

CS 2316 – Lab 1 – Create Virtual Machine in Azure

Lab 1 – Create Virtual Machine in Azure- 50 Points

Due: Friday March 4th, before 11:55 pm

Files to submit:

weatherDate.csv – The csv name will be different for the date it is created.

NameOfVM.rdp – The name of the VM is your choice.

Contents:

Part 1 – Create Virtual Machine in Azure Portal

Part 2 – Monitor VM

Part 3 – Connect to VM

Part 4 – Run Script in VM

For Help:

- PIAZZA – [Lab1] Issue tag Keren Rempe if it is Azure specific
- TA Helpdesk – schedule is posted on class website

Notes:

- 1. Do not wait until the last minute to do this assignment** in case you run into problems or the TA helpdesk is closed.
2. If you find a significant error in the assignment, let a TA know immediately!

Introduction:

The goal of this Lab is to collect data on the weather for every hour by web scraping weather.com. The weatherScrape.py file is a Python script written by one of your peers that web scrapes dynamic data off weather.com. It is designed to be ran multiple times, after running the first time, it creates a CSV file with the data for that particular time.

Rather than running the script for two days on your machine to obtain all the data for a multi day period you will create a virtual machine that will run the script for multiple days “in the cloud”.

Part 1 -- Create a Virtual Machine (VM) in Azure

In an email you should have received a subscription pass that gives you access to the Azure cloud with a limited amount of “credits” each month. Using the same login credentials you will go to the Azure portal. **You are responsible to save your credentials and all subsequent credentials.**

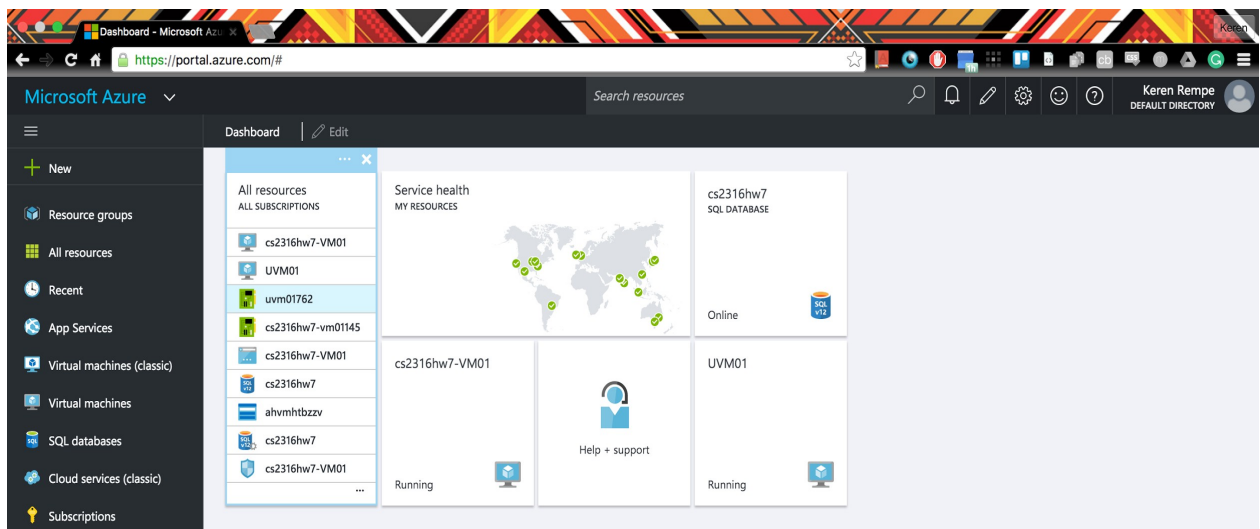
1. Activate your Azure Pass

<https://www.microsoftazurepass.com/howto>

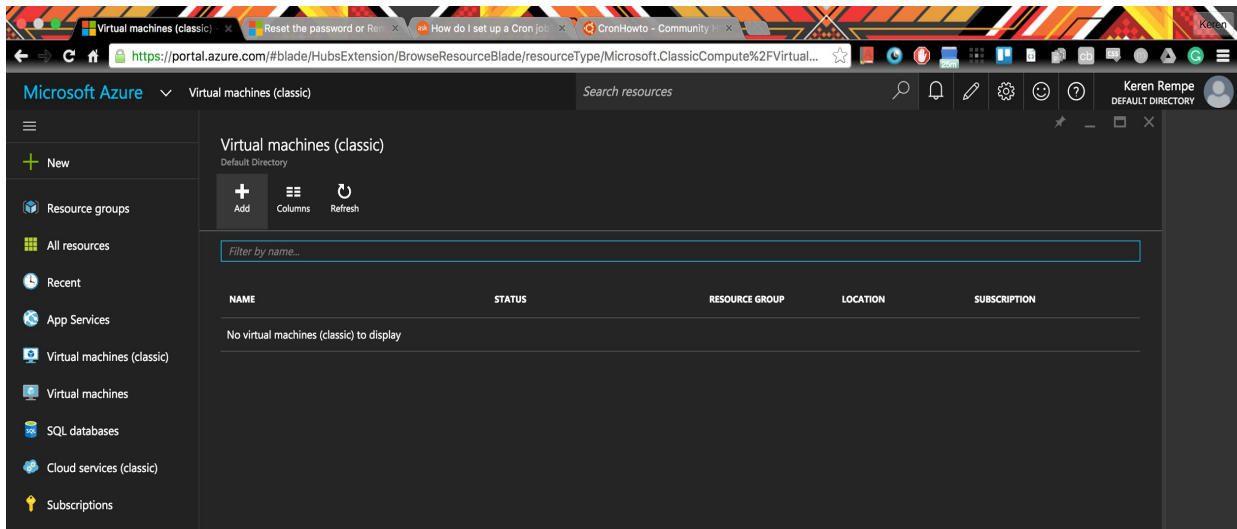
2. Log in to Azure Portal

<https://portal.azure.com>

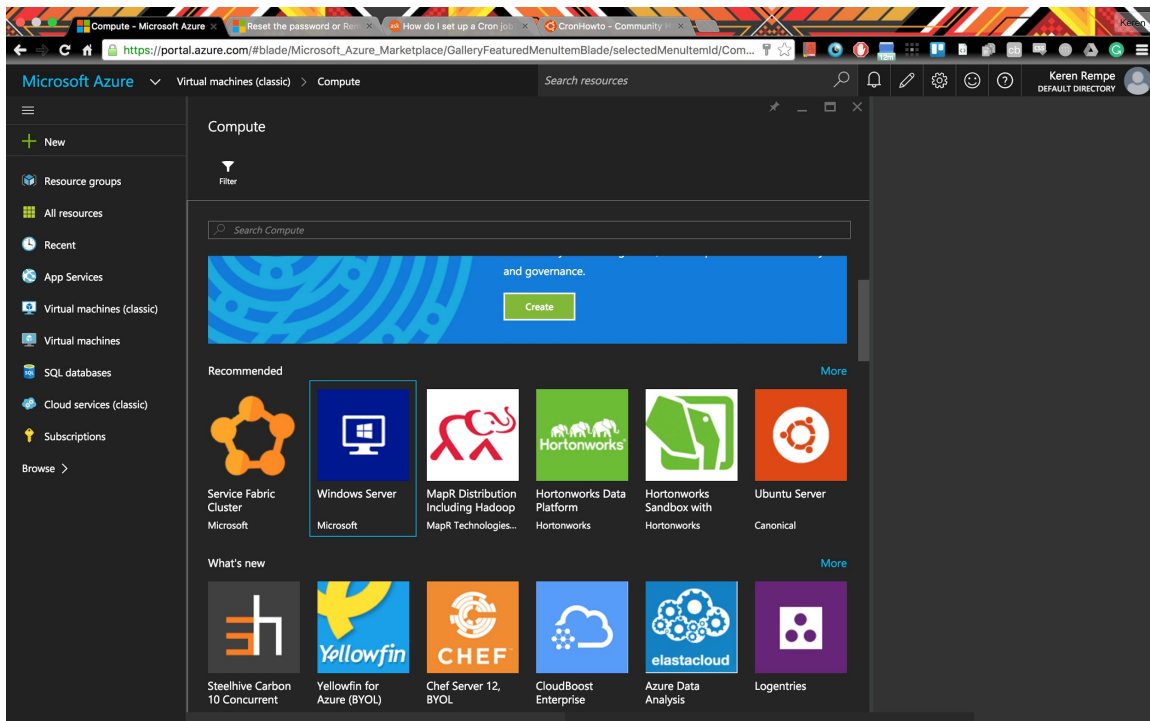
Once logged in you will see the dashboard. On the dashboard below you can see that two virtual machines were created. Below will be a step by step guide of how to create your virtual machine required for HW7 in the Azure Portal.



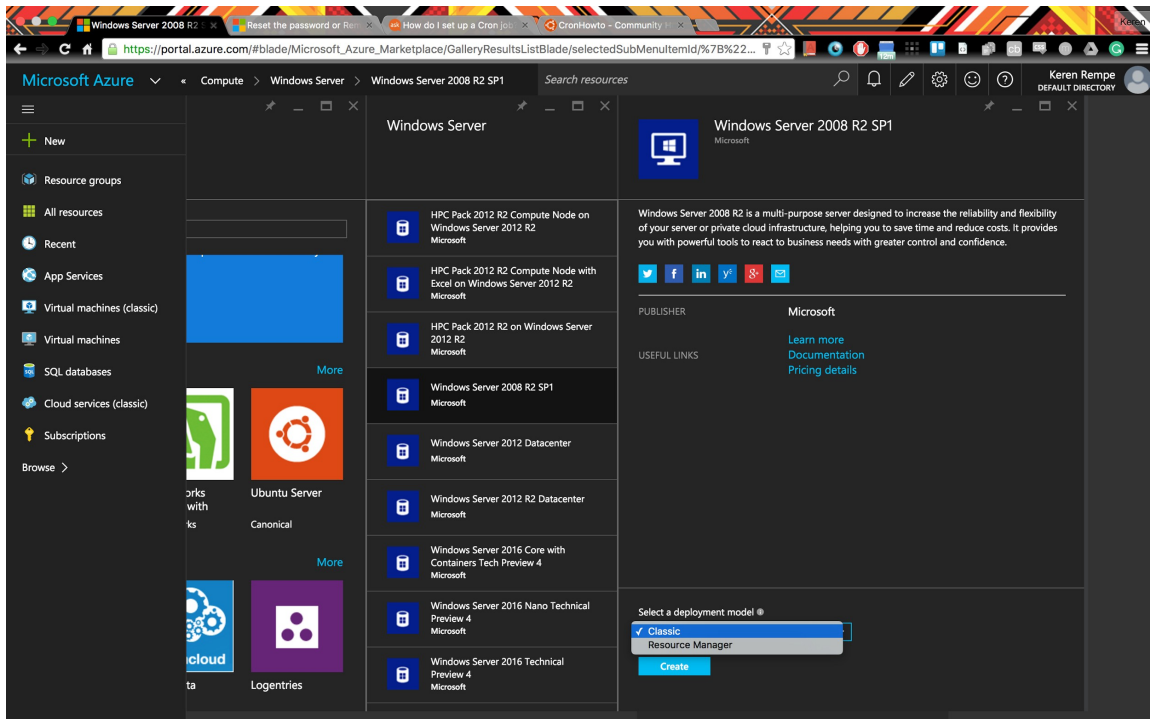
Click on Virtual Machines (Classic) then click on Add



There will be several images reflecting different options to configure a virtual machine such as what kind of operating system and different purposes for the types of operations. In HW7 we will be using a Windows Server.



Select Windows Server 2008 R2 SP1 and the deployment model is classic.



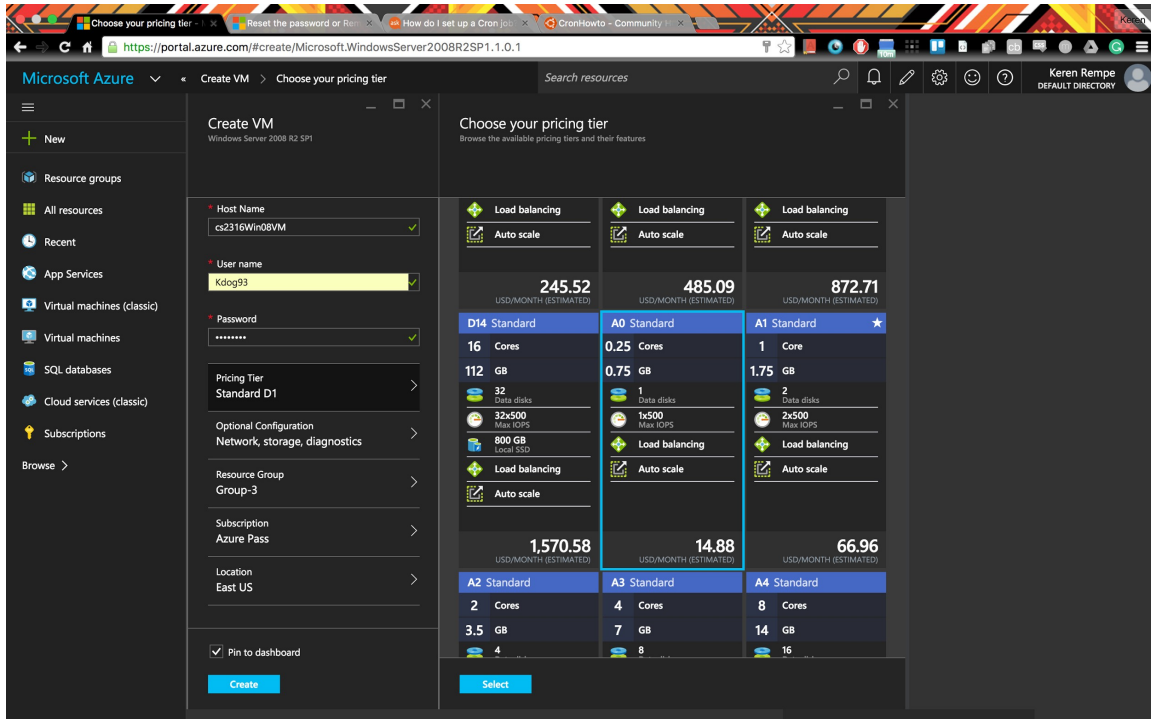
The host name is unique within all of Azure so do not copy the naming convention. I advise for anything created in Azure you use a unique prefix, for example, your gatech username krempecs2316hw7Win08VM. The character limit is 15. A common mistake with naming would be adding punctuation or starting with an uppercase character. Here are the detailed naming rules within Azure. <https://msdn.microsoft.com/en-us/library/azure/dn857353.aspx>

Change the pricing to A0 by clicking Pricing Tier, View All, and select A0 Standard. Notice the difference in prices between the different series which are denoted by the letter. The D-series is significantly more expensive than the A-series. This is important because your Azure account is limited to a fixed amount of credit each. In order to complete HW7 in addition to this lab, you do not want to go over your allotted budget!

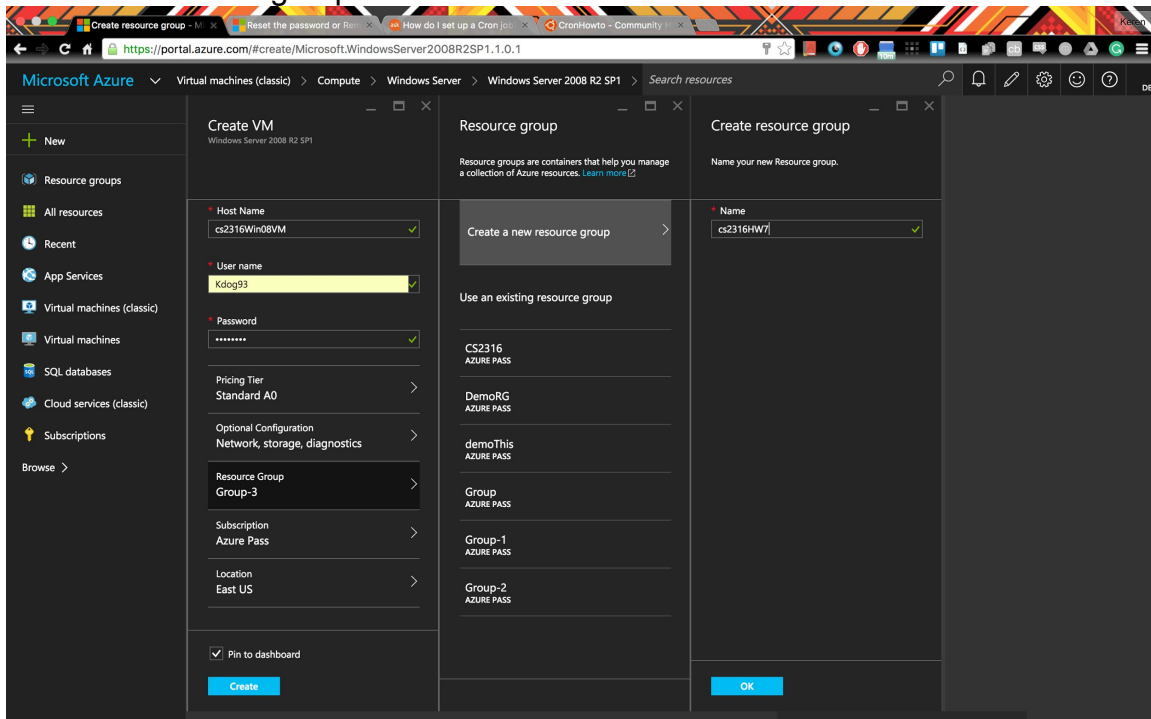
Here are more details on different pricing <https://azure.microsoft.com/en-us/pricing/details/virtual-machines/>

When you select a series in Azure you can expand your virtual machine to the end of that particular series. Click on the link above and see what's the difference in ram, disc size, and cores. The neat part of Azure is you only pay for what you use. With A0 Standard you are paying \$0.02/ hour you use your VM.

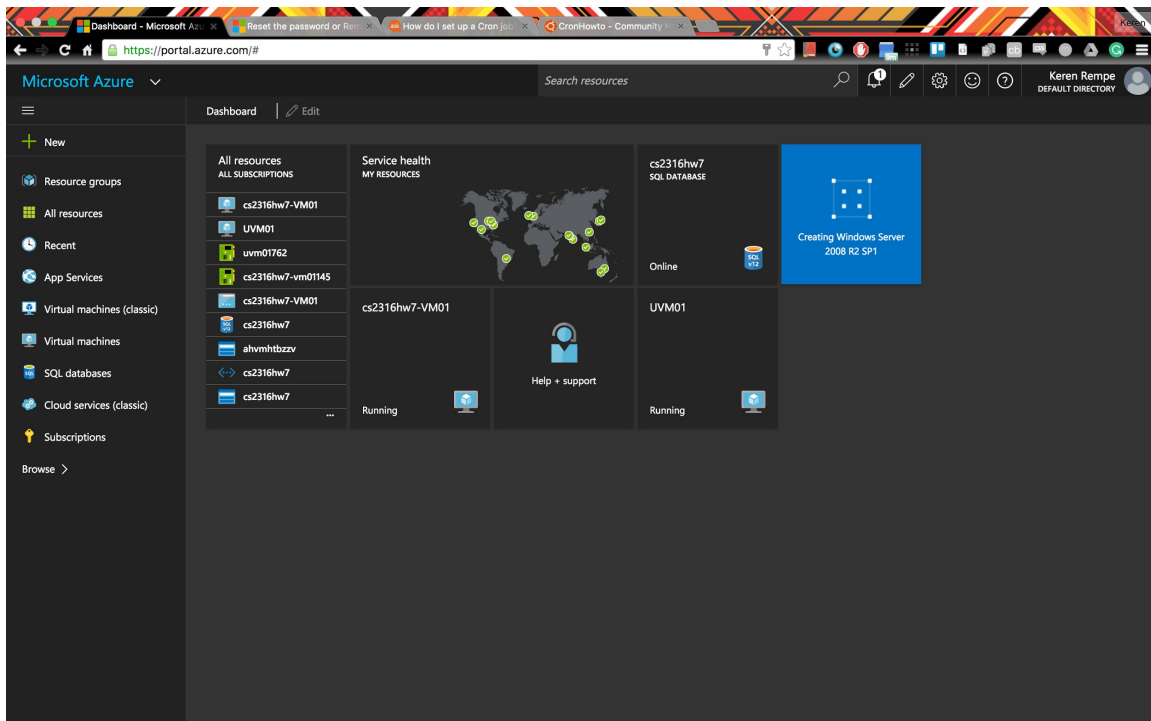
The username and password to login to your VM are the username and password created here. Be sure to write down your credentials. For example, Kdog93 is the username is the image below.



Create a resource group with the name cs2316HW7.



If you've correctly followed the steps your virtual machine should be deploying and when complete will notify you. After it is running we will create several different types of monitoring notifications to ensure that you don't spend over your budget.



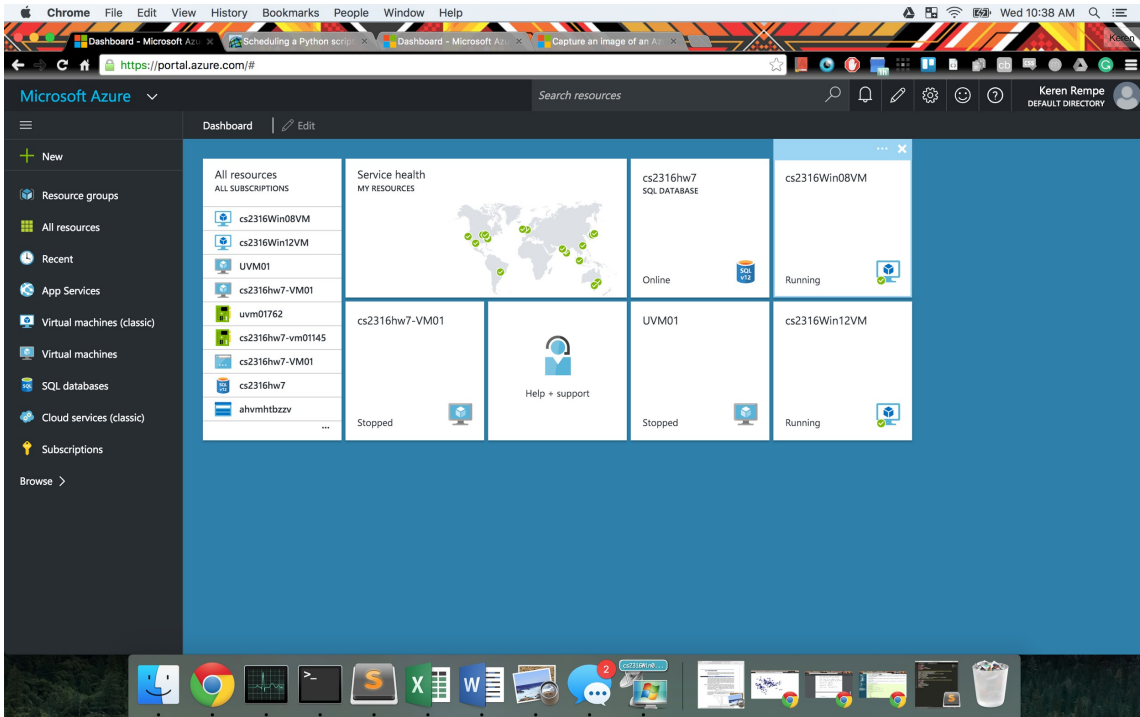
*Deploying the VM may take up to 30 minutes so you can skip to Part 3.

Part 2 — Monitor your VM

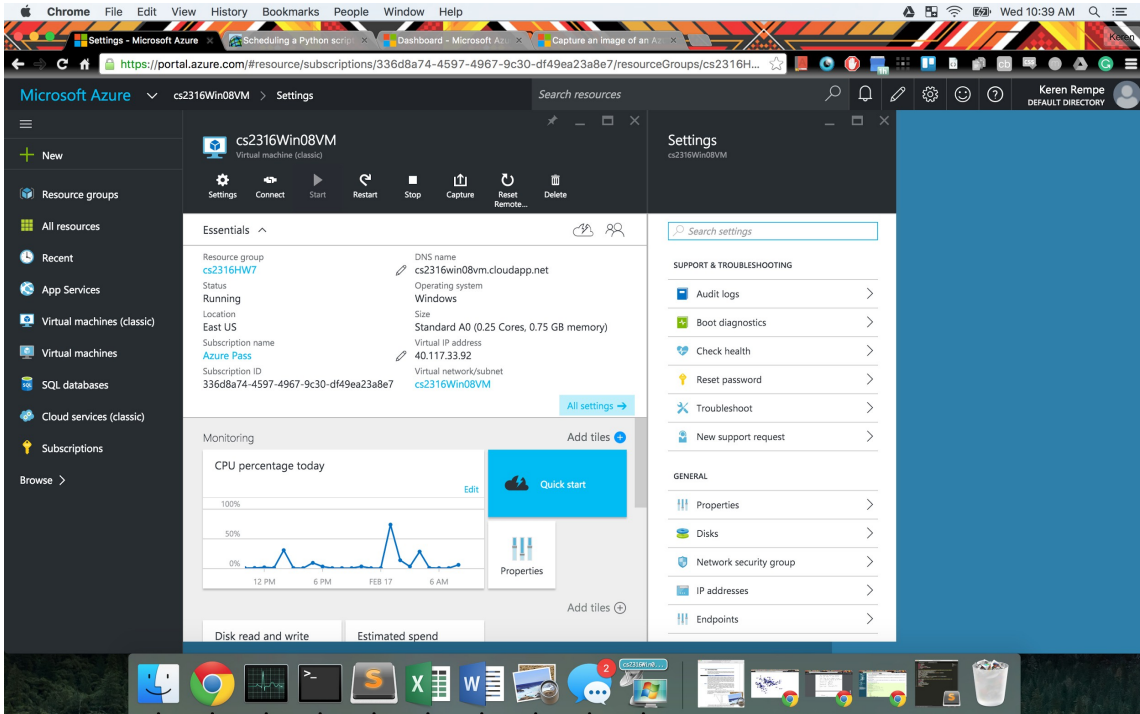
Congratulations, your VM is running! Now what does that mean...

It means that Microsoft has space and processing power to run your virtual machine. All of the processes done in your virtual machine are in the cloud, not on the physical computer you are using. You will be able to connect to and operate this Windows desktop using your computer in Part 3. Before we get there we want to monitor our estimated credit spending so we do not spend over the budget.

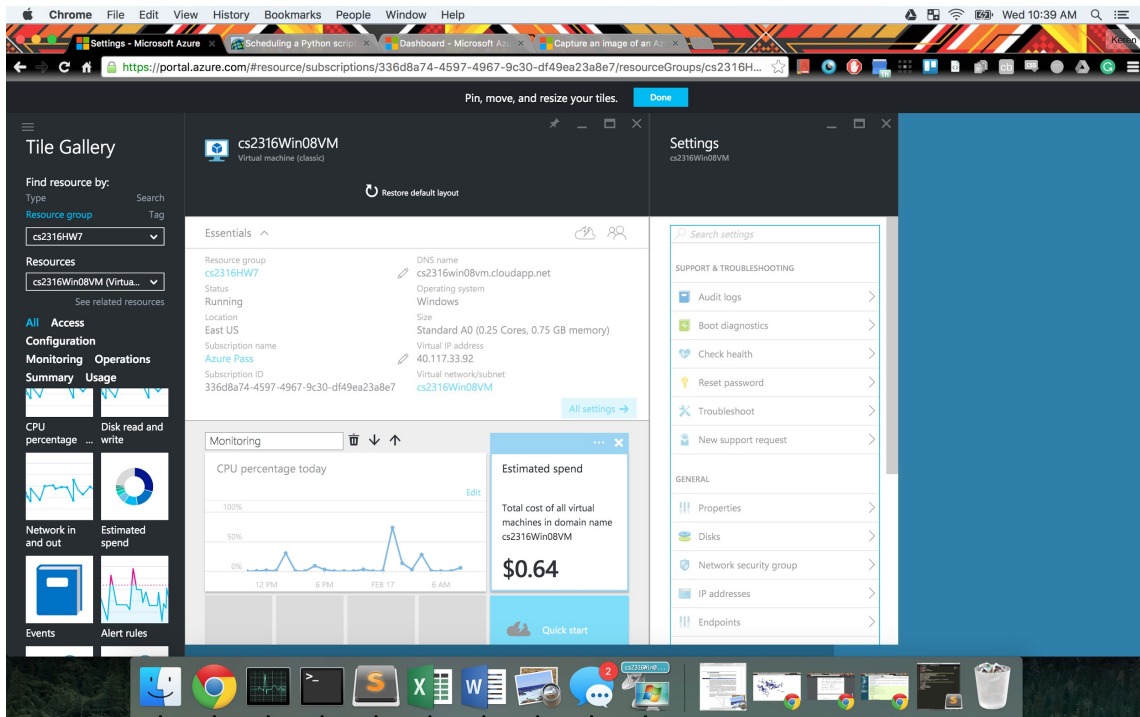
Click on your VM from the portal.



Click on Add Tiles.



Add the tile estimated spend by dragging and dropping it. Feel free to add as many tiles as you would like.



Part 3 — Connect to your VM Windows Desktop

How you connect to your VM depends on your current Operating System. Remember your VM credentials (the username and password).

Windows OS:

Follow these directions.

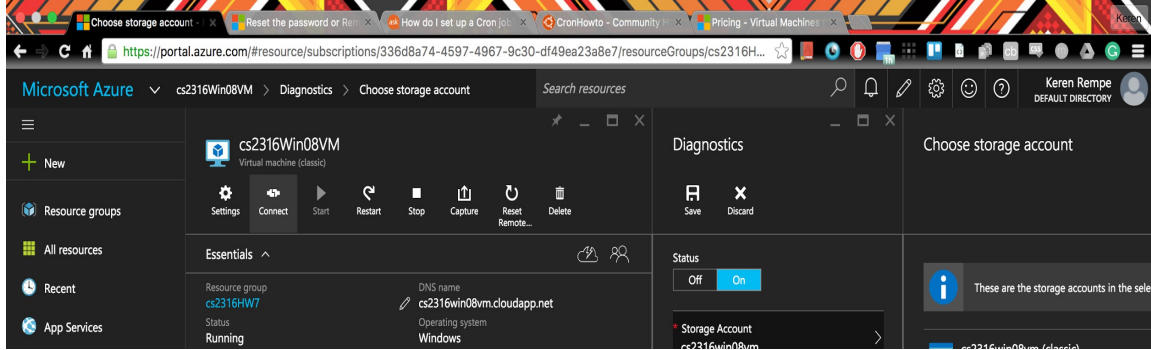
<https://azure.microsoft.com/en-us/documentation/articles/virtual-machines-log-on-windows-server/#log-on-to-the-virtual-machine>

When you are asked for credentials to connect to the VM, you must enter the username as <VM domain>\<username>. The domain will usually be the same as your VM/hostname. You can also find the domain under DNS name in the Azure portal (but remove the ".cloudapp.net"). So if the VM/domain is cs2316Win08VM and the username is Kdog93 you would connect with the username **cs2316Win08VM\Kdog93**.

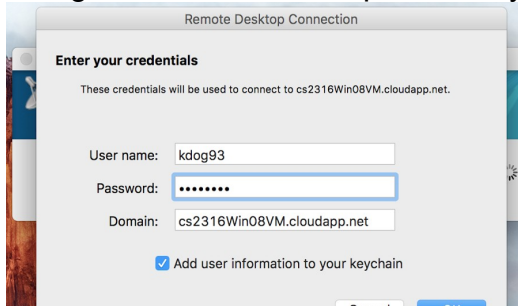
Mac OS:

Download Microsoft Remote Desktop Connection Client for Macs at <https://www.microsoft.com/en-us/download/details.aspx?id=18140>

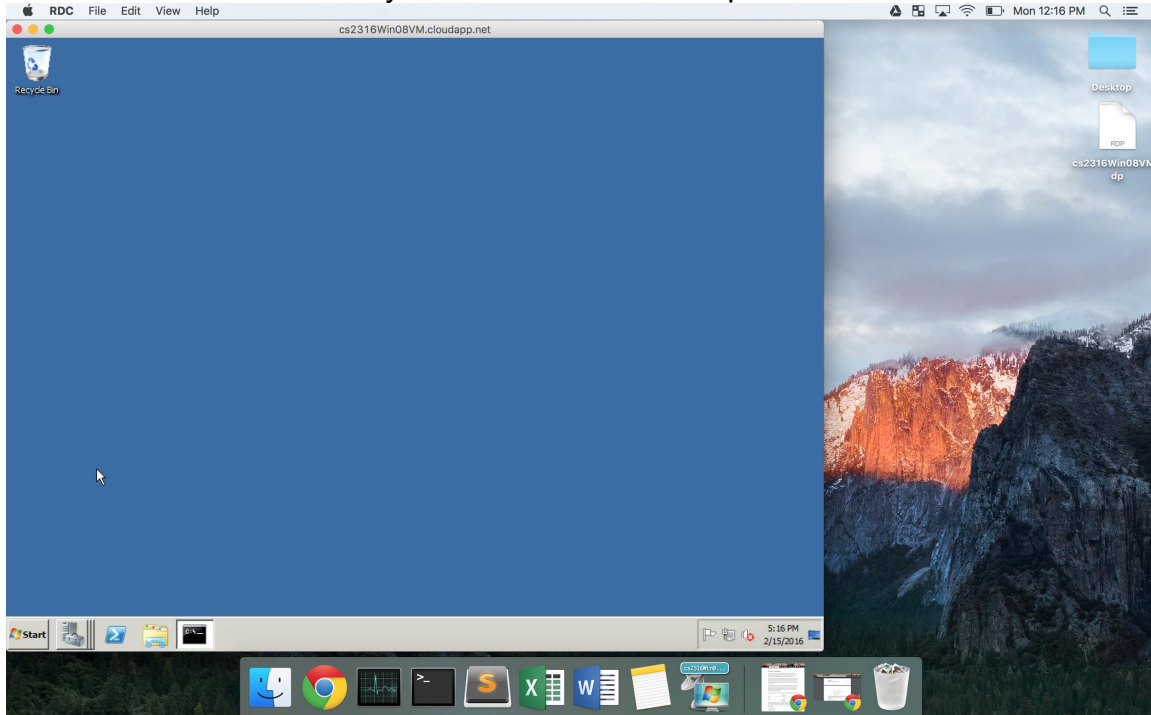
In the Azure portal select the connect button and the VM name will save as a .rdp file.



Using the username and password you chose you can login to the VM.



*Boom welcome to the sexy 2008 Windows Desktop.



Part 4— Run Python Script

Alright let's put Python on this VM. Download 3.4 version of Python for Windows here <https://www.python.org/downloads/release/python-344/>

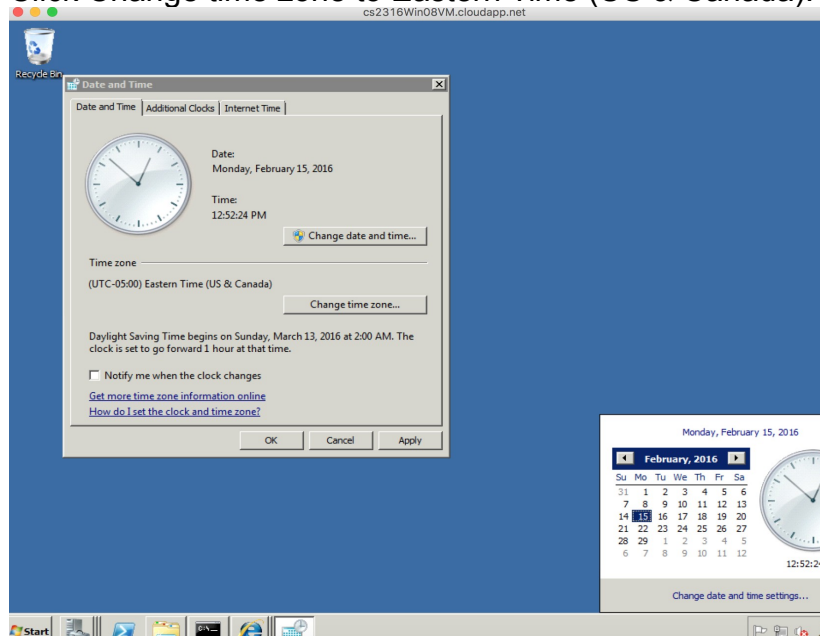
Windows x86-64 MSI installer

Feel free to download another browser like Google Chrome rather than using Internet Explorer.

IMPORTANT: Microsoft may have some updates ready for your 2008 windows desktop, and they will AUTO-INSTALL them, and then REBOOT your cloud computer, possibly while your homework is running, ruining your output! To prevent this, install all available updates yourself, and then DISABLE AUTOMATIC UPDATES while you run the python script. (Turn them back on when you are done...)

Ok do you see anything weird about the Time of the VM and the Mac photo above?! Yea not the same.. Will Python reflect that? YES. Change the VM's time zone.

Click Change time zone to Eastern Time (US & Canada).



Save weatherScrape.py to your desktop.

Go to Internet Explorer and put the url from weatherScrape (from the scrape method) in the browser. Why? There is a firewall and will not let you scrape from the website unless you have already navigated there in a browser manually.

Make sure the python directory is in the location of the script weatherScrape.py (the comments in weatherScrape tell you what to change in the path).

Run the script weatherScrape in your VM and notice that it will run for 2 days collecting data every 10 minutes. You do not need to stay connected to your VM. However, I would complete this assignment with ample time in case something goes wrong and you need to re-start the script.

Grading:

Note about grading: If you do not have all the requirements, you will NOT receive any credit.

25 points – Setting up VM for Azure correctly and submitting .rdp file

25 points – Submitted CSV or showed grading TA CSV during recitation

Note: To receive credit, you **must** follow the directions completely and include all requested. **No partial credit** will be awarded, so you will receive a score of 0 or 25 or 50