

## 20487 Developing Windows Azure and Web Services

### Overview

In this course, students will learn how to design and develop services that access local and remote data from various data sources and how to develop and deploy services to hybrid environments, including on-premises servers and Windows Azure.

### Prerequisite Comments

- Before attending this course, students must have:
- Experience with C# programming, and concepts such as Lambda expressions, LINQ, and anonymous types.
  - Understanding the concepts of n-tier applications.
  - Experience with querying and manipulating data with ADO.NET.
  - Knowledge of XML data structures.

### Target Audience

This course is intended for both novice and experienced .NET developers who have a minimum of six months programming experience, and want to learn how to develop services and deploy them to hybrid environments.

### Course Objectives

- After completing this course, students will be able to:
- Query and manipulate data with Entity Framework
  - Use ASP.NET Web API to create HTTP-based services and consume them from .NET and non-.NET clients
  - Extend ASP.NET Web API services using message handlers, model binders, action filters, and media type formatters
  - Create SOAP-based services with the Windows Communication Foundation (WCF) and consume them from .NET clients
  - Apply design principles to service contracts and extend WCF services using custom runtime components and behaviors
  - Secure WCF services using transport and message security
  - Use Windows Azure Service Bus for relayed messaging and brokered messaging using queues and topics
  - Host services on on-premises servers, and on various Windows Azure environments, such as Web Roles, Worker Roles, and Web Sites
  - Deploy services to both on-premises servers and Windows Azure
  - Store and access data in Windows Azure Storage, and configure storage access rights

[Register Online](#)

### Schedule

Class Length: 5 Days

G2R = "Guaranteed to Run"   OLL = "Online LIVE" ILT = "Instructor-Led-Training"					
10/26/20	G2R	9:00AM - 5:00PM	Norfolk-Virginia Beach, VA	OLL	\$2,975.00

- Monitor and log services, both on-premises and in Windows Azure
- Implement federated authentication by using ACS with ASP.NET Web API services
- Create scalable, load-balanced services

## Course Outline

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### 1 - Overview of service and cloud technologies

Key Components of Distributed Applications  
Data and Data Access Technologies  
Service Technologies  
Cloud Computing  
Exploring Blue Yonder Airlines' Travel Companion Application  
Lab : Exploring the work environment

### 2 - Querying and Manipulating Data Using Entity Framework

ADO.NET Overview  
Creating an Entity Data Model  
Querying Data  
Manipulating Data  
Lab : Creating a Data Access Layer by Using Entity Framework

### 3 - Creating and Consuming ASP.NET Web API Services

HTTP Services  
Creating an ASP.NET Web API Service  
Handling HTTP Requests and Responses  
Hosting and Consuming ASP.NET Web API Services  
Lab : Creating the Travel Reservation ASP.NET Web API Service

### 4 - Extending and Securing ASP.NET Web API Services

The ASP.NET Web API Pipeline  
Creating OData Services  
Implementing Security in ASP.NET Web API Services  
Injecting Dependencies into Controllers  
Lab : Extending Travel Companion's ASP.NET Web API Services

### 5 - Creating WCF Services

Advantages of Creating Services with WCF  
Creating and Implementing a Contract  
Configuring and Hosting WCF Services  
Consuming WCF Services  
Lab : Creating and Consuming the WCF Booking Service

## 6 - Hosting Services

Hosting Services On-Premises  
Hosting Services in Windows Azure  
Lab : Hosting Services

## 7 - Windows Azure Service Bus

What Are Windows Azure Service Bus Relays?  
Windows Azure Service Bus Queues  
Windows Azure Service Bus Topics  
Lab : Windows Azure Service Bus

## 8 - Deploying Services

Web Deployment with Visual Studio 2012  
Creating and Deploying Web Application Packages  
Command-Line Tools for Web Deploy  
Deploying Web and Service Applications to Windows Azure  
Continuous Delivery with TFS and Git  
Best Practices for Production Deployment  
Lab : Deploying Services

## 9 - Windows Azure Storage

Introduction to Windows Azure Storage  
Windows Azure Blob Storage  
Windows Azure Table Storage  
Windows Azure Queue Storage  
Restricting Access to Windows Azure Storage  
Lab : Windows Azure Storage

## 10 - Monitoring and Diagnostics

Performing Diagnostics by Using Tracing  
Configuring Service Diagnostics  
Monitoring Services Using Windows Azure Diagnostics  
Collecting Windows Azure Metrics  
Lab : Monitoring and Diagnostics

## 11 - Identity Management and Access Control

Claims-based Identity Concepts  
Using the Windows Azure Access Control Service  
Configuring Services to Use Federated Identities  
Handling Federated Identities on the Client Side  
Lab : Identity Management and Access Control

## 12 - Scaling Services

Introduction to Scalability  
Load Balancing  
Scaling On-Premises Services with Distributed Cache  
Windows Azure Caching  
Caveats of Scaling Services  
Scaling Globally  
Lab : Scalability

## 13 - Appendix A: Designing and Extending WCF Services

Applying Design Principles to Service Contracts  
Handling Distributed Transactions  
Extending the WCF Pipeline  
Lab : Designing and Extending WCF Services

## 14 - Appendix B: Implementing Security in WCF Services

Introduction to Web Services Security  
Transport Security  
Message Security  
Configuring Service Authentication and Authorization  
Lab : Securing a WCF Service

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