

| <b>Workshop</b>                    |  |
|------------------------------------|--|
| Name                               | Windows Azure Platform as a Service (PaaS)   |
| Duration                           | 6 Days   |
| Objective                          | Build development skills on the cloud platform from Microsoft – Windows Azure Platform   |
| Participants' Entry Profile        | <p>Participants attending this workshop must have worked on:</p> <ul style="list-style-type: none"> <li>• Windows Operating System</li> <li>• .Net Framework 1.1, 2.0, 3.0 and 3.5</li> <li>• Developing .NET Applications using C# or VB.NET</li> <li>• Basic knowledge of Creating WCF Services</li> <li>• Knowledge of XML</li> <li>• Basic SQL knowledge</li> </ul>  |
| Training Methodology               | <p>The workshop will follow Synergetics methodology of</p> <p style="text-align: center;"><b>Concept Visualization</b><br/><b>Active Experimentation</b><br/><b>Application Development.</b></p> <p>The workshop will be <b>100% Hands-On</b> with each participant having access to system during the session</p>   |
| <b>Setup Requirements</b>          |  |
| Hardware and Software Requirements | <p>Participant's as well as Trainer's Machine are required to have :</p> <p><b>Hardware / Software</b></p> <ul style="list-style-type: none"> <li>• Intel® Core™2 Duo Processor</li> <li>• 4 GB RAM minimum</li> <li>• 100 GB free in the hard disk</li> <li>• <b>Open Internet connection is mandatory</b></li> <li>• OS: Windows 7 or above</li> <li>• Web Server: IIS 7 or above</li> </ul> <p><b>Browsers</b></p> <ul style="list-style-type: none"> <li>• <b>IE9</b></li> </ul> <p><b>Development tools and SDK</b></p> <ul style="list-style-type: none"> <li>• SQL Server 2012 with Management Studio with SSDT</li> <li>• Visual Studio 2012 Ultimate</li> <li>• Latest Visual Studio tools for Azure</li> <li>• Latest Windows Azure SDK (1.8)</li> </ul> <p><b>All Participants must have their own Azure accounts where they can deploy the projects and test the applications.</b></p> |
| Training Lab Requirements          | <p>Whiteboard 6 feet by 4 feet (minimum)</p> <p>Whiteboard markers – Red, Blue, Green, Black</p> <p>Video Projector (1024 X 768 resolutions)</p>   |

## Course Contents

### Day 1

- **Cloud Computing Basics**
  - Introduction to Cloud Computing
  - Need for Cloud Computing
  - Cloud Service Models
    - IAAS
    - PAAS
    - SAAS
  
- **Overview of Windows Azure Platform**
  - Windows Azure Core Services
    - Windows Azure Compute
    - Windows Azure Storage
    - Windows Azure Networking
    - Management
  - Windows Azure Building Block Services
    - Service Bus Service
    - Active Directory Services
    - Caching Services
    - Mobile Services
    - Media Services
    - HDInsight
  
- **Windows Azure Hosting Models**
  - Platform as a Service
    - Cloud Services
    - Azure WebSites
  - Infrastructure as a Service
    - Virtual Machines
  
- **Windows Azure Compute Fabric**
  - What is the Azure Compute Fabric?
  - Role of the Fabric Controller
  - The hosting architecture in the Azure cloud
  - Understanding how instances are deployed
  
- **Windows Azure Cloud Service**
  - Understanding Windows Azure Compute Roles
  - Comparing Web Roles, Worker Roles and VM Roles
    - When to use what
  - Understanding the Role Lifecycle
  - Understanding the RoleEntryPoint class

- **Windows Azure Service Model**
  - Service Configuration
  - Service Definition
  
- **Creating Windows Azure Roles using VS.NET 2010**
  - Using the Azure Project template
  - Creating a WebRole
  - Creating a WorkerRole
  - Configuring a Role
    - Defining and Configuring Setting Variables
    - Configuring the instance count
    - Defining the VM Size for the role
  - Hosting different roles in the service application
  - Using the Development Fabric and Storage Fabric
  - Debugging Cloud Service using VS.NET

**Day 2**

- **Setting up the Azure Subscription**
  - Using the Azure Portal
  - Creating a CloudService
  - Creating a StorageAccount
  
- **Deploying Azure application to the Azure Cloud**
  - Packaging the Azure application in VS.NET 2010
  - Understanding Production and Staging environments
  - Deploying Cloud Service
    - Manually deploying the cloud service using portal
    - Using VS.NET to do a web deploy
  - Changing configuration of application
  
- **Windows Azure Storage**
  - Azure Storage Types
    - Blobs Storage
    - Tables Storage
    - Queue Storage
  - Using the Windows Azure Storage API's
    - CloudStorageAccount Class
  - Creating the Storage Connection String
  
- **Windows Azure Storage Blob**
  - Understanding the StorageAccount(User Account)
  - Understanding the Container
  - Understanding the Blob
  - Creating BlobContainers and Blobs Using the Windows Azure Storage API's
    - Using CloudBlobContainer Class
    - Using CloudBlobClient Class

**Day 3**

- **Windows Azure Storage Table**
  - Creating Table by inheriting from TableServiceEntity Class
  - Creating Class for Querying and Performing DML's by inheriting from TableServiceContext Class
  - Importance of PartitionKey
  - Importance of RowKey
  - Creating Table Using the Windows Azure Storage API's
    - Using CloudTableClient Class
  
- **Windows Azure Storage Queues**
  - Creating Queue Using the Windows Azure Storage API's
    - Using CloudQueueClient Class
    - Using CloudQueue Class
    - Using CloudQueueMessage Class
  - Creating Async processing using Queues
  - Enable Inter-Role communication using Queues
  
- **Drives (Conceptual only)**
  - Need for the Drive Storage
  - Steps for Setting up Drive Storage
  
- **Windows Azure Diagnostics**
  - Capturing diagnostic information using Diagnostic Monitor
  - Configuring the diagnostic monitor
    - DiagnosticMonitor Class
    - DiagnosticMonitorConfiguration Class
    - PerformanceCounterConfiguration Class

**Day 4**

- **Advanced Windows Azure features**
  - Creating and invoking startup tasks for a role
  - Full IIS in Web role
    - Hosting multiple sites in a single WebRole
  - Setting up Remote Desktop Access to Role Instances
  
- **SQL Database Architecture**
  - Understanding SQL Database Architecture
  - SQL Database service High Availability
  - Logical Server V/s Physical Server
  
- **Provisioning the SQL Database Server**
  - Creating the Logical Server Instance using the Portal
  - Creating the Admin user for the server

- Setting the Firewall rules
- **Tools for SQL Database**
  - Using the SQL Server 2008 R2 tools like Management Studio
  - Using the Database Manager from the Azure Portal
- **Working with SQL Database**
  - Creating Database on the SQL Database service
  - Creating Login for the Database
  - Creating User for the Database
  - Creating Table and Inserting Records
- **SQL Database Security**
  - Creating Logins and Users
  - Assigning Roles
- **Programming SQL Database**
  - Accessing SQL Database
    - Use SQL Server Management Studio
    - Use Visual Studio 2010
  - Connecting to SQL Azure from code (.NET)
    - Working with LINQ

**Day 5**

- **Windows Azure WebSites**
  - Understanding the WebSite Hosting Model
  - WebSite Configuration Models
    - Shared Free
    - Shared Paid
    - Reserved
  - WebSite Quotas for Storage and Bandwidth
  - WebSites deployment
    - Using VS.NET Web Deploy
    - Using FTP
  - WebSites support for Open Frameworks
- **Windows Azure AppFabric ServiceBus**
  - Need for ServiceBus
  - ServiceBus Services
    - Naming
    - Discovery
    - Relay Service
    - Queues, Topics, Subscriptions
  - Defining the ServiceBus Namespace
- **ServiceBus Relay Services**
  - Understanding the Relayed Messaging Pattern

- Using ServiceBus to connect to on-premise services
  - Configuring WCF Service for ServiceBus Relay
  - ServiceBus WCF Relay Bindings
  - Enabling Discovery for service on ServiceBus
- **ServiceBus Queues and Topics**
- Understanding the Brokered Messaging Patterns
  - Implementing ServiceBus Queues
  - Implementing Publisher-Subscriber Pattern with ServiceBus Topics and Subscription

**Day 6**

- **Windows Azure AppFabric AccessControl**
- Identity & Access Control in the Cloud
  - Introduction to the AppFabric Access Control Service
  - AppFabric Access Control Service Architecture
  - Federated Authentication in a Windows Azure Roles
- **Windows Azure AppFabric Caching**
- Caching Service Architecture
  - Caching options on Windows Azure
    - Shared Caching
    - Role-based Caching
- **Windows Azure Shared Caching**
- Configuring the Shared Caching
    - Creating a Cache
    - Configure Shared Caching Client
  - Using the Caching Service Providers
    - Session Mgmt
    - Output Cache
  - Using the Cache Class Library
- **Role-based Caching**
- Dedicated v/s Co-Located
  - Configuring Role-based caching
    - Configuring the Caching Role in Service Configuration
    - Configuring the Caching client in Web.config
  - Working with Cache
    - Using Caching API
    - Adding, Removing items from Cache
    - Caching Notifications
- **Windows Azure Connect Overview**
- Creating Hybrid applications with Azure Connect
  - Understanding how it works