PT 4

AMARJEET BRIJNANDAN SINGH - A0150157M  
  
CHENG HAO - A0006467E  
  
GONG SHENGLIANG - A0112429M  
  
HU RENWEN - A0150352U  
  
SMITA RANI BISOYI - A0150422X

Cloud computing

Active Learning on the Cloud Project Report

# **Team member Contributions**

|  |  |
| --- | --- |
| Team member | Contributions |
| AMARJEET BRIJNANDAN SINGH | * Explore and setup Azure Docker Service |
| CHENG HAO | * Modify application to utilize Azure blob storage * Explore and setup Traffic Manager * Explore and setup Application Insights |
| GONG SHENGLIANG | * Deploy Web App * Explore and setup Web App auto scaling |
| HU RENWEN | * Explore and setup Azure DB Geo replication * Explore and setup alert for Web App Service Plan and Azure DB recourse usage alert |
| SMITA RANI BISOYI | * Explore and setup Azure Logic App * Explore and integrated SendGrid email API |

Some Notes:

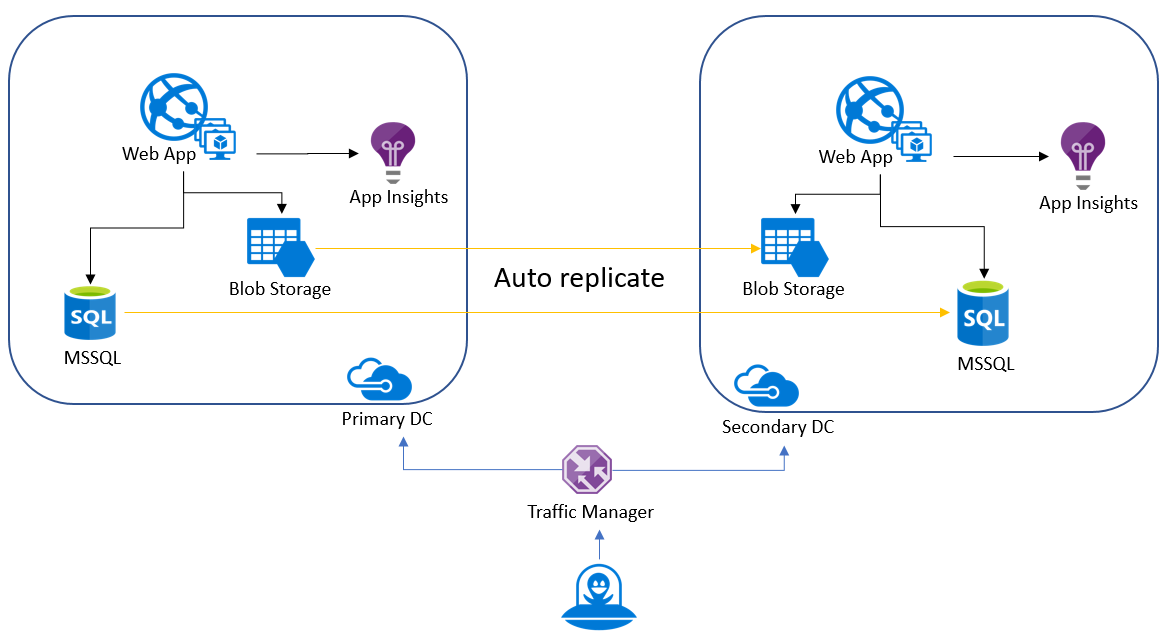
The following were not selected for the presentation, reason being:

* Docker runs on VM which is too costly for the Geo redundancy
* SendGrid free account has limited service time, and it is not really unique cloud feature

# **Background**

* Active Learning Institute had launched an e-learning system in 2016. It was hosted on Microsoft Azure VM (IaaS) with localhost SQL database.
* There were high demands of the registration and course online browsing, which caused poor performance of the system.
* The IT department head of the institute is looking at optimizing the program of the system as well as a better hosting solution to achieve quick and flexible resource scaling, and yet at a reasonable cost.
* After a few internal meetings, the IT department head decided to migrate the system to Microsoft Azure
  + Web App (PaaS)
  + Azure MSSQL
  + Blob Storage
  + Traffic Manager

# **Architecture**



# **Setup Journal**

## Web App

### Deploy application

### Geo Redundancy

### Auto scaling

### Usage Alert

## Azure DB

### Create DB schema

### Geo Redundancy

### Usage Alert

## Azure Storage Account

### Create Azure Storage Account

### Code change to utilize Blob Storage

## Application Insights

### Create Application Insights App

### Code change to trigger page tracking

## Traffic Manager

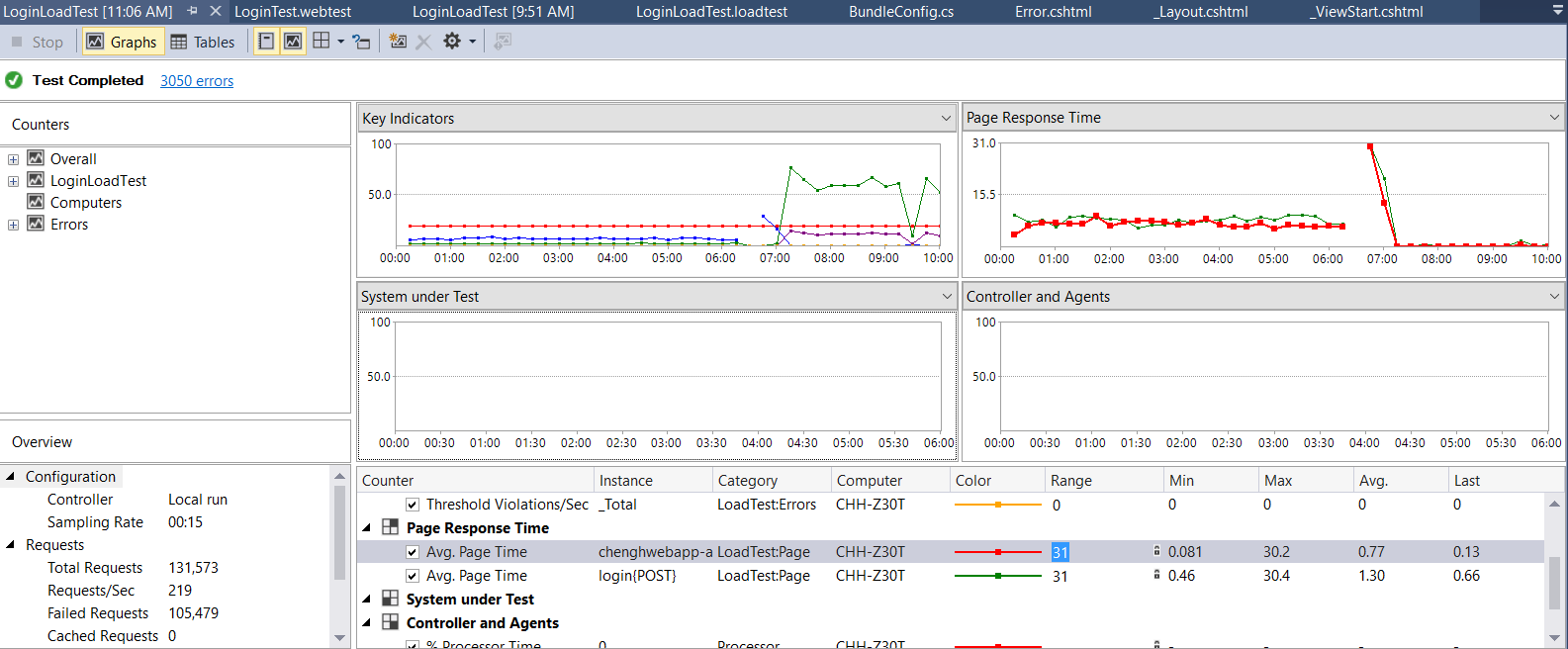
### Create Traffic Manager Profile

### Mode Configuration

### Add End Point

## Cloud Performance Test

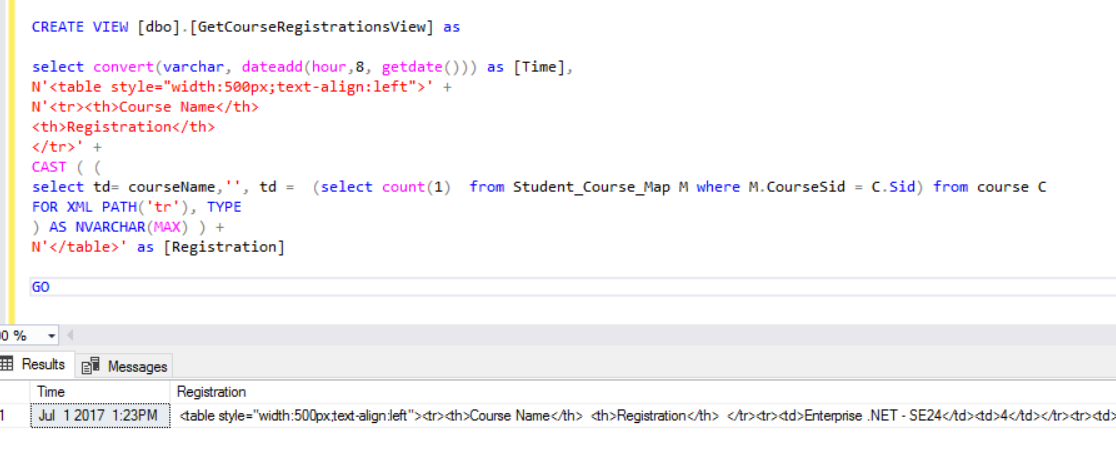
### Visual Studio Performance Test Project



## Azure Logic App

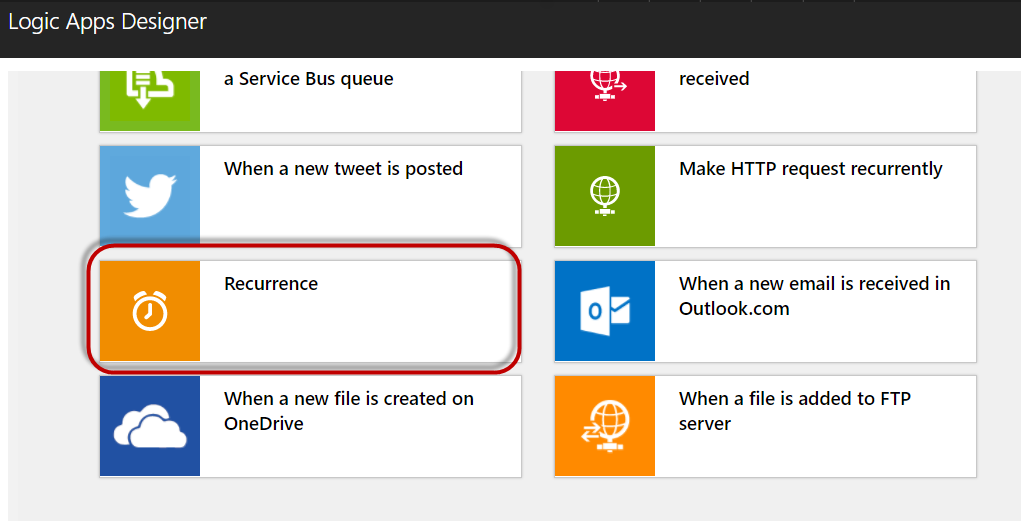
### Data source preparation

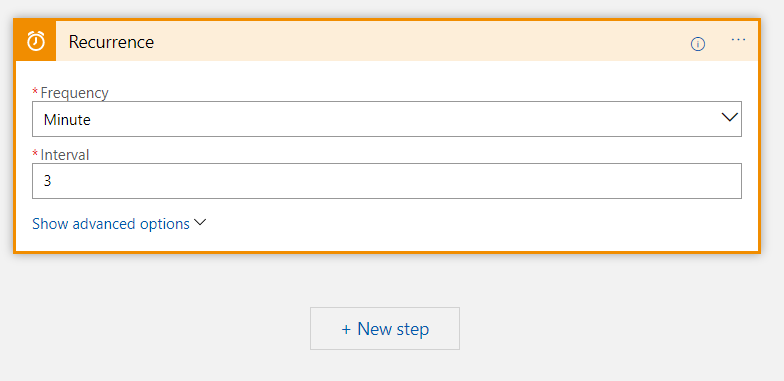
MSSQL View to construct the HTML contents



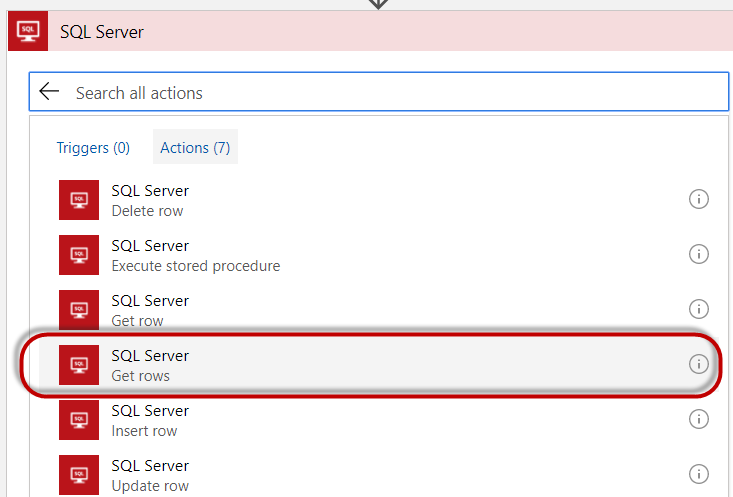
### Azure Logic App Creation

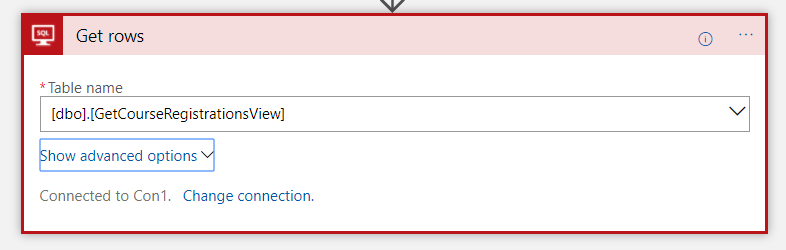
1. Setup trigger



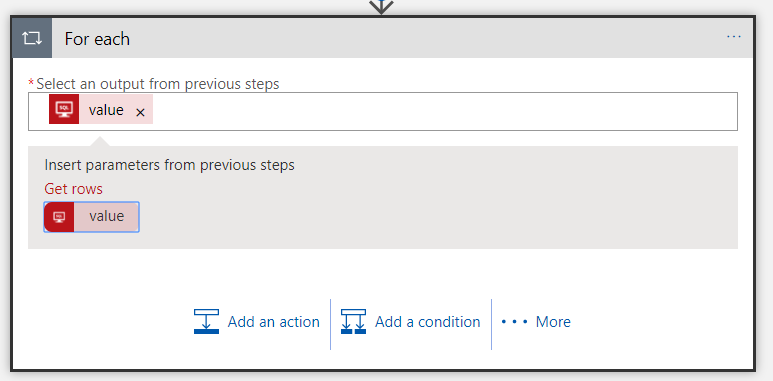


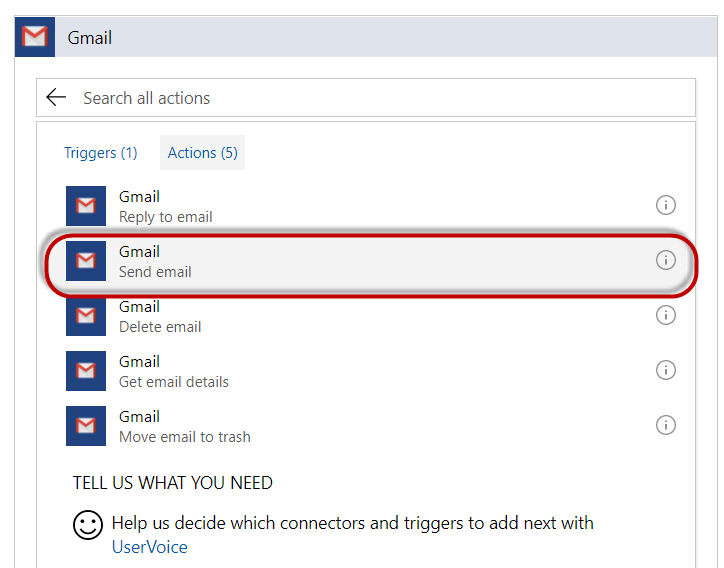
1. Retrieve data

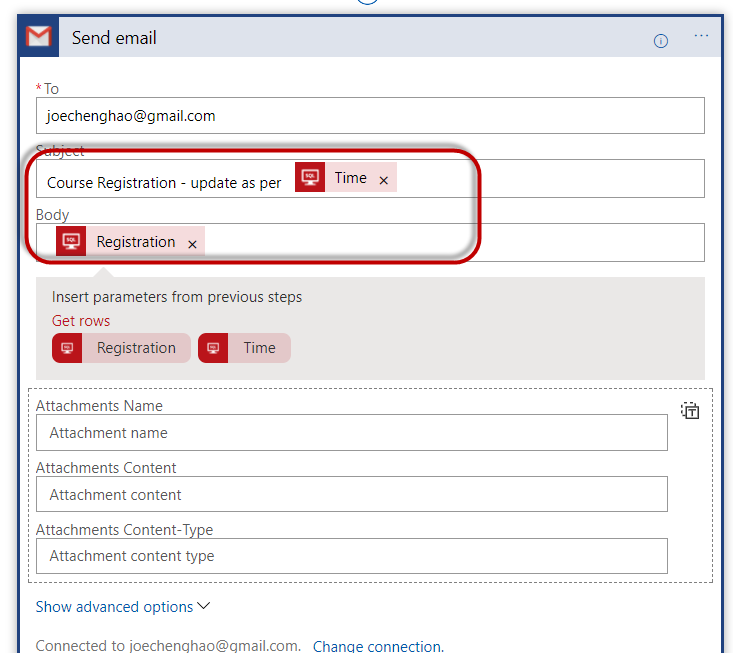


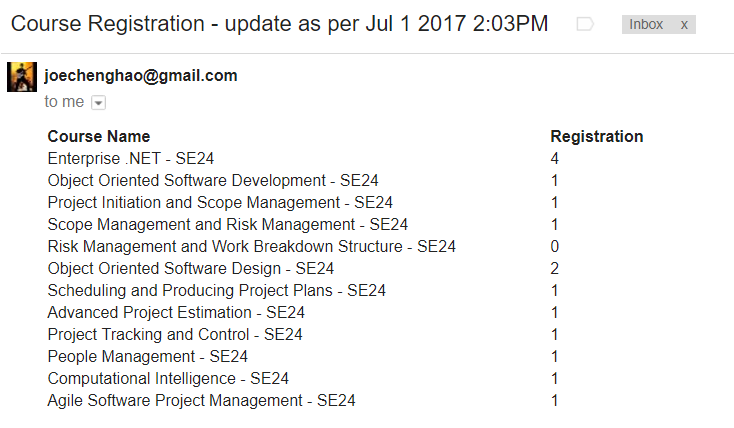


1. Process data and send email









## Geo redundancy failover simulation

## IIS Remote Management

# **Lesson learned and challenges faced**