

Day 2 - Create an Azure VM

Overview

The Nautilus DevOps team is planning to migrate a portion of their infrastructure to the Azure cloud incrementally. As part of this migration, you are tasked with creating an Azure Virtual Machine (VM).

The requirements are:

1. Use the existing resource group.
2. The VM name must be `devops-vm`, it should be in `West US` region.
3. Use the `Ubuntu 22.04 LTS` image for the VM.
4. The VM size must be `Standard_B1s`.
5. Attach a default Network Security Group (NSG) that allows inbound SSH (port 22).
6. Attach a 30 GB storage disk of type `Standard HDD`.
7. The rest of the configurations should remain as default.

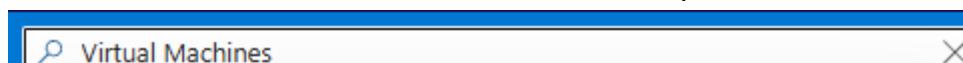
After completing these steps, make sure you can SSH into the virtual machine.

What is an Azure VM

An Azure Virtual Machine (VM) is a computer running in Microsoft's cloud service that you can access and control remotely over the internet, without needing to own or maintain the physical hardware.

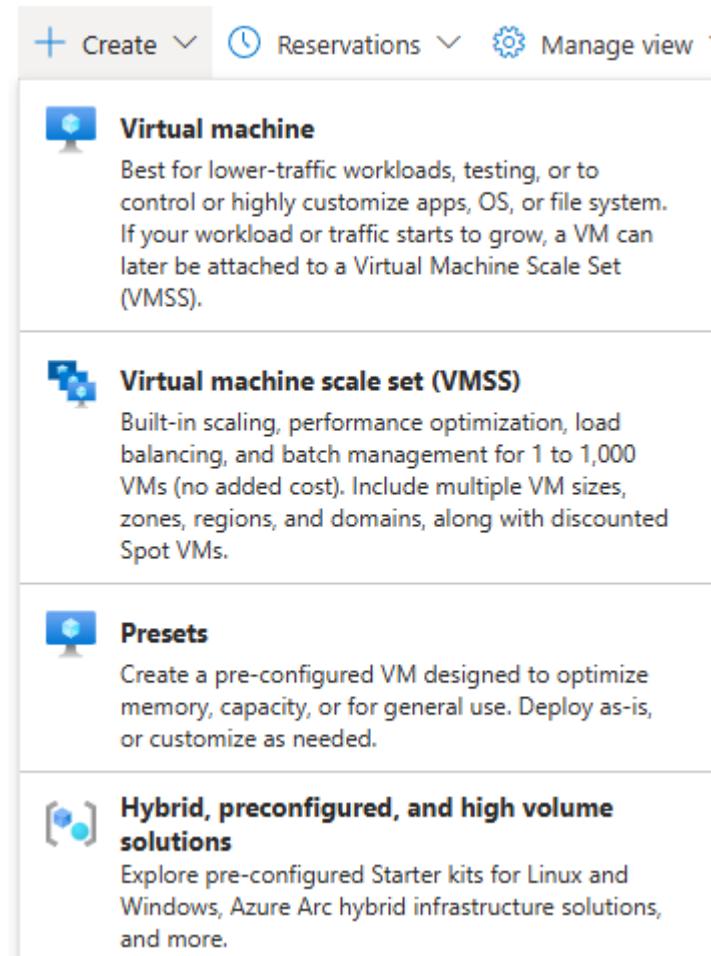
Solution

First we search for Virtual Machines at the top



A screenshot of the Azure portal's search interface. At the top, there is a search bar with a magnifying glass icon containing the text "Virtual Machines". To the right of the search bar is a close button (an 'X'). Below the search bar, there are several navigation tabs: "All" (which is highlighted in blue), "Services (30)", "Marketplace (6)", and "More (4)". Further down, under the "Services" category, there is a section titled "Virtual machines" with a small computer monitor icon next to it. To the right of this section is a "See more" link.

Now we create a new Virtual machine from the drop down



The screenshot shows the Azure portal's navigation bar with 'Create' and 'Reservations' dropdowns, and a 'Manage view' icon. Below the navigation bar, there are four main options:

- Virtual machine**: Best for lower-traffic workloads, testing, or to control or highly customize apps, OS, or file system. If your workload or traffic starts to grow, a VM can later be attached to a Virtual Machine Scale Set (VMSS).
- Virtual machine scale set (VMSS)**: Built-in scaling, performance optimization, load balancing, and batch management for 1 to 1,000 VMs (no added cost). Include multiple VM sizes, zones, regions, and domains, along with discounted Spot VMs.
- Presets**: Create a pre-configured VM designed to optimize memory, capacity, or for general use. Deploy as-is, or customize as needed.
- Hybrid, preconfigured, and high volume solutions**: Explore pre-configured Starter kits for Linux and Windows, Azure Arc hybrid infrastructure solutions, and more.

After we fill out all the relevant information in the fields

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more ↗](#)

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 * ⓘ ✓

[Deploy to an Azure Extended Zone](#)

Availability options ⓘ ✓

Security type ⓘ ✓

Image * ⓘ ✓

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

 This image is compatible with additional security features. [Click here to swap to the Trusted launch security type.](#)

VM architecture ⓘ Arm64
 x64

Run with Azure Spot discount ⓘ

Size * ⓘ ✓

[See all sizes](#)

Enable Hibernation ⓘ
 Hibernate is not supported by the size that you have selected. Choose a size that is compatible with Hibernate to enable this feature. [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 * ⓘ ✓

Username * ✓

SSH public key source ▼

SSH Key Type RSA SSH Format Ed25519 SSH Format
i Ed25519 provides a fixed security level of no more than 128 bits for 256-bit key, while RSA could offer better security with keys longer than 3072 bits.

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 * ▼

⚠ 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.

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

Now we head to disks and change the OS disk type to Standard HDD. Then create and attach a new disk

Create a new disk ...

Create a new disk to store applications and data on your VM. Disk pricing varies based on factors including disk size, storage type, and number of transactions. [Learn more ↗](#)

Name *

Source type * None (empty disk) ▼

Size * 30 GiB Standard HDD LRS [Change size](#)

Key management ↻

Enable shared disk Yes No
i Shared disk not available for the selected size.

Delete disk with VM

Now we can review and create once the disk has been attached, which we get a validation passed message which shows everything is setup correctly and now we fully

create the VM

Validation passed

Help me create a low cost VM | Help me create a VM optimized for high availability | Help me choose the right VM size for my workload

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

Price

1 X Standard B1s by Microsoft Subscription credits apply ⓘ **0.0124 USD/hr** Pricing for other VM sizes

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It can take a 1-2 minutes for the VM to be deployed whilst it goes through checks. Once it has gone through all the checks the VM will fully be deployed and running.

CreateVm-canonical.0001-com-ubuntu-server-jammy-2-20260108194601 | Overview

Deployment

Search X < > Delete Cancel Redeploy Download Refresh

Overview

Deployment name: CreateVm-canonical.0001-com-ubuntu... Start time: 1/8/2026, 8:05:41 PM
Subscription: Azure Free Labs Correlation ID: 3edbca34-bf6f-404a-ae26
Resource group: kml_rg_main-b7cec280305843ee

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

Now we can try SSH into the account using the key we downloaded when creating the VM:

```
ssh -i <keyname> azureuser@IP
```

It seems we are able to SSH into the machine with our key (my VM name is different here as I had to recreate another one due to an issue with the lab)

```
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@xfusion-vm:~$
```

Security Best Practices

- **Restrict SSH access to specific IP addresses only:** Limit SSH (port 22) to your organization's IP range instead of allowing access from anywhere
- **Use SSH keys instead of passwords:** SSH key authentication is significantly more secure and resistant to brute-force attacks
- **Disable password authentication** in SSH configuration after confirming key-based access works
- **Implement role-based access control (RBAC):** Grant users only the minimum permissions needed to perform their tasks
- **Enable Azure Disk Encryption:** Encrypt both OS and data disks to protect data at rest
- **Configure Azure Backup:** Set up automated backups for disaster recovery