

Homework_Lesson33_Report

- "1. Создайте Load Balancer в Amazon Web Services/GCP с использованием AWS CLI, terraform, python
2. Настройте маршрутизацию трафика для вашего приложения с использованием Elastic Load Balancer и Auto Scaling.
3. Используя Amazon Route 53/DuckDNS, зарегистрируйте доменное имя для вашего приложения (NGINX, Apache на выбор) и настройте DNS-записи для обеспечения его доступности в Интернете.
4. Получите сертификат и настройте работу вашего Apache/NGINX по зашифрованному соединению.
- 5.* Изучите документацию AWS по настройке маршрутизации трафика в Route 53 и настройте различные типы маршрутизации, такие как весовая маршрутизация, маршрутизация на основе геоположения и другие.
- 6.* Используйте AWS CLI для автоматизации настройки DNS-записей и маршрутизации трафика в Route 53.
7. Реализуйте функцию автоматического масштабирования для вашего приложения, используя Amazon EC2 Auto Scaling и Elastic Load Balancer/GCP Load Balancing. Масштабирование необходимо проверить и сделать скриншоты, которые бы показывали их применение

Запускаем конфиг терраформа.

```
PS C:\Users\Admin> cd D:\Terraform\Cloud3
PS D:\Terraform\Cloud3> terraform apply

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the
following symbols:
  + create

Terraform will perform the following actions:

# aws_autoscaling_group.app will be created
+ resource "aws_autoscaling_group" "app" {
  + arn                  = (known after apply)
  + availability_zones   = (known after apply)
  + default_cooldown     = (known after apply)
  + desired_capacity     = 2
  + force_delete         = true
  + force_delete_warm_pool = false
  + health_check_grace_period = 300
  + health_check_type    = "EC2"
  + id                  = (known after apply)
  + ignore_failed_scaling_activities = false
  + load_balancers       = (known after apply)
  + max_size             = 4
  + metrics_granularity  = "1Minute"
  + min_size            = 2
  + name                 = (known after apply)
  + name_prefix          = (known after apply)
  + predicted_capacity   = (known after apply)
  + protect_from_scale_in = false
  + service_linked_role_arn = (known after apply)
  + target_group_arns    = (known after apply)
  + vpc_zone_identifier  = (known after apply)
  + wait_for_capacity_timeout = "0"
  + warm_pool_size       = (known after apply)

  + availability_zone_distribution (known after apply)

  + launch_template {
    + id      = (known after apply)
    + name    = (known after apply)
    + version = "$Latest"
  }

  + mixed_instances_policy (known after apply)

  + tag {
    + key          = "Name"
    + propagate_at_launch = true
    + value        = "nginx"
  }

  + traffic_source (known after apply)
}

# aws_internet_gateway.my_internet_gateway will be created
+ resource "aws_internet_gateway" "my_internet_gateway" {
```

Наш созданный Load balancer.

app-load-balancer

app-load-balancer

▼ Details

Load balancer type

Application

Scheme

Internet-facing

Status

Active

Hosted zone

Z215JVRZR1TBD5

VPC

vpc-071817b99360866b0

Availability Zones

subnet-035fba0beeb0e4f4 eu-central-1a (eu1-az2)
subnet-0c4fe2d9d88cf3a87 eu-central-1b (eu1-az3)

Load balancer IP address type

IPv4

Date created

March 12, 2025, 11:06 (UTC+03:00)

Load balancer ARN

arn:aws:elasticloadbalancing:eu-central-1:529088282556:loadbalancer/app/app-load-balancer/5f979076e21e87

DNS name

app-load-balancer-1426116505.eu-central-1.elb.amazonaws.com (A Record)

Listeners and rules

Network mapping

Resource map

Security

Monitoring

Integrations

Attributes

Capacity

Tags

Resource map

View, explore, and troubleshoot your load balancer's architecture.

Overview

Unhealthy target map

Show resource details

app-load-balancer

Last fetched seconds ago

Listeners (1)

HTTP:80

1 rule

Rules (1)

Priority default

Forward to target group

Conditions (if)

If no other rule applies

Target groups (1)

Instance

app-target-group

2 targets

2 0 0 0 0 0

Targets (2)

i-0b0d0b068346b9df9

Port 80

Healthy

i-0cfd57f576791c7f

Port 80

Healthy

Созданная Auto scaling groups. Минимальное количество истесав 2, максимальное количество 4.

terraform-20250312080657004000000004

terraform-20250312080657004000000004 Capacity overview

Edit

am:aws:autoScaling:eu-central-1:529088282556:autoScalingGroup:4c892389-2d97-4706-bcab-6c6920ae3098:autoScalingGroupName/terraform-20250312080657004000000004

Desired capacity 2	Scaling limits (Min - Max) 2 - 4	Desired capacity type Units (number of instances)	Status -
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Date created
Wed Mar 12 2025 11:06:57 GMT+0300 (Москва, стандартное время)

Details

Integrations · new

Automatic scaling

Instance management

Instance refresh

Activity

Monitoring

Instances (2)

Filter instances

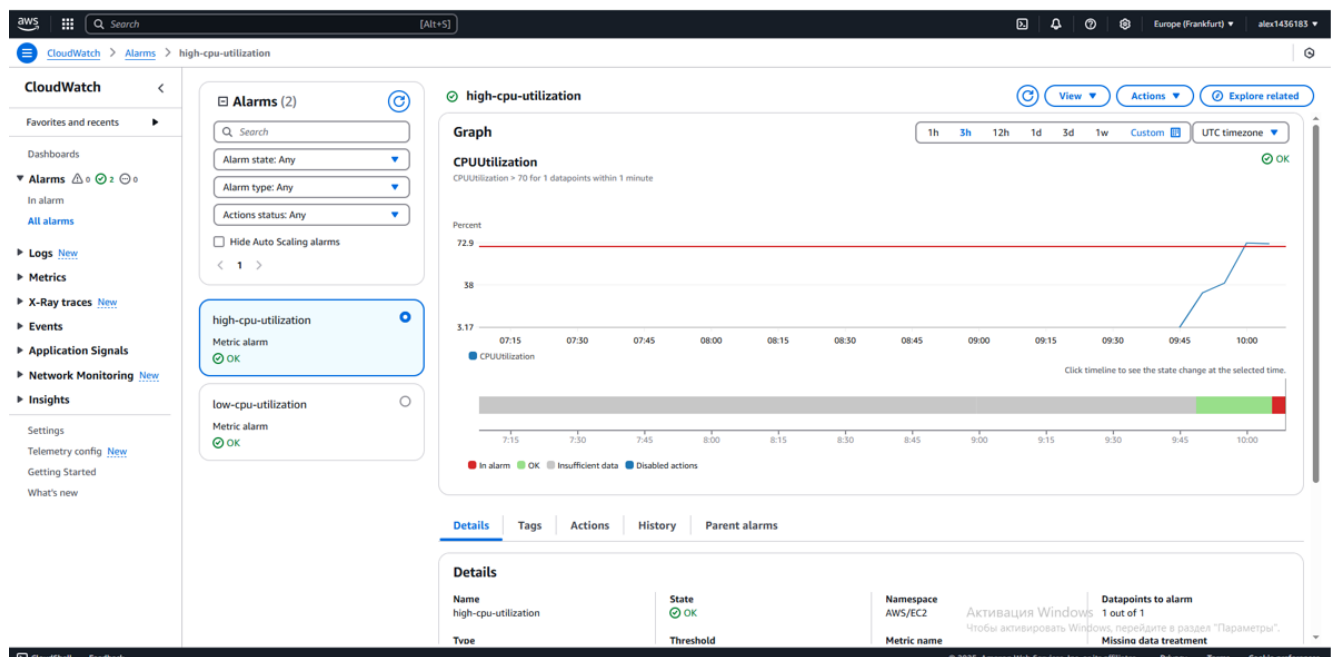
<input type="checkbox"/>	Instance ID ▲	Lifecycle ▼	Instance type ▼	Weighted capacity ▼	Launch templ... ▼	Availability Zone ▼	Health status ▼	Protected from ▼
<input type="checkbox"/>	i-0b0d0b068346b9df9 ↗	InService	t2.micro	-	app-launch-template-20;	eu-central-1a	✔ Healthy	
<input type="checkbox"/>	i-0cfdf57f576791c7f ↗	InService	t2.micro	-	app-launch-template-20;	eu-central-1b	✔ Healthy	

Lifecycle hooks (0) Info

Filter lifecycle hooks

<input type="checkbox"/>	Name ▲	Lifecycle transition ▼	Default result ▼	Heartbeat timeout (seconds) ▼	Notification target ARN ▼	Role ARN ▼
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Загрузим наши сри на одном из наших инстансов.



В итоге у нас теперь 3 инстенса.

Instances (1/8) [Info](#)

Find instance by attribute or tag (case-sensitive) All states ▾

Last updated less than a minute ago Connect Instance state ▾ Actions ▾ Launch instances ▾

	Name ↗	Instance ID	Instance state ↗	Instance type ↗	Status check	Alarm status	Availability Zone ↗	Public IPv4 DNS ↗	Public IPv4 ...	Elastic IP
<input checked="" type="checkbox"/>	nginx	i-0c580927f90ed05f5	Running ↗ ↗	t2.micro	2/2 checks passed	View alarms +	eu-central-1a	ec2-3-67-12-195.eu-ec...	3.67.12.195	-
<input type="checkbox"/>	nginx	i-0b0d0b068346b9df9	Terminated ↗ ↗	t2.micro	-	View alarms +	eu-central-1a	-	-	-
<input type="checkbox"/>	aws-ubuntu	i-0a393c52055d03d07	Running ↗ ↗	t2.micro	2/2 checks passed	View alarms +	eu-central-1b	ec2-18-185-69-247.eu-...	18.185.69.247	-
<input type="checkbox"/>	nginx	i-0cfd5f7f576791c7f	Terminated ↗ ↗	t2.micro	-	View alarms +	eu-central-1b	-	-	-
<input type="checkbox"/>	nginx	i-0364b99fdf2a880e	Running ↗ ↗	t2.micro	initializing	View alarms +	eu-central-1b	ec2-18-184-253-114.eu...	18.184.253.114	-
<input type="checkbox"/>	ubuntu	i-0c7236852ba260242	Stopped ↗ ↗	t2.micro	-	View alarms +	eu-central-1b	-	-	-
<input type="checkbox"/>	nginx	i-0bcc3ae5ce2ef1313	Terminated ↗ ↗	t2.micro	-	View alarms +	eu-central-1b	-	-	-
<input type="checkbox"/>	nginx	i-05202f5d832badfda	Running ↗ ↗	t2.micro	2/2 checks passed	View alarms +	eu-central-1b	ec2-18-199-158-18.eu...	18.199.158.18	-

После того как загрузка снизилась ниже 30 % и оставалась такой в течении минуты у нас снова осталось 2 инстанса.

Instances (8) [Info](#)

Find Instance by attribute or tag (case-sensitive) All states

Last updated less than a minute ago [Connect](#) [Instance state](#) [Actions](#) [Launch instances](#)

<input type="checkbox"/>	Name 🔗	Instance ID	Instance state 🔍	Instance type 🔍	Status check 🔍	Alarm status 🔍	Availability Zone 🔍	Public IPv4 DNS 🔍	Public IPv4 ... 🔍	Elastic IP 🔍
<input type="checkbox"/>	nginx	i-0b0d0b0f8246b0d0f0	Terminated 🔍	t2.micro	2/2 checks passed	View alarms +	eu-central-1a			
<input type="checkbox"/>	aws-ubuntu	i-0a395c52055d03d07	Running 🔍	t2.micro	2/2 checks passed	View alarms +	eu-central-1b	ec2-18-185-69-247.eu-...	18.185.69.247	
<input type="checkbox"/>	nginx	i-03c4b991d03a8888e	Running 🔍	t2.micro	2/2 checks passed	View alarms +	eu-central-1b	ec2-18-184-253-114.eu-...	18.184.253.114	
<input type="checkbox"/>	nginx	i-0c580927f90ed05f5	Terminated 🔍	t2.micro	2/2 checks passed	View alarms +	eu-central-1a			
<input type="checkbox"/>	nginx	i-0ccab6bc1fd529802	Running 🔍	t2.micro	2/2 checks passed	View alarms +	eu-central-1a	ec2-3-71-10-141.eu-ce...	3.71.10.141	
<input type="checkbox"/>	ubuntu	i-0c7236852ba260242	Stopped 🔍	t2.micro	2/2 checks passed	View alarms +	eu-central-1b			
<input type="checkbox"/>	nginx	i-0bcc3ae3ce2ef1313	Terminated 🔍	t2.micro	2/2 checks passed	View alarms +	eu-central-1b			
<input type="checkbox"/>	nginx	i-05202f58d32badfda	Terminated 🔍	t2.micro	2/2 checks passed	View alarms +	eu-central-1b			


Select an instance

Переходим по ссылке на load balanser.

← → ↻ 🌐 [http-load-balancer-121255753.eu-central-1.elb.amazonaws.com](#) Google Объекты 📄 ⌵ 🔍 DuckDuckGo

Information


Levchenko Alexey Viktorovich
Group: DOS24-onl
Topic: webserver
IP Address: **192.168.1.210:8080**



Created by Levchenko Alexey

Узнаем IP и указываем его на duck dns.

← → ↻ 🌐 [www.duckdns.org/domains](#) Duck DNS spec about why install flags logout logged in with alex1436183@gmail.com



Duck DNS

account alex1436183@gmail.com
type free
token d06ce0ae-d8c0-4d60-88ad-df6e6b65d882
token generated 3 months ago
created date 10 Dec 2024, 09:02:35

success: ip address for [myaap.duckdns.org](#) updated to 35.158.165.100

domains 25

[http://](#) [.duckdns.org](#) [add domain](#)

domain	current ip	ipv6	changed
myaap	35.158.165.100 update ip	<input type="text" value="ipv6 address"/> update ipv6	0 seconds ago delete domain
tms-avl	35.158.211.111 update ip	<input type="text" value="ipv6 address"/> update ipv6	3 months ago delete domain

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Переходим по ссылке и проверяем.

← → 🔍 Не защищено myarp.duckdns.org

🔖 ☆ 🔄 👤 Ошибка


Information

Levchenko Alexey Viktorovich

Group: DOS24-onl

Topic: webservers

IP Address: [192.168.1.210:8080](#)



Created by [Levchenko Alexey](#)

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