McKesson   **Assignment 04**   Deep Azure

Handed out: 11/01/2017   Due by 11:59 PM, midnight (CST) on Tuesday, 11/07/2017

Problem 01. Please use Azure CLI to create resource group. Please give that group a unique name. Again, using Azure CLI create an SQL server with user name and password. Subsequently, using Azure CLI create database within that server. Again using Azure CLI create server firewall. Open port 1433. Watch out, your corporate firewall might block your traffic. Use SQL Server Management Studio to connect to your database and create a simple table. Insert and query 2 rows using SSMS New Query window.
(20%)

LOGIN
```
kirks-mbp:mck-pipelines el5vgxz$ az login
To sign in, use a web browser to open the page https://aka.ms/devicelogin and enter
the code BPFV46WD7 to authenticate.
[
  {
    "cloudName": "AzureCloud",
    "id": "d5f65876-4dec-4a2e-afe1-b61e713a8612",
    "isDefault": true,
    "name": "Free Trial",
    "state": "Enabled",
    "tenantId": "cd28ef90-210d-4c10-b290-de42a4d6adfe",
    "user": {
      "name": "skertz@hotmail.com",
      "type": "user"
    }
  }
]
```

CREATE RESOURCE GROUP
```
kirks-mbp:mck-pipelines el5vgxz$ az group create -l westus -n rg-kirkdahl
{
  "id": "/subscriptions/d5f65876-4dec-4a2e-afe1-b61e713a8612/resourceGroups/rg-
kirkdahl",
  "location": "westus",
  "managedBy": null,
  "name": "rg-kirkdahl",
  "properties": {
    "provisioningState": "Succeeded"
  },
  "tags": null
}
```

CREATE SQL VM
```
kirks-mbp:mck-pipelines el5vgxz$ az sql server create -p XXXXXXXX -u sqladmin -n vm-
kirk-sql -g rg-kirkdahl -l westus
{
  "administratorLogin": "sqladmin",
  "administratorLoginPassword": null,
  "fullyQualifiedDomainName": "vm-kirk-sql.database.windows.net",
  "id": "/subscriptions/d5f65876-4dec-4a2e-afe1-b61e713a8612/resourceGroups/rg-
kirkdahl/providers/Microsoft.Sql/servers/vm-kirk-sql",
  "identity": null,
  "kind": "v12.0",
```

```
  "location": "westus",
  "name": "vm-kirk-sql",
  "resourceGroup": "rg-kirkdahl",
  "state": "Ready",
  "tags": null,
  "type": "Microsoft.Sql/servers",
  "version": "12.0"
}
```

CREATE SQL DATABASE

```
kirks-mbp:mck-pipelines el5vgxz$ az sql db create -n msql-db-kirkdahl -g rg-kirkdahl
-s vm-kirk-sql --max-size 1GB
{
  "collation": "SQL_Latin1_General_CP1_CI_AS",
  "containmentState": 2,
  "createMode": null,
  "creationDate": "2017-11-06T20:04:04.337000+00:00",
  "currentServiceObjectiveId": "f1173c43-91bd-4aaa-973c-54e79e15235b",
  "databaseId": "05f6b491-17db-4ddd-abe4-98719ea60f12",
  "defaultSecondaryLocation": "East US",
  "earliestRestoreDate": "2017-11-06T20:14:44.443000+00:00",
  "edition": "Standard",
  "elasticPoolName": null,
  "failoverGroupId": null,
  "id": "/subscriptions/d5f65876-4dec-4a2e-afe1-b61e713a8612/resourceGroups/rg-
kirkdahl/providers/Microsoft.Sql/servers/vm-kirk-sql/databases/msql-db-kirkdahl",
  "kind": "v12.0,user",
  "location": "West US",
  "maxSizeBytes": "1073741824",
  "name": "msql-db-kirkdahl",
  "readScale": "Disabled",
  "recommendedIndex": null,
  "recoveryServicesRecoveryPointResourceId": null,
  "requestedServiceObjectiveId": "f1173c43-91bd-4aaa-973c-54e79e15235b",
  "requestedServiceObjectiveName": "S0",
  "resourceGroup": "rg-kirkdahl",
  "restorePointInTime": null,
  "sampleName": null,
  "serviceLevelObjective": "S0",
  "serviceTierAdvisors": null,
  "sourceDatabaseDeletionDate": null,
  "sourceDatabaseId": null,
  "status": "Online",
  "tags": null,
  "transparentDataEncryption": null,
  "type": "Microsoft.Sql/servers/databases"
}
```

CREATE SQL FIREWALL RULE

```
kirks-mbp:mck-pipelines el5vgxz$ az sql server firewall-rule create -g rg-kirkdahl -
s vm-kirk-sql --end-ip-address 0.0.0.0 --start-ip-address 0.0.0.0 -n fw-kirk-sql
{
  "endIpAddress": "143.112.144.129",
  "id": "/subscriptions/d5f65876-4dec-4a2e-afe1-b61e713a8612/resourceGroups/rg-
kirkdahl/providers/Microsoft.Sql/servers/vm-kirk-sql/firewallRules/fw-kirk-sql",
  "kind": "v12.0",
  "location": "West US",
  "name": "fw-kirk-sql",
  "resourceGroup": "rg-kirkdahl",
  "startIpAddress": "143.112.144.129",
  "type": "Microsoft.Sql/servers/firewallRules"
}
```
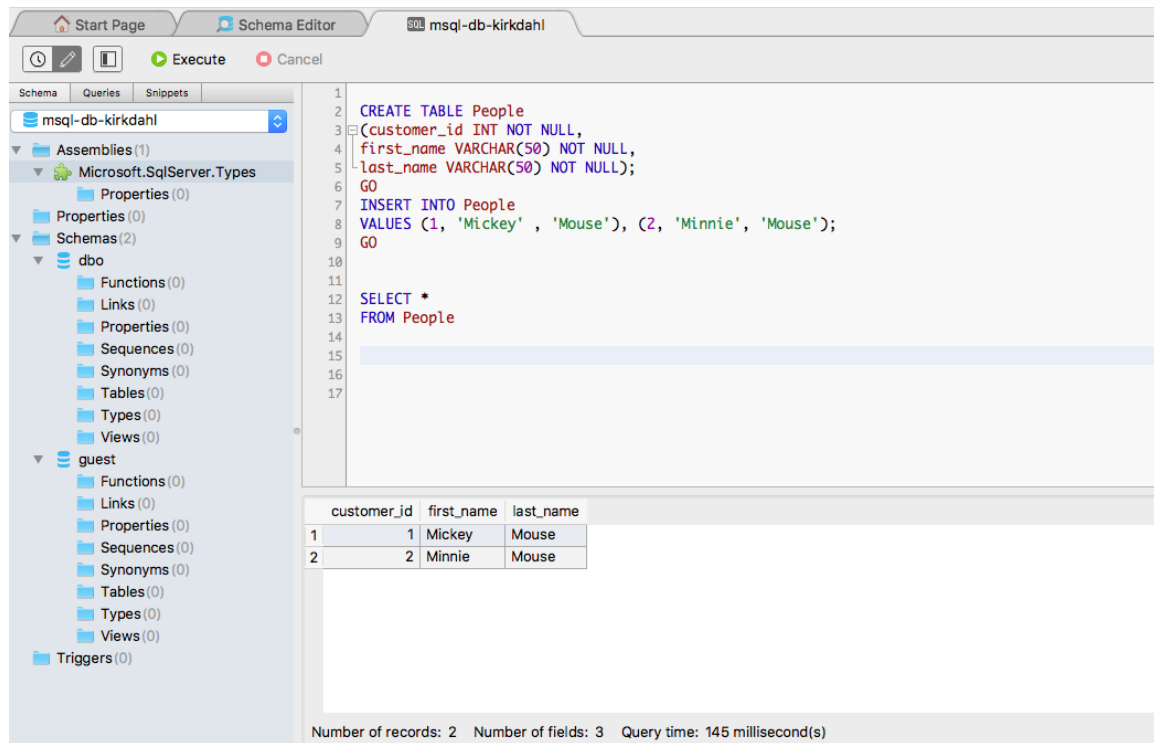
CREATE TABLE (I'm using a MAC tool instead of SSMS)
INSERT ROWS
SELECT *

Problem 02. Using Azure CLI create a Windows VM in the Azure resource group created in Problem #1. Demonstrate that you can connect to your Windows machine. Clean up all resources created in Problem 1 and 2 using Azure CLI. (20%)

<u>Create WINDOWS MACHINE</u>

```
kirks-mbp:mck-pipelines el5vgxz$ az vm create -n MyVm -g rg-kirkdahl --image
Win2012R2Datacenter
Admin Password:
Confirm Admin Password:
{
  "fqdns": "",
  "id": "/subscriptions/d5f65876-4dec-4a2e-afe1-b61e713a8612/resourceGroups/rg-
kirkdahl/providers/Microsoft.Compute/virtualMachines/MyVm",
  "location": "westus",
  "macAddress": "00-0D-3A-36-BC-94",
  "powerState": "VM running",
  "privateIpAddress": "10.0.0.4",
  "publicIpAddress": "104.42.122.85",
  "resourceGroup": "rg-kirkdahl",
  "zones": ""
}
```

CONNECT TO WINDOWS MACHINE

DELETE SQL SERVER
```
kirks-mbp:mck-pipelines el5vgxz$ az sql server delete --name vm-kirk-sql --resource-
group rg-kirkdahl
Are you sure you want to perform this operation? (y/n): y
```

DELETE SQL DB
```
kirks-mbp:mck-pipelines el5vgxz$ az sql db delete --name vm-kirk-sql --resource-
group rg-kirkdahl --server vm-kirk-sql --yes
kirks-mbp:mck-pipelines el5vgxz$
```


Problem 03. Identify all Azure Resource Providers that deliver some kind of database type of resource. Identify all types of resources you could provision from those providers. Select one provide and one "db-like" type of resource. Verify that the provider and selected type of resource are available in your region of choice. If not, find a region near-by where they are. Register yourself with that provider and then deploy an instance of one of the resources offered by selected provider. Do it first with a fixed, hardcoded template. Subsequently, modify your template so would accept command line parameters for various resource names. Demonstrate that you have removed all created resources. Use Azure CLI.
(30%)

LIST ALL

```
kirks-mbp:mck-pipelines el5vgxz$ az provider list --query "[].{Provider:namespace,
Status:registrationState}" --out table
Provider                                 Status
---------------------------------------  ------------
Microsoft.Batch                          Registered
Microsoft.Compute                        Registered
Microsoft.ContainerRegistry              Registered
Microsoft.Network                        Registered
Microsoft.Sql                            Registered
Microsoft.Storage                        Registered
Microsoft.Web                            Registered
84codes.CloudAMQP                        NotRegistered
AppDynamics.APM                          NotRegistered
Aspera.Transfers                         NotRegistered
Auth0.Cloud                              NotRegistered
Citrix.Cloud                             NotRegistered
Cloudyn.Analytics                        NotRegistered
Conexlink.MyCloudIT                      NotRegistered
Crypteron.DataSecurity                   NotRegistered
Dynatrace.DynatraceSaaS                  NotRegistered
Dynatrace.Ruxit                          NotRegistered
LiveArena.Broadcast                      NotRegistered
Lombiq.DotNest                           NotRegistered
Mailjet.Email                            NotRegistered
Microsoft.AAD                            NotRegistered
microsoft.aadiam                         NotRegistered
Microsoft.Addons                         NotRegistered
```

```
Microsoft.ADHybridHealthService             Registered
Microsoft.Advisor                           NotRegistered
Microsoft.AnalysisServices                  NotRegistered
Microsoft.ApiManagement                     NotRegistered
Microsoft.Authorization                     Registered
Microsoft.Automation                        NotRegistered
Microsoft.AzureActiveDirectory              NotRegistered
Microsoft.AzureStack                        NotRegistered
Microsoft.BatchAI                           NotRegistered
Microsoft.Billing                           Registered
Microsoft.BingMaps                          NotRegistered
Microsoft.BizTalkServices                   NotRegistered
Microsoft.Cache                             NotRegistered
Microsoft.Cdn                               NotRegistered
Microsoft.CertificateRegistration           NotRegistered
Microsoft.ClassicCompute                    NotRegistered
Microsoft.ClassicNetwork                    NotRegistered
Microsoft.ClassicStorage                    NotRegistered
Microsoft.ClassicSubscription               Registered
Microsoft.ClassicInfrastructureMigrate      NotRegistered
Microsoft.CognitiveServices                 NotRegistered
Microsoft.Commerce                          Registered
Microsoft.Consumption                       Registered
Microsoft.ContainerInstance                 NotRegistered
Microsoft.ContainerService                  NotRegistered
Microsoft.ContentModerator                  NotRegistered
Microsoft.CustomerInsights                  NotRegistered
Microsoft.DataCatalog                       NotRegistered
Microsoft.DataFactory                       NotRegistered
Microsoft.DataLakeAnalytics                 NotRegistered
Microsoft.DataLakeStore                     NotRegistered
Microsoft.DBforMySQL                        NotRegistered
Microsoft.DBforPostgreSQL                   NotRegistered
Microsoft.Devices                           NotRegistered
Microsoft.DevTestLab                        NotRegistered
Microsoft.DocumentDB                        NotRegistered
Microsoft.DomainRegistration                NotRegistered
Microsoft.DynamicsLcs                       NotRegistered
Microsoft.EventGrid                         NotRegistered
Microsoft.EventHub                          NotRegistered
Microsoft.Features                          Registered
Microsoft.HDInsight                         NotRegistered
Microsoft.ImportExport                      NotRegistered
microsoft.insights                          NotRegistered
Microsoft.KeyVault                          NotRegistered
Microsoft.Logic                             NotRegistered
Microsoft.MachineLearning                   NotRegistered
Microsoft.MachineLearningExperimentation    NotRegistered
Microsoft.MachineLearningCompute            NotRegistered
Microsoft.MachineLearningModelManagement    NotRegistered
Microsoft.MarketplaceOrdering               Registered
Microsoft.Media                             NotRegistered
Microsoft.NotificationHubs                  NotRegistered
Microsoft.OperationalInsights               NotRegistered
Microsoft.OperationsManagement              NotRegistered
Microsoft.Portal                            NotRegistered
Microsoft.PowerBI                           NotRegistered
Microsoft.PowerBIDedicated                  NotRegistered
Microsoft.RecoveryServices                  NotRegistered
Microsoft.Relay                             NotRegistered
Microsoft.ResourceHealth                    NotRegistered
Microsoft.Resources                         Registered
Microsoft.ResourcesTopology                 NotRegistered
Microsoft.Scheduler                         NotRegistered
Microsoft.Search                            NotRegistered
```

```
Microsoft.Security                    NotRegistered
Microsoft.ServiceBus                  NotRegistered
Microsoft.ServiceFabric               NotRegistered
Microsoft.Solutions                   NotRegistered
Microsoft.StorageSync                 NotRegistered
Microsoft.StorSimple                  NotRegistered
Microsoft.StreamAnalytics             NotRegistered
microsoft.support                     Registered
Microsoft.TimeSeriesInsights          NotRegistered
microsoft.visualstudio                NotRegistered
Myget.PackageManagement               NotRegistered
NewRelic.APM                          NotRegistered
nuubit.nextgencdn                     NotRegistered
Paraleap.CloudMonix                   NotRegistered
Pokitdok.Platform                     NotRegistered
RavenHq.Db                            NotRegistered
Raygun.CrashReporting                 NotRegistered
RedisLabs.Memcached                   NotRegistered
RedisLabs.Redis                       NotRegistered
RevAPM.MobileCDN                      NotRegistered
Sendgrid.Email                        NotRegistered
Signiant.Flight                       NotRegistered
Sparkpost.Basic                       NotRegistered
stackify.retrace                      NotRegistered
SuccessBricks.ClearDB                 NotRegistered
TrendMicro.DeepSecurity               NotRegistered
U2uconsult.TheIdentityHub             NotRegistered
```

REGISTER WITH Microsoft.DBforMySql

```
kirks-mbp:mck-pipelines el5vgxz$ az provider register --namespace
Microsoft.DBforMySQL
Registering is still on-going. You can monitor using 'az provider show -n
Microsoft.DBforMySQL'
```

CHECK IF LOCATION NEAR ME (yes – West US)

```
kirks-mbp:mck-pipelines el5vgxz$ az provider show -n Microsoft.DBForMySql
{
  "id": "/subscriptions/d5f65876-4dec-4a2e-afe1-
b61e713a8612/providers/Microsoft.DBforMySQL",
  "namespace": "Microsoft.DBforMySQL",
  "registrationState": "Registered",
  "resourceTypes": [
    {
      "aliases": null,
      "apiVersions": [
        "2017-04-30-preview",
        "2016-02-01-privatepreview"
      ],
      "locations": [
        "Brazil South",
        "Canada Central",
        "Canada East",
        "Central India",
        "East Asia",
```

```
          "East US 2",
          "East US",
          "Japan East",
          "Japan West",
          "North Central US",
          "North Europe",
          "South Central US",
          "Southeast Asia",
          "West Europe",
          "West India",
          "West US"
        ],
```

DEPLOY TEMPLATE

```
kirks-mbp:week4 el5vgxz$ az group deployment create --resource-group rg-kirkdahl --
template-file mydeploy.json
{
  "id": "/subscriptions/d5f65876-4dec-4a2e-afe1-b61e713a8612/resourceGroups/rg-
kirkdahl/providers/Microsoft.Resources/deployments/mydeploy",
  "name": "mydeploy",
  "properties": {
    "correlationId": "bb81260c-a0e8-4818-8835-c656bba613a5",
    "debugSetting": null,
    "dependencies": [],
    "mode": "Incremental",
    "outputs": {},
    "parameters": {},
    "parametersLink": null,
    "providers": [
      {
        "id": null,
        "namespace": "Microsoft.Storage",
        "registrationState": null,
        "resourceTypes": [
          {
            "aliases": null,
            "apiVersions": null,
            "locations": [
              "westus"
            ],
            "properties": null,
            "resourceType": "storageAccounts"
          }
        ]
      }
    ],
    "provisioningState": "Succeeded",
    "template": null,
    "templateLink": null,
    "timestamp": "2017-11-06T23:08:51.329260+00:00"
  },
  "resourceGroup": "rg-kirkdahl"
}
```
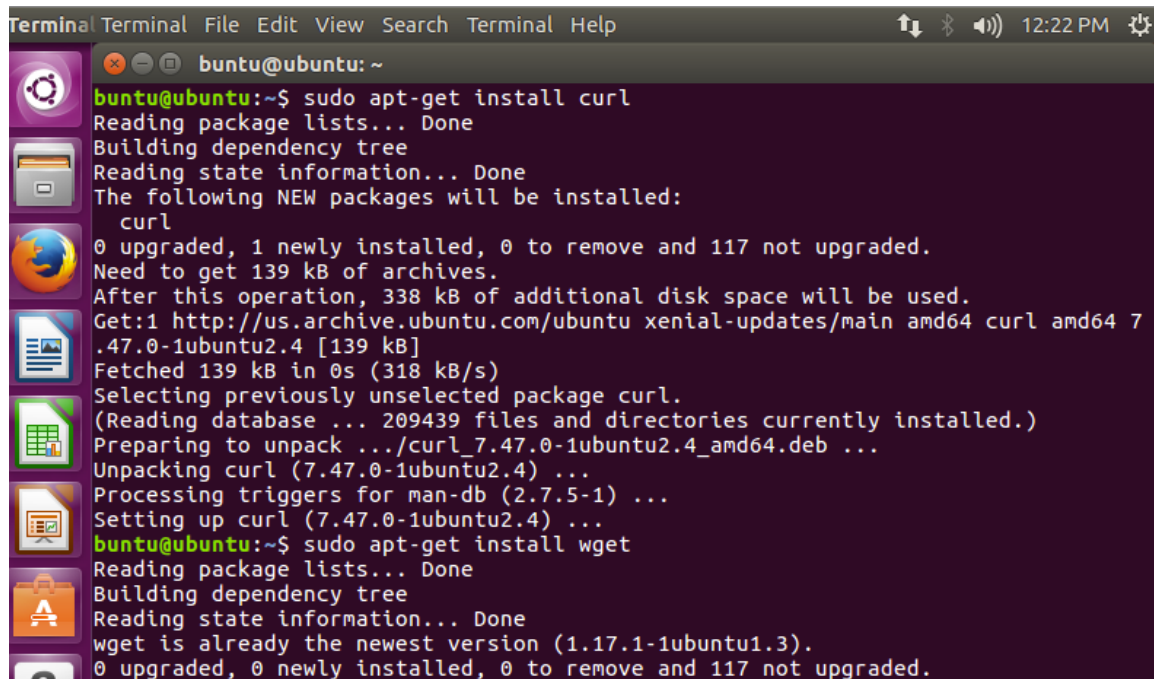
Problem 04. Download CentOS7.4 or Ubuntu16.0.43 VM from the link bellow. Use
VMWare Free Player to run one of those VMs. If you have VMware Workstation/Fusion,
you can use it as well. The username and password for Ubuntu VM are buntu/buntu. The
username and password for the CentoSO VM are centos/centos. Both VMs are somewhat

smaller than 2 GB. You can download ZIO files and then expand on an external drive. On your VMs install curl, wget and git. You will need them in future. Use instructions in the attached documents describing Docker installation to install Docker to one or the other VM. You do not have to do it on both VMs. Just one is enough. Go to Docker public repository and create your account. Remember username and password. Once your Docker daemon is running pull down from the public repository either an ubuntu or centos container image and run the container in the interactive mode with an open bash shell. Once inside the container shell, tell us what date and time it is. When you exit the container ask your host VM for time and date. Compare the two. While your container is still running, open another command window and run commands: sudo docker info, sudo docker images and sudo docker ps. Provide results of those commands. Examine the content of the host VM directory /var/lib/docker. Describe that directory in some detail. (30%)

Link to OneDrive provided by the courtesy of Kevin Henderson: https://mckessoncorp-my.sharepoint.com/personal/kevin_b_henderson_mckesson_com/_layouts/15/guestaccess.aspx?folderid=0799bfe00b5af46a5a3954b9bf5959280&authkey=ASxrWsv05dK1Z5_m-up-5B4&expiration=2017-11-22T07%3A00%3A00.000Z&e=ab14a7a4b41c4aa990445af8c6ff5c00

DOWNLOAD UBUNTU VM IMAGE AND CREATE IN VMWARE FUSION INSTALL CURL & WGET

INSTALL GIT


```
  git git-man liberror-perl
0 upgraded, 3 newly installed, 0 to remove and 117 not upgraded.
Need to get 3,857 kB of archives.
After this operation, 25.6 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us.archive.ubuntu.com/ubuntu xenial/main amd64 liberror-perl all 0.
17-1.2 [19.6 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 git-man all
1:2.7.4-0ubuntu1.3 [736 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 git amd64 1:
2.7.4-0ubuntu1.3 [3,102 kB]
Fetched 3,857 kB in 3s (1,017 kB/s)
Selecting previously unselected package liberror-perl.
(Reading database ... 209446 files and directories currently installed.)
Preparing to unpack .../liberror-perl_0.17-1.2_all.deb ...
Unpacking liberror-perl (0.17-1.2) ...
Selecting previously unselected package git-man.
Preparing to unpack .../git-man_1%3a2.7.4-0ubuntu1.3_all.deb ...
Unpacking git-man (1:2.7.4-0ubuntu1.3) ...
Selecting previously unselected package git.
Preparing to unpack .../git_1%3a2.7.4-0ubuntu1.3_amd64.deb ...
Unpacking git (1:2.7.4-0ubuntu1.3) ...
Processing triggers for man-db (2.7.5-1) ...
Setting up liberror-perl (0.17-1.2) ...
Setting up git-man (1:2.7.4-0ubuntu1.3) ...
Setting up git (1:2.7.4-0ubuntu1.3) ...
buntu@ubuntu:~$
buntu@ubuntu:~$
```

DOCKER INSTALLED


```
buntu@ubuntu:~$ sudo docker version
Client:
 Version:      17.10.0-ce
 API version:  1.33
 Go version:   go1.8.3
 Git commit:   f4ffd25
              Oct 17 19:04:16 2017
              x/amd64

Server:
 Version:      17.10.0-ce
 API version:  1.33 (minimum version 1.12)
 Go version:   go1.8.3
 Git commit:   f4ffd25
 Built:        Tue Oct 17 19:02:56 2017
 OS/Arch:      linux/amd64
 Experimental: false
buntu@ubuntu:~$
```

RUN HELLOW WORLD THAT PULLED DOWN UBUNTU IMAGE

```
              See docker run --help .
buntu@ubuntu:~$ sudo docker run ubuntu echo hello world
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
ae79f2514705: Pull complete
c59d01a7e4ca: Pull complete
41ba73a9054d: Pull complete
f1bbfd495cc1: Pull complete
0c346f7223e2: Pull complete
Digest: sha256:6eb24585b1b2e7402600450d289ea0fd195cfb76893032bbbb3943e041ec8a65
Status: Downloaded newer image for ubuntu:latest
hello world
buntu@ubuntu:~$
```

DOCKER LOGIN TO MY PERSONAL DOCKER HUB ACCOUNT

```
buntu@ubuntu:~$ sudo docker login --username=skertz
Password:
Login Succeeded
buntu@ubuntu:~$
```

DOCKER IMAGES

```
buntu@ubuntu:~$ sudo docker images
REPOSITORY          TAG              IMAGE ID            CREATED
SIZE
ubuntu              latest           dd6f76d9cc90        3 days ago
122MB
busybox             latest           6ad733544a63        3 days ago
1.13MB
buntu@ubuntu:~$
```

SHOWING DATE COMMAND IN CONTAINER AND IN VM (difference is TZ)

```
REPOSITORY                            TAG        IMAGE ID        CRE
ATED              SIZE
ubuntu                                latest     dd6f76d9cc90    3 d
ays ago           122MB
hello-world                           latest     725dcfab7d63    3 d
ays ago           1.84kB
busybox                               latest     6ad733544a63    4 d
ays ago           1.13MB
skertz/webui                          1.1        28886391a687    2 m
onths ago         214MB
skertz/rng                            1.1        370f475fd922    2 m
onths ago         99.4MB
skertz/my-centos                      1.0        a48a1e2af1ae    2 m
onths ago         357MB
training/docker-fundamentals-image    latest     6c614c124232    3 y
ears ago          835MB
buntu@ubuntu:~$ sudo docker run -it ubuntu /bin/bash
root@b8eb5b06648b:/# date
Tue Nov  7 22:11:02 UTC 2017
root@b8eb5b06648b:/# exit
exit
buntu@ubuntu:~$ date
Tue Nov  7 14:11:07 PST 2017
buntu@ubuntu:~$
```

RESULT OF COMMANDS WHILE CONTAINER STILL RUNNING AND I'M IN ANOTHER TERMINAL

```
buntu@ubuntu:~$ sudo docker info
[sudo] password for buntu:
Containers: 11
 Running: 1
 Paused: 0
 Stopped: 10
Images: 7
Server Version: 17.10.0-ce
Storage Driver: aufs
 Root Dir: /var/lib/docker/aufs
 Backing Filesystem: extfs
 Dirs: 55
 Dirperm1 Supported: true
Logging Driver: json-file
Cgroup Driver: cgroupfs
Plugins:
 Volume: local
 Network: bridge host macvlan null overlay
 Log: awslogs fluentd gcplogs gelf journald json-file logentries splunk
syslog
Swarm: inactive
Runtimes: runc
Default Runtime: runc
Init Binary: docker-init
containerd version: 06b9cb35161009dcb7123345749fef02f7cea8e0
runc version: 0351df1c5a66838d0c392b4ac4cf9450de844e2d
init version: 949e6fa
Security Options:
 apparmor
```

```
 seccomp
  Profile: default
Kernel Version: 4.10.0-28-generic
Operating System: Ubuntu 16.04.3 LTS
OSType: linux
Architecture: x86_64
CPUs: 1
Total Memory: 971.6MiB
Name: ubuntu
ID: DRU3:5JAS:JXZ5:6XDN:RL3Z:7TCV:QDSQ:3LKR:SCKL:Y54U:IFBH:BH67
Docker Root Dir: /var/lib/docker
Debug Mode (client): false
Debug Mode (server): false
Username: skertz
Registry: https://index.docker.io/v1/
Experimental: false
Insecure Registries:
 127.0.0.0/8
Live Restore Enabled: false

WARNING: No swap limit support
```

```
buntu@ubuntu:~$ sudo docker images
REPOSITORY                          TAG           IMAGE ID
CREATED            SIZE
ubuntu                              latest        dd6f76d9cc90
3 days ago         122MB
hello-world                         latest        725dcfab7d63
3 days ago         1.84kB
busybox                             latest        6ad733544a63
4 days ago         1.13MB
skertz/webui                        1.1           28886391a687
2 months ago       214MB
skertz/rng                          1.1           370f475fd922
2 months ago       99.4MB
skertz/my-centos                    1.0           a48a1e2af1ae
2 months ago       357MB
training/docker-fundamentals-image  latest        6c614c124232
3 years ago        835MB
```

```
buntu@ubuntu:~$ sudo docker ps
CONTAINER ID        IMAGE           COMMAND             CREATED
STATUS              PORTS           NAMES
3d997734dbe2        ubuntu          "/bin/bash"         2 minutes
ago        Up 2 minutes                        wizardly_leavitt
buntu@ubuntu:~$
```

The /var/lib/docker directory is where each container resides and its local storage

SUBMISSION INSTRUCTIONS:

Your main submission should be a MS Word or PDF document containing descriptions of your action while configuring Azure services. If your MS Word document is larger than 1 MB, save it as a MINIMIZED PDF. Please be merciful and capture small JPGs. Describe the purpose of every action and the significance of the results. Start with the text of this homework assignment as the template. Please add any other files that you might have used or generated. Please write your solution as if you are writing a tutorial for your colleagues. Please make your text readable. Make sure that your fonts, especially in captured images are not unreadable. Please do not provide ZIP or RAR or any other archives. Canvas cannot open those archives and they turn into a nuisance for us.