

Introduction to Network interfaces, IP addresses

Network Interface Overview

A Network Interface (NIC) is an interconnection between a Virtual Machine and the underlying software network. An Azure Virtual Machine (VM) has one or more network interfaces (NIC) attached to it. Any NIC can have one or more static or dynamic public and private IP addresses assigned to it

01

Virtual network & subnets - Attach NIC to a VNet and subnet. You can change subnet later but not VNet.

02

IP configurations - Public and private IP addresses will be assigned at NIC level. Primary & secondary IP configurations

03

NSG & Routes - You can apply zero or one network security group and one or more routes to a network interface.

04

IP Forwarding - The setting must be enabled for every network interface that is attached to the virtual machine

05

DNS servers - You can specify which DNS server a network interface is assigned by the Azure DHCP servers.

A unique reference that identifies each computer using the Internet Protocol to communicate over a network.

Private

- Private IPv4 addresses enable a virtual machine to communicate with other resources in a virtual network or other connected networks.
- **Dynamic:** When selecting this option, Azure automatically assigns the next available address from the address space of the subnet you selected.
- **Static:** When selecting this option, you must manually assign an available IP address from within the address space of the subnet you selected

Public

- Assigning a public IP address to an Azure resource that supports public IP addresses enables
 - Inbound communication from internet to the resource such as Azure VMs
 - Outbound connectivity to the Internet using a predictable IP address.
- Dynamic addresses are released when a public IP address resource is dissociated from a resource it is associated to.
- **Static:** Static addresses are assigned when a public IP address is created.

IP Addresses

IP Address type	Resource	IP Address association	Dynamic	Static
Public	Virtual machine	Network Interface	Yes	Yes
Public	Load balancer	Front end configuration	Yes	Yes
Public	Virtual machine scale set	Network Interface	Yes	Yes
Public	VPN gateway	Gateway IP Configuration	Yes	No
Public	Application gateway	Front end configuration	Yes	No
Private	Virtual machine	Network Interface	Yes	Yes
Private	Load balancer	Front end configuration	Yes	Yes
Private	Application gateway	Front end configuration	Yes	Yes

Hostname resolution



DNS hostname resolution

You can specify a DNS domain name label for a public IP resource, which creates a mapping for *domainnamelabel.location.cloudapp.azure.com* to the public IP address in the Azure-managed DNS servers

Internal DNS hostname resolution (for VMs)

All Azure VMs are configured with Azure-managed DNS servers by default, unless you explicitly configure custom DNS servers. These DNS servers provide internal name resolution for VMs that reside within the same VNet.