

Fault tolerance with AWS CLI, EC2 and S3

(max 15 points)

In this homework, you need to create a fault tolerant store of files using EC2 the S3 services.

The homework must be uploaded to OLAT until Monday, **18.06.2018**, at **08:00**, and will be evaluated on 19th June!

Assignment:

Theoretical background

Please read the tutorial about AWS CLI for S3.

<https://docs.aws.amazon.com/cli/latest/reference/s3/#directory-and-s3-prefix-operations>

We simulate an application that runs on a single VM (VM1) and generates various data in files. In order to improve the fault tolerance, you need to create copies of each generated file to another VM (VM2) and to S3. In order to improve the performance later, you need to measure the file transfer time between VM-S3, S3-VM and VM-VM and determine which procedure is faster (directly VM1-VM2 or VM1-S3-VM2).

Practical task.

Develop a single AWS CLI script that will be executed from a local machine, which will:

- a) From your local machine, start a VM (VM1) of type t2.micro using already created access keys and security group (SSH).
- b) Create files with various size in VM1 (F1 - 1KB, F2 - 10KB, F3 - 100KB, F4 - 1MB, F5 - 10MB) (3)
- c) Store all these files in S3 (copy VM1->S3) (2)

Choose either d) or e)

- d) From VM1, start a new VM (VM2) in EC2 (3)
- e) From local machine, start a new VM (VM2) in EC2
- f) Copy files from VM1 to VM2 (copy S3->VM) (2)
- g) Copy files from S3 to VM2 (2)
- h) Measure all three times for each file and write back the results to the local machine (3)

Demonstrate that your script works (created VMs, stored files in S3) and conclude which copy will be preferred (directly or through S3).