Berner Fachhochschule
Haute école spécialisée bernoise
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Connected Computing Block B - Infrastructure as Code (IaC) - LAB

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IaC LAB

- **You will get a personal AWS Account for your user**
- **For the following lab us: terraform**
  - https://developer.hashicorp.com/terraform/tutorials/aws-get-started/install-cli

IaC LAB

- In this lab, you will use Terraform to build a small, event-driven infrastructure in your own isolated AWS account. You'll define and deploy a Lambda function that writes incoming payloads to an S3 bucket. You will also set up a remote backend in S3 to store your Terraform state, ensuring reproducibility and team readiness.

- The goal of the exercise is to practice infrastructure as code (IaC) principles, understand IAM boundaries, and gain hands-on experience with real-world AWS services — all fully automated and deployed by you.

- You are expected to destroy and re-apply your infrastructure using Terraform, then validate that the Lambda works as expected via manual invocation with a test payload.

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- Use your assigned AWS account (studentXX) via AWS SSO
- Everything must be deployed via **Terraform** in region eu-central-1
- Configure **S3 backend** for Terraform using bucket: cc-bfh-studentXX-tf-state

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- Deploy the following:
  - S3 bucket: cc-bfh-studentXX-result (to store Lambda output)
  - Lambda function: cc-bfh-studentXX-lambda
  - IAM role for Lambda with permissions for the task
  - All resources must be tagged:
    - **Owner: studentXX**
    - **Project: iac-lab**
- Your Lambda must:
  - Be written in Python
  - Accept a JSON payload with filename and filetext
  - Write a file to your result bucket using that filename and content
  - Trigger Lambda using aws lambda invoke with your profile (--profile studentXX)

IaC LAB

- Lambda payload example:

```
{
  "filename": "example.txt",
  "filetext": "This is a test"
}
```

IaC LAB

- Same groups as for the AWS LAB
- The infrastructure is deployed with TF in your personal account: 1 point (individual)
- The lambda is deployed with TF, is working in your personal account: 1 point (individual)
- Terraform destroy/apply is removing and (re)creating all the infrastructure in your account: 1 point (individual)
- The terraform code and lambda code is **clean, functional, and follows best practices (resource names, structure, variables, no permission escalations.) and ready to use:** 2 points (group)
  - One of you must deliver to code in Moodle, please add your names in a comment
  - Your code will be used for the grading
- Total 5/5

- -> Code deliveries on Moodle