

PGPCC | Project

Course: Azure Essentials

Creating a scalable geo distributed event registration application with Azure Active Directory Authentication, NoSQL database persistence, Azure storage persistence and email notification

Scenario for Event Registration

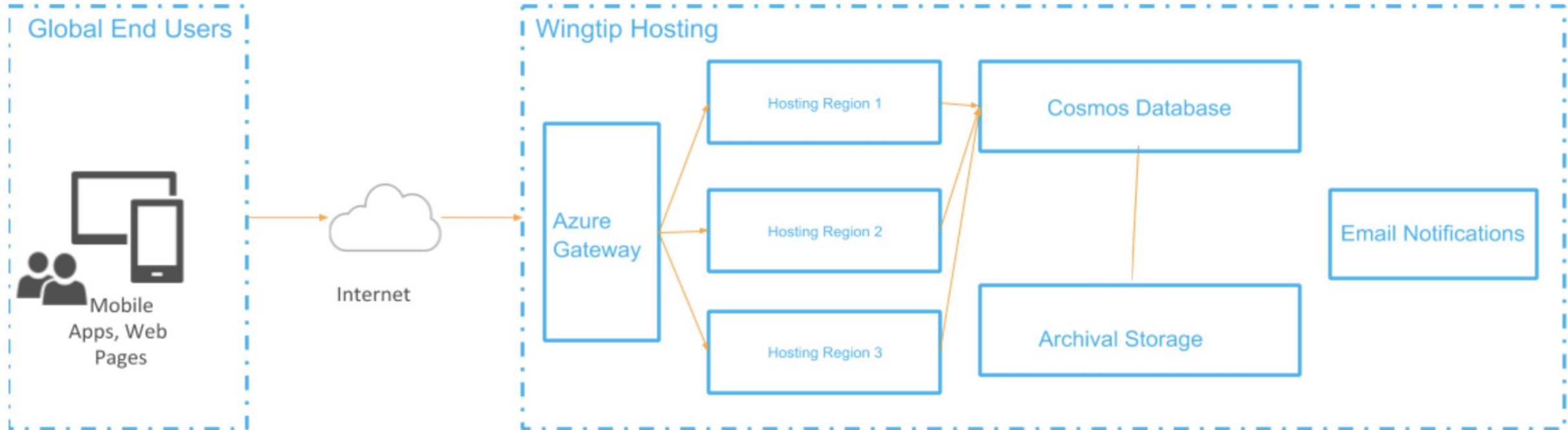
Wingtip provides Event Registration (ER) as a Service to corporates who would like to host events. The ER provides a Web api which the corporates systems can call by passing the token generated after authentication with Azure AD and be able to let employees enroll themselves for the events.

The ER API service is a multitenant web api that can onboard millions of end users. The ER API service should be globally available with automatic geo failover, as any downtime to ER App can cause revenue loss to Corporates as end users will not be able to enroll.

Email notifications should be sent to end users after successful registration. Wingtip is looking to reduce operational overhead on infrastructure management and maintenance.

Wingtip is also looking to store event information for long term retrieval and analytics. The overall integration flow should be durable and reliable.

Event Registration



The Solution

Azure logic apps provide a globally scalable serverless platform to host http endpoints in azure. It provides designer and connector-based approach to connect various azure PaaS services and build an enterprise workflow. Azure logic apps provide integration with Email notification, Table and Cosmos storage through its out of the box connector.

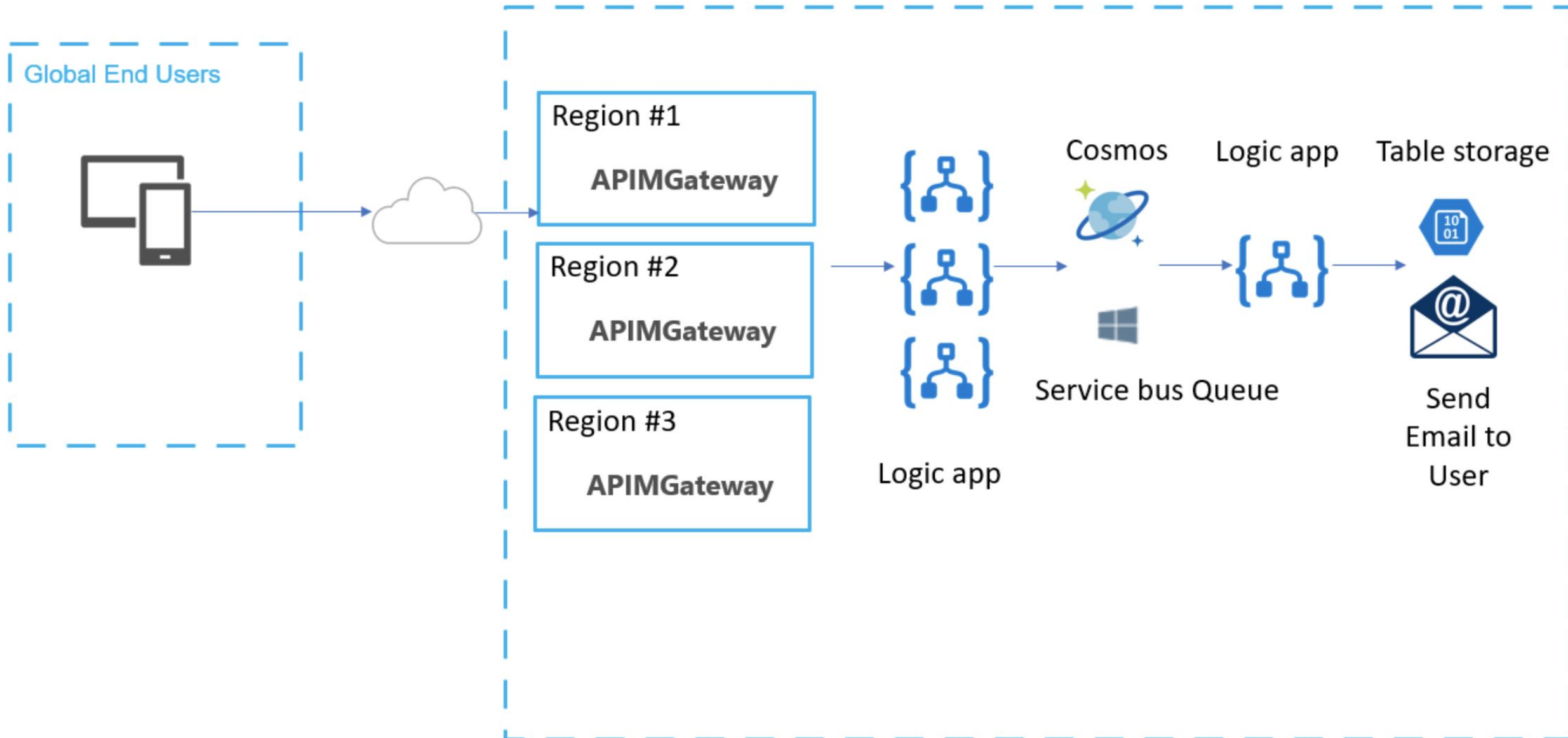
Azure Active Directory acts as an Azure Identity store which can be leveraged to authenticate the users.

Azure APIM provides a gateway for hosting api/services. Azure APIM is capable of hosting http endpoint which are hosted as Azure logic apps. It allows to provide the cross cutting authentication layer for these hosted services by configuring Azure AD Oauth server.

Cosmos DB provides a highly scalable multi model global database that supports MongoDB, Graph, NoSQL Table, Cassandra and SQL Doc DB. It also provides automatic backup and restore capabilities. Cosmos DB database provide a scalable resource provisioning capability which can be leveraged scale as user load ramps up.

Azure Service Bus provides highly-reliable cloud messaging service between applications and services, even when one or more is offline. Asynchronous operations give you flexible, brokered messaging between client and server, along with structured first-in, first-out (FIFO) messaging and publish/subscribe capabilities—excellent for tasks like order processing.

Final Goal



Project Outcome

A highly scalable Event Registration Application is deployed to multiple regions with a scalable database.

End users can login with Azure AD authentication.

Important Information

Project Submission Deadline

Refer Assignments section (submission link)

Project Region

Central US, West US, East US

Grading Policy & Tasks

You will receive points for completing each task as listed below;

1. Api created in logic App and hosted in Azure APIM - 5 points
2. Cosmos DB/Any DB Setup - 20 points
3. Configuration AAD and integrating it with APIM - 10 points
4. Configuring logic app to write data to Cosmos DB – 10 points
5. Implement Publish subscribe pattern using Service bus queue connector of logic app – 15 points
6. Configuring Logic app to archive data – 10 Points
7. Configuring Logic app to send email – 10 points
8. Solution documentation - 10 points

Project Preferences

Any language/platform such as .net, java, node or PHP can be used for Web App.

Any database MongoDB, NoSQL, SQL DB, MySQL, PostgreSQL can be used for database platform.

For the Employee/user, capture inputs such as First Name, Last Name, Organization and Email as Fields that will be persisted in the database.

Final Submission

The final submission includes the following items (in listed order)

Solution Document with:

- a. Your observations and lessons learnt through the project.
- b. Screenshots of each task completed.

(Please refer to “Grading Policy & Tasks” slide.)