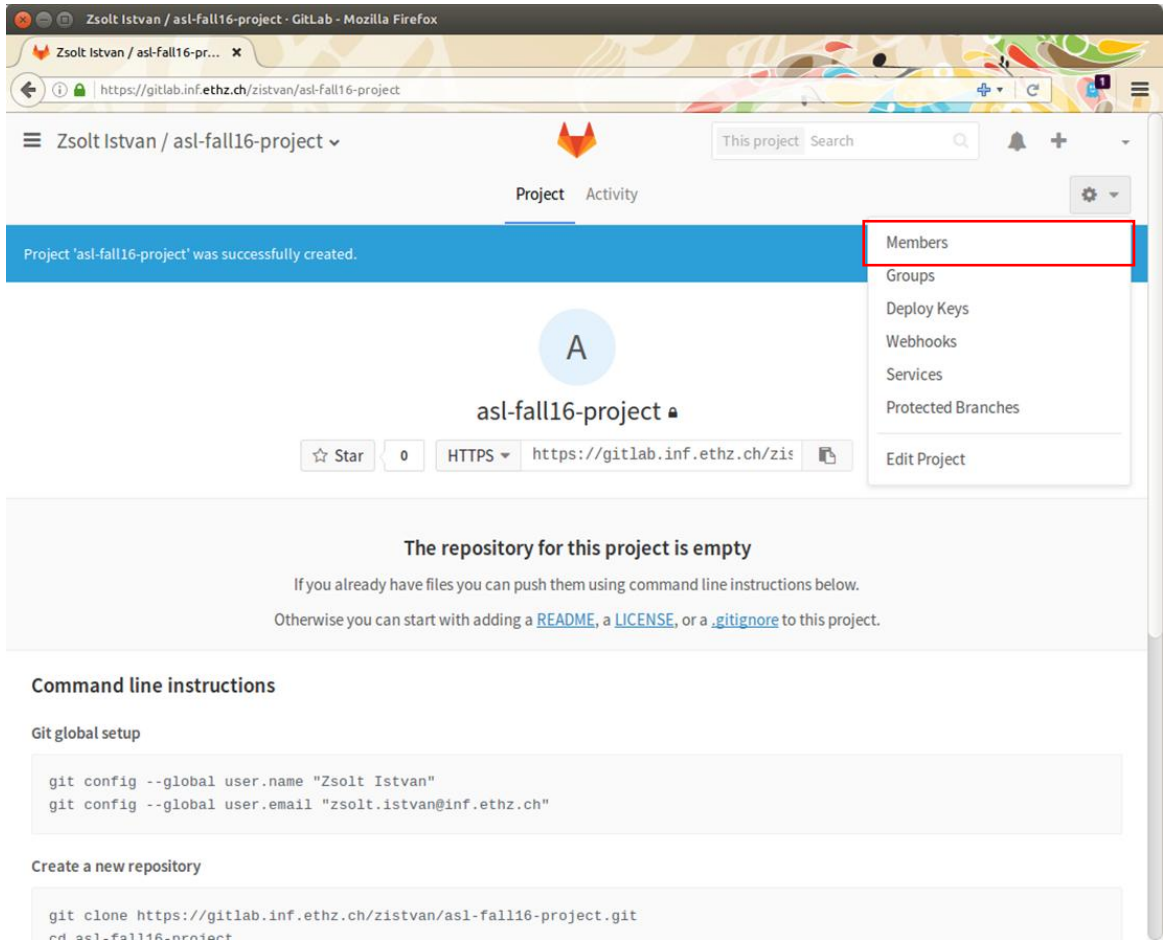
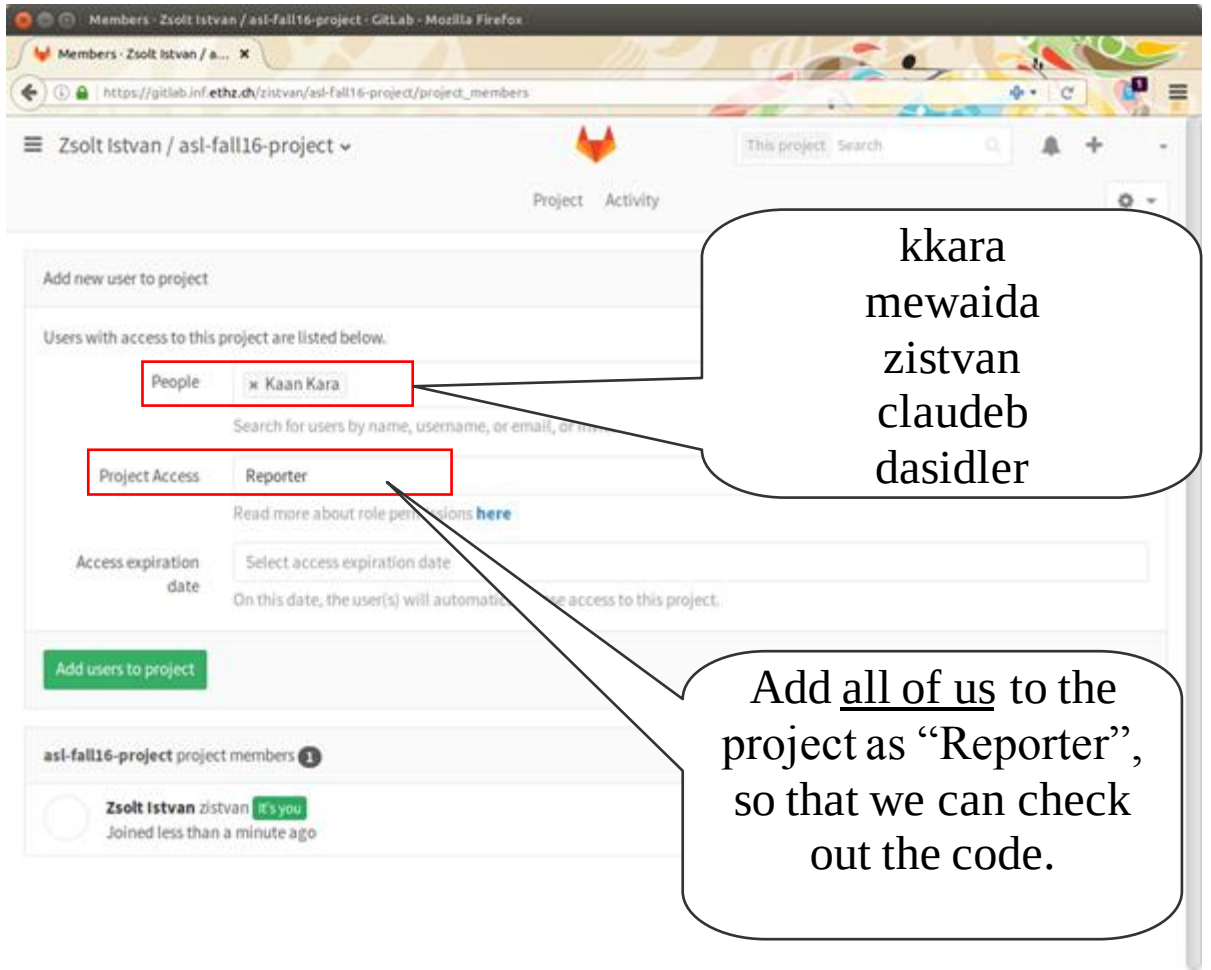
What you should have done so far…

- Check if you have a gitlab repository (gitlab.inf.ethz.ch) -- if not, email your TA!
- Give us TAs access to it:



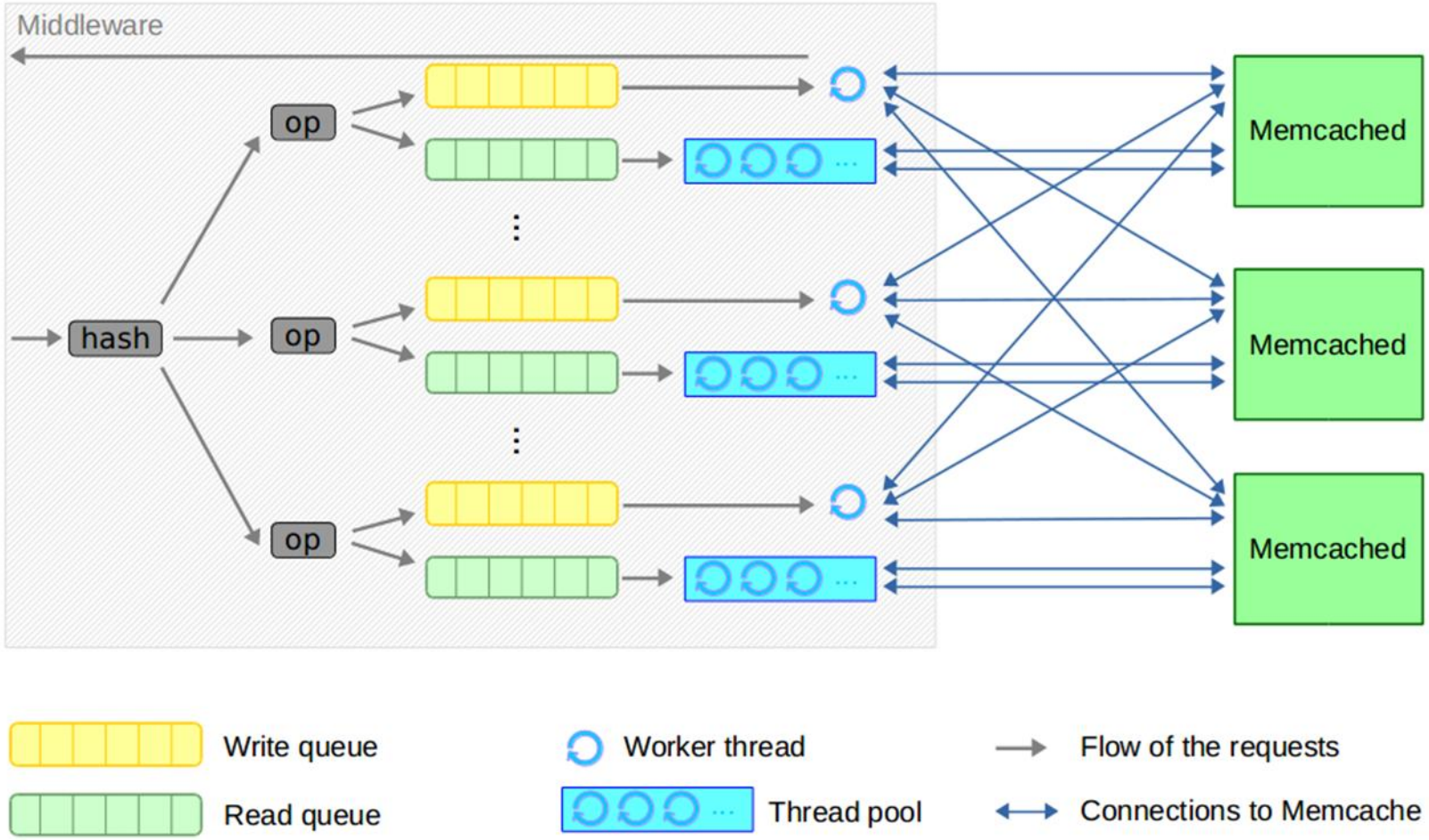


What you should have done so far…

- Have a Microsoft account: One that you can log in to Azure.
- Send us that email address and you nethz ID.
- You will get an Azure voucher from your TA.

What you should have done so far…

- Understand what you need to implement for the first milestone.



FAQ

- Are we allowed to use memcached client libraries in our middleware?
  - No external memcached client libraries allowed in your middleware.
- Do we need to implement the binary protocol?
  - Do not implement the binary protocol. Just look at the ASCII specification.
- Do we need to implement the multi-get?
  - Do not implement multi-get. All operations use only a single key.
- The keys generated by memaslap has some non ASCII characters. Why?
  - The key generated by memaslap might have some characters that are not in ASCII. That is fine. Just forward what you get to the servers.

Remarks

- The latex template for the first milestone has changed. Please download the recent version from the webpage: http://systems.ethz.ch/courses/fall2016/asl

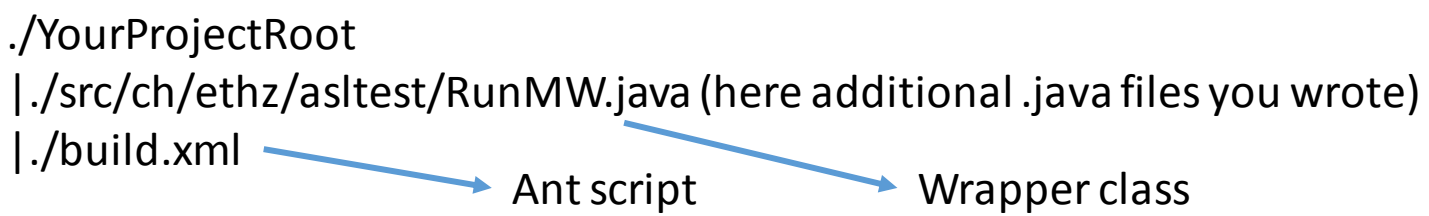
- For memaslap use the command below **as default way** of starting experiments. If you want to change parameters make sure you explain it in the report.

$ ./clients/memaslap –s ip_of_server_vm:11212 –T 64 –c 64 –o1 –S 1s –t <runtime> **–F <path/to/configfile>**

- We provided on the website a set of workload files. Start by default with the **small workload (16B key, 128B value, 1% writes)**

What you should do this week…

- Set up your development environment:
  - Recommended IDE: Eclipse. Use it during development to debug.
  - End build: Ant. We will provide a script and a wrapper class.



To build:

1. Install ant: $ sudo apt-get install ant
2. $ cd /path/to/YourProjectRoot/
3. Open build.xml. Replace YOURETHZID with your ethz ID. Save.
4. $ ant

To run:

$ java –jar ./dist/middleware-${nethzid}.jar [options]

What you should do this week…

- Take a look at the wrapper RunMW.java
- Options:
  1. -l <MyIP>: External IP of the middleware VM.
  2. -p <MyListenPort>: Port that the middleware listens to.
  3. -t <NumberOfThreadsInPools>
  4. -r <WriteToThisManyServers>: Replication strategy (1: No replication)
  5. -m <MemcachedIP:Port> <MemcachedIP2:Port2> …

- You have to use this wrapper!
- And, start with development if you haven't already done so.

Azure Tutorial

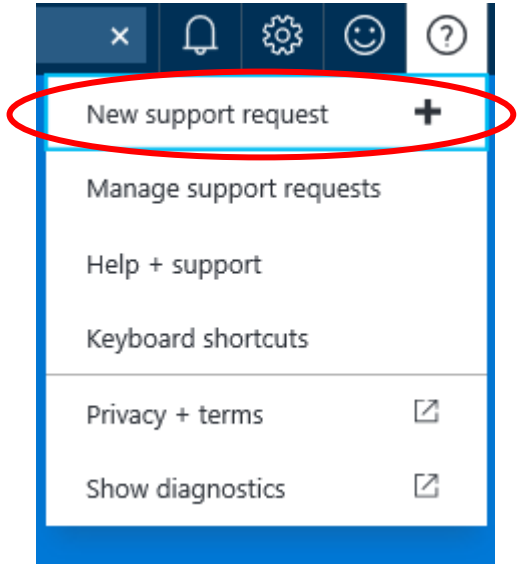
- Accepting the voucher and logging in
- Use the template script provided to create VMs
- SSH into a server VM and install memcached
- SSH into a client VM and install memaslap
- Run a baseline experiment

Validate the voucher and log in to portal

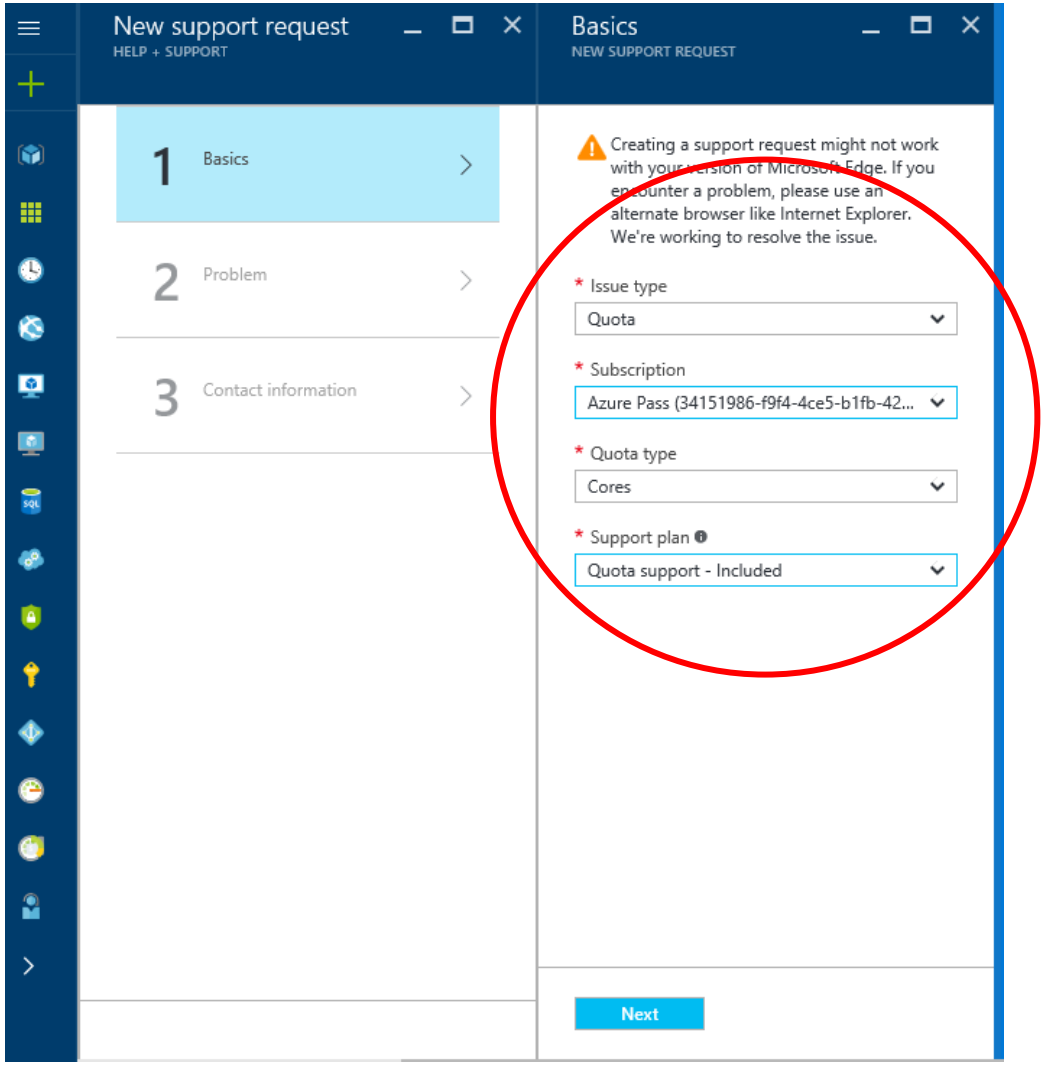
- Go to: https://www.microsoftazurepass.com/
- Select country: Switzerland
- Put the voucher code and click submit
- Log in to portal.azure.com
- Under subscriptions you should see your Azure Pass
- Check usage to see how much money you have left
- 85 Euros/month should be more than enough, if you just create the VMs we provide in the template

Submit a request to raise core quota

1.

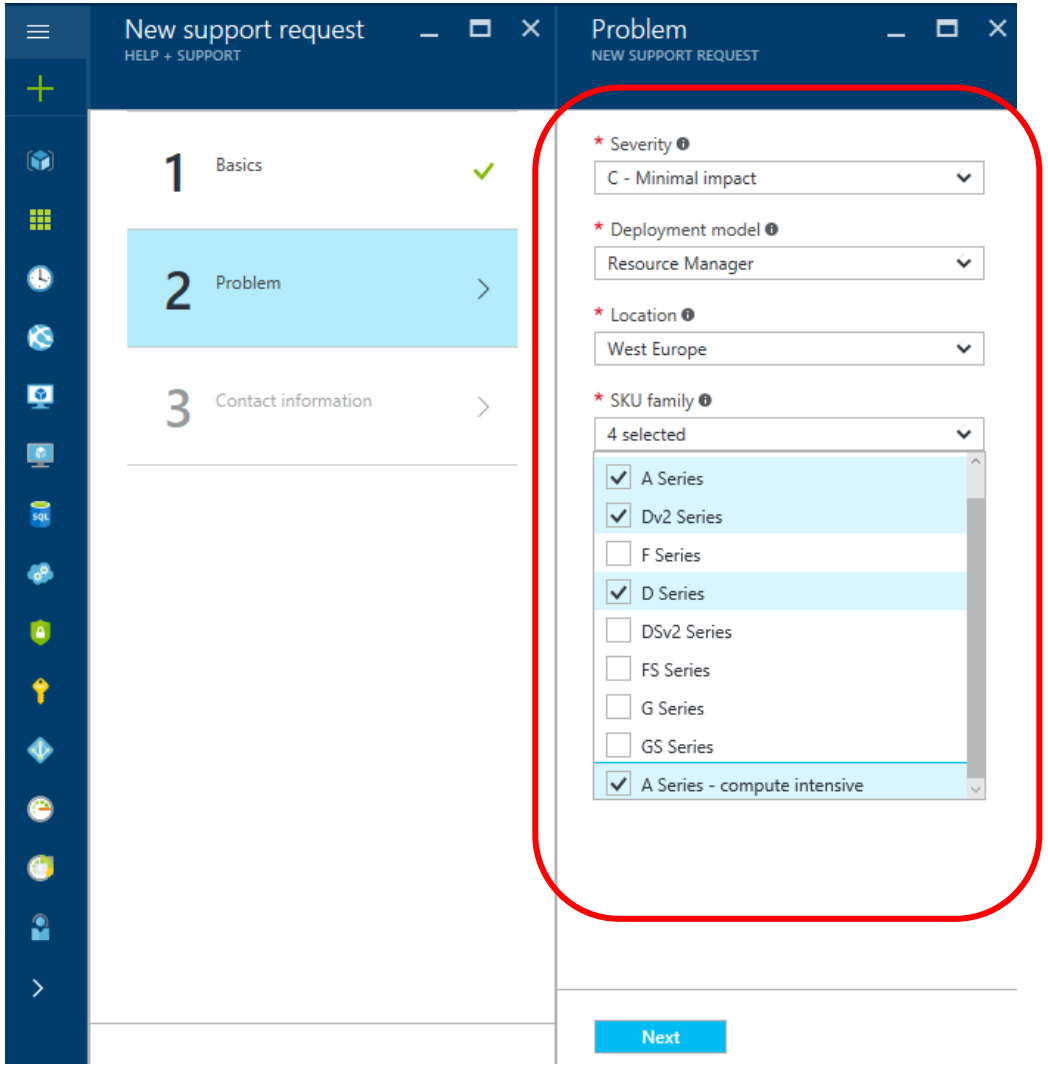


2.

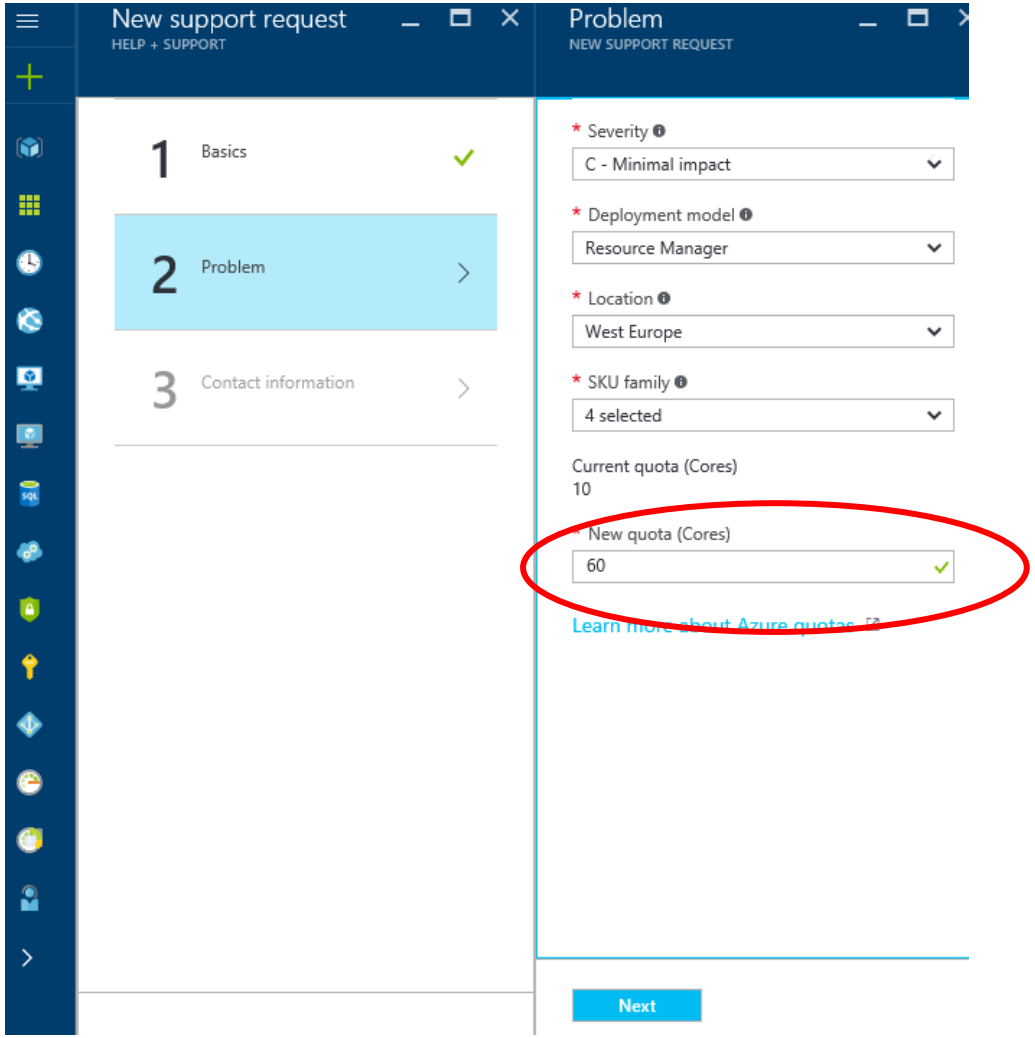


Submit a request to raise core quota

3.



4.



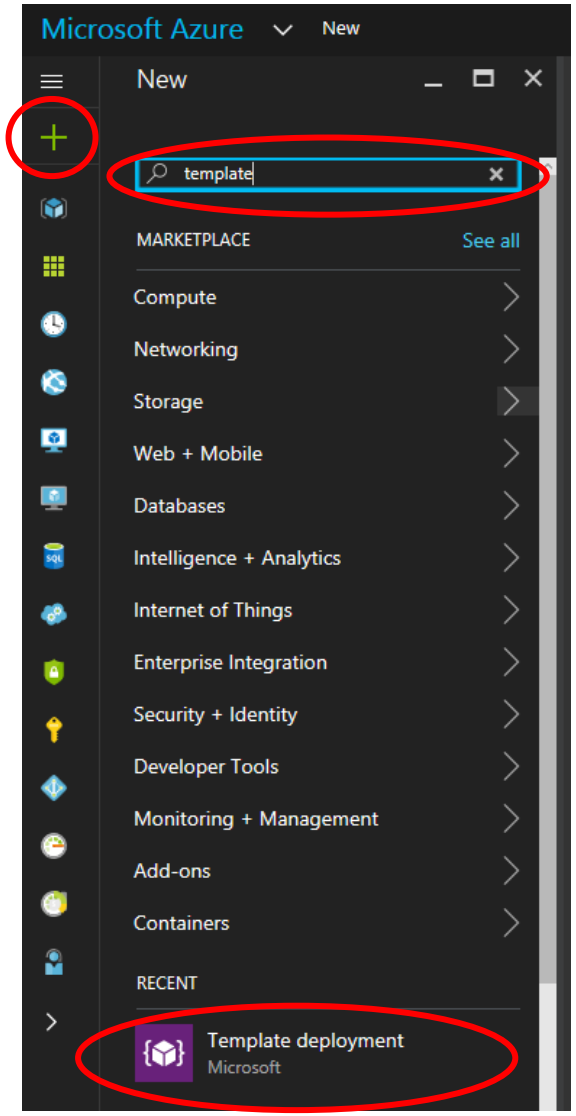
5. Then, fill in the contact info and create the request.

Use the template to create VMs

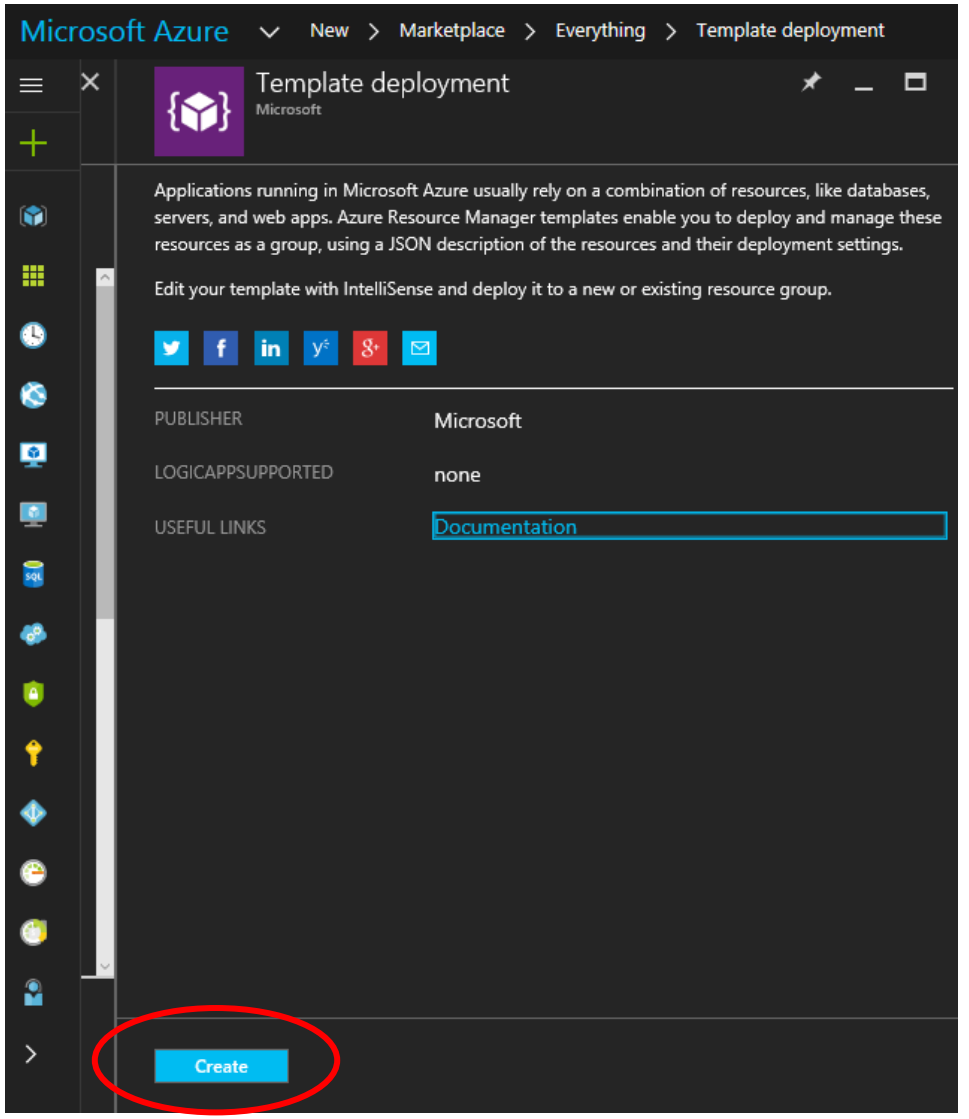
1. Launch Template Deployment on Azure.
2. Name for the VMs, network interface, vnet already given.
3. Generate a public SSH key and copy it to the template.
4. Put in your nethz (it will be used as unique DNS name and admin username).
5. Give an admin password.
6. Start deployment.

Use the template to create VMs

1.

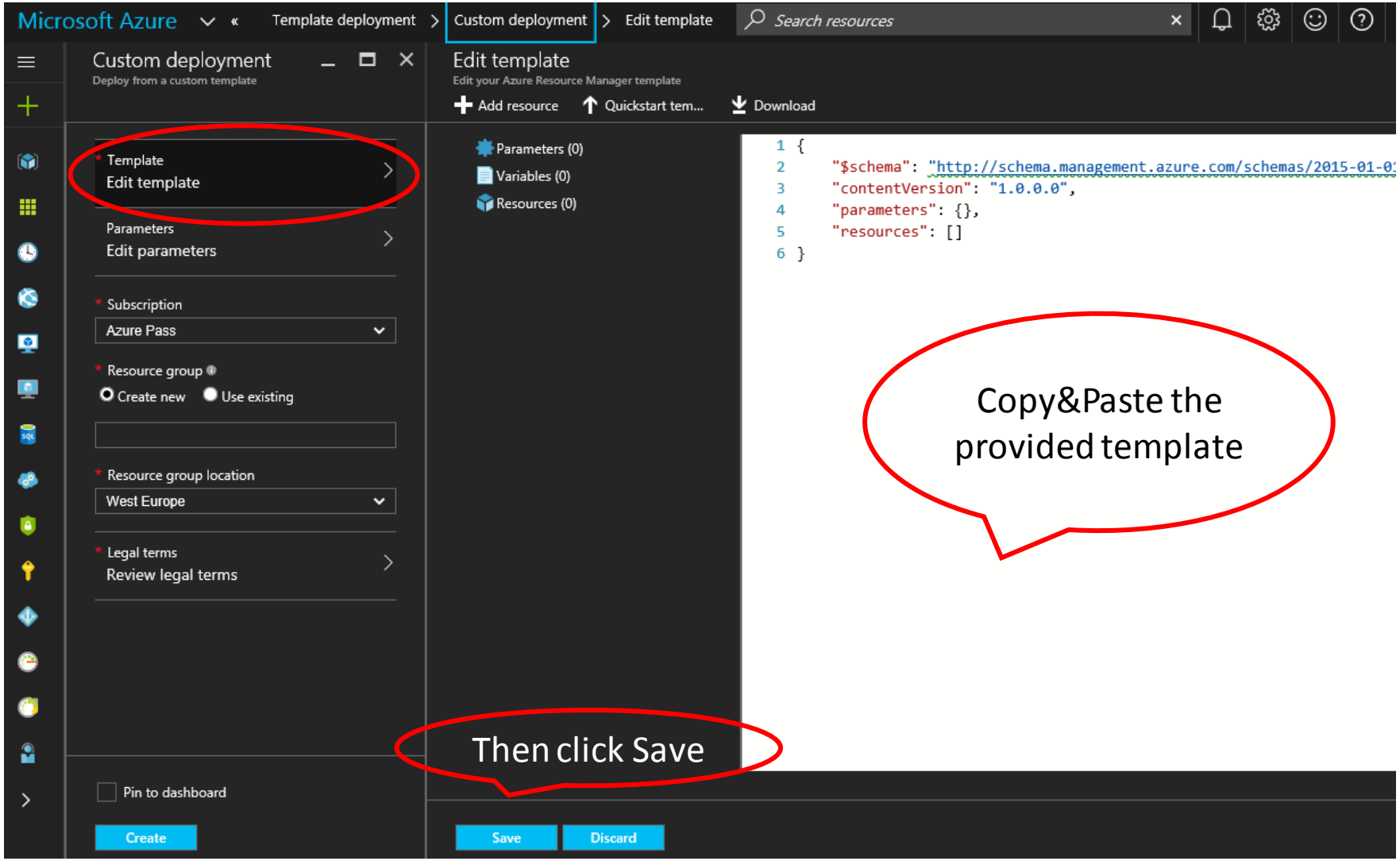


2.



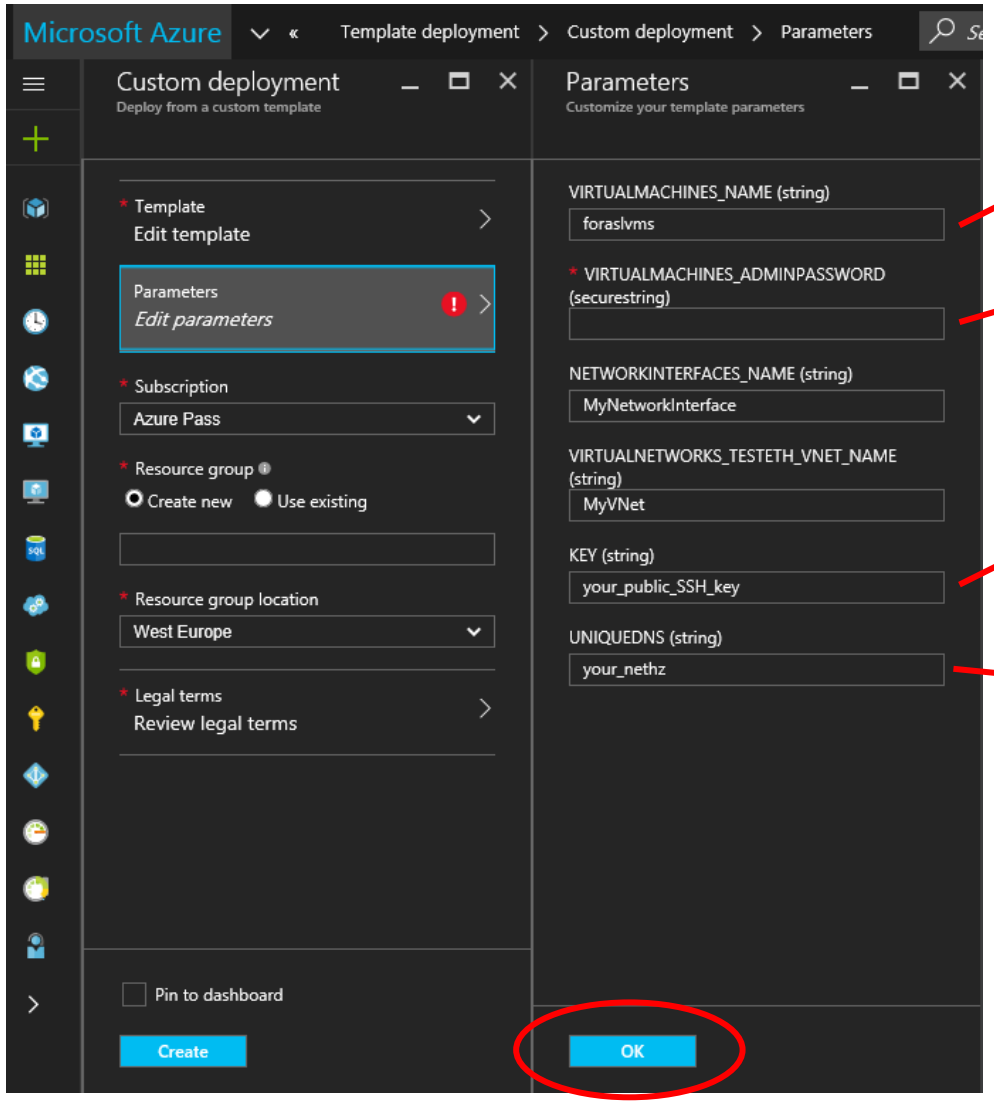
Use the template to create VMs

3.



Use the template to create VMs

4.



Name your VMs, however you want
BUT small case letters!

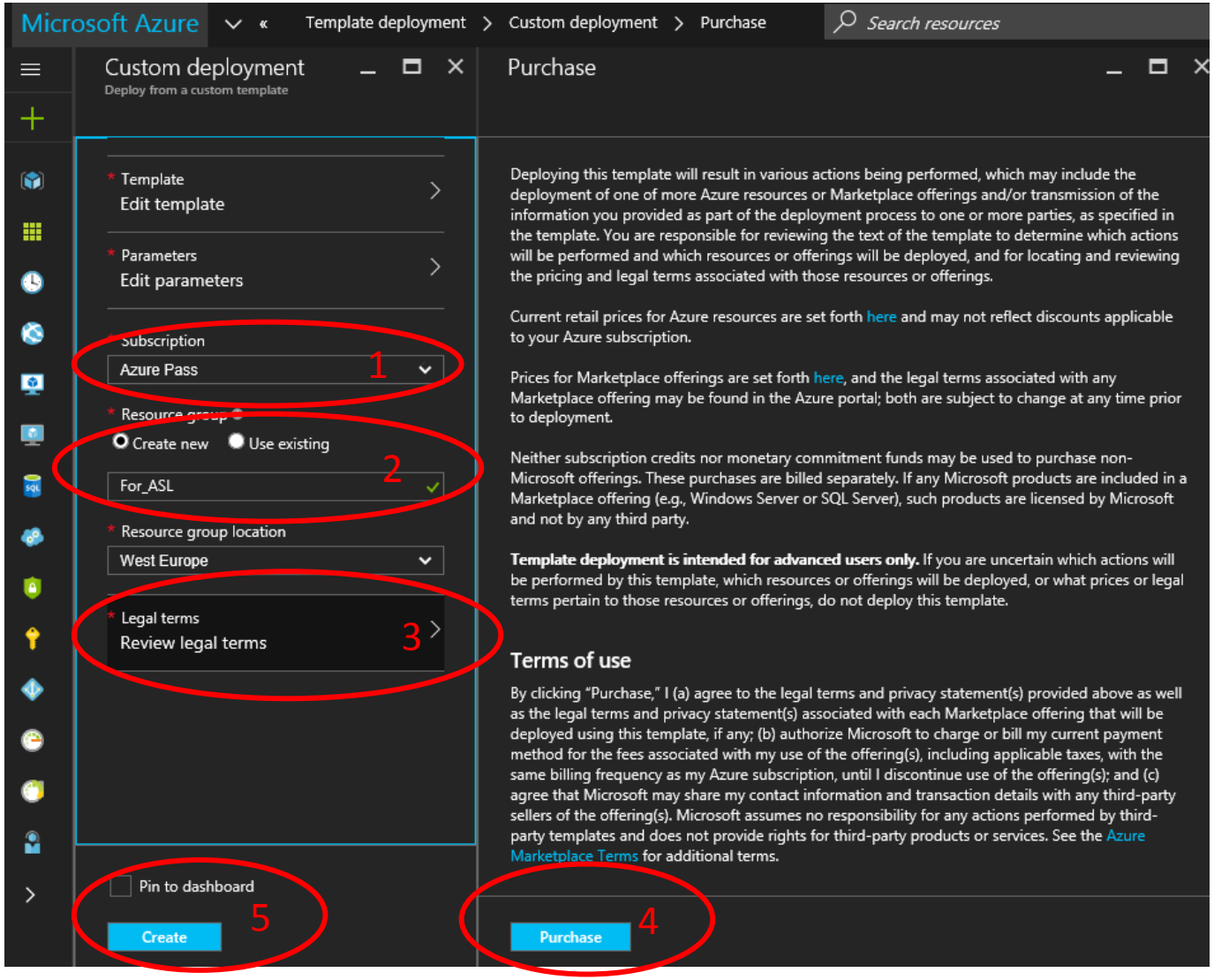
Give a password for the local admin
(You will use it for sudo on the VM later on)

Generate an SSH key and copy the public key here. See
https://gitlab.inf.ethz.ch/help/ssh/README

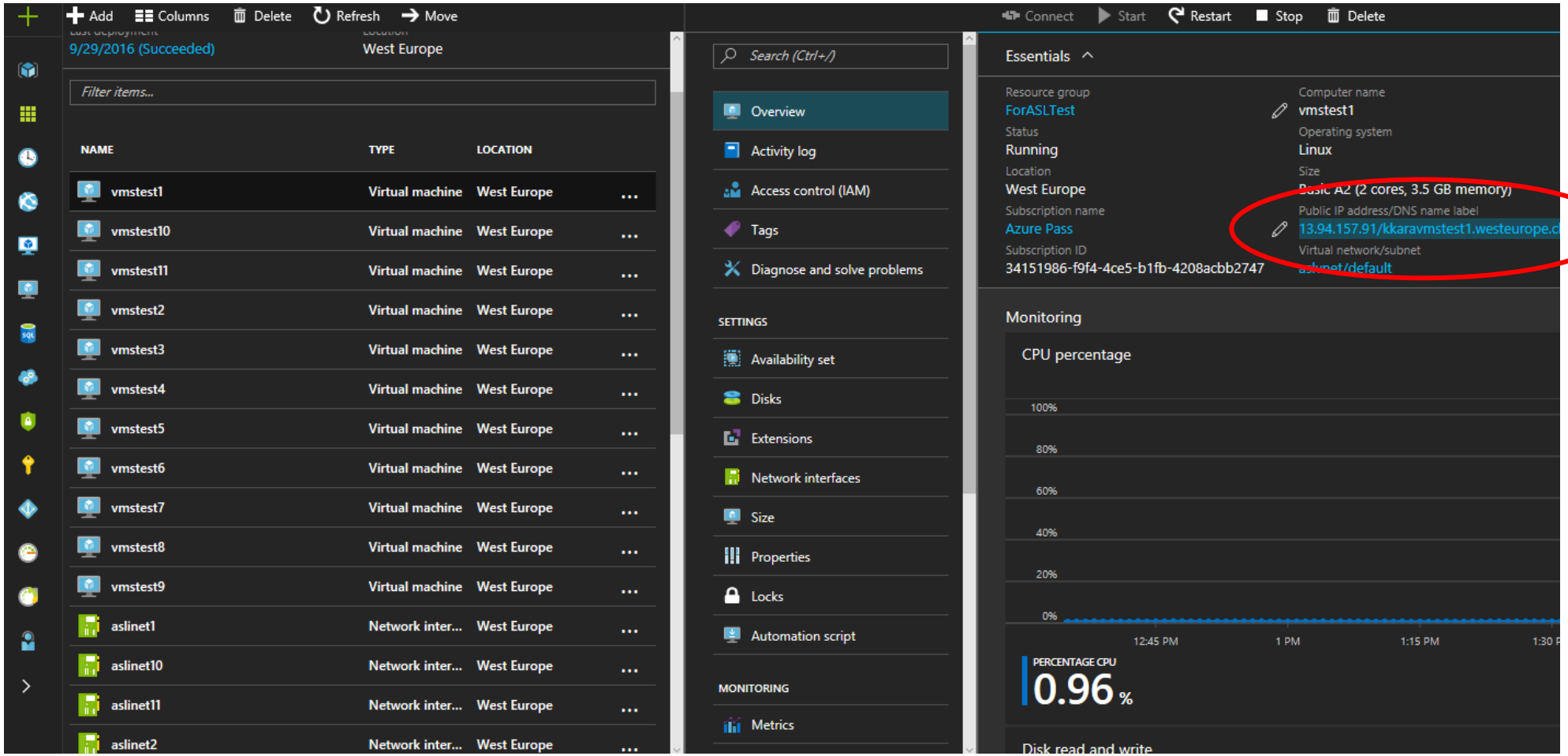
Your ETHZ_ID

Use the template to create VMs

5.



After you have created the VMs…



Use the hostname or the public IP to ssh into the VM

SSH into a server VM (choose one of Basic_A2)

- ssh your_nethz@hostname_of_vm
- sudo apt-get update
- sudo apt-get install build-essential libevent-dev memcached
- memcached –p 11212 –t 1

Starts memcached on port 11212

SSH into a client VM (choose one of Basic_A2)

- ssh your_nethz@hostname_of_vm
- sudo apt-get update
- sudo apt-get install build-essential libevent-dev
- wget https://Launchpad.net/libmemcached/1.0/1.0.18/+download/libmemcached-1.0.18.tar.gz
- tar xvf libmemcached-1.0.18.tar.gz
- cd libmemcached-1.0.18
- export LDFLAGS=-lpthread
- ./configure --enable-memaslap && make clients/memaslap
- ./clients/memaslap –s ip_of_server_vm:11212 –T 64 –c 64 –o1 –S 1s –t 1s

Attention!: This is the private IP of the VM. (e.g. 10.0.0.X)

Starts memaslap

SSH into the middleware VM (choose one of Basic_A4)

- ssh your_nethz@hostname_of_vm
- sudo apt-get update
- sudo apt-get openjdk-7-jre
- (If you want to build on the VM) sudo apt-get openjdk-7-jdk ant