Microsoft Windows Azure

Meet the expert: Bret Stateham is the owner of Net Connex, a technical training and consulting company. He has been both working and teaching on Microsoft platforms since the DOS days, has over 20 years of experience in the IT field, and has over a decade of experience as a trainer. Bret has contributed to multiple technical books and is a frequent speaker at regional events.

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Course description: In this course you will learn the tools, technologies and techniques for developing .NET applications that run on the Windows Azure platform. At the completion of this course you should have the understanding and skills to develop applications that use Windows Azure Web, Worker and Virtual Machine roles, leverage the Azure Table, Queue and Blob storage services, and interact with SQL Azure databases.

Course outline:

Intro to Cloud Solutions
- Introduction
- Intro to Cloud Solutions
- Concepts
- Microsoft"s Cloud Offerings
- Intro to Windows Azure
- Windows Azure Data Centers
- Windows Azure Fabric
- Azure Data Center "Stack"
- Developer Tools
- Demo: Windows Azure SDK
- Windows Azure SDK
- Demo: SDK Command Prompt
- Summary

Azure SDK Development Tools
- Introduction
- Development Tools
- Command Line Tools
- Tools for Visual Studio
- Creating an Azure Service
- Azure Service Architecture
- What is an Azure Service?
- What are Azure Roles?
- Service Definition and Config
- General Azure Development Flow
- Creating Azure App Using SDK
- Demo: Creating Azure App
- Summary

Creating Azure App
- Introduction
- Creating App Using VS Tools
- Demo: Creating App Using VS
- Summary

Windows Azure Web Roles
- Introduction
- Windows Azure Roles
- Azure Operating Systems
- Demo: OS and SDK Compatibility
- Windows Azure Web Roles
- Creating a Web Role Project
- Web Roles
- Cloud Role, Project Relationships
- Creating Empty Web Role Project
- Demo: Web Role Projects
- Demo: Empty Web Role
- Summary

Configuring Web Roles
- Introduction
- Configuration
- ServiceDefinition.csdef
- Web Role Element
- Editing Service Files in VS
- Using VS Configuration UI
- Endpoints
- Demo: Endpoints
- ConfigurationSettings
- Demo: ConfigurationSettings
- Summary

Windows Azure APIs
- Introduction
- Windows Azure APIs
- Windows Azure Managed Library
- ServiceRuntime
- RoleEntryPoint
- RoleEnvironment
- Demo: RoleEntryPoint
- Demo: RoleEnvironment
- Summary

Windows Azure Worker Roles
- Introduction
- Windows Azure Worker Roles
- Creating Worker Role Project
- Worker Role"s RoleEntryPoint
- Worker Role"s OnStart Method
- Worker Role"s Run Method
- Demo: Worker Role
- Summary

Inter-Role Communication
- Introduction
- Inter-Role Communication
- InternalEndpoint Element
- Demo: WCF Service
- Demo: InternalEndpoint
- Demo: Worker Role
- Demo: Web Role
- Demo: Get Weather Endpoint
- Summary

Deploying Packages Using VS
- Introduction
- Creating Hosted Service in Azure
- Create an Azure Storage Account
- Deploying with Visual Studio
- Creating Management Credentials
- Monitoring Deployment Activity
- Demo: Creating Hosted Service
- Demo: Azure Storage Account
- Demo: Deploying with VS
- Demo: Monitoring Deployment
- Summary

Azure Local Storage
- Introduction
- Azure Local Storage
- Accessing Local Storage in Code
- Problems with Local Storage
- Proper use of Local Storage
- Demo: Example Overview
- Demo: Defining Local Storage
- Demo: ShowUploadedFiles
- Demo: Uploading Files
- Summary

Azure Storage Services
- Introduction
- Azure Storage Services
- Azure Storage Account
- Creating a Storage Account
- Affinity Groups
- Demo: Creating an Account
- Demo: Access Keys
- Summary

Azure Storage
- Introduction
- Azure Storage APIs
- Key StorageClient Classes
- Demo: Example Overview
- Demo: Upload to Blob Storage
- Demo: Containers
- Demo: Working with a Blob
- Demo: Testing and Debugging
- Summary

Table Storage
- Introduction
- Table Storage Architecture

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- Azure Table Storage
- Entity Properties
- Azure Table Storage REST API
- Operations on Tables
- Operations on Entities
- REST API Requirements
- Managed APIs for Azure Storage
- Summary

Connecting to Azure Storage
- Introduction
- Authentication
- Connection Strings
- Configuration Settings
- Connection Strings in VS
- VS Server Explorer
- Demo: Connection API
- Demo: Testing and Debugging
- Demo: Connection Strings
- Summary

Working with Tables and Entities
- Introduction
- CloudTableClient Class
- TableServiceEntity Class
- TableServiceContext
- Demo: TableServiceEntity
- Demo: EmployeeDataServiceContext
- Demo: User Interface
- Demo: Running and Debugging
- Summary

Azure Queue Architecture
- Introduction
- Queue Service Architecture
- What is a Queue
- Queue Concepts
- Managed Queue API
- Demo: Queues_WebRole
- Demo: Configuration Settings
- Demo: Global.asax
- Demo: WorkerRole Start Method
- Demo: Access to Queue Service
- Summary

Queue Messages
- Introduction
- CloudQueueMessage Class
- Sending, Getting Messages
- Message Expiration, Time Limits
- PopReceipts
- Demo: Default.aspx
- Demo: WorkerRole.cs
- Demo: Compute Emulator
- Demo: Message Expiration
- Summary

Managing Queues
- Introduction
- Counting Messages
- Peeking at Messages
- Clearing the Queue
- Demo: Counting Messages
- Demo: Peeking at Messages
- Summary

Azure Blob Storage
- Introduction
- Azure Blob Service Architecture
- Blobs, Containers
- Blob Permissions
- Managed Blob API
- CloudContainer Class
- CloudBlob Class
- Demo: CloudStorageAccount
- Demo: Refresh Code
- Demo: CloudBlobClient
- Summary

Blob Metadata
- Introduction
- Understanding Blob Metadata
- Setting Metadata
- Fetching Metadata
- Demo: User Interface
- Demo: Blob Storage
- Demo: Metadata
- Demo: Showing the Data
- Summary

Managing Blobs
- Introduction
- Managing Blobs
- Copying Blobs
- Deleting Blobs
- Demo: Copying, Deleting Files
- Summary

Introduction to SQL Azure
- Introduction
- Introduction to SQL Azure
- SQL Azure Provisioning
- SQL Server Firewall Rules
- Connecting to SQL Azure
- Database Manager
- SQL Server Management Studio
- Transact-SQL Support
- Demo: Setting up Subscription
- Demo: Create a Database
- Demo: SQL Management Studio
- Summary

SQL Objects
- Introduction
- Deploying Objects
- Generating Scripts
- Data Tier Applications
- Demo: Generating Scripts
- Demo: Data Tier Applications
- Summary

ASP.NET Providers
- Introduction
- ASP.NET Universal Providers
- NuGet
- Edit the DefaultConnection
- Demo: Universal Providers
- Demo: NuGet
- Demo: Editing DefaultConnection
- Summary

VM Roles
- Introduction
- Quick Review of Roles
- Virtual Machine Roles
- Some Virtual Machine Caveats
- What is a VM Role Good For
- Summary

VM Roles Demo
- Introduction
- Steps to create a VM Role VHD
- Adapters
- Uploading the VHD to Azure
- Demo: Creating Certificates
- Demo: Uploading to Portal
- Summary

Deploying VM Roles
- Introduction
- Visual Studio Pre-Requisite
- Adding the VM Role to Project
- Deploying a VM Role
- Demo: Creating a Project
- Demo: Adding the VM Role
- Demo: Deploying VM Role
- Summary

Azure Toolkit for WP7
- Introduction
- Azure Toolkit for WP7
- New Project Templates
- Key Cloud Integration Points
- Using Access Control Service
- Demo: Setting up Tools
- Demo: Running and Debugging
- Summary

Storage Integration
- Introduction
- WindowsPhoneCloud.StorageClient
- Storage Permissions
- Demo: Data Management
- Summary

Push Notifications
- Introduction
- Push Notifications
- The Push Process
- Push Notification Helper
- Demo: Push Notifications
- Summary