

AZURE BASIC FEATURES



AZURE BASIC FEATURES

Storage services

Network services

Computing services

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Storage services

- Azure blob storages
- Azure files

Network services

Computing services

AZURE BASIC FEATURES

Storage services

- Azure blob storages
- Azure files

Network services

Computing services

- Serving images or documents directly to a browser.
- Storing files for distributed access.
- Streaming video and audio.
- Writing to log files.
- Storing data for backup and restore, disaster recovery, and archiving.
- Storing data for analysis by an on-premises or Azure-hosted service.

AZURE BASIC FEATURES

Storage services

- Azure blob storages
- Azure files

Network services

Computing services

Aim to:

- Replace or supplement on-premises file servers
- "Lift and shift" applications
- Simplify cloud development

Using:

- Server Message Block (SMB) protocol
- Network File System (NFS) protocol
- Azure Files REST API

AZURE BASIC FEATURES

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Computing services

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Storage services

Network services

- Virtual networks
- Load balancing

Computing services

AZURE BASIC FEATURES

Storage services

Network services

- Virtual networks
- Load balancing

Computing services

- Communication of Azure resources with the internet.
- Communication between Azure resources.
- Communication with on-premises resources.
- Filtering of network traffic.
- Routing of network traffic.
- Integration with Azure services.

AZURE BASIC FEATURES

Storage services

Network services

- Virtual networks
- Load balancing

Computing services

- Azure Front Door
- Traffic manager
- Application gateway
- Load balancer

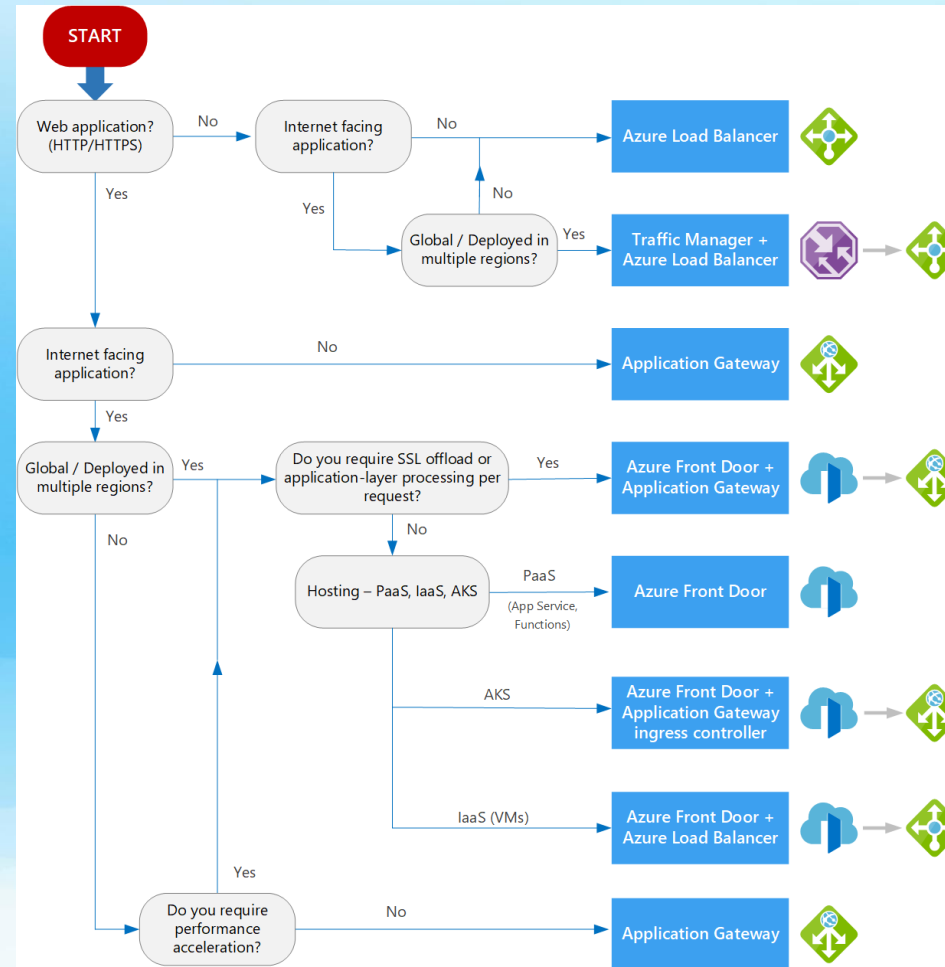
AZURE BASIC FEATURES

Storage services

Network services

- Virtual networks
- Load balancing

Computing services



AZURE BASIC FEATURES

Storage services

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Computing services

AZURE BASIC FEATURES

Storage services

Network services

Computing services

- VMs
- Apps

AZURE BASIC FEATURES

Storage services

Network services

Computing services

- VMs
- Apps

Azure virtual machine gives you the flexibility of virtualization without having to buy and maintain the physical hardware that runs it. However, you still need to maintain the virtual machine by performing tasks, such as configuring, patching, and installing the software that runs on it.

AZURE BASIC FEATURES

Storage services

Network services

Computing services

- VMs
- Apps

Enables you to build and host web apps, mobile back ends, and RESTful APIs in the programming language of your choice without managing infrastructure. It offers auto-scaling and high availability, supports both Windows and Linux, and enables automated deployments from GitHub, Azure DevOps.

In practice:

Deployment: network + subnetwork + VMs + load balancer – what to pay attention to?

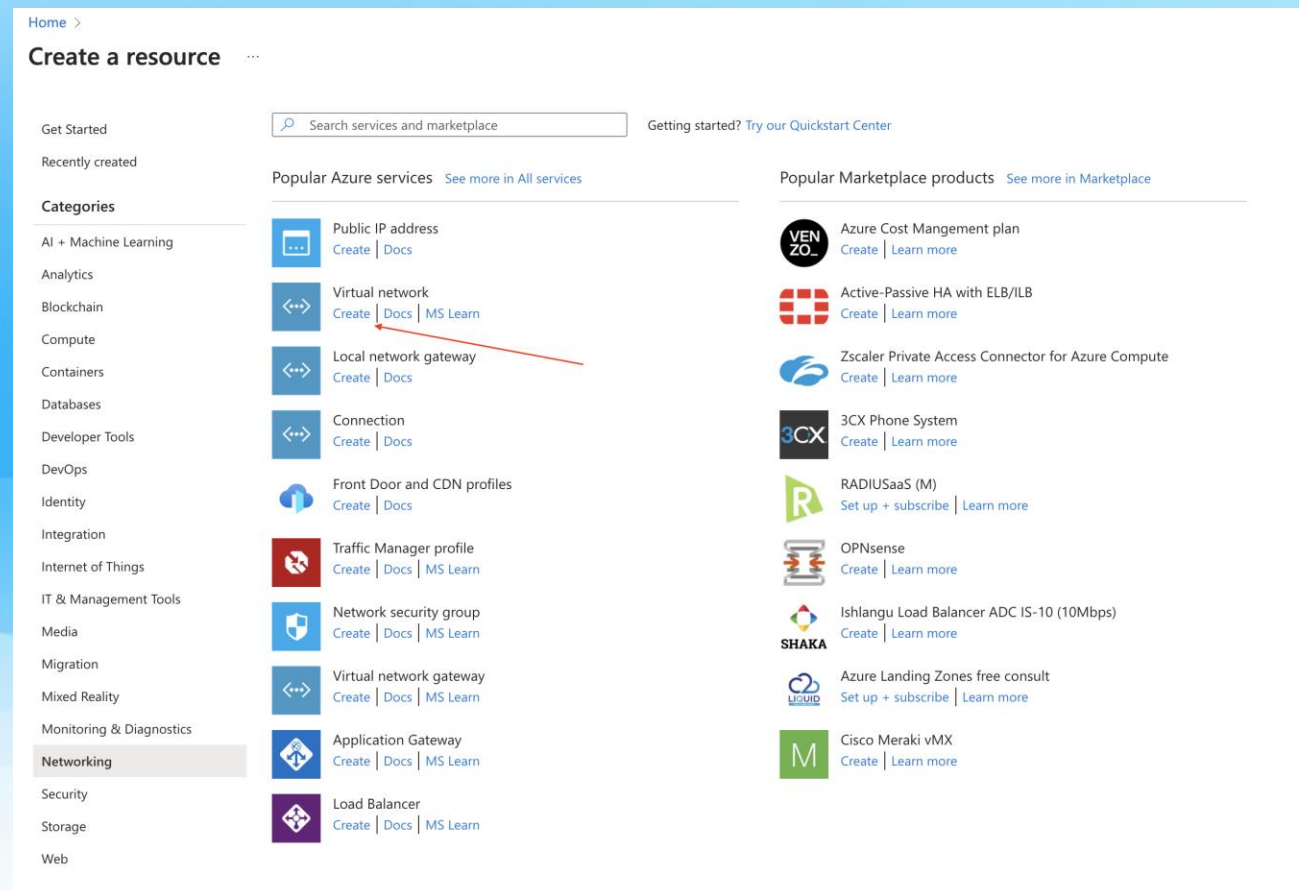
In practice:

Deployment: network + subnetwork + VMs + load balancer – what to pay attention to?

Do not use
SKU = Basic
Anything marked = (Classic)

In practice:

Deployment: network + subnetwork + VMs + load balancer – what to pay attention to?



In practice:

Deployment: network + subnetwork + VMs + load balancer – what to pay attention to?

Home > Create a resource >

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 | ▾

10.0.0.0/16 [Delete address space](#)

10.0.0.0 - 10.0.255.255 65,536 addresses

+ Add a subnet

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

In practice:

Deployment: network +
subnetwork + VMs +
load balancer – what to
pay attention to?

Create public IP address ...

Basics DDoS Protection Tags Review + create

Project details

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

Subscription * ⓘ Azure subscription 1 

Resource group * ⓘ testCourseRG 
[Create new](#)

Instance details


Region * (Europe) West Europe 


[Deploy to an Azure Extended Zone](#) 

Configuration details

Name * test

IP Version * ⓘ ☒ IPv4 ☐ IPv6

SKU * ⓘ ☒ Standard ☐ Basic 

Availability zone * ⓘ Zone-redundant 

Tier * ⓘ ☒ Regional ☐ Global

IP address assignment

Static IPs are assigned at the time the resource is created and released when the resource is deleted. Dynamic IPs are assigned when associating the IP to a resource and is released when you stop, restart, or delete a resource. Dynamic is only available for Basic SKU. [Learn more](#) ⓘ

IP address assignment * ⓘ ☐ Dynamic ☒ Static

Routing preference * ⓘ ☒ Microsoft network

In practice:

Deployment: network + subnetwork + VMs + load balancer – what to pay attention to?

Home > Availability sets >

Create availability set

i We recommend that new customers choose virtual machine scale sets with flexible orchestration mode for high availability with the wide

Basics Advanced Tags Review + create

An Availability Set is a logical grouping capability for isolating VM resources from each other when they're deployed. Azure makes sure that the VMs you place within an Availability Set run across multiple physical servers, compute racks, storage units, and network switches. If a hardware or software failure happens, only a subset of your VMs are impacted and your overall solution stays operational. Availability Sets are essential for building reliable cloud solutions.
[Learn more about availability sets.](#)

Project details

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

Subscription * ⓘ Azure subscription 1

Resource group * ⓘ testCourseRG
[Create new](#)

Instance details

Name * ⓘ second ✓

Region * ⓘ (Europe) West Europe

Fault domains ⓘ 2

Update domains ⓘ 5

Use managed disks ⓘ ☒ No (Classic) ☐ Yes (Aligned)

In practice:

Deployment: network + subnetwork + VMs + load balancer – what to pay attention to?

Home > Load balancing | Load Balancer >

Create load balancer ...

Basics Frontend IP configuration Backend pools Inbound rules Outbound rules Tags Review + create

Azure load balancer is a layer 4 load balancer that distributes incoming traffic among healthy virtual machine instances. Load balancers uses a hash-based distribution algorithm. By default, it uses a 5-tuple (source IP, source port, destination IP, destination port, protocol type) hash to map traffic to available servers. Load balancers can either be internet-facing where it is accessible via public IP addresses, or internal where it is only accessible from a virtual network. Azure load balancers also support Network Address Translation (NAT) to route traffic between public and private IP addresses. [Learn more.](#)

Project details

Subscription * Azure subscription 1

Resource group * testCourseRG
[Create new](#)

Instance details

Name *

Region * West Europe

SKU * ☒ Standard (Recommended) ☐ Gateway ☐ Basic (Retiring soon)

Type * ☒ Public ☐ Internal

Tier * ☒ Regional ☐ Global

In practice:

Deployment: network + subnetwork + VMs + load balancer – what to pay attention to?

The screenshot shows the 'Create load balancer' page in the Azure portal. The main area has tabs for 'Basics', 'Frontend IP configuration', 'Backend pools', 'Inbound rules', 'Outbound rules', 'Tags', and 'Review + create'. The 'Frontend IP configuration' tab is active. Below the tabs, a description states: 'A frontend IP configuration is an IP address used for inbound and/or outbound communication as defined within load balancing, inbound NAT, and outbound rules.' There is a '+ Add a frontend IP configuration' button. Below this, a table with the header 'Name ↑↓' and a single row 'Add a frontend IP to get started' is visible. A red arrow points from this row to the right-hand sidebar. The sidebar is titled 'Add frontend IP configuration' and contains the following fields:

- Name ***: A text input field with the placeholder 'Frontend IP configuration name'.
- IP version**: Two radio buttons, 'IPv4' (selected) and 'IPv6'.
- IP type**: Two radio buttons, 'IP address' (selected) and 'IP prefix'.
- Public IP address ***: A dropdown menu with the placeholder 'Select public IP address'. It shows two options: 'Can be associated with this load balancer' and 'Cannot be associated with this load balancer'. The 'testIP (20.67.68.12)' is listed below these options.
- Gateway Load balancer**: A link with a question mark icon.

In practice:

Deployment: network + subnetwork + VMs + load balancer – what to pay attention to?

[Home](#) > [Load balancing | Load Balancer](#) > [Create load balancer](#) >

Add backend pool ...

Name *

Backend pool name

Virtual network ⓘ

testNetwork (testCourseRG)

Backend Pool Configuration

testNetwork (testCourseRG)

☐ IP address

In practice:

Deployment: network + subnetwork + VMs + load balancer – what to pay attention to?

Home > Virtual machines >

Create a virtual machine

[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

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 *

Availability options

Availability set * [Create new](#)

Security type

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

There is a generation 2 version of this image available which has higher feature compatibility. [Click here to swap to the generation 2 version](#)

In practice:

Deployment: network + subnetwork + VMs + load balancer – what to pay attention to?

Home > Virtual machines >

Create a virtual machine


[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

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 ☐ 

OS disk


OS disk size

OS disk type

Delete with VM ☒

Key management

Enable Ultra Disk compatibility ☐

Encryption at host ☐  Encryption at host is only available for managed disks. [Learn more](#)

OS disk size The selected image does not support resizing the OS disk during VM creation.

In practice:

Deployment: network + subnetwork + VMs + load balancer – what to pay attention to?

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Create a virtual machine

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

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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

Name

Region

Fault domains

Update domains

Use managed disks ☒ No (Classic) ☐ Yes (Aligned)

<https://learn.microsoft.com/en-us/azure/virtual-machines/disks-enable-host-based-encryption-portal?tabs=azure-powershell#prerequisites>

In practice:

Deployment: network +
subnetwork + VMs +
load balancer – what to
pay attention to?

[Home](#) > [Virtual machines](#) >

Create a virtual machine



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](#)

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 * | <div>testNetwork</div> <div>Create new</div> |
| Subnet * | <div>default (10.0.0.0/24)</div> <div>Manage subnet configuration</div> |
| Public IP | <div>None</div> <div>Create new</div> |
| NIC network security group | <div><input type="radio"/> None</div> <div><input type="radio"/> Basic</div> <div><input checked="" type="radio"/> Advanced</div> |
| Configure network security group * | <div>testVM1-nsg</div> <div>Create new</div> |
| Delete NIC when VM is deleted | <input type="checkbox"/> |
| Enable accelerated networking | <input type="checkbox"/> |

The selected VM size does not support accelerated networking.

Load balancing

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

Place this virtual machine behind an existing load balancing solution?



Load balancing settings

- Application Gateway** is an HTTP/HTTPS web traffic load balancer with URL-based routing, SSL termination, session persistence, and web application firewall. [Learn more about Application Gateway](#)
- Azure Load Balancer** supports all TCP/UDP network traffic, port-forwarding, and outbound flows. [Learn more about Azure Load Balancer](#)

| | |
|--------------------------|---|
| Load balancing options * | <div>Azure load balancer</div> |
| Select a load balancer * | <div>testLB</div> |
| Select a backend pool * | <div>testCoursePool</div> <div>Create new</div> |

Homework:

- Create network + subnet
- Create load balancer with http traffic balancing
- Create 2 VMs behind the LB (access to VM only by the LB's IP)
- Install simple http server on each VM but make different start pages
(e.g. 'Hello world!' & 'Hello world 2!' Or any visible difference by your choice)
- Invite my user to your directory – use email > testingkv13@gmail.com
- Provide the invited user with 'Contributor' role to the resource group with all resources related to the homework

Questions?

