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Хмарні технології

Практична робота №6

Тема: Implement Network Traffic Management

Мета: Навчитися контролю навантаженням

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Група ІІЗ-41
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providers.tf

```
1 terraform {
2   required_version = ">= 1.0"
3   required_providers {
4     azurerm = {
5       source = "hashicorp/azurerm"
6       version = "~> 3.0"
7     }
8   }
9 }
10
11 provider "azurerm" {}
12 features {}
13 }
```

main.tf

```
1 resource "azurerm_resource_group" "rg" {
2   name      = var.resource_group_name
3   location  = var.location
4 }
5
6 resource "azurerm_virtual_network" "vnet" {
7   name                = "az104-06-vnet1"
8   address_space       = ["10.60.0.0/16"]
9   location             = azurerm_resource_group.rg.location
10  resource_group_name = azurerm_resource_group.rg.name
11 }
12
13 resource "azurerm_subnet" "subnets" {
14   count              = 3
15   name               = "subnet${count.index}"
16   resource_group_name = azurerm_resource_group.rg.name
17   virtual_network_name = azurerm_virtual_network.vnet.name
18   address_prefixes   = ["10.60.${count.index}.0/24"]
19 }
20
```

```
21 resource "azurerm_network_security_group" "nsg" {
22     name                = "az104-06-nsg"
23     location             = azurerm_resource_group.rg.location
24     resource_group_name = azurerm_resource_group.rg.name
25
26     security_rule {
27         name                = "AllowHTTP"
28         priority            = 100
29         direction          = "Inbound"
30         access              = "Allow"
31         protocol            = "Tcp"
32         source_port_range   = "*"
33         destination_port_range = "80"
34         source_address_prefix = "*"
35         destination_address_prefix = "*"
36     }
37 }
38
39 resource "azurerm_network_interface" "nics" {
40     count                = 3
41     name                = "az104-06-nic${count.index}"
42     location             = azurerm_resource_group.rg.location
43     resource_group_name = azurerm_resource_group.rg.name
44
45     ip_configuration {
46         name                = "internal"
47         subnet_id           = azurerm_subnet.subnets[count.index].id
48         private_ip_address_allocation = "Dynamic"
49     }
50 }
```

```

52 resource "azurerm_network_interface_security_group_association" "nsg_assoc" {
53     count                        = 3
54     network_interface_id       = azurerm_network_interface.nics[count.index].id
55     network_security_group_id = azurerm_network_security_group.nsg.id
56 }
57
58 resource "azurerm_windows_virtual_machine" "vms" {
59     count            = 3
60     name            = "az104-06-vm${count.index}"
61     resource_group_name = azurerm_resource_group.rg.name
62     location         = azurerm_resource_group.rg.location
63     size             = var.vm_size
64     admin_username   = var.admin_username
65     admin_password    = var.admin_password
66     network_interface_ids = [azurerm_network_interface.nics[count.index].id]
67
68     os_disk {
69         caching           = "ReadWrite"
70         storage_account_type = "Standard_LRS"
71     }
72
73     source_image_reference {
74         publisher = "MicrosoftWindowsServer"
75         offer     = "WindowsServer"
76         sku       = "2019-Datacenter"
77         version    = "latest"
78     }
79 }

```

```

81 resource "azurerm_public_ip" "lb_pip" {
82     name            = "az104-lbpip"
83     location         = azurerm_resource_group.rg.location
84     resource_group_name = azurerm_resource_group.rg.name
85     allocation_method = "Static"
86     sku              = "Standard"
87 }
88
89 resource "azurerm_lb" "lb" {
90     name            = "az104-lb"
91     location         = azurerm_resource_group.rg.location
92     resource_group_name = azurerm_resource_group.rg.name
93     sku              = "Standard"
94
95     frontend_ip_configuration {
96         name            = "az104-fe"
97         public_ip_address_id = azurerm_public_ip.lb_pip.id
98     }
99 }
100
101 resource "azurerm_lb_backend_address_pool" "lb_be" {
102     loadbalancer_id = azurerm_lb.lb.id
103     name            = "az104-be"
104 }
105
106 resource "azurerm_lb_backend_address_pool_address" "vm_assoc" {
107     count            = 2
108     name            = "vm${count.index}-address"
109     backend_address_pool_id = azurerm_lb_backend_address_pool.lb_be.id
110     virtual_network_id = azurerm_virtual_network.vnet.id
111     ip_address        = azurerm_network_interface.nics[count.index].private_ip_address

```

```
114 resource "azurerm_lb_probe" "hp" {
115     loadbalancer_id = azurerm_lb.lb.id
116     name             = "az104-hp"
117     port             = 80
118     protocol         = "Tcp"
119     interval_in_seconds = 5
120 }
121
122 resource "azurerm_lb_rule" "lb_rule" {
123     loadbalancer_id = azurerm_lb.lb.id
124     name            = "az104-lbrule"
125     protocol        = "Tcp"
126     frontend_port   = 80
127     backend_port    = 80
128     frontend_ip_configuration_name = "az104-fe"
129     backend_address_pool_ids = [azurerm_lb_backend_address_pool.lb_be.id]
130     probe_id        = azurerm_lb_probe.hp.id
131 }
132
133 resource "azurerm_subnet" "appgw_subnet" {
134     name = "subnet-appgw"
135     resource_group_name = azurerm_resource_group.rg.name
136     virtual_network_name = azurerm_virtual_network.vnet.name
137     address_prefixes = ["10.60.3.224/27"]
138 }
```

```
140 resource "azurerm_public_ip" "appgw_pip" {
141     name                = "az104-gwpip"
142     location            = azurerm_resource_group.rg.location
143     resource_group_name = azurerm_resource_group.rg.name
144     allocation_method   = "Static"
145     sku                 = "Standard"
146 }
147
148 resource "azurerm_application_gateway" "appgw" {
149     name                = "az104-appgw"
150     resource_group_name = azurerm_resource_group.rg.name
151     location            = azurerm_resource_group.rg.location
152
153     sku {
154         name      = "Standard_v2"
155         tier       = "Standard_v2"
156         capacity = 2
157     }
158
159     ssl_policy {
160         policy_type = "Predefined"
161         policy_name = "AppGwSslPolicy20170401S" # Виправлення помилки TLS
162     }
163
164     gateway_ip_configuration {
165         name      = "my-gateway-ip-configuration"
166         subnet_id = azurerm_subnet.appgw_subnet.id
167     }
168 }
```

```
169     frontend_port {
170         name = "fe-port"
171         port = 80
172     }
173
174     frontend_ip_configuration {
175         name = "fe-ip"
176         public_ip_address_id = azurerm_public_ip.appgw_pip.id
177     }
178
179     backend_address_pool {
180         name = "az104-appgwbe"
181         ip_addresses = [
182             azurerm_network_interface.nics[0].private_ip_address,
183             azurerm_network_interface.nics[1].private_ip_address
184         ]
185     }
186
187     backend_address_pool {
188         name = "az104-imagebe"
189         ip_addresses = [azurerm_network_interface.nics[1].private_ip_address]
190     }
191
192     backend_address_pool {
193         name = "az104-videobe"
194         ip_addresses = [azurerm_network_interface.nics[2].private_ip_address]
195     }
```

```
197     backend_http_settings {
198         name = "http-settings"
199         cookie_based_affinity = "Disabled"
200         port = 80
201         protocol = "Http"
202         request_timeout = 60
203     }
204
205     http_listener {
206         name = "listener"
207         frontend_ip_configuration_name = "fe-ip"
208         frontend_port_name = "fe-port"
209         protocol = "Http"
210     }
211
212     request_routing_rule {
213         name = "az104-gwrule"
214         rule_type = "PathBasedRouting"
215         http_listener_name = "listener"
216         url_path_map_name = "url-path-map"
217         priority = 10
218     }
219
220     url_path_map {
221         name = "url-path-map"
222         default_backend_address_pool_name = "az104-appgwbe"
223         default_backend_http_settings_name = "http-settings"
224     }
```

```

225     path_rule {
226         name           = "image-rule"
227         paths          = ["/image/*"]
228         backend_address_pool_name = "az104-imagebe"
229         backend_http_settings_name = "http-settings"
230     }
231
232     path_rule {
233         name           = "video-rule"
234         paths          = ["/video/*"]
235         backend_address_pool_name = "az104-videobe"
236         backend_http_settings_name = "http-settings"
237     }
238 }
239 }

```

outputs.tf

```

1  output "lb_public_ip" {
2      value = azurerm_public_ip.lb_pip.ip_address
3  }
4
5  output "appgw_public_ip" {
6      value = azurerm_public_ip.appgw_pip.ip_address
7  }

```

variables.tf

```
1 variable "resource_group_name" {
2   | default = "az104-rg6"
3 }
4
5 variable "location" {
6   | default = "North Europe" # Змінено для уникнення SkuNotAvailable
7 }
8
9 variable "admin_username" {
10  | default = "localadmin"
11 }
12
13 variable "admin_password" {
14  | default = "P@ssw0rd12345!"
15 }
16
17 variable "vm_size" {
18  | default = "Standard_B1s" # Мінімальний стабільний розмір
19 }
```

Висновок

Було зроблено ще одну лабораторну. На цьому по суті все.
Гітхаб: https://github.com/Illoizaur/azure_labs/tree/main/lab6