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**Хмарні технології**

**Практична робота №5**

**Тема:** Implement Intersite Connectivity

**Мета:** Навчитися основам роботи з віртуальними машинами

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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" "core_vnet" {
7    name                = "CoreServicesVnet"
8    address_space       = ["10.0.0.0/16"]
9    location             = azurerm_resource_group.rg.location
10   resource_group_name = azurerm_resource_group.rg.name
11 }
12
13 resource "azurerm_subnet" "core_subnet" {
14   name                = "Core"
15   resource_group_name = azurerm_resource_group.rg.name
16   virtual_network_name = azurerm_virtual_network.core_vnet.name
17   address_prefixes     = ["10.0.0.0/24"]
18 }
19
20 resource "azurerm_network_interface" "core_nic" {
21   name                = "CoreServicesVM-nic"
22   location            = azurerm_resource_group.rg.location
23   resource_group_name = azurerm_resource_group.rg.name
24
25   ip_configuration {
26     name                = "internal"
27     subnet_id           = azurerm_subnet.core_subnet.id
28     private_ip_address_allocation = "Dynamic"
29   }
30 }
31
```

```
32 resource "azurerm_windows_virtual_machine" "core_vm" {
33     name = "CoreServicesVM"
34     resource_group_name = azurerm_resource_group.rg.name
35     location = azurerm_resource_group.rg.location
36     size = var.vm_size
37     admin_username = var.admin_username
38     admin_password = var.admin_password
39     network_interface_ids = [azurerm_network_interface.core_nic.id]
40
41     os_disk {
42         caching = "ReadWrite"
43         storage_account_type = "Standard_LRS"
44     }
45
46     source_image_reference {
47         publisher = "MicrosoftWindowsServer"
48         offer = "WindowsServer"
49         sku = "2019-Datacenter"
50         version = "latest"
51     }
52
53     boot_diagnostics {
54         storage_account_uri = null
55     }
56 }
57
58 resource "azurerm_virtual_network" "mfg_vnet" {
59     name = "ManufacturingVnet"
60     address_space = ["172.16.0.0/16"]
61     location = azurerm_resource_group.rg.location
62     resource_group_name = azurerm_resource_group.rg.name
63 }
```

```
65 resource "azurerm_subnet" "mfg_subnet" {
66     name                       = "Manufacturing"
67     resource_group_name       = azurerm_resource_group.rg.name
68     virtual_network_name      = azurerm_virtual_network.mfg_vnet.name
69     address_prefixes          = ["172.16.0.0/24"]
70 }
71
72 resource "azurerm_network_interface" "mfg_nic" {
73     name                       = "ManufacturingVM-nic"
74     location                   = azurerm_resource_group.rg.location
75     resource_group_name       = azurerm_resource_group.rg.name
76
77     ip_configuration {
78         name                       = "internal"
79         subnet_id                  = azurerm_subnet.mfg_subnet.id
80         private_ip_address_allocation = "Dynamic"
81     }
82 }
83
84 resource "azurerm_windows_virtual_machine" "mfg_vm" {
85     name                       = "ManufacturingVM"
86     resource_group_name       = azurerm_resource_group.rg.name
87     location                   = azurerm_resource_group.rg.location
88     size                       = var.vm_size
89     admin_username             = var.admin_username
90     admin_password             = var.admin_password
91     network_interface_ids     = [azurerm_network_interface.mfg_nic.id]
92
93     os_disk {
94         caching              = "ReadWrite"
95         storage_account_type = "Standard_LRS"
96     }
97 }
```

```

98     source_image_reference {
99         publisher = "MicrosoftWindowsServer"
100         offer     = "WindowsServer"
101         sku       = "2019-Datacenter"
102         version   = "latest"
103     }
104
105     boot_diagnostics {
106         storage_account_uri = null
107     }
108 }
109
110 resource "azurerm_virtual_network_peering" "core_to_mfg" {
111     name                        = "CoreServicesVnet-to-ManufacturingVnet"
112     resource_group_name       = azurerm_resource_group.rg.name
113     virtual_network_name      = azurerm_virtual_network.core_vnet.name
114     remote_virtual_network_id = azurerm_virtual_network.mfg_vnet.id
115     allow_virtual_network_access = true
116     allow_forwarded_traffic    = true
117     depends_on                 = [azurerm_virtual_network.core_vnet, azurerm_virtual_network.mfg_vnet]
118 }
119
120 resource "azurerm_virtual_network_peering" "mfg_to_core" {
121     name                        = "ManufacturingVnet-to-CoreServicesVnet"
122     resource_group_name       = azurerm_resource_group.rg.name
123     virtual_network_name      = azurerm_virtual_network.mfg_vnet.name
124     remote_virtual_network_id = azurerm_virtual_network.core_vnet.id
125     allow_virtual_network_access = true
126     allow_forwarded_traffic    = true
127     depends_on                 = [azurerm_virtual_network.core_vnet, azurerm_virtual_network.mfg_vnet]
128 }

```

```

130 resource "azurerm_subnet" "perimeter_subnet" {
131     name                = "perimeter"
132     resource_group_name = azurerm_resource_group.rg.name
133     virtual_network_name = azurerm_virtual_network.core_vnet.name
134     address_prefixes    = ["10.0.1.0/24"]
135 }
136
137 resource "azurerm_route_table" "rt_core" {
138     name                = "rt-CoreServices"
139     location             = azurerm_resource_group.rg.location
140     resource_group_name = azurerm_resource_group.rg.name
141     bgp_route_propagation_enabled = false
142
143     route {
144         name                = "PerimetertoCore"
145         address_prefix      = "10.0.0.0/16"
146         next_hop_type       = "VirtualAppliance"
147         next_hop_in_ip_address = "10.0.1.7"
148     }
149 }
150
151 resource "azurerm_subnet_route_table_association" "core_assoc" {
152     subnet_id      = azurerm_subnet.core_subnet.id
153     route_table_id = azurerm_route_table.rt_core.id
154     depends_on     = [azurerm_subnet.core_subnet, azurerm_route_table.rt_core]
155 }

```

### outputs.tf

```
1  output "CoreServicesVM_Private_IP" {
2    |   value = azurerm_network_interface.core_nic.private_ip_address
3  }
4
5  output "ManufacturingVM_Private_IP" {
6    |   value = azurerm_network_interface.mfg_nic.private_ip_address
7  }
```

### variables.tf

```
1  variable "resource_group_name" {
2    |   default = "az104-rg5"
3  }
4
5  variable "location" {
6    |   default = "North Europe"
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"
19 }
```

## Висновок

Було зроблено ще одну лабораторну. На цьому по суті все.  
Гітхаб: [https://github.com/Illoizaur/azure\\_labs/tree/main/lab5](https://github.com/Illoizaur/azure_labs/tree/main/lab5)