



CLOUD

SWATHI MOURUGUESSIN B2B

16/02/2024

Introduction

Vous avez été missionné pour construire une petite infrastructure Cloud dans un environnement Microsoft Azure.

Vous utiliserez votre abonnement « Azure pour étudiant » fournit par votre établissement scolaire.

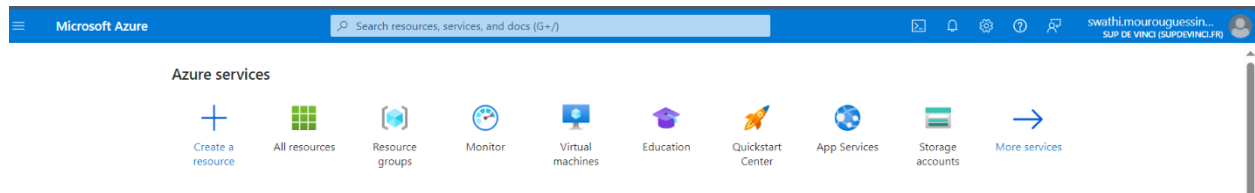
Création d'un groupe de ressources

1. À l'intérieur du portail Azure, créez un nouveau groupe de ressources appelé « Examcloud ».

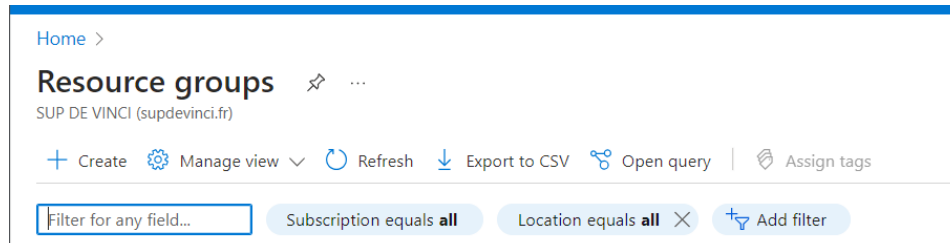
Connectez-vous à votre compte Azure avec ce <https://portal.azure.com/>

Pour créer un nouveau groupe de ressources nommé "ExamCloud" dans la région Azure "France Central", suivez ces étapes :

Dans le volet de gauche, cliquez sur "Resource groups".



Cliquez sur le bouton "Create" pour créer un nouveau groupe de ressources.



2. Sélectionnez la région azure « France Central » pour votre déploiement.

Remplissez les détails suivants dans le formulaire de création :

Resource Group : ExamCloud

Subscription : Azure for Students

Region: Sélectionnez "France Central"

Create a resource group

Basics Tags Review + create

Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. [Learn more](#)

Project details

Subscription *

Resource group *

Resource details

Region *

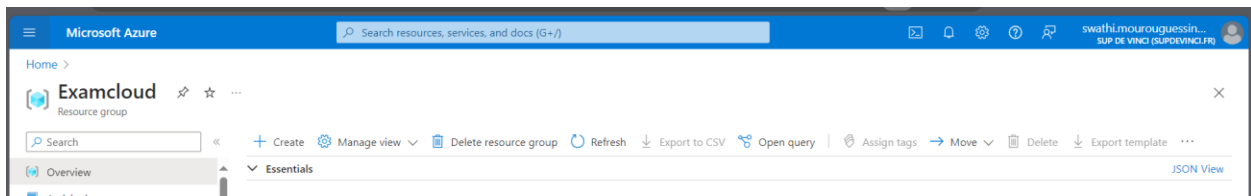
Review + create < Previous Next : Tags >

Cliquez sur "Next :Tags" pour vérifier les détails et cliquez sur "Review + Create" pour créer le groupe de ressources.

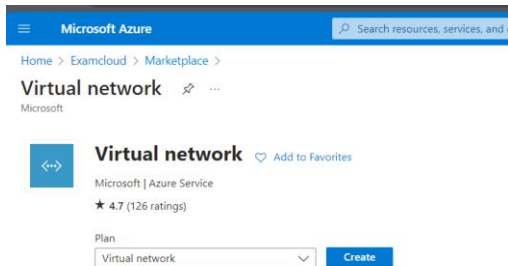
Configuration d'un réseau virtuel

1. À l'intérieur du groupe de ressources, créez deux réseaux virtuels nommés Vn1 et Vn2.

Dans le volet de gauche, cliquez sur "Resource groups" et sélectionnez le groupe de ressources "ExamCloud" que vous avez créé précédemment.



Dans le groupe de ressources, cliquez sur "Create" pour créer un nouveau réseau virtuel.



La création d'un réseau virtuel peut se faire en cinq étapes : Basics, IP Address, Security, Tags, Review + create.

Remplissez les détails suivants dans le formulaire de création pour vn1 :

Nom : vn1

2. Définissez la plage d'adresses IP 192.168.23.0/24 Pour Vn1 ainsi qu'un sous-réseau svn1 prenant l'entièreté de la plage d'adresse de Vn1.

Nom du sous-réseau : svn1

The screenshot shows the 'Create virtual network' wizard in the Azure portal, specifically the 'IP addresses' step. The breadcrumb navigation is 'Home > Examcloud > Marketplace > Virtual network >'. The page title is 'Create virtual network'. Below the title are tabs for 'Basics', 'Security', 'IP addresses' (which is selected), 'Tags', and 'Review + create'. A descriptive text states: 'virtual network address space into smaller ranges for use by your applications. When you deploy resources into a subnet, Azure assigns the resource an IP address from the subnet. [Learn more](#)'. There is a button 'Add IPv4 address space'. The main area shows a list of address spaces. One is expanded to show a subnet configuration: '192.168.23.0/24' with a 'Delete address space' link. Below this, there are input fields for '192.168.23.0/24' and '/24', and the text '192.168.23.0 - 192.168.23.255' and '256 addresses'. There is a '+ Add a subnet' button. Below that is a table with columns 'Subnets', 'IP address range', 'Size', and 'NAT gateway'. The table contains one row for 'svn1' with the IP range '192.168.23.0 - 192.168.23.255 /24 (256 addresses)' and a '-' in the NAT gateway column. At the bottom of the wizard are 'Previous', 'Next', and 'Review + create' buttons. A blue informational banner at the bottom states: 'A NAT gateway is recommended for outbound internet access from subnets. Edit the subnet to add a NAT gateway. [Learn more](#)'.

Plage d'adresses : 192.168.23.0/24

Add a subnet

Select an address space and configure your subnet. You can customize a default subnet or select from subnet templates if you plan to add select services later. [Learn more](#)

Subnet purpose: Default

Name: svn1

IPv4

Include an IPv4 address space:

IPv4 address range: 192.168.23.0 - 192.168.23.255

Starting address: 192.168.23.0

Size: /24 (256 addresses)

Subnet address range: 192.168.23.0 - 192.168.23.255

IPv6

Include an IPv6 address space: This virtual network has no IPv6 address ranges.

Private subnet PREVIEW

Private subnets enhance security by not providing default outbound access. To enable outbound connectivity for virtual machines to access the internet, it is necessary to explicitly grant outbound access. A NAT gateway is the recommended way to provide outbound connectivity for virtual machines in the subnet. [Learn more](#)

Enable private subnet (no default)

Buttons: Previous, Next, Review + create, Add, Cancel

Subnets	IP address range	Size	NAT gateway
default	10.0.0.0 - 10.0.0.255	/24 (256 addresses)	-

Sélectionnez "France Central" comme région

Sélectionnez "ExamCloud" comme groupe de ressources

Cliquez sur "Review + Create", puis sur "Create" pour créer le réseau virtuel vn1 avec le sous-réseau svn1.

Create virtual network

Basics Security IP addresses Tags **Review + create**

Basics

Subscription: Azure for Students

Resource Group: Examcloud

Name: Vn1

Region: France Central

Security

Azure Bastion: Disabled

Azure Firewall: Disabled

Azure DDoS Network Protection: Disabled

IP addresses

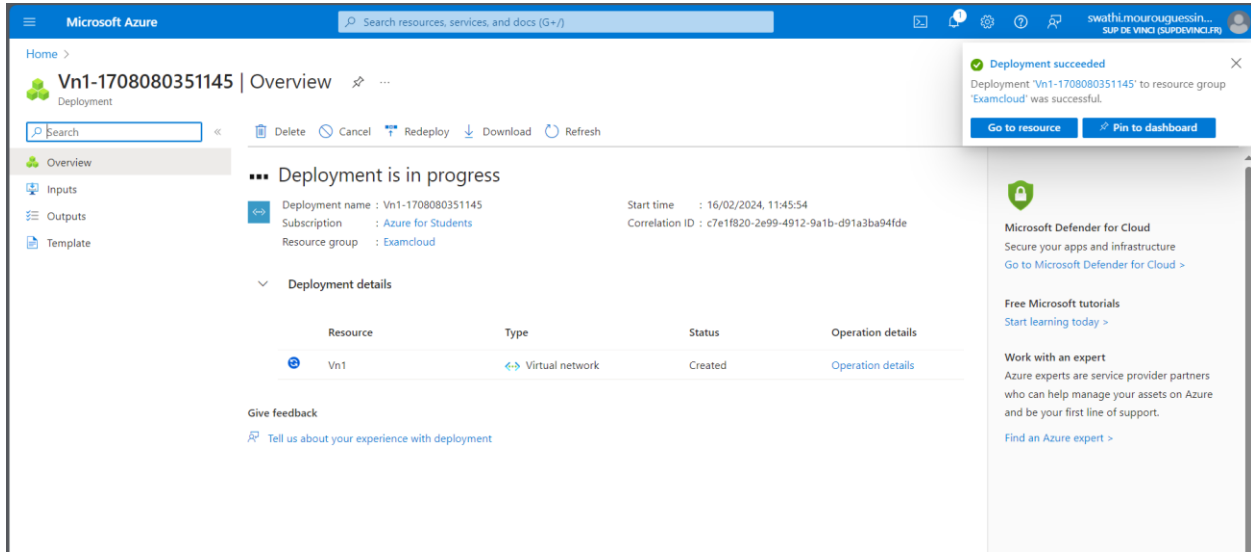
Address space: 192.168.23.0/24 (256 addresses)

Subnet: svn1 (192.168.23.0/24) (256 addresses)

Tags

Buttons: Previous, Next, Create

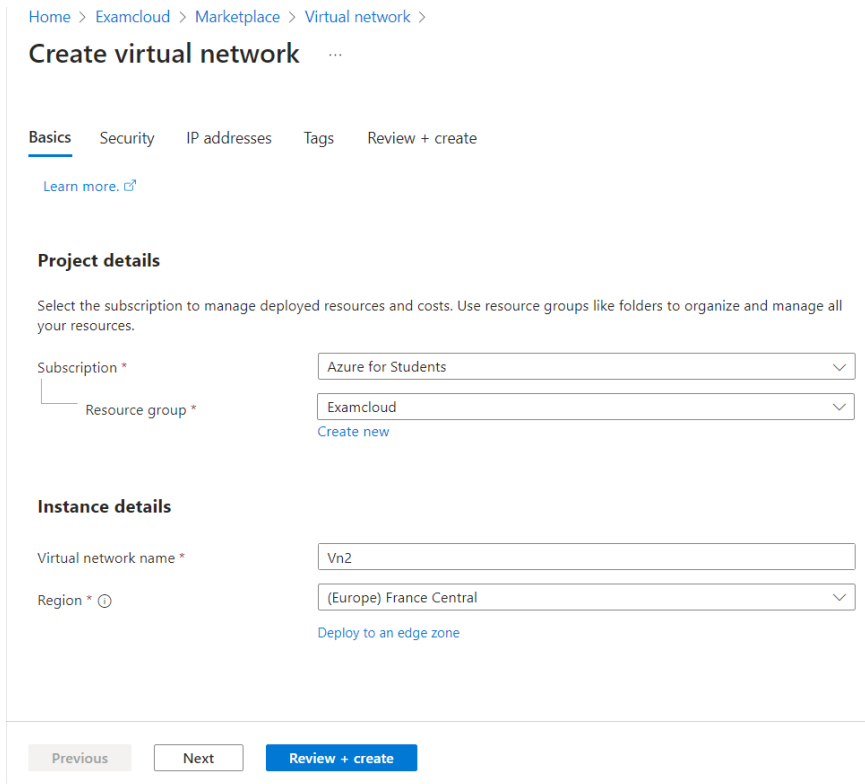
Vous recevrez un avis de déploiement terminé comme ci-dessous



Et Votre réseau virtuel est désormais prêt à être utilisé.

3. Définissez la plage d'adresses IP 192.168.24.0/24 pour Vn2 ainsi qu'un sous-réseau Svn2 prenant l'entièreté de la plage d'adresse de Vn2.

Répétez les étapes pour créer vn2 avec la plage d'adresses IP 192.168.24.0/24 et le sous-réseau svn2.



Microsoft Azure

Home > Examcloud > Marketplace > Virtual network >

Create virtual network

Basics Security **IP addresses** Tags Review + create

Define the address space of your virtual network with one or more IPv4 or IPv6 address ranges. Create subnets to segment the virtual network address space into smaller ranges for use by your applications. When you deploy resources into a subnet, Azure assigns the resource an IP address from the subnet. [Learn more](#)

Add IPv4 address space

192.168.24.0/24

192.168.24.0 /24

192.168.24.0 - 192.168.24.255 256 addresses

+ Add a subnet

Subnets	IP address range	Size	NAT gateway

A NAT gateway is recommended for outbound internet access from subnets. Edit the subnet to add a NAT gateway. [Learn more](#)

Add a subnet

Select an address space and configure your subnet. You can customize a default subnet or select from subnet templates if you plan to add select services later. [Learn more](#)

Subnet purpose: Default

Name: svn2

IPv4

Include an IPv4 address space:

IPv4 address range: 192.168.24.0/24

Starting address: 192.168.24.0

Size: /24 (256 addresses)

Subnet address range: 192.168.24.0 - 192.168.24.255

IPv6

Include an IPv6 address space: This virtual network has no IPv6 address ranges.

Private subnet PREVIEW

Private subnets enhance security by not providing default outbound access. To enable outbound connectivity for virtual machines to access the internet, it is necessary to explicitly grant outbound access. A NAT gateway is the recommended way to provide outbound connectivity for virtual machines in the subnet. [Learn more](#)

Enable private subnet (no default)

Buttons: Add, Cancel

Previous Next **Review + create**

Home > Examcloud > Marketplace > Virtual network >

Create virtual network

Basics Security **IP addresses** Tags Review + create

Configure your virtual network address space with the IPv4 and IPv6 addresses and subnets you need. [Learn more](#)

Define the address space of your virtual network with one or more IPv4 or IPv6 address ranges. Create subnets to segment the virtual network address space into smaller ranges for use by your applications. When you deploy resources into a subnet, Azure assigns the resource an IP address from the subnet. [Learn more](#)

Add IPv4 address space

192.168.24.0/24

192.168.24.0 /24

192.168.24.0 - 192.168.24.255 256 addresses

+ Add a subnet

Subnets	IP address range	Size	NAT gateway
svn2	192.168.24.0 - 192.168.24.255	/24 (256 addresses)	-

Buttons: Previous, Next, **Review + create**

Create virtual network ...

Basics Security IP addresses Tags Review + create

[View automation template](#)

Basics

Subscription	Azure for Students
Resource Group	Examcloud
Name	Vn2
Region	France Central

Security

Azure Bastion	Disabled
Azure Firewall	Disabled
Azure DDoS Network Protection	Disabled

IP addresses

Address space	192.168.24.0/24 (256 addresses)
Subnet	svn2 (192.168.24.0/24) (256 addresses)

Previous

Next

Create

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

Home > Vn2-1708080678904 | Overview

Deployment

Search << Delete Cancel Redeploy Download Refresh

✓ Your deployment is complete

Deployment name : Vn2-1708080678904
Subscription : Azure for Students
Resource group : Examcloud

Start time : 16/02/2024, 11:51:21
Correlation ID : 63bd992d-183e-43f7-b53f-3d93f8628183

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 >](#)

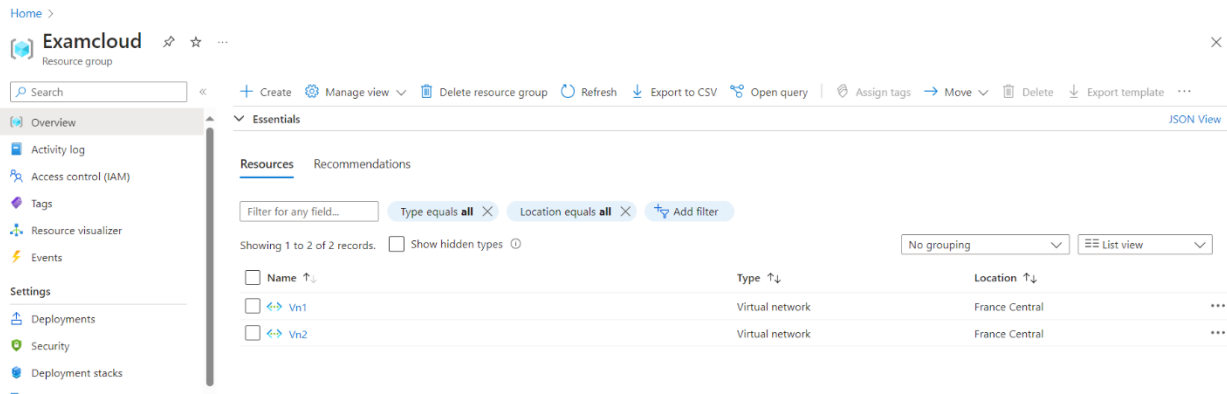
Microsoft Defender for Cloud
Secure your apps and infrastructure
[Go to Microsoft Defender for Cloud >](#)

Free Microsoft tutorials
[Start learning today >](#)

Work with an expert
Azure experts are service provider partners

4. Assurez-Vous que les réseaux virtuels sont associés au groupe de Ressources créée précédemment.

Une fois les étapes terminées, votre réseau virtuel sera associé au groupe de ressources **Examcloud** dans Azure.



Déploiement de machines virtuelles

1. Créez une machine virtuelle ubuntu 22.04 dans chaque sous-réseau (2 machines virtuelles au total).
2. Configurez les paramètres des machines virtuelles, tels que les noms d'hotes (Vm1 Et Vm2), l'administrateur, Et le mot de passe.
3. Configurer une connexion ssh par clef publique/privée pour permettre l'accès à distance aux deux machines virtuelles.
4. Ouvrez le port ssh dans les groupes de sécurité réseau pour permettre l'accès aux machines virtuelles.

Accédez à « Machines virtuelles » et cliquez sur « Ajouter » pour créer une nouvelle machine virtuelle.



Pour chaque machine virtuelle, configurez les paramètres suivants :

Nom d'hôte:

Machine virtuelle 1: vm1

Home >

Create a virtual machine

This subscription may not be eligible to deploy VMs of certain sizes in certain regions.

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *
Resource group *
[Create new](#)

Instance details

Virtual machine name *
Region *
Availability options
Availability zone *
You can now select multiple zones. Selecting multiple zones will create one VM per zone. [Learn more](#)
Purchase type

Choisissez Ubuntu Server 22.04 LTS comme image.

[See all images](#) | [Configure VM generation](#)

Security type ⓘ

[Configure security features](#)

Image * ⓘ

[See all images](#) | [Configure VM generation](#)

VM architecture ⓘ

Arm64
 x64

Run with Azure Spot discount ⓘ

Size * ⓘ

[See all sizes](#)

Enable Hibernation (preview) ⓘ

i To enable Hibernation, you must register your subscription. [Learn more](#)

Administrator account

Authentication type ⓘ

SSH public key
 Password

i Azure now automatically generates an SSH key pair for you and allows you to

Administrateur : Utilisez un nom d'utilisateur

Administrator account

Authentication type ⓘ

- SSH public key
 Password

i Azure now automatically generates an SSH key pair for you and allows you to store it for future use. It is a fast, simple, and secure way to connect to your virtual machine.

Username * ⓘ

swathi ✓

SSH public key source

Generate new key pair ▾

Key pair name *

Vm1_key ✓

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * ⓘ

- None
 Allow selected ports

Select inbound ports *

SSH (22) ▾

Générez une paire de clés SSH publique/privée.

Configurer le disque : laissez les options par défaut et continuez.

Configurer le réseau :

[Home](#) >

Create a virtual machine ...

When creating a virtual machine, a network interface will be created for you.

Virtual network * ⓘ

Vn1 ▾

[Create new](#)

Subnet * ⓘ

svn1 (192.168.23.0/24) ▾

[Manage subnet configuration](#)

Public IP ⓘ

(new) Vm1-ip ▾

[Create new](#)

NIC network security group ⓘ

- None
 Basic
 Advanced

Public inbound ports * ⓘ

- None
 Allow selected ports

Select inbound ports *

HTTP (80), HTTPS (443), SSH (22), RDP (3389) ▾

⚠ This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.

Delete public IP and NIC when VM is ...

Choisissez Vn1 un réseau virtuel et sélectionnez les ports entrants (SSH - 22).

Configuration de la gestion:
Laissez les options par défaut et continuez.


[Home](#) >

Create a virtual machine ...

Basics Disks Networking **Management** Monitoring Advanced Tags Review + create


Configure management options for your VM.


Microsoft Defender for Cloud

Microsoft Defender for Cloud provides unified security management and advanced threat protection across hybrid cloud workloads. [Learn more](#) 

 Your subscription is protected by Microsoft Defender for Cloud basic plan.



Identity



Enable system assigned managed identity 

 To enable system-assigned managed identity, change your orchestration mode to Uniform on the Basics tab

Azure AD

Login with Azure AD 

 RBAC role assignment of Virtual Machine Administrator Login or Virtual Machine User Login is required when using Azure AD login. [Learn more](#) 

 Azure AD login now uses SSH certificate-based authentication. You will need to use an SSH client that supports OpenSSH certificates. You can use Azure CLI or Cloud Shell from the Azure Portal. [Learn more](#) 

Configuration monitoring et avancée : laissez par défaut.

[Home](#) >

Create a virtual machine

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Add additional configuration, agents, scripts or applications via virtual machine extensions or cloud-init.

Extensions

Extensions provide post-deployment configuration and automation.

Extensions ⓘ [Select an extension to install](#)

VM applications

VM applications contain application files that are securely and reliably downloaded on your VM after deployment. In addition to the application files, an install and uninstall script are included in the application. You can easily add or remove applications on your VM after create. [Learn more](#) ⓘ

[Select a VM application to install](#)

Custom data and cloud init

Pass a cloud-init script, configuration file, or other data into the virtual machine **while it is being provisioned**. The data will be saved on the VM in a known location. [Learn more about custom data for VMs](#) ⓘ

Custom data

Configuration des étiquettes : laissez par défaut.

[Home](#) >

Create a virtual machine

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Tags are name/value pairs that enable you to categorize resources and view consolidated billing by applying the same tag to multiple resources and resource groups. [Learn more about tags](#) ⓘ

Note that if you create tags and then change resource settings on other tabs, your tags will be automatically updated.

Name ⓘ	Value ⓘ	Resource
<input type="text"/>	: <input type="text"/>	13 selected <input type="button" value="v"/>

Passez en revue les paramètres et cliquez sur "Créer".

[Home](#) >

Create a virtual machine ...

✓ Validation passed

Basics Disks Networking Management Monitoring Advanced Tags **Review + create**

📘 Cost given below is an estimate and not the final price. Please use [Pricing calculator](#) for all your pricing needs.

Price

1 X Standard D4s v3
by Microsoft
[Terms of use](#) | [Privacy policy](#)

Subscription credits apply ⓘ
0.2240 USD/hr
[Pricing for other VM sizes](#)

TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

Name

Swathi MOUROUGUSSIN

Preferred e-mail address

swathi.mourougussin@sud.univ-st.fr

Create

< Previous

Next >

[Download a template for automation](#)

Après la création, Azure fournira une paire de clés SSH. Téléchargez la clé privée et gardez-la

[Home](#) >

Create a virtual machine ...

✓ Validation passed

Auto-shutdown	Off
Backup	Disabled
Enable hotpatch	Off
Patch orchestration options	Image Default

Monitoring

Alerts	Off
Boot diagnostics	On
Enable OS guest diagnostics	Off
Enable application health monitoring	Off

Advanced

Extensions	None
VM applications	None
Cloud init	No
User data	No
Disk controller type	SCSI
Proximity placement group	None
Capacity reservation group	None

Generate new key pair

📘 An SSH key pair contains both a public key and a private key. **Azure doesn't store the private key.** After the SSH key resource is created, you won't be able to download the private key again. [Learn more](#)

Download private key and create resource

Return to create a virtual machine

Vous recevrez un avis de déploiement terminé comme ci-dessous

Microsoft Azure

Home > CreateVm-canonical.0001-com-ubuntu-server-focal-2-20240216120522 | Overview

Deployment

Deployment is in progress

Deployment name: CreateVm-canonical.0001-com-ubuntu-server-f... Start time: 16/02/2024, 12:16:50
Subscription: Azure for Students Correlation ID: 1e469eb3-d3ea-44aa-8ea7-fd418b90e9e8
Resource group: Examcloud

Deployment details

Resource	Type	Status	Operation details
Vm1	Microsoft.Compute/virtualMach...	Created	Operation details
vm152_z1	Microsoft.Network/networkInte...	Created	Operation details
Vm1-ip	Microsoft.Network/publicIpAdd...	OK	Operation details
Vm1-nsg	Microsoft.Network/networkSec...	OK	Operation details

Give feedback
Tell us about your experience with deployment

Microsoft Defender for Cloud
Secure your apps and infrastructure
Go to Microsoft Defender for Cloud >

Free Microsoft tutorials
Start learning today >

Work with an expert
Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support.
Find an Azure expert >

Répétez les étapes pour créer Vm2 comme ci-dessous

Home > Examcloud > Marketplace > Virtual machine >

Create a virtual machine

This subscription may not be eligible to deploy VMs of certain sizes in certain regions.

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Resource group *
[Create new](#)

Instance details

Virtual machine name *

Region *

Availability options

Availability zone *

You can now select multiple zones. Selecting multiple zones will create one VM per zone. [Learn more](#)

Security type

Home > Examcloud > Marketplace > Virtual machine >

Create a virtual machine

Image
See all images | Configure VM generation

VM architecture Arm64 x64

Run with Azure Spot discount

Size
See all sizes

Enable Hibernation (preview)
To enable Hibernation, you must register your subscription. [Learn more](#)

Administrator account

Authentication type SSH public key Password

Azure now automatically generates an SSH key pair for you and allows you to store it for future use. It is a fast, simple, and secure way to connect to your virtual machine.

Username
Password

Azure now automatically generates an SSH key pair for you and allows you to store it for future use. It is a fast, simple, and secure way to connect to your virtual machine.

Username ✓

SSH public key source ✓

Key pair name ✓

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports None Allow selected ports

Select inbound ports ✓

All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

[Review + create](#) [< Previous](#) [Next: Disks >](#)

Home > Examcloud > Marketplace > Virtual machine >

Create a virtual machine

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

VM disk encryption

Azure disk storage encryption automatically encrypts your data stored on Azure managed disks (OS and data disks) at rest by default when persisting it to the cloud.

Encryption at host
Encryption at host is not registered for the selected subscription. [Learn more about enabling this feature](#)

OS disk

OS disk size ✓

OS disk type ✓

Delete with VM

Key management ✓

Enable Ultra Disk compatibility

Data disks for Vm2

[Review + create](#) [< Previous](#) [Next: Networking >](#)

Home > Examcloud > Marketplace > Virtual machine >

Create a virtual machine

Basics Disks **Networking** Management Monitoring Advanced Tags Review + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution. [Learn more](#)

Network interface

When creating a virtual machine, a network interface will be created for you.

Virtual network * [Create new](#)

Subnet * [Manage subnet configuration](#)

Public IP [Create new](#)

NIC network security group None Basic Advanced

Public inbound ports * None Allow selected ports

Select inbound ports *

Review + create < Previous Next: Management >

Warning: This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.

Delete public IP and NIC when VM is deleted

Enable accelerated networking

Load balancing

You can place this virtual machine in the backend pool of an existing Azure load balancing solution. [Learn more](#)

Load balancing options None Azure load balancer Supports all TCP/UDP network traffic, port-forwarding, and outbound flows. Application gateway Web traffic load balancer for HTTP/HTTPS with URL-based routing, SSL termination, session persistence, and web application firewall.

Review + create < Previous Next: Management >

Home > Examcloud > Marketplace > Virtual machine >

Create a virtual machine

Basics Disks Networking **Management** Monitoring Advanced Tags Review + create

Configure management options for your VM.

Microsoft Defender for Cloud

Microsoft Defender for Cloud provides unified security management and advanced threat protection across hybrid cloud workloads. [Learn more](#)

Your subscription is protected by Microsoft Defender for Cloud basic plan.

Identity

Enable system assigned managed identity **i** To enable system-assigned managed identity, change your orchestration mode to Uniform on the Basics tab

Azure AD

Login with Azure AD **i** RBAC role assignment of Virtual Machine Administrator Login or Virtual Machine User Login is required when using Azure AD login. [Learn more](#)

i Azure AD login now uses SSH certificate-based authentication. You will need to use an SSH client that supports OpenSSH certificates. You can use [Azure CLI](#) or [Cloud Shell](#) from the [Azure Portal](#). [Learn more](#)

Review + create < Previous Next: Monitoring >

Create a virtual machine

Basics Disks Networking Management **Monitoring** Advanced Tags Review + create

Configure monitoring options for your VM.

Alerts

Enable recommended alert rules

Diagnostics

Boot diagnostics Enable with managed storage account (recommended)
 Enable with custom storage account
 Disable

Enable OS guest diagnostics

Health

Enable application health monitoring

[Review + create](#) < Previous Next: Advanced >

Create a virtual machine

Basics Disks Networking Management Monitoring **Advanced** Tags Review + create

Add additional configuration, agents, scripts or applications via virtual machine extensions or cloud-init.

Extensions

Extensions provide post-deployment configuration and automation.

Extensions [Select an extension to install](#)

VM applications

VM applications contain application files that are securely and reliably downloaded on your VM after deployment. In addition to the application files, an install and uninstall script are included in the application. You can easily add or remove applications on your VM after create. [Learn more](#)

[Select a VM application to install](#)

Custom data and cloud init

Pass a cloud-init script, configuration file, or other data into the virtual machine **while it is being provisioned**. The data will be saved on the VM in a known location. [Learn more about custom data for VMs](#)

Custom data

[Review + create](#) < Previous Next: Tags >

Create a virtual machine

Basics Disks Networking Management Monitoring Advanced **Tags** Review + create

Tags are name/value pairs that enable you to categorize resources and view consolidated billing by applying the same tag to multiple resources and resource groups. [Learn more about tags](#)

Note that if you create tags and then change resource settings on other tabs, your tags will be automatically updated.

Name	Value	Resource
<input type="text"/>	<input type="text"/>	13 selected

[Review + create](#) < Previous Next: Review + create >

Create a virtual machine ...

✓ Validation passed

Basics Disks Networking Management Monitoring Advanced Tags **Review + create**

ⓘ Cost given below is an estimate and not the final price. Please use [Pricing calculator](#) for all your pricing needs.

Price

1 X Standard E2s v3
by Microsoft
[Terms of use](#) | [Privacy policy](#)

Subscription credits apply ⓘ
0.1560 USD/hr
[Pricing for other VM sizes](#)

TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

Name

Swathi MOUROUGUESSIN

Preferred e-mail address

swathi.mourougouessin@unimontreal.ca

Create

< Previous

Next >

[Download a template for automation](#)

Create a virtual machine ...

✓ Validation passed

Auto-shutdown	Off
Backup	Disabled
Enable hotpatch	Off
Patch orchestration options	Image Default

Monitoring

Alerts	Off
Boot diagnostics	On
Enable OS guest diagnostics	Off
Enable application health monitoring	Off

Advanced

Extensions	None
VM applications	None
Cloud init	No
User data	No
Disk controller type	SCSI
Proximity placement group	None
Capacity reservation group	None

Create

< Previous

Next >

[Download a template for automation](#)

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

Home > Examcloud > Marketplace > Virtual machine >

Create a virtual machine

Validation passed

Auto-shutdown	Off
Backup	Disabled
Enable hotpatch	Off
Patch orchestration options	Image Default

Monitoring

Alerts	Off
Boot diagnostics	On
Enable OS guest diagnostics	Off
Enable application health monitoring	Off

Advanced

Extensions	None
VM applications	None
Cloud init	No
User data	No
Disk controller type	SCSI
Proximity placement group	None
Capacity reservation group	None

Generate new key pair

i An SSH key pair contains both a public key and a private key. **Azure doesn't store the private key.** After the SSH key resource is created, you won't be able to download the private key again. [Learn more](#)

[Download private key and create resource](#)

[Return to create a virtual machine](#)

Create | < Previous | Next > | Download a template for automation

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

Home >

CreateVm-canonical.0001-com-ubuntu-server-jammy-2-20240216122131 | Overview

Deployment

Search | Delete | Cancel | Redeploy | Download | Refresh

- Overview
- Inputs
- Outputs
- Template

Your deployment is complete

Deployment name: CreateVm-canonical.0001-com-ubuntu-server-j... | Start time: 16/02/2024, 12:28:47
 Subscription: Azure for Students | Correlation ID: dfb3da47-d7bf-4c82-8c35-ddb058ab187c

Resource group: Examcloud

Deployment details

Next steps

- Setup auto-shutdown Recommended
- Monitor VM health, performance and network dependencies Recommended
- Run a script inside the virtual machine Recommended

[Go to resource](#) | [Create another VM](#)

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 >

Microsoft Defender for Cloud

Secure your apps and infrastructure. Go to Microsoft Defender for Cloud >

Free Microsoft tutorials

Start learning today >

Work with an expert

Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support. Find an Azure expert >

Tentative de communication entre les machines virtuelles

1. Connectez-vous aux machines virtuelles via ssh.

VM1

Test de Connexion SSH :

Utilisez la commande depuis le système hôte CMD windows 10.

```
C:\Windows\system32>ssh -i "D:\user\Downloads\Vm1_key.pem" swathi@20.199.87.56
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1054-azure x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Fri Feb 16 11:42:54 UTC 2024

System load:  0.08          Processes:            128
Usage of /:   5.2% of 28.89GB Users logged in:     0
Memory usage: 2%           IPv4 address for eth0: 192.168.23.4
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

swathi@Vm1:~$
```

VM1

```
C:\Windows\system32>ssh -i "D:\user\Downloads\Vm2_key.pem" azureuser@20.19.81.198
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.2.0-1019-azure x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Fri Feb 16 11:48:31 UTC 2024

System load:  0.0          Processes:            122
Usage of /:   5.0% of 28.89GB Users logged in:     0
Memory usage: 2%          IPv4 address for eth0: 192.168.24.4
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

azureuser@Vm2:~$
```

2. Assurez-vous que l'utilitaire « telnet » est installé sur la vm1

```
swathi@Vm1:~$ sudo apt install telnet
Reading package lists... Done
Building dependency tree
Reading state information... Done
telnet is already the newest version (0.17-41.2build1).
telnet set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 10 not upgraded.
```

Et « netcat » est installé sur la vm2.

```
azureuser@Vm2:~$ sudo apt install netcat
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
 netcat
0 upgraded, 1 newly installed, 0 to remove and 17 not upgraded.
Need to get 2044 B of archives.
After this operation, 17.4 kB of additional disk space will be used.
Get:1 http://azure.archive.ubuntu.com/ubuntu jammy/universe amd64 netcat all 1.218-4ubuntu1 [2044 B]
Fetched 2044 B in 0s (52.1 kB/s)
Selecting previously unselected package netcat.
(Reading database ... 61596 files and directories currently installed.)
Preparing to unpack ../netcat_1.218-4ubuntu1_all.deb ...
Unpacking netcat (1.218-4ubuntu1) ...
Setting up netcat (1.218-4ubuntu1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
```

3. Lancez netcat « en écoute » sur le port 24517 dans la vm2 avec la commande suivante : netcat -l 24517

```
azureuser@Vm2:~$  
azureuser@Vm2:~$ netcat -l 24517
```

4. Essayez d'envoyer un message via telnet depuis la vm1 vers la vm2 avec la commande suivante : telnet 24517

```
swathi@Vm1:~$ telnet 20.19.81.198 24517  
Trying 20.19.81.198...  
telnet: Unable to connect to remote host: Connection timed out
```

la communication ne fonctionnera pas.

Configuration des règles de sécurité pour autoriser la communication entre les VMs

1. Mettez à jour les règles de sécurité réseau sur chaque machine virtuelle pour autoriser les communications depuis la vm1 vers le port 24517 de la vm2 (et uniquement depuis la vm1).

Accédez aux groupes de sécurité réseau associés à vos machines virtuelles, créez une **règle outbound sur Vm1 et inbound** sur Vm2 autorisant le trafic sortant de vm1, dirigé vers le port 24517 de vm2, et n'autorisez que ce trafic spécifique comme ci-dessous

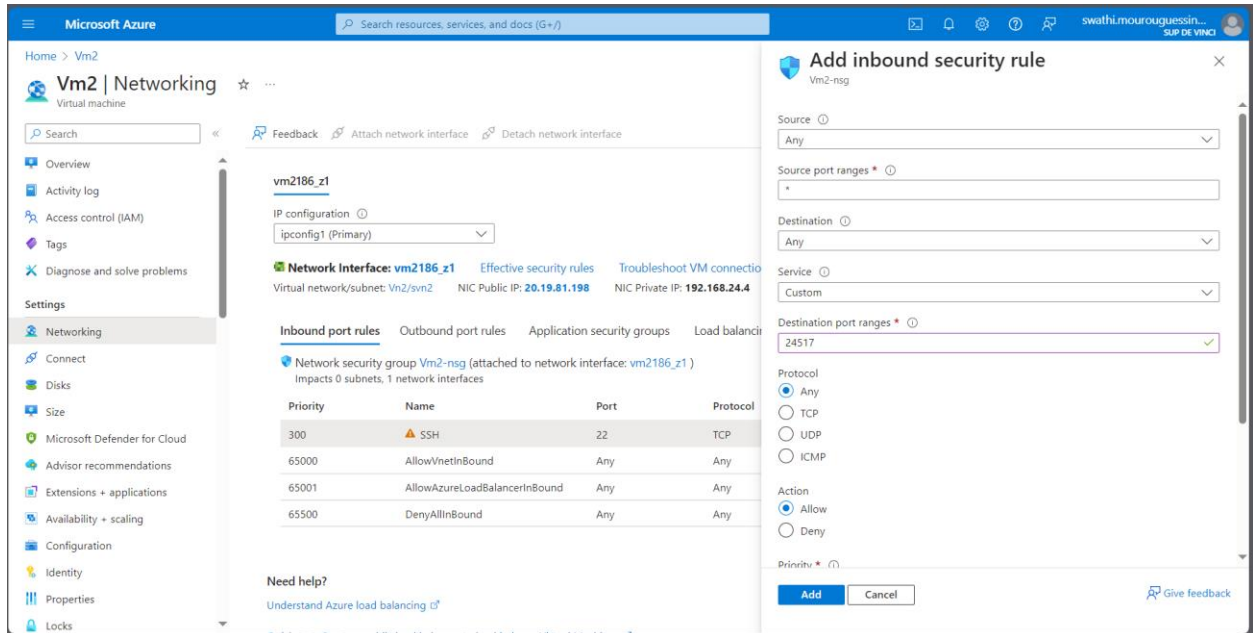
The screenshot displays the Microsoft Azure portal interface. On the left, the navigation pane shows the 'Vm1 | Networking' section. The main area shows the configuration for the virtual machine 'vm152_z1', including its IP configuration and a table of network security rules. The 'Outbound port rules' tab is active, showing a table with the following data:

Priority	Name	Port	Protocol
65000	AllowVnetOutBound	Any	Any
65001	AllowInternetOutBound	Any	Any
65500	DenyAllOutBound	Any	Any

Below the table, there is a 'Need help?' section with a link to 'Understand Azure load balancing'. The right-hand pane is the 'Add outbound security rule' dialog for 'Vm1-nsg'. The configuration is as follows:

- Source: Any
- Source port ranges: *
- Destination: Any
- Service: Custom
- Destination port ranges: 24517
- Protocol: Any
- Action: Allow
- Priority: *

Buttons for 'Add' and 'Cancel' are visible at the bottom of the dialog.



2. Reessayez de faire communiquer les 2 machines via telnet et netcat.

Une configuration réussie, maintenant si vous attendez de recevoir une réponse de l'écouteur netcat sur vm2, vous devez taper votre message. Après avoir envoyé le message, vous pouvez vérifier sur vm2 si le message a été reçu.

```
swathi@Vm1:~$ telnet 20.19.81.198 24517
Trying 20.19.81.198...
Connected to 20.19.81.198.
Escape character is '^]'.
coucou SdV
```

```
azureuser@Vm2:~$ netcat -l 24517
coucou SdV
```