NOTE: All the information shared in this document will be used to market the Training session as shared (copy/paste) by the Instructors. Please share relevant information to help market the session effectively.

Title: **Serverless Architectures with Azure**

Subtitle: Leverage Azure as a utility, using Serverless Architectures to improve your application architecture and design.

Description

Serverless architecture is a relatively new approach to delivering software in the Cloud. It allows you to solve business problems quickly and leverage other pieces of Cloud simple and easy while providing these solutions relatively quickly. These types of solutions can be developed in the Azure Portal or within Visual Studio/Visual Code, which provides a robust local testing and development environments. While microservices are not new to the development arena, providing them in a way that doesn't require server or container management is. This new breed of microservice architecture allows you to choose between a consumption-based model, pay for what you use, or an App Service Plan/VM backed model for better control over you microservice environment.

The goal of the course is to learn to design, architect, develop, build, and deploy serverless resources. These resources will include Azure Functions, Azure Logic Apps, and Azure Event Grid. We will learn how to leverage both the Azure Portal and Visual Studio, to provide these solutions and what it means when you choose one over the other. We will also learn how to build and deploy these using Azure DevOps to manage the deployment to Azure.

Our labs throughout this course will help provide a working knowledge of how to build serverless applications to use storage, queues, tables, service bus, event hubs, Azure DevOps, scheduling, and data repositories like CosmosDB and SQL.

As we journey through our serverless architecture and development we will learn best practices and how to troubleshoot and test this new and exciting serverless environment.

What is this training about, and why is it important?

This training is aimed at improving your application architecture and is designed to help to understand and implementing applications using serverless resources. You will be able to know when to use serverless resources and how to connect them to other cloud resources. You will also learn best practices in reflection to the serverless resources.

What you'll learn—and how you can apply it

You will learn:

1. Create a Function App and setting up Visual Studio for local development of functions and in the portal
2. Steps to create multiple Azure functions and explain all concepts including Bindings, Triggers, events, integrating with other services and configuration
3. Testing, troubleshooting and best practices for implementing and deploying Azure functions
4. Create a Logic App and setting up Visual Studio for local development of functions and in the portal
5. Steps to create multiple Azure Logic Apps and explain all concepts including Bindings, Triggers, events, integrating with other services and configuration
6. Testing, troubleshooting and best practices for implementing and deploying Azure Logic Apps
7. Using Event Grid in your serverless applications
8. Using DevOps to Deploy and manage your serverless applications

This Online Training is for you because…

As an Engineer, developer and IT Operation executive who want to learn about the Serverless paradigm using Azure Functions. If you have been struggling to find the time to gain proficiency and confidence with serverless applications, their development, and deployment and everyday tasks related to it, here is your one-stop solution!

Prerequisites

Basic understanding of the Azure Portal

Visual Studio installed

Functions SDK

Logic Apps SDK

Functions runtime

Materials, downloads, or Supplemental Content needed in advance

Visual Studio - http://www.visualstudio.com/en-us/products/visual-studio-community-vs

Functions and Logic App SDK - Install the “Azure development” workload

Functions runtime - https://docs.microsoft.com/en-us/azure/azure-functions/functions-runtime-install

Resources

Hands-On Cloud Solutions with Azure

Building Serverless Architecture in Azure

GUIDELINES FOR INSTRUCTORS:

- We can divide every section with options and/or combinations of:
    - Instructor Lecture or Q&A
    - Practical Exercise / Activity
- Please do add breaks. It's as necessary for you too. Just list them in the schedule below to help us and the participants be aware of your plans.
- We suggest you take breaks of 10-15 minute for every 60-90 minutes.
- While breaks are important to give participants and the instructor a breather, kindly, keep it within realistic means to keep them engaged.
- LABS are practical exercises/activities. It's a good practice to have one in every section to help participants understand how it can be practically implemented/apply what they have learned.

Training Schedule

DAY 1 – 4 hours

SECTION1: What is Serverless? – 30 Minutes

- Understanding what Serverless means
- Learning areas of responsibility
- Understanding Serverless Cost

Lab Activity: Setup and configure your local development environment for Serverless applications (20 mins)

Q & A – 10 Minutes

Break? – 10 Minutes

SECTION 2: Understanding Azure Functions – 30 Minutes

- What are Azure Functions?
- Why should I use them?
- How are they architected?
- Developing them using the Portal and Visual Studio.

Lab Activity: Create and simple C# JSON input function via the Azure Portal and Visual Studio. (20 mins)

Q & A – 10 Minutes

Break? – 10 Minutes

SECTION 3: Understanding Azure Logic Apps – 30 Minutes

- What are the Azure Logic Apps?
- Why should I use them?
- How should you architect Azure functions?
- Developing them using the Portal and Visual Studio

Lab Activity: Create a logic app to send an email with the body from a JSON file. (20 mins)

Q & A – 10 Minutes

Break? – 10 Minutes

DAY 2 – 4 hours:

SECTION 5: Understanding Azure Event Grid – 20 Minutes

- What is the Azure Event Grid?
- Why should I use them?
- How are they architected?
- Developing them using the Portal and Visual Studio

Lab Activity: Create a simple app using event grid. (20 mins)

Q & A – 5 Minutes

Break? – 10 Minutes

SECTION 6: Using Serverless in other Azure Resources – 20 Minutes

- Using Azure Functions in CosmosDB
- Using Logic App to respond to the event in Dynamics
- Using Azure functions for timer events

Lab Activity: Adding an Azure to CosmosDB as a trigger. (20 mins)

Q & A – 5 Minutes

Break? – 10 Minutes

SECTION 7: Developing modern Solutions using Serverless – 20 Minutes

- Architecting Serverless solutions
- Developing Serverless solutions

Lab Activity: Use an event grid to monitor a queue pick up a message send it to a logic app to process using a function. (20 mins)

Q & A – 5 Minutes

Break? – 10 Minutes

SECTION 8: Developing your Serverless using Azure DevOps – 20 Minutes

- Using Azure DevOps with Serverless solution

Lab Activity: Deploying functions using Azure DevOps Setup and deploy the labs into Azure using Azure DevOps. (20 mins)

Final Q&A – 15 Minutes

Wrap up: Session Summary, Discussion - 15 minutes

ABOUT THE AUTHOR/s

- **Name: Greg Leonardo**
- **Bio:** I have been working in the IT industry since my time in the military. I'm a father, veteran, developer, teacher, speaker, an early adopter. I have worked in many facets of IT throughout my career. I'm president of #TampaCC, a community meetup, that runs #TampaCC, Azure User Group, Azure Medics, and various technology events throughout Tampa.
- **Email Address:** gleonardo@webonology.com
- **Phone Number:** 813-469-1564
- **Twitter:** @gleonardo
- **Personal Website:** https://gregleonardo.com
- Github:
- **LinkedIn:** https://www.linkedin.com/in/gregleonardo/