



Microsoft® Official Course



Module13

Using Windows Azure Web Services in ASP.NET MVC 4 Web Applications



Module Overview

- Introducing Windows Azure
 - Designing and Writing Windows Azure Services
 - Consuming Windows Azure Services in a Web Application



Lesson 1: Introducing Windows Azure

- What Is Windows Azure?

Benefits of Hosting Services in Windows Azure

Benefits of Hosting Web Applications in Windows Azure

Windows Azure Storage Services

Discussion: Windows Azure Scenarios



What Is Windows Azure?

- Windows Azure is an open and flexible application development platform that:
 - Supports businesses of various sizes
 - Helps reduce the effort to develop scalable web applications
 - Decreases development costs
- Windows Azure provides the following categories of services:
 - Execution Models
 - Windows Azure Identity Management
 - Data Management
 - Business Analytics Solutions
 - Networking Services
 - Messaging with Service Bus
 - Media Management



Benefits of Hosting Services in Windows Azure

Characteristics of hosting services on Windows Azure:

- Windows Azure cloud services use a role-based model that includes a web role VM and a worker role VM
- You need not create the VM for the role-based model
- You need to upload the configuration file on the staging environment to direct Windows Azure on how to configure the application



Benefits of Hosting Web Applications in Windows Azure

Hosting web applications in Windows Azure:

- Is similar to hosting services, because web applications also require using VMs
- Provides full access to the IIS instance
- Automates the process of deploying applications to different hosting servers
- Simplifies the process of deploying additional hosts to support an application



Windows Azure Storage Services

Windows Azure provides storage services, such as:

- **Azure Storage:**

- Is also called Blob service
- Stores objects or file content relevant to web applications
- Provides a unique URL to access content

- **SQL Database:**

- Is a relational database service
- Increases the availability and scalability of web applications



Discussion: Windows Azure Scenarios

Discuss the following scenarios:

- Storage location for photos in a photo sharing application
- Centralized database for a Windows-based business application
- Hosting options for the business logics in an application
- Hosting options for web applications that use third-party components



Lesson 2: Designing and Writing Windows Azure Services

- Windows Azure Visual Studio Project Templates
 - Coding a Web Service
 - The Life Cycle of a Service
 - Deploying a Web Service
 - Debugging a Windows Azure Web Service



Windows Azure Visual Studio Project Templates

You can create applications by using the following project templates:

- Windows Azure project:
 - Facilitates role-based projects
 - Includes service definition and service configuration files
- Web role project:
 - Provides templates for the following web roles:
 - ASP.NET Web Forms
 - ASP.NET MVC4
 - ASP.NET MVC3
 - ASP.NET MVC2
 - WCF Service
 - Silverlight Business Application
- Worker role project:
 - Supports background processing



Coding a Web Service

To code a web service:

1. Create a WCF Service Web Role project
2. Rename the interface for the service
3. Define properties and methods in the interface
4. Rename the service class
5. Implement the service logic
6. Test the service



The Life Cycle of a Service

The **RoleEntryPoint** class:

- Helps define the following methods that Windows Azure hosts call, based on the development stage of the application:
 - OnStart
 - OnStop
 - Run
- Helps define the functions that add logic to services



Deploying a Web Service

Two files help control the Windows Azure instance that runs the application:

- The `ServiceDefinition.csdef` file:
 - Helps define roles for your application
- The `ServiceConfiguration.cscfg` file:
 - Helps configure the instance assigned for your application
 - Directs Windows Azure on how to configure the hosting environment



Debugging a Windows Azure Web Service

You can debug a Windows Azure application by using:

- Diagnostic logs:
 - Helps access the API to perform diagnosis
- IntelliTrace:
 - Enables you to access event log information
 - Enables you to debug the application
- Remote desktop:
 - Provides full access to Windows event logs
 - Enables you to remotely access services



Lesson 3: Consuming Windows Azure Services in a Web Application

- Calling a Windows Azure Service by Using Server-Side Code

Calling a Windows Azure Service by Using jQuery

Demonstration: How to Call a Windows Azure Service by Using jQuery



Calling a Windows Azure Service by Using Server-Side Code

To call a web service in a Windows Azure web application:

- Add the service reference in your application:
 - To add service reference in the production environment, use `http://<urlname>.cloudapp.net/<servicename>.svc`
 - To add service reference in the staging environment, use `http://<urlname>.cloudapp.net/<servicename>.svc`
- Use the generated proxy class



Calling a Windows Azure Service by Using jQuery

To enable the jQuery **ajax** function to call WCF services:

- Configure the services to accept POST requests in the JSON data format
- Use the **ajax** function to submit requests to WCF services:
 - Specify parameters such as **type**, **url**, **contentType**, and **dataType**
 - Specify the **ServiceSucceeded** callback function as a parameter



Demonstration: How to Call a Windows Azure Service by Using jQuery

In this demonstration, you will see how to:

1. Create a JavaScript function that calls a service
2. Call a service by using the `jQuery.Ajax()` function
3. Create callback functions that use the service response



Lab: Using Windows Azure Web Services in ASP.NET MVC 4 Web Applications

- Exercise 1: Accessing Windows Azure and Bing Maps
- Exercise 2: Creating a WCF Service for Windows Azure
- Exercise 3: Calling a Web Service from Controller Action

Logon Information

Virtual Machine: **20486B-SEA-DEV11**

User name: **Admin**

Password: **Pa\$\$w0rd**

Note: In Hyper-V Manager, start the **MSL-TMG1** virtual machine if it is not already running.

Estimated Time: 75 minutes

Lab Scenario

In the Photo Sharing application, the users have the option to add location information of a photo when they upload it. The senior developer recommends that you should store the location as a longitude and latitude, and an address so that other applications can use the data in mash-ups. You have been asked to create a service, hosted in Windows Azure, which will perform this conversion. You have to call this service from the Photo Upload page in the Photo Sharing application.



Lab Review

- What is the advantage of calling the Bing Maps Geocoding service from a WCF service in Windows Azure, instead of calling the Geocoding service directly from the Create action in the MVC web application?

Why is latitude and longitude data useful for photos in the Photo Sharing application?



Module Review and Takeaways

- Review Question(s)