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COSC349 ASSIGNMENT 2

Our Application:

We decided to use Microsoft Azure cloud for this assignment as we were not able to access our Amazon AWS accounts. Our application is the same as the Assignment 1 application, except we have deployed it to the cloud manually through Azure. Our design of our application consists of 2 Linux Apache2 Virtual machines and a MySQL Database server using the Azure MySQL database service. The two virtual machines are our web servers.

To reach our Application, The user should type the IP address 52.187.208.81 in their browsers URL search bar. This is our first web servers IP address. In their browser URL search bar. The first web server hosts a web page coded in php where there are text boxes for a user to enter contact information they would like to store. Once the user has entered the contact information, they can press submit. This initiates an SSL connection through PDO with our database on our mysql database server, and stores the entered data into it.

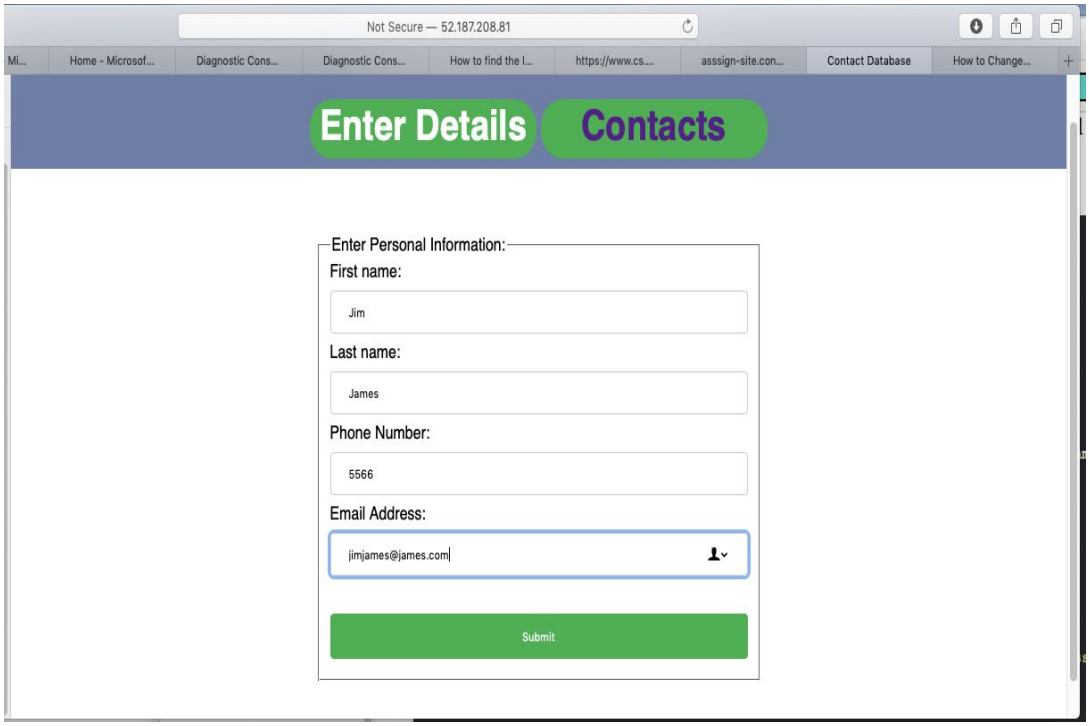


Figure 1. User enters data into text boxes

Once the user sees the message at the bottom left of the webpage saying, “table updated!”, and the input boxes have cleared, the data has been successfully stored in our mysql database.

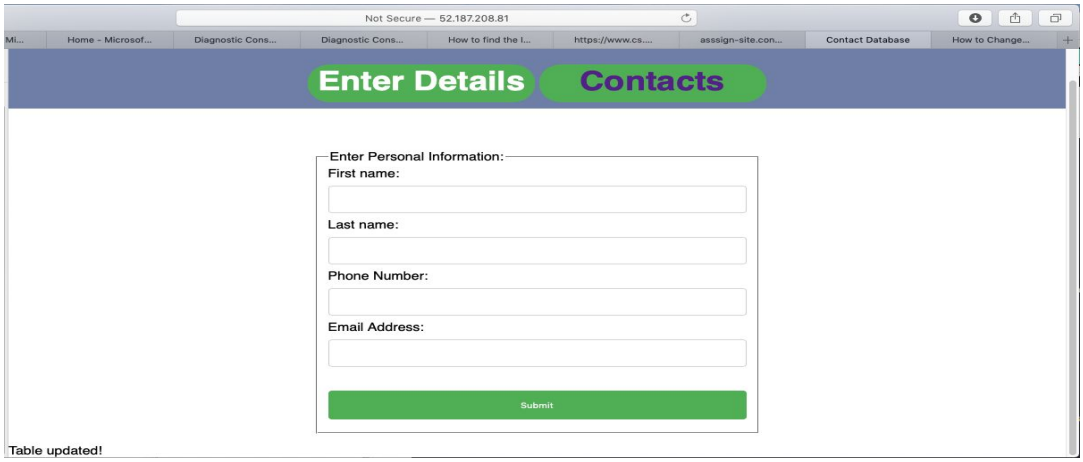


Figure 2. User has submitted data, Table updated has shown.

The user can now click on the contacts button on the website, and this will direct them to a webpage hosted by our second web server. Our second webserver web page, also coded in PHP, makes an SSL connection through PDO with our Mysql database hosted on our Mysql database server. It gets all the information stored in a table called “contactInfo”, which is stored in a database called contactdb on our server. It then displays the stored contact information in a table format for our users to read.

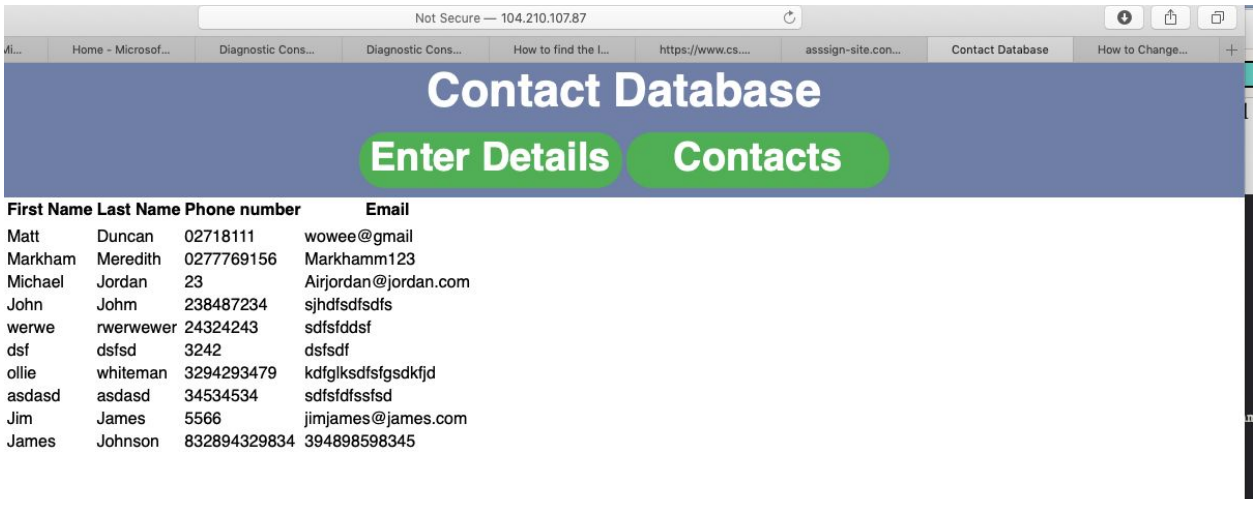


Figure 3. User has pressed contacts button and gone to our other web server displaying MySQL table information.

The web server virtual machines were created on Microsoft Azure Virtual Machine services, and configured manually by ssh connecting to them from the Microsoft Azure CLI and configuring the required files after installing apache2. I put them in location of Australia East because it is the closest web server to New Zealand we could find. This configuration consisted of us adding our PHP and CSS code to the /var/www folder, and adding a new assign-site configuration to etc/apache2/sites-available.

We also had to add a security certificate in var/www/bin to enable an SSL connection through PDO between our web servers and mysql database. All php/css code was used from our Assignment 1 application, and just modified so a SSL connection was enabled to our mySQL server. I also followed some of the commands from our Assignment 1 application web scripts to allow installation of apache2 and running the new web pages instead of the default on the web servers. I also used the Assignment 1 assign-site.conf code and modified it to the right directory.

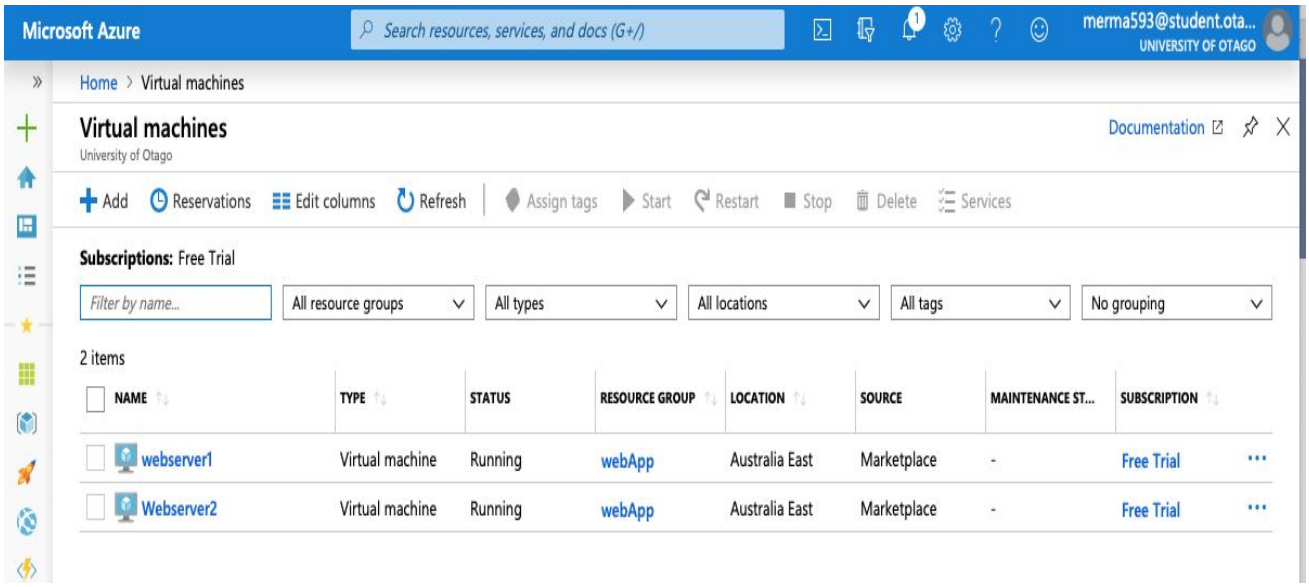


Figure 4. Our two Web servers

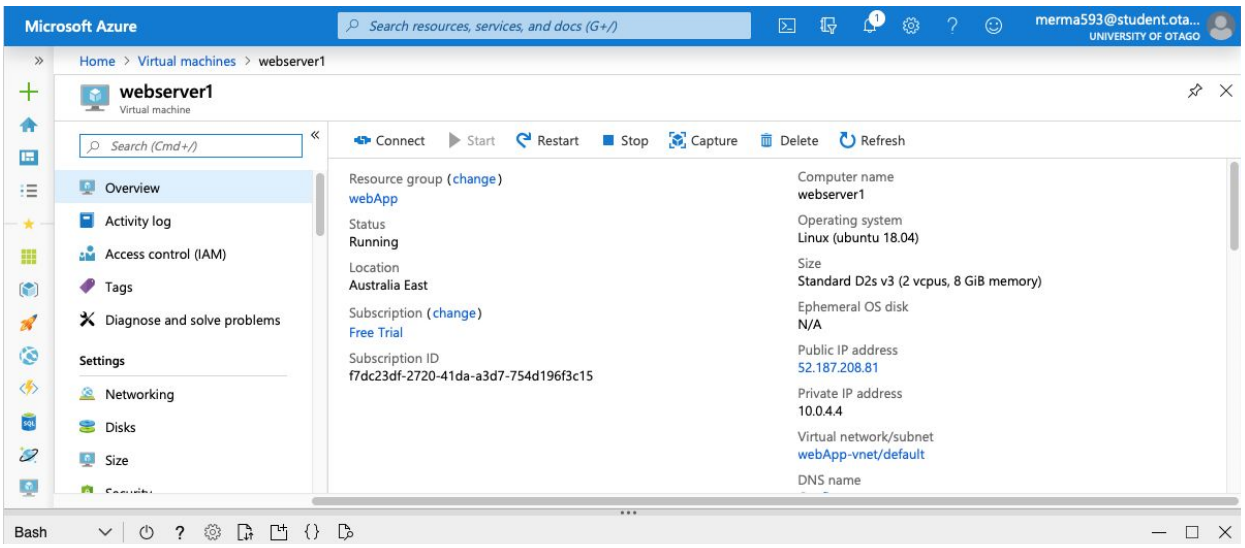


Figure 5. Web Server 1 overview

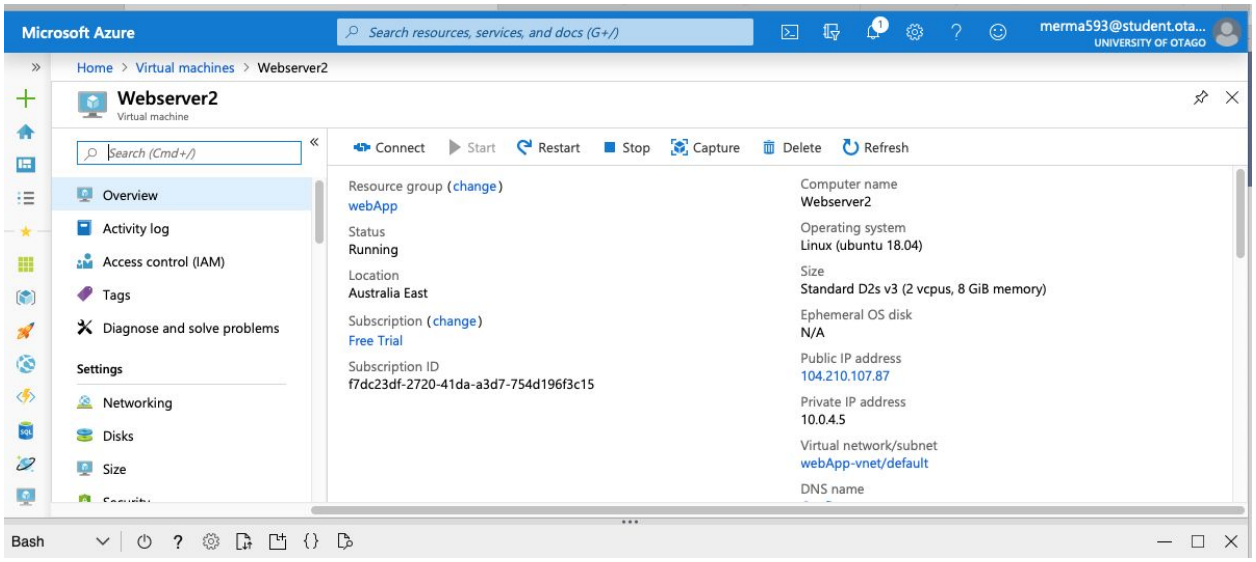
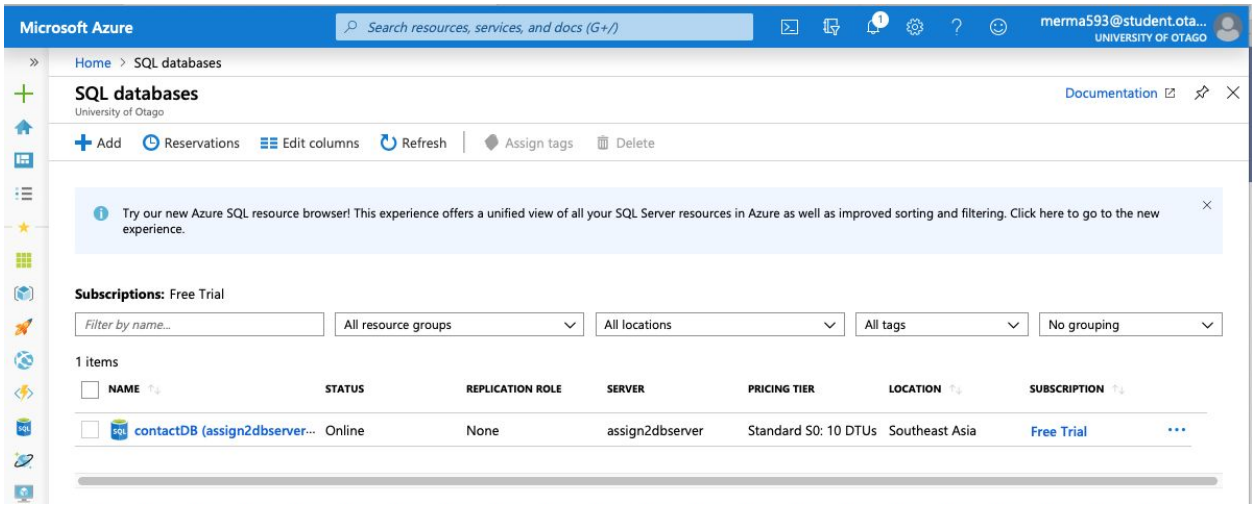


Figure 6. Web server 2 overview

Our MySQL database server ASSIGN2contactlistDB was deployed using Microsoft Azure service “Azure Database for MySQL server”. We then added connection security rules to allow my local machine and all Microsoft Azure IPs to connect to it. We also enabled “Enforce SSL Connection” to allow SSL connections to our MySQL database. After connecting to my

MySQL database server we created my database “contactdb” and manually configured my table “contactInfo” using the code for my database table creation in Assignment1. The location configured for our server is in South East Asia because Azure would not allow us to put it in East Australia.

We chose the Azure Database for MySQL service as we felt it was the most fitting service to use as our database from Assignment 1 we wanted to deploy is a MySQL database. The advanced security offered by Azure for this service was another reason we decided to use it as we wanted our database information to be protected, and to be notified if it was at risk.



Due to Azure not allowing use of vagrant deployment, all our configuration and development was done manually. We were therefore not able to have commit history of our incremental development of our application. We have however included our final PHP, CSS code and site configuration file for both web servers in our GitHub repository for this assignment.

Resources:
Creating VM

https://docs.microsoft.com/en-us/azure/virtual-machines/windows/create-portal-availability-zone

Our assignment 1 github repository, used for both web server configuration and database configuration
https://github.com/merma593/ContactListApp

CSS used for styling the contact table:
https://www.w3schoold.com/css/tryit.asp?filename=trycss_fancy_table

CSS styling for form:
https://www.w3schools.com/css/tryit.asp?filename=trycss_forms

Enabling SSL connection
https://docs.microsoft.com/en-us/azure/mysql/howto-configure-ssl

Creating MySQL database server using Azure services
https://docs.microsoft.com/en-us/azure/mysql/quickstart-create-mysql-server-database-using-azure-portal