Azure Tutorial

• Outline
• 1. Setup Azure & Gitlab accounts
• 2. Deployment virtual machines in the cloud
• 3. SSH into a server VM and install memcached and memtier
How to get a voucher for Azure.. (I)

• Create a gitlab repository on gitlab.ethz.ch (not gitlab.vis.ethz.ch)
• Name it “asl-fall19-project” and give us access to it
How to get a voucher for Azure.. (II)

• Have a Microsoft account: One that you can log in to Azure
• Send you Microsoft account email to the course mailing list
• In the Azure Education Hub, take the credit assigned to you

Azure Education Hub: https://aka.ms/startEdu
Go to your outlook email...

Accept your Azure lab assignment

You have a pending lab assignment. Please accept your assignment to get started with your course.

Accept lab assignment >

This email is generated from an unmonitored alias; please do not reply. If you have questions, please submit a request.
Go to Education Hub: https://aka.ms/startEdu

You should see an invite to a new lab.
After the lab is setup switch to the “Courses” tab. You should see a class (ASL)
In the Lab tab you will see the Project Handout aka Subscription ID
Azure Tutorial

• Outline
  • 1. Setup Azure & Gitlab accounts → Done!
  • 2. Deployment virtual machines in the cloud
  • 3. Connect to VM and prepare environment
Deploying using a custom template (go to “Deploy a custom template” tab)
Deploying using a custom template (select “Build your own template in the editor”)
Deploying using a custom template (load provided json template, then “Save”)
Deploying using a custom template

Step 1 - create a new resource group

Step 2 - provide a public ssh key

Step 3 - Purchase
Check the “Resource groups” tab...
Looking into a specific Virtual Machine...

Your instances consume cloud resources even when not being used! Stop all the time after using them!

Private IP, useful for memtier

DNS name, useful for SSH
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Example script to setup virtual machines...

```bash
#!/bin/bash

sudo apt-get update
sudo apt-get -y install memcached git unzip ant openjdk-8-jdk build-essential autoconf
automake libpcre3-dev libevent-dev pkg-config zlib1g-dev
wget https://github.com/RedisLabs/memtier_benchmark/archive/master.zip
unzip master.zip
cd memtier_benchmark-master
autoreconf -ivf
./configure
make
sudo service memcached stop
```
Example script for starting memtier_benchmark

#!/bin/bash

tag=$1
server=$2 # private server IP address!
nclient=$3
nthread=$4
msize=$5
ratio=$6

ssh azureuser@<dns name>
~/memtier_benchmark-master/memtier_benchmark \
    --port=11211 \
    --protocol=memcache_text \
    --ratio=$ratio \
    --hide-histogram \
    --expiry-range=9999-10000 \
    --key-maximum=1000 \
    --server=$server \
    --test-time=60 \
    --clients=$nclient \
    --threads=$nthread \
    --data-size=$msize \
    --out-file=$tag &> log &
Example steps for starting memcached

Step 1 - use the correct flags (suggestion, edit directly /etc/memcached.conf):
   -d
   logfile /var/log/memcached.log
   -m 64
   -t 1
   -p 11211
   -u memcache

Step 2 – launch service

   #!/bin/bash
   ssh azureuser@<dns name> "sudo service memcached restart"
Pieces of advice...

- use azure cli for starting and stopping all virtual machines
  https://github.com/Azure/azure-cli
  https://www.attosol.com/start-or-stop-all-vms-of-a-resource-group-in-azure/

- read carefully the project description and report outline (will be out soon)
  → before starting your experiments, install all the necessary code instrumentation

- script everything...
  For each message size...
    For each client number...
      Launch Experiment
      Collect results

- For each experiment you need to populate memcached...
  → except when you have another experiment with the same value size