Problem Statement

Tech survey ecommerce site need a better solution for their application which is deployed geographically in different zones across the world for them performance and uptime are the main key points to keep their site up and running with no single point of failure.

Overview of Technology

Microsoft Azure Traffic manager is the point of discussion here. Briefly about it, Microsoft Azure Traffic Manager allows control the distribution of user traffic for service endpoints in different datacenters. Service endpoints supported by traffic manager include Azure VMs, Web Apps, and cloud services. It can also be used with external , non-Azure endpoints.

- Traffic Manager uses DNS to direct client requests to most appropriate endpoint.
- Endpoints based on traffic-routing method and Health of the endpoints.

Traffic Manager benefits

- Improves the availability of critical applications
- Improves the responsiveness of high-performance applications
- Performs service maintenance without downtime
- Combines on-premises and Cloud-based applications
- Distribute traffic for large, complex deployments

Traffic Manager routing methods

Azure traffic Manager supports four traffic-routing methods to determine how to route network traffic to the various service endpoints. Traffic Manager applies the traffic-routing method to each DNS query it receives. Below are four traffic routing methods.

- Priority
- Weighted
- Performance
- Geographic

High Level Overview of steps

1. Four Azure windows based VMs each with a power shell script
2. Installed Java 1.8 JDK, NetBeans IDE 8.2 along with Glassfish Server 4.1 on all of them
3. Installed Oracle Database 11g Express Edition on one of the VM
4. Ran SQL queries to ingest data on the database
5. Deployed survey and survey admin apps on Glassfish server by changing libraries
6. Updated JDBC connection string to talk to the DB respectively from each GlassFish Server.
7. Ran PowerShell script to Create Azure Traffic Manager Profile ‘performance’ based
8. Create DNS for the site using DNS Zone and did a CNAME to point to Traffic Manager Profile.

Data Set

Survey URLs:
http://gsrworld.techsurvey.com/survey/index.xhtml
Survey Admin URLs:
http://gsrworld.techsurvey.com/surveyadmin/home.jsp

Traffic Manager Survey URLs:
http://gen-unique.trafficmanager.net/survey/index.xhtml
Traffic Manager Survey Admin URL:
http://gen-unique.trafficmanager.net/surveyadmin/home.jsp

- Online-Survey-System-Java-Project - Size: 3..2 MB
- I haven’t included other tools as they are big like netbeans, oracle db and java jdk
- Power shell scripts are included

Hardware

- Windows Server 2012 R2
- Azure Traffic Manager

Software:

- NetBeans IDE 8.2
- GlassFish Server 4.1
- Java JDK 1.8
- Oracle Database 11g Express Edition
- JDBC Driver - ojdbc7.jar
- JSF Libraries – 1.2, 2.2
- My PC with Apache 2.4
- MY PC with host entry change

References:

http://www.codewithc.com/online-survey-system-project-java/

Lessons Learned & Pros/Cons

- Need to disable Windows Firewall which was not allowing incoming traffic
- NSGs can able applied at the network interface level or the subnet level for a VM.

- Not able to submit the survey – may be a code but couldn’t figure out.
- DNS zone Site DNS CNAME to Azure Traffic Manager Profile not working so I used my PC with apache as a portal DNS Server