SAO - AWS Lab Setup

About
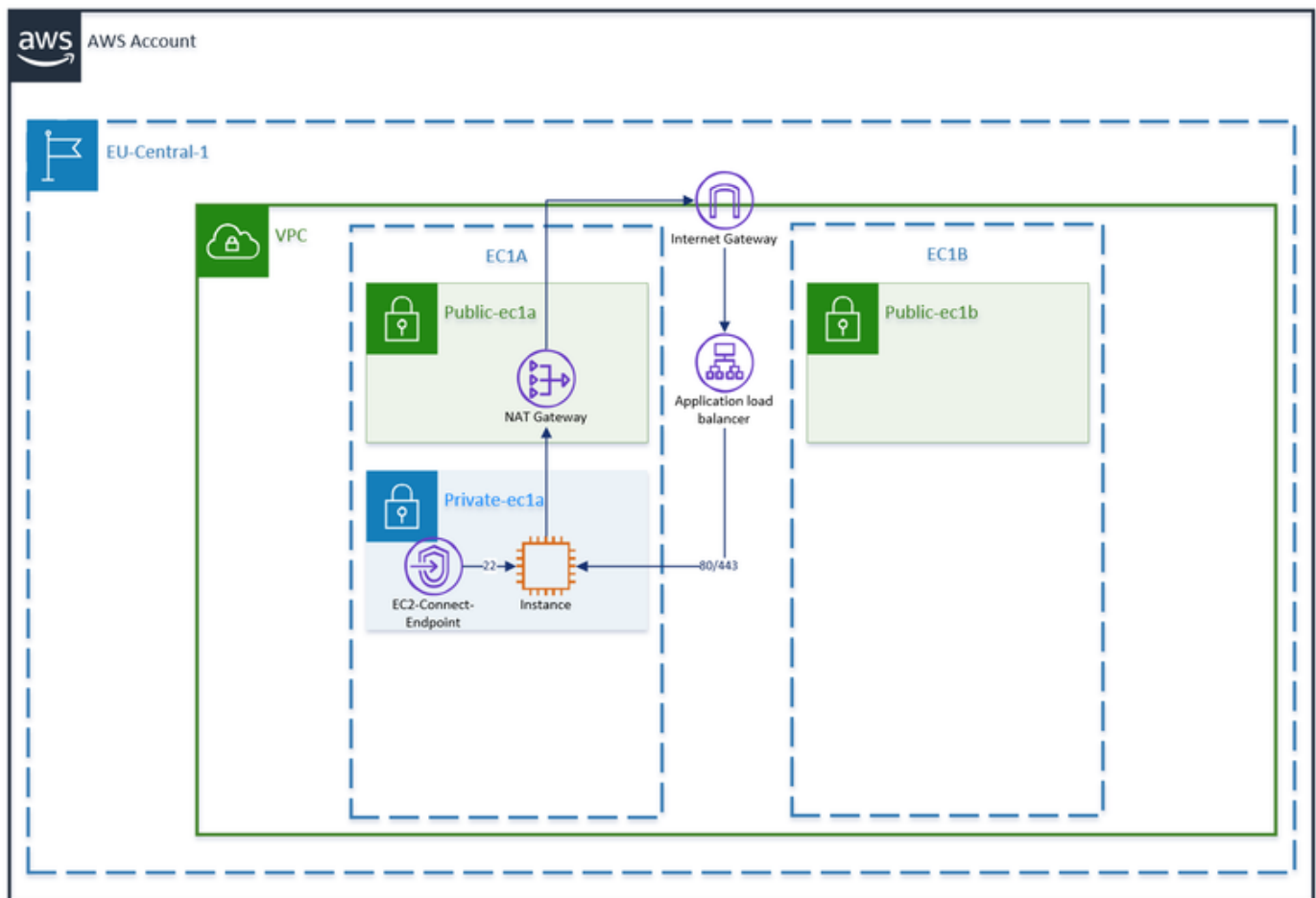
Documented list of changes and setup related to SAO activities.

`https://calculator.aws/#/estimate?id=9535abc257bf4f6887880594431c34f9498b42ec`

Setup

All non-global services configured with Frankfurt (EU-Central-1) set as region.

Simplified Diagram

Cloudtrail

Pricing: No cost in itself, cost on S3 storage

trail "management-events" configured. Storage to S3 bucket aws-cloudtrail-logs-310880924526-bf757d25

Config

Pricing: 0.001 USD/rule evaluation/region for first 100k rule evaluations. 0.003 USD/config item/region/month

Set up with 2 rules:

- mfa-enabled-for-iam-console-access
- root-account-mfa-enabled

VPC

Pricing: No cost in itself

Lab VPC - 10.0.10.0/24 - Frankfurt (eu-central-1)

Subnets

Pricing: No cost in itself

Name	CIDR	Route Table
Private-ec1a	10.0.10.0/27	MAIN
Public-ec1a	10.0.10.32/27	Lab-Public-RT
Public-ec1b	10.0.10.64/27	Lab-Public-RT

Internet Gateway

Pricing: No cost in itself

Lab-IGW

NAT Gateway

Pricing: 37.96 USD/month + 0.052USD /GB Traffic

NGW-ec1a - Public NATGW - Subnet: Public-ec1a

Route Tables

Pricing: No cost in itself

Lab-Private-RT (MAIN) - 0.0.0.0 NGW (to be configured)
Lab-Public-RT - 0.0.0.0 IGW

Endpoints

EIC Pricing: 0.0035USD/gb traffic

Name	Endpoint Type	Description
EC2-Connect-Endpoint	EC2 Instance Connect Endpoint	Endpoint used by EC2 Instance Connect Service to allow connection to instances without public IPs.

DNS + Certificate

Route 53 Hosted Zones

Pricing: 0.50 USD/zone/month

innlab.dzr.mk - Public Hosted Zone

Amazon Certificate Manager

Pricing: Public Certs are free

EC2

Encryption

EBS encryption set to "Always encrypt new EBS volumes" using default AWS managed key.

Security Groups

Pricing: No cost in itself

Name	Description	Openings
SG-ALB	Allows HTTP and HTTPS to load balancer from SAO and OAGN	80 and 443 from SAO and OAGN IPs
SG-WebServers	Allows traffic to webservers	80 and 443 from SG-ALB 22 from SG-InstanceConnect
SG-InstanceConnect	Assigned to EC2-Instance Connect Endpoint	

Elastic Load Balancing

Pricing: 19.71USD/month + 0.008USD/gb/hour

lab-alb - subnet Public-ec1a+Public-ec1b

Currently setup with listener on http port 80 forwarding to target group "Shiny-servers"

AWS DNS name: `lab-alb-152898206.eu-central-1.elb.amazonaws.com`

S3

Pricing: S3 Standard 0.0245 USD/GB Request price (per 1000 requests): PUT,COPY,POST,LIST 0.0054USD, GET,SELECT,other 0.000043USD

3 buckets set up with S3 Standard

- aws-cloudtrail-logs-310880924526-bf757d25
- config-bucket-310880924526
- app-config-310880924526

Billing

Budget

Monthly Budget - 1000 USD setup, adjusted to 200 USD as threshold.

Sends alerts to goran.poposki@dzr.gov.mk

Alerts sent at: Actual 85%, Forecasted 100% and Actual 100%.