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Інформатика і програмування

Лабораторна робота № 7

Тема: Implement Intersite Connectivity

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Task 1: Create a core services virtual machine and virtual network

In this task, you create a core services virtual machine with a virtual network.

The screenshot shows the Microsoft Azure portal interface. The title bar indicates the URL is `portal.azure.com/?l=en-en-gb#view/HubsExtension/DeploymentDetailsBlade/~/o...`. The main content area displays a deployment titled "CreateVm-MicrosoftWindowsServer.WindowsServer-201-2025121300...". The "Overview" tab is selected, showing a green checkmark and the message "Your deployment is complete". Below this, it lists deployment details: name, start time, subscription, correlation ID, resource group, and resource type. It also shows sections for "Deployment details" and "Next steps" with recommended actions like "Setup auto-shutdown" and "Monitor VM health, performance and network dependencies". At the bottom, there are "Go to resource" and "Create another VM" buttons, along with links for "Give feedback" and "Tell us about your experience with deployment". To the right, there are promotional cards for "Cost Management", "Microsoft Defender for Cloud", "Free Microsoft tutorials", and "Work with an expert". A small note at the bottom left says "Add or remove favorites by pressing `Ctrl+Shift+F`".

Task 2: Create a virtual machine in a different virtual network

In this task, you create a manufacturing services virtual network with a virtual machine.

Properties Monitoring Capabilities (8) Recommendations Tutorials

Virtual machine

Computer name	ManufacturingVM
Operating system	Windows
VM generation	V2
VM architecture	x64
Agent status	Not Ready
Agent version	Unknown
Hibernation	Disabled
Host group	-
Host	-
Proximity placement group	-
Colocation status	N/A
Capacity reservation group	-
Disk controller type	SCSI

Azure Spot

Azure Spot	-
Azure Spot eviction policy	-

Availability + scaling

Availability zone (edit)	1
Extended zone	-

Networking

Public IP address	20.83.147.72 (Network interface manufacturingvm764_z1)
1 associated public IPs	-
Public IP address (IPv6)	-
Private IP address	172.16.0.4
Private IP address (IPv6)	-
Virtual network/subnet	ManufacturingVNet/Manufacturing
DNS name	Configure

Size

Size	Standard D2s v3
vCPUs	2
RAM	8 GiB

Source image details

Source image publisher	MicrosoftWindowsServer
Source image offer	WindowsServer
Source image plan	2019-datacenter-gensecond

Disk

OS disk	ManufacturingVM_OsDisk_1_917989a36b8847ffa696225079c581
Encryption at host	Disabled

Task 3: Use Network Watcher to test the connection between virtual machines

In this task, you verify that resources in peered virtual networks can communicate with each other. Network Watcher will be used to test the connection. Before continuing, ensure both virtual machines have been deployed and are running.

The screenshot shows the Microsoft Azure Network Watcher Connection troubleshoot interface. On the left, a sidebar lists various diagnostic tools: Overview, Get started, Monitoring, Network diagnostic tools (IP flow verify, NSG diagnostics, Next hop, Effective security rules, VPN troubleshoot, Packet capture), Connection troubleshoot (Metrics, Logs), Metrics, and Logs. The 'Connection troubleshoot' section is currently selected. In the main area, the 'Connection diagnostic' section is active, with 'Diagnostic tests' set to 'Connectivity, NSG diagnostic, Next hop, Port scanner'. A large button labeled 'Run diagnostic tests' is visible. Below this, a 'Results' section displays the test results for 'CoreServicesVM' to 'ManufacturingVM'. The results table has columns for Test, Status, and Details. The tests and their statuses are:

Test	Status	Details
Connectivity test	Unreachable	Probes sent: 316, probes failed: 316. See details.
Outbound NSG diagnostic	Deny	There are failed tests in the NSG rule: CoreServicesVM-nsg. See details.
Inbound NSG diagnostic	Deny	There are failed tests in the NSG rule: ManufacturingVM-nsg. See details.
Next hop (from source)	Success	Next hop type: None. Route table: System Route.
Destination port accessible	Reachable	

At the bottom, there are links for 'Still can't connect?', 'Troubleshooting documentation', and 'Contact support'. A 'Give feedback' button is also present.

Task 4: Configure virtual network peerings between virtual networks

In this task, you create a virtual network peering to enable communications between resources in the virtual networks.

CoreServicesVnet | Peerings

Virtual network

Add Refresh Export to CSV Delete Sync

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Resource visualizer Settings Address space Connected devices Subnets

Virtual network peering enables you to seamlessly connect two or more virtual networks in Azure. The virtual networks appear as one for connectivity purposes. [Learn more](#)

Filter by name...

Showing all 1 items

Name	Peering status	Peering ID	Remote VNet	Virtual Network	Cross-tenant
CoreServicesVnet-t...	Fully Synchronized	Connected	Manufactured	Disabled	No

Task 5: Use Azure PowerShell to test the connection between virtual machines

In this task, you retest the connection between the virtual machines in different virtual networks.

there is error, idk why

Output

```
WARNING: TCP connect to (10.0.0.4 : 3389) failed
WARNING: Ping to 10.0.0.4 failed with status: TimedOut

ComputerName      : 10.0.0.4
RemoteAddress     : 10.0.0.4
RemotePort        : 3389
InterfaceAlias    : Ethernet
SourceAddress     : 172.16.0.4
PingSucceeded     : False
PingReplyDetails (RTT) : 0 ms
TcpTestSucceeded   : False
```

Task 6: Create a custom route

In this task, you want to control network traffic between the perimeter subnet and the internal core services subnet. A virtual network appliance will be installed in the perimeter subnet and all traffic should be routed there.

Microsoft.Ro lab007unique 10.60.2.4 10.60.2.4 https://sp=... portal.azure.com/?l=en-en-gb#view/HubsExtension/DeploymentDetailsBlade/~/o... Copilot

Microsoft Azure Search resources, services, and docs (G+)

Home > Microsoft.RouteTable-20251213013326 | Overview Deployment

Search Delete Cancel Redeploy Download Pin to dashboard Go to resource gr...

✓ Deployment succeeded Deployment 'Microsoft.RouteTable-20251213013326' to resource group 'az104-rg5' was successful.

Overview Inputs Outputs Template

✓ Your deployment is complete

Deployment name : Microsoft.RouteTable-20251213013326
Subscription : Azure subscription 1
Resource group : az104-rg5
Start time : 13/12/2025, 01:34:02
Correlation ID : 48e3fb0-804d-4d4e-9c65-c33fa6d4f0ab

Deployment details Next steps

Go to resource

Give feedback Tell us about your experience with deployment

Cost management Get notified to stay within your budget and prevent unexpected charges on your bill. Set up cost alerts >

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The screenshot shows the Microsoft Azure portal interface. The browser tab bar includes multiple tabs such as 'rt-CoreService', 'lab007unique', '10.60.2.4', '10.60.2.4', and 'https://sp=...'. The main content area is titled 'Microsoft Azure' with a search bar 'Search resources, services, and docs (G+/-)' and a 'Copilot' button.

The current page is 'Home > Network foundation | Route tables > rt-CoreServices'. The main title is 'rt-CoreServices | Routes'. On the left, a sidebar menu lists options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Resource visualizer, Settings (Configuration, Routes, Subnets, Properties, Locks), Monitoring, Automation, and Help. The 'Routes' option is currently selected.

The main content area displays a table of routes:

Name ↑↓	Address prefix ↑↓	Next hop type ↑↓	Next hop IP address ↑↓	...
PerimetertoCore	10.0.0.0/16	VirtualAppliance	10.0.1.7	...

At the bottom of the page, there is a note: 'Add or remove favorites by pressing **Ctrl+Shift+F**' and a Copilot icon.

The screenshot shows the Microsoft Azure portal interface. The URL in the address bar is <https://portal.azure.com/?l=en-en-gb#v=vladkeeksgmail.onmicrosoft.com/resource/subsc...>. The main title is "rt-CoreServices | Subnets".

A success message box is displayed in the top right corner:

- Saved route table for subnet**
- Successfully saved route table for subnet 'Core'.

The left sidebar navigation includes:

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Resource visualizer
- Settings
 - Configuration
 - Routes
- Subnets** (selected)
- Properties
- Locks
- Monitoring
- Automation
- Help

The main content area displays a table of subnets:

Name ↑↓	Address range ↑↓	Virtual network ↑↓	Security group ↑↓
Core	10.0.0.0/24	CoreServicesVnet	-

At the bottom right of the portal window is a "Give feedback" button with a brain icon.

Costs: