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Інформатика і програмування

Лабораторна робота № 6

Тема: Впровадження управління мережевим трафіком

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Група ПЗ-43

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Викладач: Поварчук Д.Д

Івано-Франківськ – 2025

Лабораторний сценарій

Ваша організація має публічний веб-сайт. Вам потрібно балансувати навантаження вхідних публічних запитів між різними віртуальними машинами. Вам також потрібно надати зображення та відео з різних віртуальних машин. Ви плануєте впровадити балансувальник навантаження Azure та шлюз додатків Azure. Усі ресурси знаходяться в одному регіоні.

Одразу хочу сказати що вирішив трішки ультанути і цього разу буде тільки кілька скріншотів як тераформ працює і два скріна в ажурі, цього разу теж з першого разу не вийшло задеплойти

Отож, скрін команди terraform plan та terraform validate

The image shows a Windows 10 desktop environment. The primary focus is the Visual Studio Code (VS Code) application, which is open with a Terraform configuration file named 'main.tf'. The file is located in a directory named 'lab6'. The code in 'main.tf' defines an Azure Application Gateway resource. It includes a 'url_path_map' block with a 'path_rule' block that specifies the 'backend_address_pool_name' as 'az104-videobe' and the 'backend_http_settings_name' as 'az104-http'. It also includes a 'request_routing_rule' block with 'name' 'az104-gwrule', 'rule_type' 'PathBasedRouting', 'http_listener_name' 'az104-listener', and 'priority' 10. The 'url_path_map_name' is set to 'az104-pathmap'. A comment in Ukrainian is present: '# Правило маршрутизації просто посилається на карту шляхів'. The VS Code interface shows the Explorer sidebar on the left with the file structure, the main editor area with the code, and the Output/Debug Console/Problems/Ports/Azure tabs at the bottom. The terminal shows the command 'terraform validate' being executed, resulting in a 'Success!' message. The taskbar at the bottom shows the Windows Start button, search bar, and several open applications including File Explorer, Edge, and VS Code. The system tray shows the date and time as 12:10:205.

```
PS C:\Users\fedir\Documents\IPZ_43\Cloud\technologies\lab6> terraform plan -out=lab6template

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:

# azurerm_application_gateway.appgw will be created
+ resource "azurerm_application_gateway" "appgw" {
  + id                        = (known after apply)
  + location                 = "eastus"
  + name                     = "az104-appgw"
  + private_endpoint_connection = (known after apply)
  + resource_group_name      = "az104-rg6"

  + backend_address_pool {
    + fqdns      = []
    + id         = (known after apply)
    + ip_addresses = (known after apply)
    + name       = "az104-appgwbe"
  }
  + backend_address_pool {
    + fqdns      = []
    + id         = (known after apply)
  }
}
```

Остання (також успішна) спроба задеплоїти всі сервіси

```
Plan: 26 to add, 0 to change, 0 to destroy.

Changes to Outputs:
+ appgw_public_ip = (known after apply)
+ lb_public_ip    = (known after apply)

Saved the plan to: lab6template

To perform exactly these actions, run the following command to apply:
    terraform apply "lab6template"
PS C:\Users\Fedir\Documents\TPZ_43\Cloud_tecnologies\lab6> terraform apply "lab6template"
random_password.vm: Creating...
random_password.vm: Creation complete after 0s [id=none]
```

```
412 | host           = "127.0.0.1"
413 | path           = "/"
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  AZURE
azurerm_application_gateway.appgw: Still creating... [02m20s elapsed]
azurerm_application_gateway.appgw: Still creating... [02m30s elapsed]
azurerm_application_gateway.appgw: Still creating... [02m40s elapsed]
azurerm_application_gateway.appgw: Still creating... [02m50s elapsed]
azurerm_application_gateway.appgw: Still creating... [03m00s elapsed]
azurerm_application_gateway.appgw: Still creating... [03m10s elapsed]
azurerm_application_gateway.appgw: Still creating... [03m20s elapsed]
azurerm_application_gateway.appgw: Still creating... [03m30s elapsed]
azurerm_application_gateway.appgw: Still creating... [03m40s elapsed]
azurerm_application_gateway.appgw: Still creating... [03m50s elapsed]
azurerm_application_gateway.appgw: Still creating... [04m00s elapsed]
azurerm_application_gateway.appgw: Still creating... [04m10s elapsed]
azurerm_application_gateway.appgw: Still creating... [04m20s elapsed]
azurerm_application_gateway.appgw: Still creating... [04m30s elapsed]
azurerm_application_gateway.appgw: Still creating... [04m40s elapsed]
azurerm_application_gateway.appgw: Still creating... [04m50s elapsed]
azurerm_application_gateway.appgw: Creation complete after 4m54s [id=/subscriptions/2d2c7915-d7d9-4c46-9986-e3254f7b9c4b/resourceGroups/az104-rg6/providers/Microsoft.Network/applicationsGateways/az104-appgw]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.

Outputs:
appgw_public_ip = "74.235.203.159"
lb_public_ip    = "20.169.172.30"
PS C:\Users\Fedir\Documents\TPZ_43\Cloud_tecnologies\lab6>
```

Ну і скрін-докази що все запустилось

Lab 06 - Implement Network Ti | az104-rg6 - Microsoft Azure | azurerm_application_gateway | x | +

portal.azure.com/#@fedirko816gmail.onmicrosoft.com/resource/subscriptions/2d2c7915-d7d9-4c46-9986-e3254f7b9c4b/resourceGroups/az104-rg6/overview

Microsoft Azure Upgrade Search resources, services, and docs (G+) Copilot fedirko816@gmail.com DEFAULT DIRECTORY (FEDIRKO816...)

Home > Resource groups >

Resource groups << Default Directory (fedirko816gmail.onmicrosoft.co...)

+ Create Manage view ...

You are viewing a new version of Browse experience. Click here to access the old experience.

☐ Name 1

☒ az104-rg6

☐ NetworkWatcherRG

Showing 1 - 2 of 2. Display count: auto

az104-rg6 Resource group Help me generate Terraform for this resource group configuration How to manage these changes more efficiently with deployment tools? +1

Search Overview Activity log Access control (IAM) Tags Resource visualizer Events Settings Deployments Security Deployment stacks Policies Properties Locks Cost Management Monitoring Automation

Essentials

Resources Recommendations

Filter for any field... Type equals all Location equals all Add filter

Name	Type	Location
az104-06-nic0	Network Interface	East US
az104-06-nic1	Network Interface	East US
az104-06-nic2	Network Interface	East US
az104-06-vm0	Virtual machine	East US
az104-06-vm0-osdisk	Disk	East US
az104-06-vm1	Virtual machine	East US
az104-06-vm1-osdisk	Disk	East US
az104-06-vm2	Virtual machine	East US
az104-06-vm2-osdisk	Disk	East US

Showing 1 - 10 of 15. Display count: auto Give feedback

Lab 06 - Implement Network T... az104-rg6 - Microsoft Azure azurerm_application_gateway | x +

portal.azure.com/#@fedirko816gmail.onmicrosoft.com/resource/subscriptions/2d2c7915-d7d9-4c46-9986-e3254f7b9c4b/resourceGroups/az104-rg6/overview

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Home >

az104-rg6 Resource group

Generate Bicep code to duplicate this resource group. How to manage these changes more efficiently with deployment tools? Help me generate Terraform for this resource group configuration.

Search

+ Create Manage view Delete resource group Refresh Export to CSV Open query Assign tags Move Delete Group by none

Overview

Activity log

Access control (IAM)

Tags

Resource visualizer

Events

Settings

Deployments

Security

Deployment stacks

Policies

Properties

Locks

Cost Management

Monitoring

Automation

Essentials

Resources Recommendations

Filter for any field... Type equals all Location equals all Add filter

<input type="checkbox"/>	az104-06-vm0-osdisk	Disk	East US
<input type="checkbox"/>	az104-06-vm1	Virtual machine	East US
<input type="checkbox"/>	az104-06-vm1-osdisk	Disk	East US
<input type="checkbox"/>	az104-06-vm2	Virtual machine	East US
<input type="checkbox"/>	az104-06-vm2-osdisk	Disk	East US
<input type="checkbox"/>	az104-06-vnet1	Virtual network	East US
<input type="checkbox"/>	az104-06-web-nsg	Network security group	East US
<input type="checkbox"/>	az104-appgw	Application gateway	East US
<input type="checkbox"/>	az104-gwpip	Public IP address	East US
<input type="checkbox"/>	az104-lb	Load balancer	East US
<input type="checkbox"/>	az104-lbpip	Public IP address	East US

Showing 1 - 15 of 15. Display count: 20

12°C Cloudy

Ну і видалення)

PS C:\Users\fedir\Documents\IPZ_43\Cloud technologies\lab6> terraform destroy -auto-approve

random_password.vm: Refreshing state... [id=none]

Ln 422, Col 4 Spaces: 4 UTF-8 CRLF Terraform Signed out

12°C Cloudy

File Edit Selection View Go Run Terminal Help

lab6

EXPLORER

LAB6

.terraform

terraform.lock.hcl

lab6template

main.tf

terraform.tfstate

terraform.tfstate.backup

terraform.tfvars

main.tf

```
resource "azurerm_application_gateway" "appgw" {
  resource "azurerm_application_gateway" "appgw" {
    backend_address_pool {
      ip_addresses = [azurerm_network_interface.nic2.private_ip_address]
    }
    probe {
      name           = "http-probe-80"
      protocol       = "Http"
      host           = "127.0.0.1"
      path           = "/"
    }
  }
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS AZURE

subnets/subnet-web3] azurerm_network_interface.nic0: Still destroying... [id=/subscriptions/2d2c7915-d7d9-4c46-9986-...etwork/networkInterfaces/az104-06-nic0, 00m10s elapsed]

azurerm_subnet.sn_web2: Still destroying... [id=/subscriptions/2d2c7915-d7d9-4c46-9986-...rks/az104-06-vnet1/subnets/subnet-web2, 00m20s elapsed]

azurerm_subnet.sn_web3: Still destroying... [id=/subscriptions/2d2c7915-d7d9-4c46-9986-...rks/az104-06-vnet1/subnets/subnet-web3, 00m10s elapsed]

azurerm_subnet.sn_web2: Destruction complete after 22s

azurerm_network_interface.nic0: Still destroying... [id=/subscriptions/2d2c7915-d7d9-4c46-9986-...etwork/networkInterfaces/az104-06-nic0, 00m20s elapsed]

azurerm_network_interface.nic0: Still destroying... [id=/subscriptions/2d2c7915-d7d9-4c46-9986-...etwork/networkInterfaces/az104-06-nic0, 00m20s elapsed]

azurerm_network_interface.nic0: Destruction complete after 31s

azurerm_subnet.sn_web1: Destroying... [id=/subscriptions/2d2c7915-d7d9-4c46-9986-e3254f7b9c4b/resourceGroups/az104-rg6/providers/Microsoft.Network/virtualNetworks/az104-06-vnet1/subnets/subnet-web1]

azurerm_subnet.sn_web3: Still destroying... [id=/subscriptions/2d2c7915-d7d9-4c46-9986-...rks/az104-06-vnet1/subnets/subnet-web3, 00m30s elapsed]

azurerm_subnet.sn_web1: Still destroying... [id=/subscriptions/2d2c7915-d7d9-4c46-9986-...rks/az104-06-vnet1/subnets/subnet-web1, 00m10s elapsed]

azurerm_subnet.sn_web1: Destruction complete after 33s

azurerm_subnet.sn_web1: Still destroying... [id=/subscriptions/2d2c7915-d7d9-4c46-9986-...rks/az104-06-vnet1/subnets/subnet-web1, 00m20s elapsed]

azurerm_subnet.sn_web1: Destruction complete after 22s

azurerm_virtual_network.vnet: Destroying... [id=/subscriptions/2d2c7915-d7d9-4c46-9986-e3254f7b9c4b/resourceGroups/az104-rg6/providers/Microsoft.Network/virtualNetworks/az104-06-vnet1]

azurerm_virtual_network.vnet: Still destroying... [id=/subscriptions/2d2c7915-d7d9-4c46-9986-...Network/virtualNetworks/az104-06-vnet1, 00m10s elapsed]

azurerm_virtual_network.vnet: Destruction complete after 11s

azurerm_resource_group.rg: Destroying... [id=/subscriptions/2d2c7915-d7d9-4c46-9986-e3254f7b9c4b/resourceGroups/az104-rg6]

azurerm_resource_group.rg: Still destroying... [id=/subscriptions/2d2c7915-d7d9-4c46-9986-e3254f7b9c4b/resourceGroups/az104-rg6, 00m10s elapsed]

azurerm_resource_group.rg: Destruction complete after 18s

Destroy complete! Resources: 26 destroyed.

PS C:\Users\fedir\Documents\IPZ_43\Cloud technologies\lab6>

Ln 422, Col 4 Spaces: 4 UTF-8 CRLF Terraform Signed out

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