using Bing Maps. First we need to install Python and Django on your local machine. If you are not familiar with Django, it is a "High-level Python Web framework that encourages rapid development and clean, pragmatic design." You may learn more about using it for web development from its [website](#).

1. Open the folder `*Azure-training-course\Day 1\2. HOL Microsoft Azure Web Sites\Source\DjangoApplication*`. There is an existing Django project. All code are ready for you. It creates a view called **earthquake** to show all earthquakes on Bing map.
2. In order to use Bing Map SDK, we will also need to apply for a key. Just visit the [Bing Maps Portal](#).



Maps Account Center

[Bing Maps Account Center Help](#)

Resources

[Bing Maps Platform](#)
[Bing Maps APIs](#)
[Bing Maps Forums](#)
[Bing Maps Blog](#)
[Bing Maps AJAX Control 7.0 ISDK](#)

Contact Us

Account issues
mpnet@microsoft.com

Licensing inquiries
maplic@microsoft.com

[Bing Maps APIs Terms of Use](#)
[Bing Maps Platform APIs' Terms of Use \(TOU\)](#)
[Bing Maps API Terms of Use for Pre-release Windows 8 Metro Style Apps \(Beta\)](#)

Welcome to the Bing Maps Account Center

Your Bing Maps Account lets you create Bing Maps Keys to use with the Bing Maps APIs. You can also create and manage data sources that contain entities with a location. [Learn more](#)

[Sign In](#)

[New User](#)

You will need a Microsoft account (Formerly known as Windows Live ID)

Bing Map Portal

You can use the same Microsoft account you used to login to the Microsoft Azure portal, or you can click **New User** to register a new one.

1. Click **Create or view keys** to create your own key. Input your application name, Url, key type and application type. Set the Key type to **Basic** and Application type to **Education**. Please ensure the **Application URL** is the same as the web site you just created in the last step.



Maps Account Center

[Bing Maps Account Center Help](#)
[Announcements](#)

My Account

[Update or view account details](#)
[Create or view keys](#)
[View my Bing Maps API usage](#)

Data Sources

[Upload data to a data source](#)
[Manage my data sources](#)
[View data source information](#)

Resources

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maplic@microsoft.com

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[Bing Maps API Terms of Use for Pre-release Windows 8 Metro Style Apps \(Beta\)](#)

My keys

You are able to create two keys (Trial or Basic) for most application types and one additional Windows Store app Trial key under this account. Trial keys expire after 90 days and cannot be converted to Basic keys. You cannot delete keys or generate more than 3 keys from this account. If you intend to create a non-trial application, make one of the keys a Basic key and read the governing [TOU](#) that defines usage limits.

Create key

* Application name

earthquake

* Application URL

mydjangowebsite1

* Key type

Basic

[What's This](#)

* Application type

Education

* Enter the characters you see

[Try a new image](#)



[Submit](#)

Create Bing Map Keys

2. You will get your key after you submit your information. You will use the key in your html page.

Application name	Key details	
earthquake	<div style="border: 2px solid red; height: 1.2em; width: 500px; margin-bottom: 5px;"></div> http://mydjangowebsite1.azurewebsites.net/	Update
	Basic / Education	
	Created Date: 09/30/2013 Expiration Date: None	

Bing Map Key

- Open the file in **templates\earthquake.html** in text editor, replace the **Your Bing Maps Key** with your own application key and save the file.

```

.....function getMap(){
.....map=new Microsoft.Maps.Map(document.getElementById('myMap'),{credentials:'Your Bing Maps Key'});
.....}

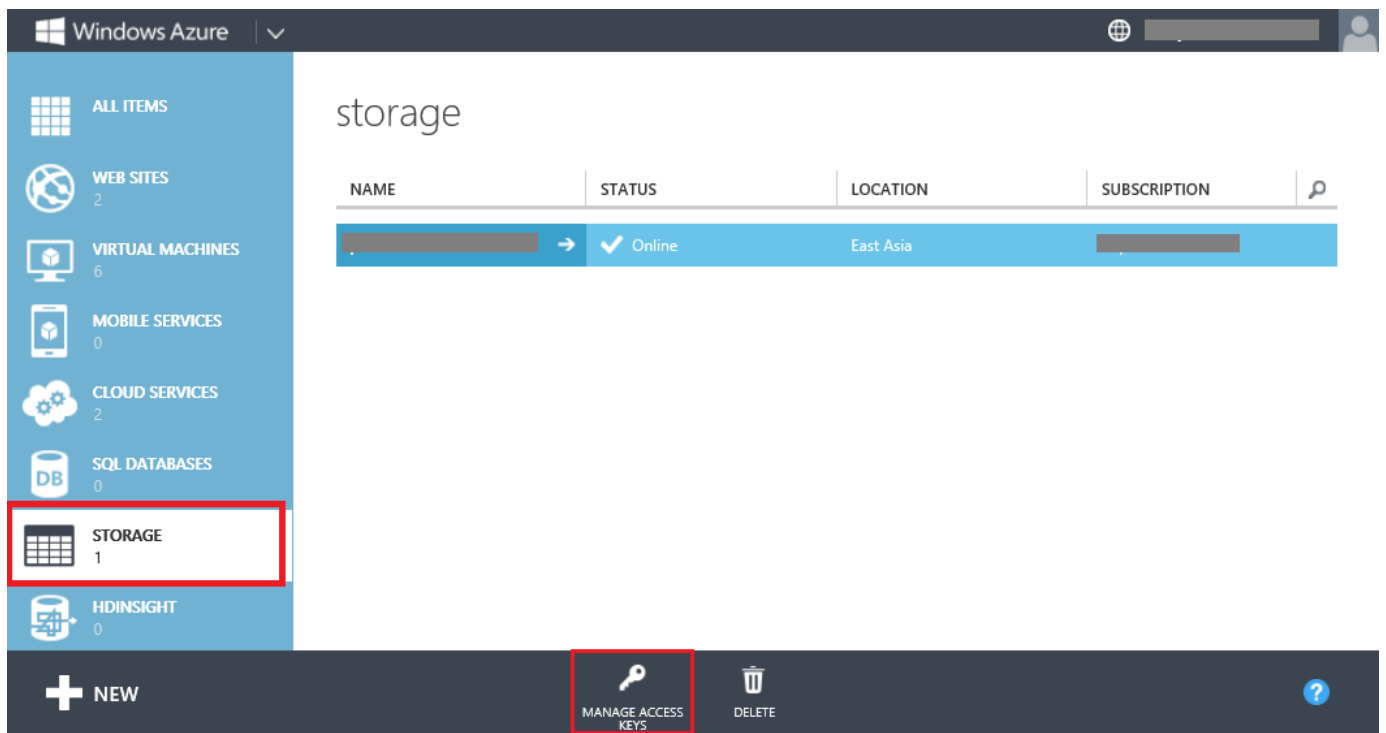
```

Change Application Key

- In order to use webjobs in Exercise 3, you will also need a storage account. Storage account is a place where we can save blob files, no sql data or queue data. You don't need to worry too much about it because we will explain it more in the coming sessions. In the management portal, just click **New -> Data Service -> Storage -> Quick Create** to create one. You can select your nearest region and a global unique name for the url.

Create A Storage Account

- You need to know your storage account's name and access key. You can find your storage account name and access key in your Microsoft Azure Management Portal.



Microsoft Azure Storage Account

Click the "Manage Access Keys" button under the page to display the storage account name and access keys for the currently selected storage account.

Manage Access Keys

When you regenerate your storage access keys, you need to update any virtual machines, media services, or applications that access this storage account to use the new keys. [Learn more.](#)

STORAGE ACCOUNT NAME

PRIMARY ACCESS KEY

regenerate

SECONDARY ACCESS KEY

regenerate



Manage Access Key

6. Replace the storage account name and storage account key at the end the python code file **settings.py**

```
# SAVE Storage Account Name and Key Name
AZURE_ACCOUNT_NAME = '<storage account name>'
AZURE_ACCOUNT_KEY = '<storage account key>'
AZURE_QUEUE_NAME = 'webjobsqueue'
AZURE_CONTAINER_NAME = 'earthquake'
AZURE_BLOB_NAME = 'locations.txt'
```

Update storage account info

7. Connect to the FTP publishing service by FileZilla. You can download and install FileZilla to manage all your folders. FileZilla is a free ftp solution. The client version can be downloaded from [here](#). It has Windows and Mac version. The UI is almost exactly the same.

Provide the **Host Name**, **User Name** and **Password** of your deployment credentials. The **Host Name** is available from the Dashboard in the portal under FTP HOST NAME (or FTPS HOST NAME) and will look something like *ftp://waws-prod-blu-001.ftp.azurewebsites.windows.net*. Make sure that the **User Name** is prefixed by the **Web Site** name (e.g. *mydiangoweb site1\trainingwebsiteuser*). The password is you wrote down in the Exercise 1.

MANAGEMENT SERVICES

[Operation Logs](#)

VIRTUAL IP ADDRESS

No IP-based SSL binding is configured

SITE URL

[a4rdjangoweb site.azurewebsites.net](#)

COMPUTE MODE

Free

FTP HOST NAME

[ftp://waws-prod-blu-003.ftp.azurewebsites.windows.net](#)

FTPS HOST NAME

[https://waws-prod-blu-003.ftp.azurewebsites.windows.net](#)

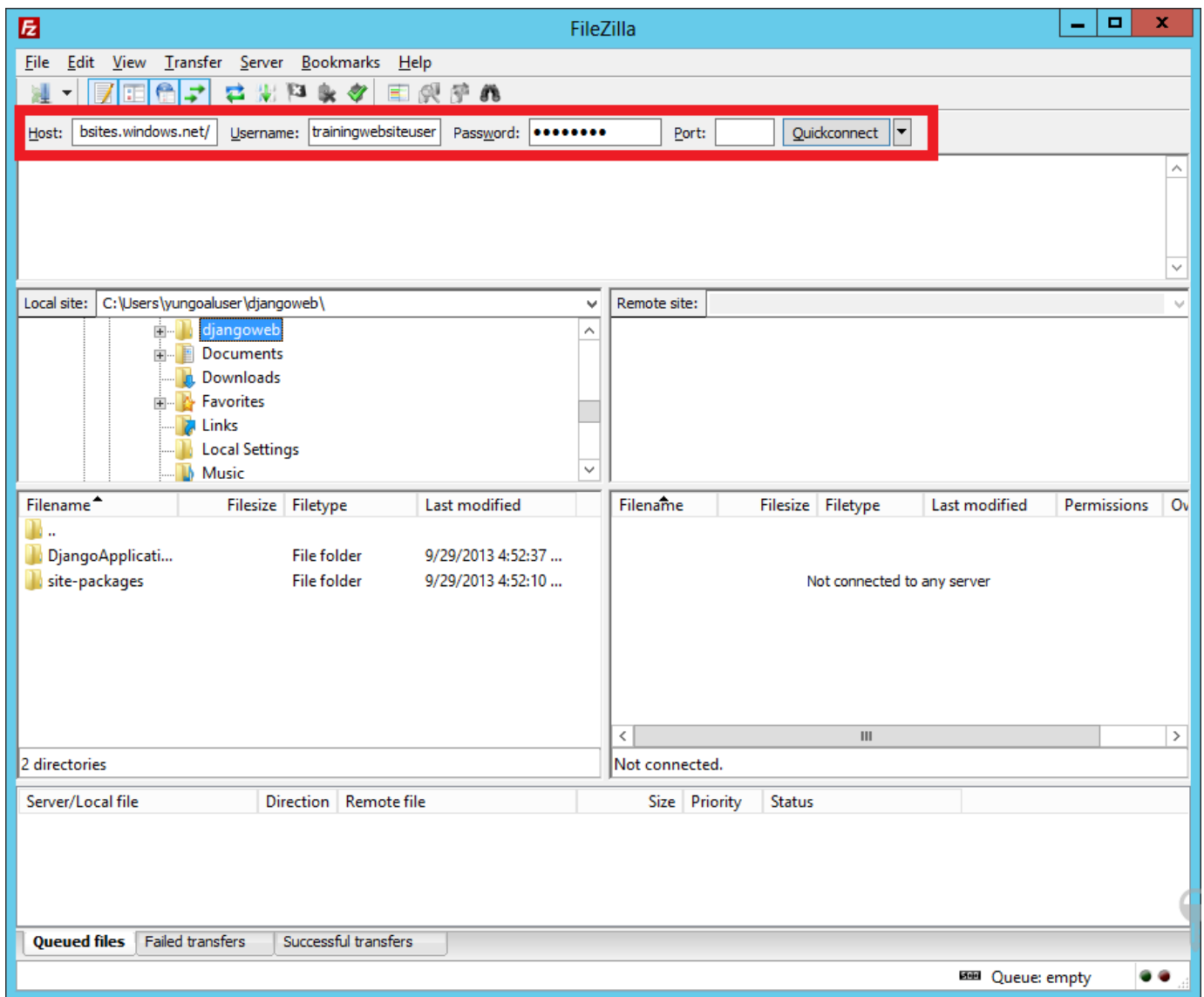
DEPLOYMENT / FTP USER

[a4rdjangoweb site\trainingwebsiteuser](#)

FTP DIAGNOSTIC LOGS

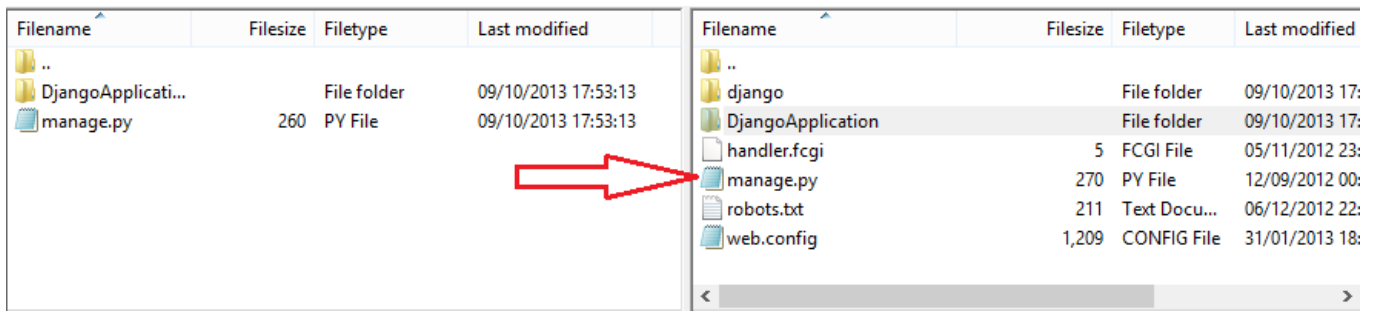
[ftp://waws-prod-blu-003.ftp.azurewebsites.windows.net/LogFiles](#)

Above is an example of the **Dash board**, on the right hand side you will find the ftp host and the user name you should use for Filezilla.



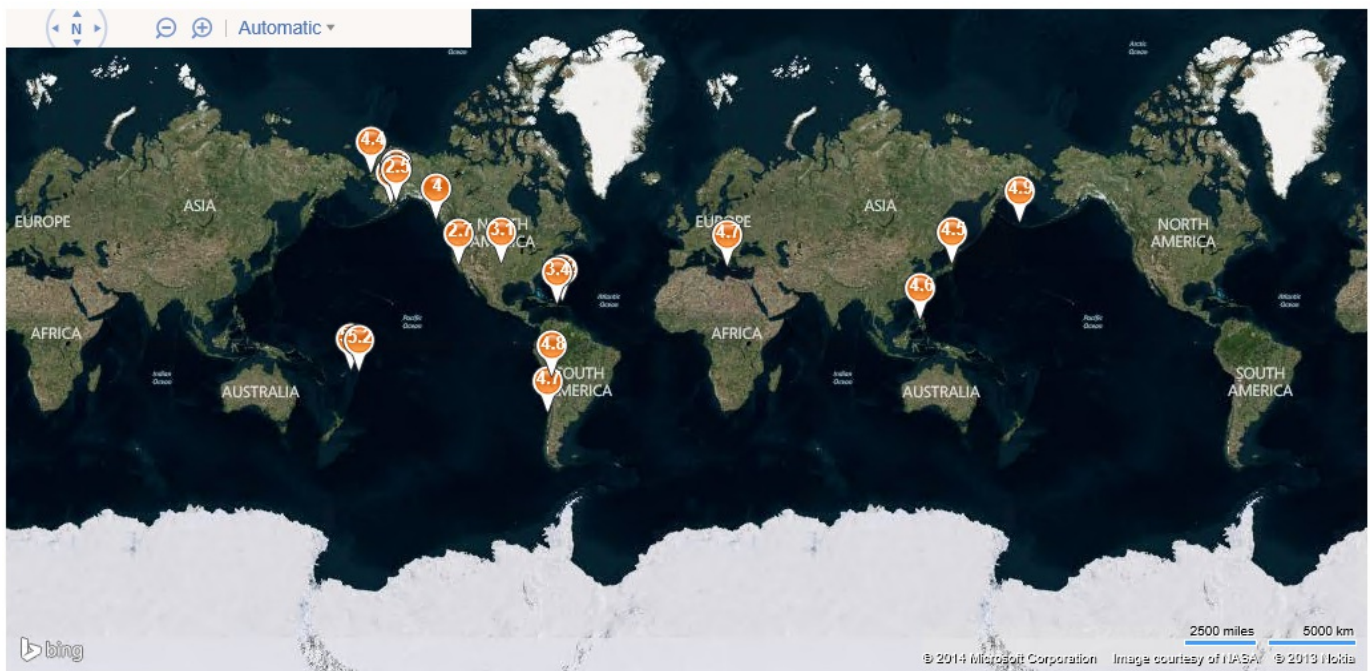
Use FileZilla

8. Click **Quick Connect** and Upload all files using the FileZilla. Use FileZilla to upload the subfolder **Azure-training-course\Day 1\2. HOL Microsoft Azure Web Sites\Source\DjangoApplication\DjangoApplication\DjangoApplication** to **site/wwwroot** folder. You can overwrite the server files.



Upload Django Website

9. Browse the new web site [http://\[yourwebsite\].azurewebsites.net/earthquake](http://[yourwebsite].azurewebsites.net/earthquake), for example, <http://django.azurewebsites.net/earthquake>.
10. You can see the earthquake locations on your website.



Earthquake Locations

If you get the following error **No module named azure.storage**, you can upload the folder **Azure-training-course\Day 1\2. HOL Microsoft Azure Web Sites\Source\azure** to **/site/wwwroot** so as to enable the azure sdk for python.

ImportError at /

No module named azure.storage

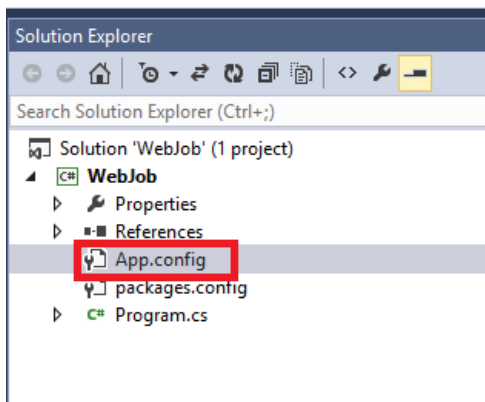
```
Request Method: GET
Request URL: http://a4rdjangowebsite.azurewebsites.net/
Django Version: 1.4
Exception Type: ImportError
Exception Value: No module named azure.storage
Exception Location: D:\home\site\wwwroot\DjangoApplication\views.py in <module>, line 5
Python Executable: D:\Python27\python.exe
Python Version: 2.7.3
Python Path: ['D:\\Python27\\Scripts',
'D:\\Windows\\SYSTEM32\\python27.zip',
'D:\\Python27\\DLLs',
'D:\\Python27\\lib',
'D:\\Python27\\lib\\plat-win',
'D:\\Python27\\lib\\lib-tk',
'D:\\Python27',
'D:\\Python27\\lib\\site-packages',
u'D:\\home\\site\\wwwroot']
Server time: Fri, 25 Apr 2014 08:23:25 +0000
```

11. If you are having issues with the ftp server, close Filezilla and try again, make sure you have used the correct user name and password. Also note that username is in the format of: [YOURWEBSITE/USERNAME] not user name you created via reset deployment credential.

Exercise 3 - Create a webjob to show all big earthquakes nearby.

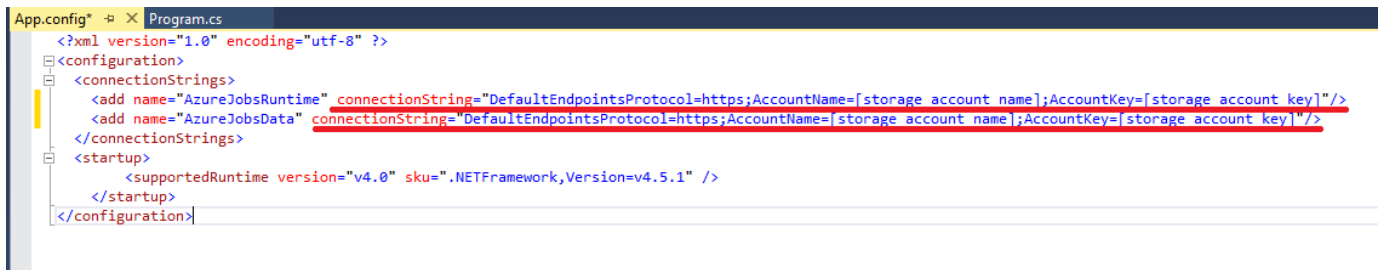
Next, we are going to create a webjob to download all big earthquakes from 2000 to now. The magnitude is larger than 6 and we are looking for the circle with 1000 km inside radius and 1200 km outside radius. A .NET executable is running continuously. If you click the pushpin on the map, the job will get the location of the pushpin and check all earthquakes.

1. Open the project file under **Azure-training-course\Day 1\2. HOL Microsoft Azure Web Sites\Source\WebJob\WebJob.sln** with Visual Studio 2013. It is a console application to download all earthquake data from **USGS**. We will upload the console application to the website and run a background job to get all big earthquakes near a certain location. All code is ready but we need to modify some configurations in the file **app.config**. Double click the file in the solution explore.



Update app config

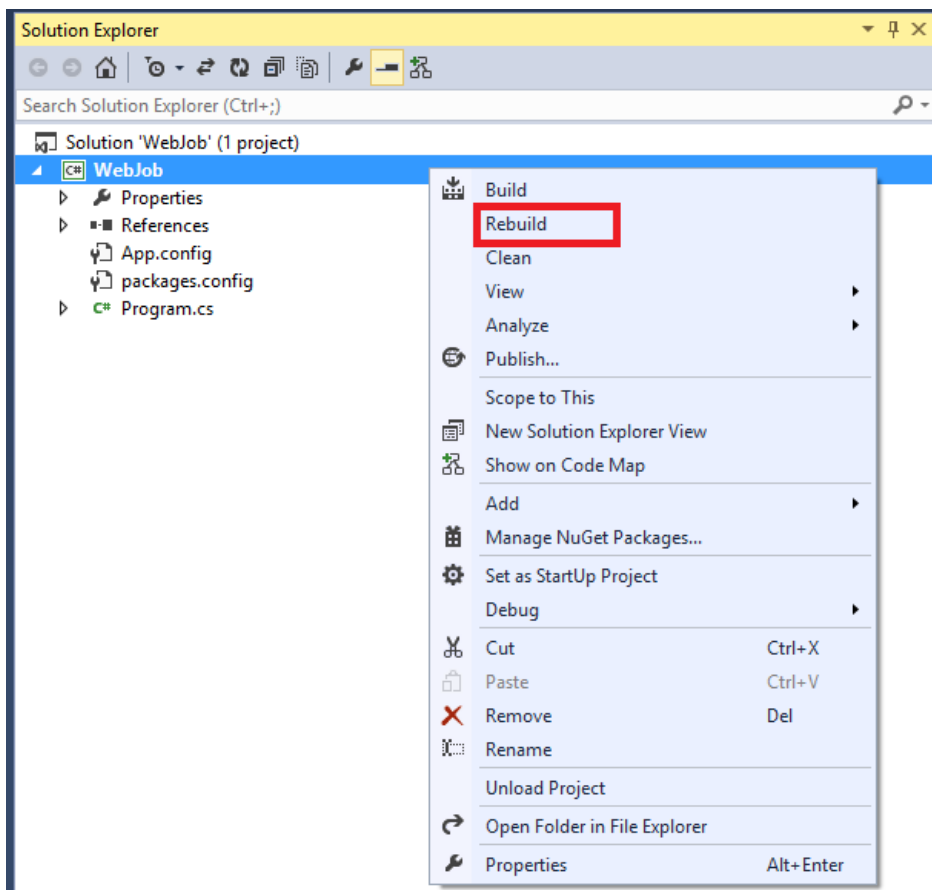
We have two connection strings, **AzureJobRuntime** and **AzureJobsData**, we need to replace the storage account name and key in the connection string.



Replace the connection string

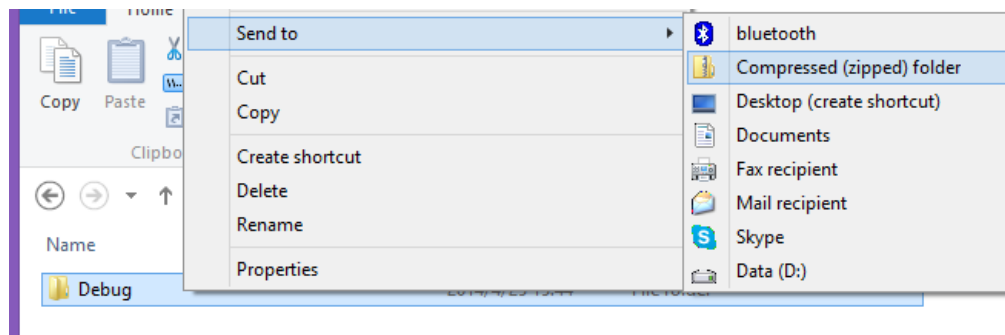
Save the file after you modify.

2. Then we need to rebuild the project by right click the **WebJob** node in the *Solution Explorer* and click **Rebuild**



Rebuild

Right click the **WebJob** node in the *Solution Explorer* and click **Open Folder In File Explorer**, Navigate to **bin/Debug** folder. Right click the folder, select **Send To -> Compressed (zipped) folder** to create a zip file.



Create a zip file

if you are using Mac OS or Linux and you don't have a visual studio installed. We have already build the file for you. You can directly open the folder **Azure-training-course\Day 1\2. HOL Microsoft Azure Web Sites\Source\WebJob\WebJob\bin\Debug** and open the file **WebJob.exe.config**. Just do the same modification and create a zip file from the Debug folder.

1. In your website dashboard, click Configuration tab.

a4rdjangowebiste

[DASHBOARD](#) [MONITOR](#) [WEBJOBS PREVIEW](#) **[CONFIGURE](#)** [SCALE](#) [LINKED RESOURCES](#) [BACKUPS PREVIEW](#)

general

Website Configure

Scroll down to connection strings section, add a new connection string. Don't forget to replace storage account name and storage account key with you own data. Click **Save** after you are done.

```
Name = "AzureJobsRuntime"
Value = DefaultEndpointsProtocol=https;AccountName=[storage account name];AccountKey=[storage account key]
Type = Custom
```

```
App.config* x Program.cs
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
  <connectionStrings>
    <add name="AzureJobsRuntime" connectionString="DefaultEndpointsProtocol=https;AccountName=[storage account name];AccountKey=[storage account key]"/>
    <add name="AzureJobsData" connectionString="DefaultEndpointsProtocol=https;AccountName=[storage account name];AccountKey=[storage account key]"/>
  </connectionStrings>
  <startup>
    <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.5.1" />
  </startup>
</configuration>
```

Website Configure

2. Click WebJob tab in the dashboard. Click **ADD A JOB** to create a new job.

a4rdjangowebste

[DASHBOARD](#) [MONITOR](#) **WEBJOBS PREVIEW** [CONFIGURE](#) [SCALE](#) [LINKED RESOURCES](#) [BACKUPS PREVIEW](#)

You have no jobs. Add one to get started!

ADD A JOB 

Add WebJobs

3. In the **Basic WebJob settings** form, input the job name, select the zip file we just created and select **Run Continuously**.


NEW JOB

x


Basic WebJob settings

NAME

CONTENT (ZIP FILES - 100MB MAX) ?

 Debug.zip



HOW TO RUN ?



Run continuously 



Basic WebJob settings

Microsoft Azure

Subscriptions  


a4rdjangowebste

a4rdjangowebste

[DASHBOARD](#) [MONITOR](#) **WEBJOBS PREVIEW** [CONFIGURE](#) [SCALE](#) [LINKED RESOURCES](#) [BACKUPS PREVIEW](#)

NAME	STATUS	SCHEDULE	LAST RUN TIME	LAST RUN RESULT	LOGS
webjob	✓ Running	Runs continuously			https://a4rdjangowebste.sc

WebJob Created

4. After the job is created, move your mouse to a pushpin and click, you will see the webjob will query all big earthquakes whose magnitude is larger than 6 near the pushpin location from 2000 to now!



Begin to find all ≥ 6 degrees earthquakes in the circle with radius 1000 kms and center 35.4997,21.6771 from year 2000.

There are 2 big earthquakes happened near 35.4997, 21.6771.

Earthquake Locations Nearby

Summary

By completing this hands-on lab you learned the following:

- Create a new Web Site on Microsoft Azure by using Django.
- Create a Django website to show earthquake information.
- Create a webjob to show all big earthquakes nearby.

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