

Assignment: 02
Lab: 04
Name: Ameer Umar Khan
ID: 2280137
Section: 7B

Creating virtual network - basics

portal.azure.com/#view/Microsoft_Azure_Network/VirtualNetworkCreateV3ReactView/_provisioningContext~/~/7B*initialValues%3A%7B*subscriptionId%3A%5B*9c95a83d-2817-48dc...

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Create virtual network

Basics

Security

IP addresses

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 *

(New) az104-rg4

Create new

Instance details

Virtual network name *

CoreServicesVnet

Region *

(US) East US

Deploy to an Azure Extended Zone

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Review + create

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IP addresses

portal.azure.com/#view/Microsoft_Azure_Network/VirtualNetworkCreateV3ReactView/_provisioningContext~/~/7B*initialValues%3A%7B*subscriptionId%3A%5B*9c95a83d-2817-48dc...

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Basics

Security

IP addresses

Tags

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assigns the resource an IP address from the subnet. [Learn more](#)

☐ Allocate using IP address pools. [Learn more](#)

+ Add a subnet

10.20.0.0/16

Delete address space

10.20.0.0

/16

10.20.0.0 - 10.20.255.25565,536 addresses

Subnets	IP address range	Size	NAT gateway
default	10.20.0.0 - 10.20.0.255	/24 (256 addresses)	-

Add IPv4 address space

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Creating subnet

portal.azure.com/#view/Microsoft_Azure_Network/VirtualNetworkCreateV3.ReactView/_provisioningContext~/~/7B*initialValues%3A%7B*subscriptionId%3A%5B*9c95a83d-2817-48dc...

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Basics Security IP addresses Tags Review + create

Enter network address space and subnet ranges to use as your applications. When you deploy resources into a subnet, Azure assigns the resource an IP address from the subnet. [Learn more](#)

☐ Allocate using IP address pools. [Learn more](#)

+ Add a subnet

10.20.0.0/16 [Delete address space](#)

10.20.0.0 /16
10.20.0.0 - 10.20.255.255 65,536 addresses

Subnets	IP address range	Size	NAT gateway
default	10.20.0.0 - 10.20.0.255	/24 (256 addresses)	-

+ Add IPv4 address space

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Review + create

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

Name

IPv4

Include an IPv4 address space ☒

IPv4 address range
10.20.0.0 - 10.20.255.255

Starting address

Size

Subnet address range

IPv6

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

Private subnet

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

Add

Cancel

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Creating 2nd subnet

portal.azure.com/#view/Microsoft_Azure_Network/VirtualNetworkCreateV3.ReactView/_provisioningContext~/~/7B*initialValues%3A%7B*subscriptionId%3A%5B*9c95a83d-2817-4...

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Create virtual network

Basics Security IP addresses Tags Review + create

Enter network address space and subnet ranges to use as your applications. When you deploy resources into a subnet, Azure assigns the resource an IP address from the subnet. [Learn more](#)

☐ Allocate using IP address pools. [Learn more](#)

+ Add a subnet

10.20.0.0/16 [Delete address space](#)

10.20.0.0 /16
10.20.0.0 - 10.20.255.255 65,536 addresses

Subnets	IP address range	Size	NAT gateway
SharedServicesSubnet	10.20.10.0 - 10.20.10.255	/24 (256 addresses)	-

+ Add IPv4 address space

Previous

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Review + create

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

Name

IPv4

Include an IPv4 address space ☒

IPv4 address range
10.20.0.0 - 10.20.255.255

Starting address

Size

Subnet address range

IPv6

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

Private subnet

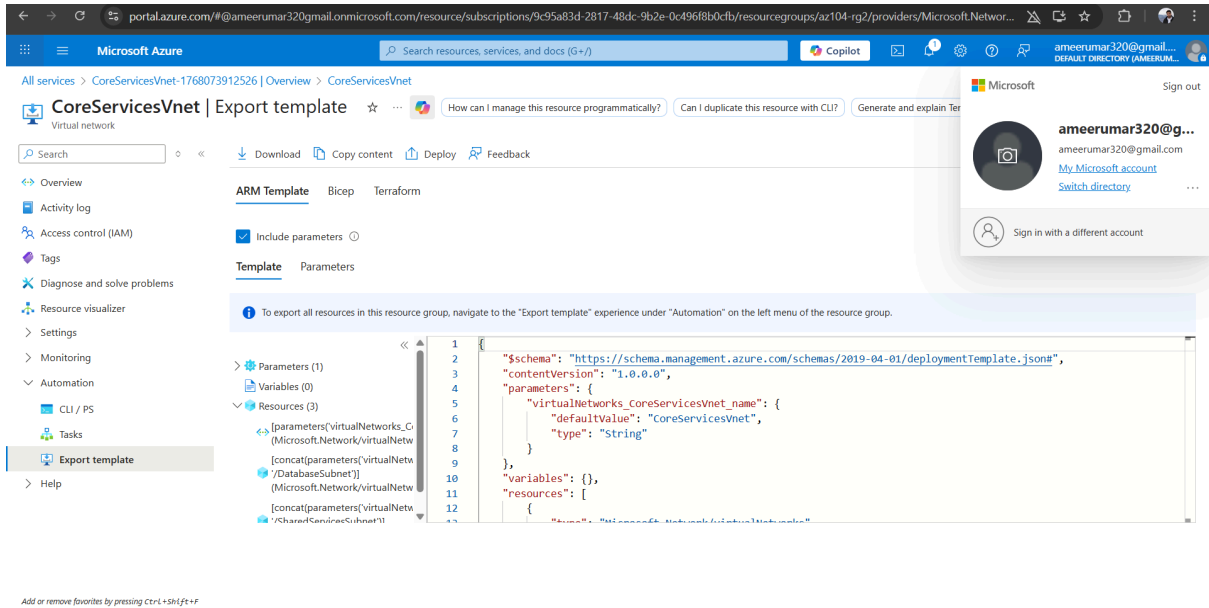
Private subnets enhance security by not providing default outbound access. To enable outbound connectivity for virtual machines to access the internet, it is necessary to explicitly grant outbound access. A NAT gateway is the recommended way to provide outbound

Add

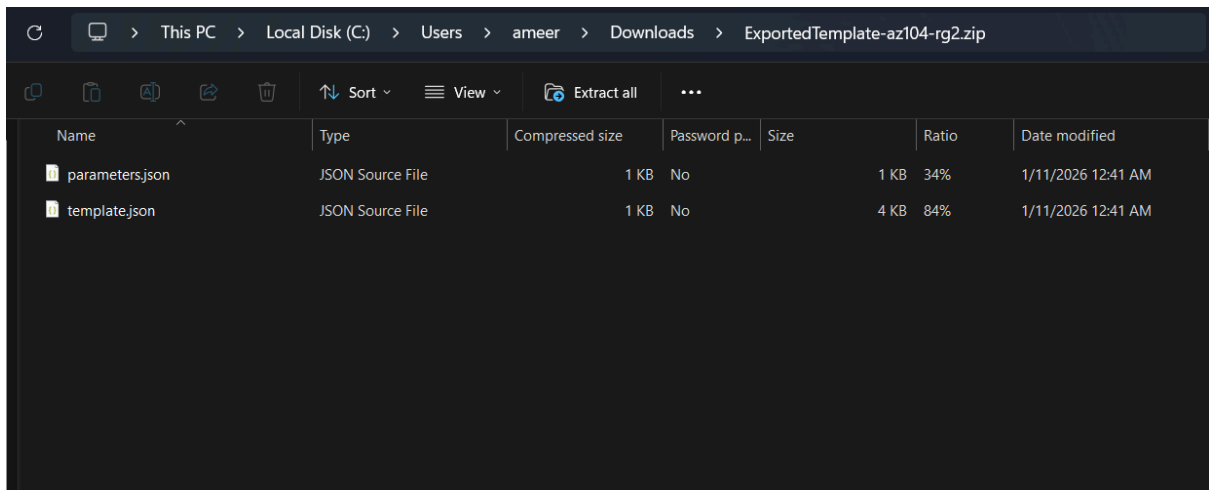
Cancel

[Give feedback](#)

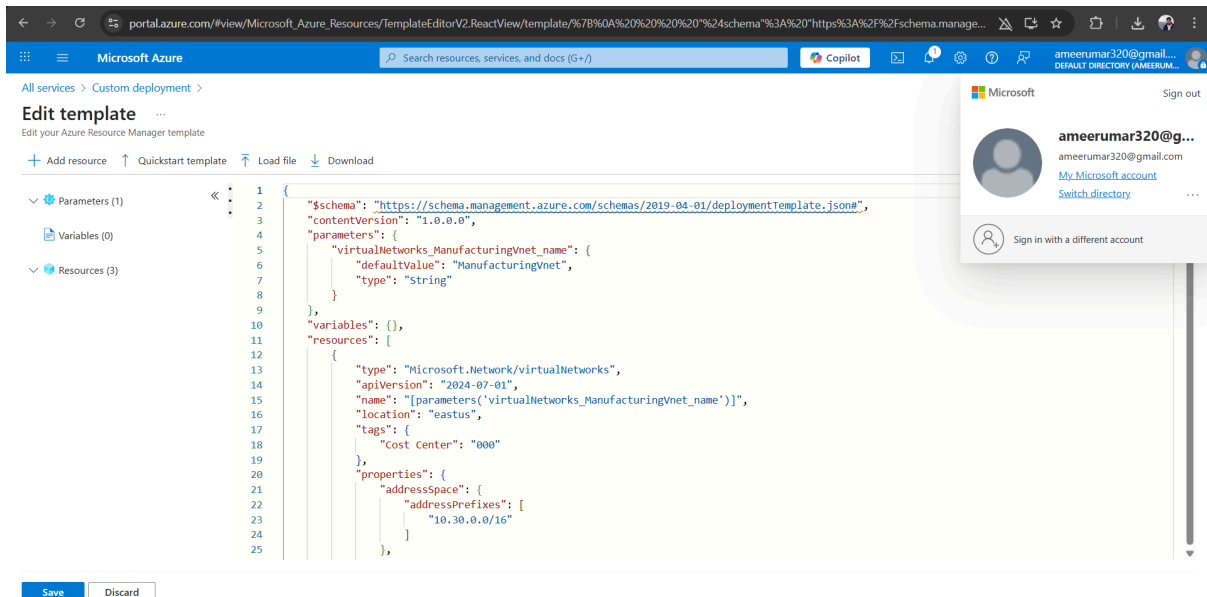
Automation template on the new resource



Downloaded zip



Custom template loading



portal.azure.com/#view/Microsoft_Azure_ResourceManager/TemplateEditorV2.ReactView/template/%7B%0A%20%20%20%24schema%3A%20%24https%3A%2F%2Fschema.manage...

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All services > Custom deployment >

Edit template

Edit your Azure Resource Manager template

+ Add resource ↑ Quickstart template ↑ Load file ↓ Download

Parameters (1)

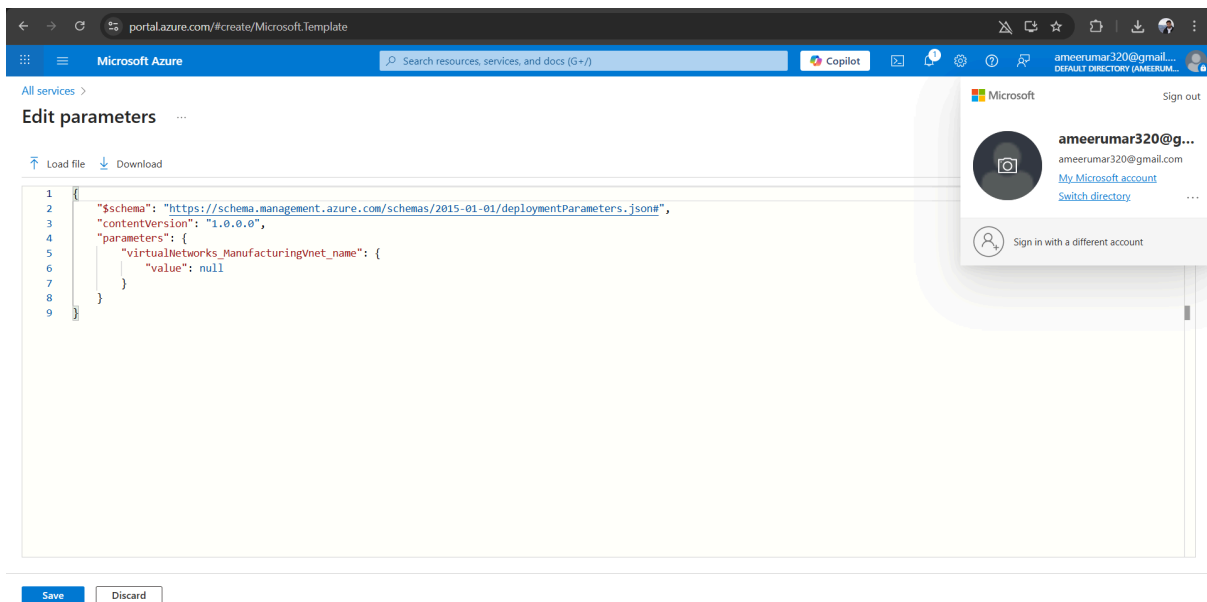
Variables (0)

Resources (3)

```
1 {
2   "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#",
3   "contentVersion": "1.0.0.0",
4   "parameters": {
5     "virtualNetworks_ManufacturingVnet_name": {
6       "defaultValue": "ManufacturingVnet",
7       "type": "String"
8     }
9   },
10  "variables": {},
11  "resources": [
12    {
13      "type": "Microsoft.Network/virtualNetworks",
14      "apiVersion": "2024-07-01",
15      "name": "[parameters('virtualNetworks_ManufacturingVnet_name')]",
16      "location": "eastus",
17      "tags": {
18        "Cost Center": "000"
19      },
20      "properties": {
21        "addressSpace": {
22          "addressPrefixes": [
23            "10.30.0.0/16"
24          ]
25        }
26      }
27    }
28  ]
29 }
```

Save Discard

Loading parameters



portal.azure.com/#create/Microsoft.Template

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All services >

Edit parameters

Load file Download

```
1 {
2   "$schema": "https://schema.management.azure.com/schemas/2015-01-01/deploymentParameters.json#",
3   "contentVersion": "1.0.0.0",
4   "parameters": {
5     "virtualNetworks_ManufacturingVnet_name": {
6       "value": null
7     }
8   }
9 }
```

Save Discard

Deployed

portal.azure.com/#view/HubsExtension/DeploymentDetailsBlade/~/overview/id/%2Fsubscriptions%2F9c95a83d-2817-48dc-9b2e-0c4968b0cfb%2FresourceGroups%2Faz104-r...

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All services >

Microsoft.Template-20260111005837 | Overview

Deployment

Search

DeleteCancelRedeployDownloadRefresh

Overview

Inputs

Outputs

Template

✓ Your deployment is complete

Deployment name : Microsoft.Template-20260111005837

Subscription : Azure subscription 1

Resource group : az104-rg4

Start time : 11/01/2026, 00:58:47

Correlation ID : 0821f93c-acf7-4756-8d07-eca0e90b39f6

> Deployment details

< Next steps

Go to resource group

Give feedback

Tell us about your experience with deployment

Deployment succeeded

Deployment 'Microsoft.Template-20260111005837' to resource group 'az104-rg4' was successful.

Pin to dashbo...

Go to resource gr...

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Creating application security group

portal.azure.com/#view/Microsoft_Azure_Network/CreateApplicationSecurityGroupBlade/_provisioningContext~/~/7B"initialValues"%3A%7B"subscriptionIds"%3A%5B"9c95a83d-281...

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All services > Network foundation | Application security groups >

Create an application security group

✓ Validation passed

Basics

Tags

Review + create

Basics

Subscription

Resource group

Location

Name

Azure subscription 1

az104-rg4

East US

asg-web

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Sign out

Sign in with a different account

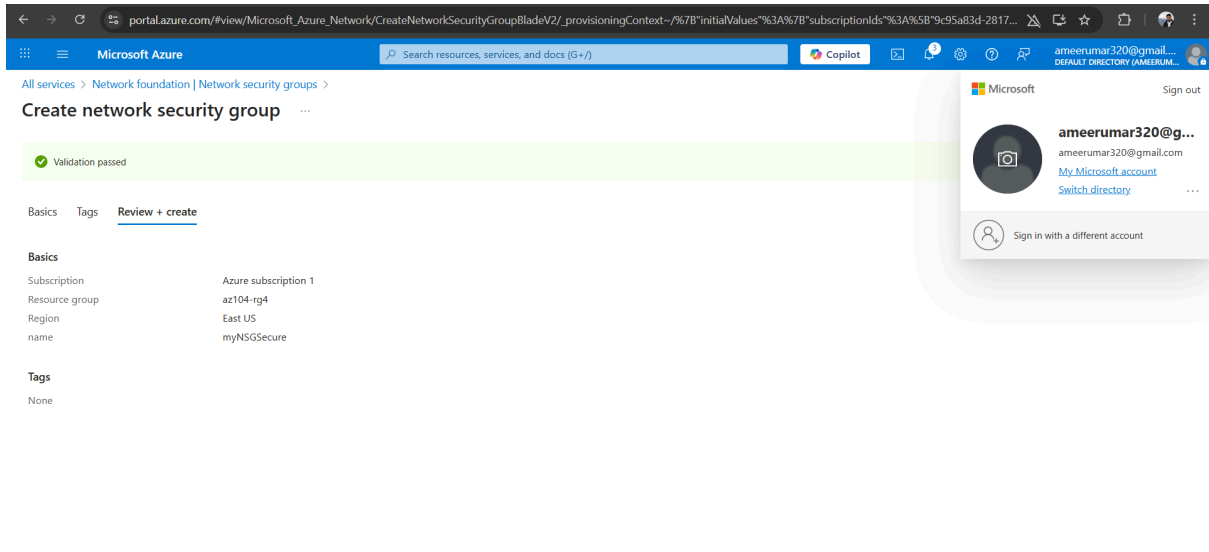
Create

< Previous

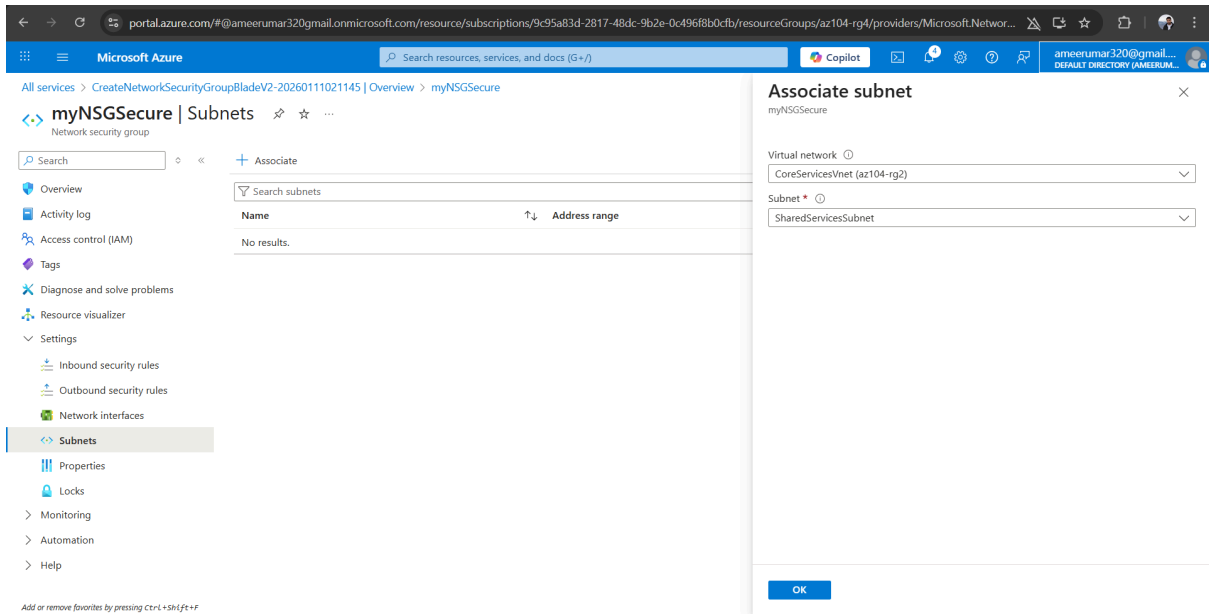
Next >

Download a template for automation


Creating network security group



Associate NSG with subnet




Adding inbound rule

 **Add inbound security rule** ✕
myNSGSecure

Source ⓘ

Application security group ▼

Source application security groups

asg-web ▼ 

No application security groups found ▼

Source port ranges * ⓘ

*

Destination ⓘ

Any ▼

Service ⓘ

Custom ▼

Destination port ranges * ⓘ

80,443 ✓

Protocol


☐ Any


☒ TCP

☐ UDP

Add

Cancel

 Give feedback

 **Add inbound security rule** ✕
myNSGSecure

Destination port ranges * ⓘ

80,443 ✓

Protocol

☐ Any

☒ TCP

☐ UDP

☐ ICMPv4

☐ ICMPv6

Action

☒ Allow

☐ Deny

Priority * ⓘ

100


Name *

AllowASG ✓


Description

Add

Cancel

 Give feedback

Adding outbound rule

 **Add outbound security rule** ×

myNSGSecure

Source ⓘ

Any

Source port ranges * ⓘ

*

Destination ⓘ

Service Tag

Destination service tag ⓘ

Internet

Service ⓘ

Custom

Destination port ranges * ⓘ

8080

Protocol

☒ Any

☐ TCP


☐ UDP


☐ ICMPv4

☐ ICMPv6

Add

Cancel

 Give feedback

 **Add outbound security rule** ×

myNSGSecure

Destination port ranges ⓘ

8080

Protocol

☒ Any

☐ TCP

☐ UDP

☐ ICMPv4

☐ ICMPv6

Action

☐ Allow

☒ Deny

Priority * ⓘ

4096


Name *

DenyInternetOutboundD

Description

Add

Cancel

 Give feedback

Creating a DNS zone

portal.azure.com/#view/Microsoft_Azure_DNS/DnsZoneCreate.ReactView/_provisioningContext~/.../initialValues%3A%7B%22subscriptionId%3A%5B%229c95a83d-2817-48dc-9b2e-0c...

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All services > DNS zones >

Create a DNS Zone ...

Validation passed

Basics DNS Zone Editor Tags Review + Create

View automation template

Basics

Subscription

Azure subscription 1

Resource group

az104-rg4

Resource group location

East US

Name

contoso.pk

DNS Zone Record Set(s)

Number of record sets

0 record set(s)

Create

< Previous

Next >

Give feedback

Copying a name server

portal.azure.com/#view/Microsoft_Azure_DNS/DnsZoneCreate.ReactView/_provisioningContext~/.../initialValues%3A%7B%22subscriptionId%3A%5B%229c95a83d-2817-48dc-9b2e-0c...

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All services >

contoso.pk
DNS zone

Search

<<

+ Child zone Record sets DNSSEC Import Export Move Refresh Delete Give feedback

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Resource visualizer

Settings

DNS Management

Monitoring

Automation

Help

Essentials

Resource group (move)

az104-rg4

Location

Global

Subscription (move)

Azure subscription 1

Subscription ID

9c95a83d-2817-48dc-9b2e-0c496f8b0cfb

Recordsets

2

Tags (edit)

Add tags

Max number of record s... : 10000

Name server 1

ns1-02.azure-dns.com

Name server 2

ns2-02.azure-dns.net

Name server 3

ns3-02.azure-dns.org

Name server 4

ns4-02.azure-dns.info

Get Started

Tutorials

Tools + SDK

Azure DNS is a hosting service for DNS domains that provides name resolution by using Microsoft Azure infrastructure. By hosting your domains in Azure, you can manage your DNS records by using the same credentials, APIs, tools, and billing as your other Azure services.

Add DNS record sets

Begin hosting your domain in Azure DNS by adding record sets. A record set is a collection of records in a zone that have the same name and are the same type.

Import record sets from file

You have the option to import your zone directly using the import utility. This utility offers a rapid, dependable, and convenient method for transferring DNS zone data into or out of Azure DNS.

Access control

View your level of access to DNS zone. Review the level of access a user, group, service principal, or managed identity has to this DNS zone.

Azure DNS Documentation

For detail understanding of Azure DNS, refer to the documentation.

Add or remove favorites by pressing Ctrl+Shift+F

Adding a record set

Add record set ×

contoso.pk

Name
www .contoso.pk

Type
A - IPv4 Address records

Alias record set ⓘ
No

TTL * 1

TTL unit Hours

IP address

10.1.1.4

0.0.0.0

Add **Cancel** [Give feedback](#)

Local terminal

```
Microsoft Windows [Version 10.0.26100.7462]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ameer>nslookup www.contoso.pk ns1-02.azure-dns.com.
Server:      UnKnown
Address:     13.107.236.2

Name:       www.contoso.pk
Address:    10.1.1.4

C:\Users\ameer>
```

Creating private dns zone

portal.azure.com/#view/Microsoft_Azure_PrivateDNS/PrivateDnsZoneCreate.ReactView/_provisioningContext~/7%7BinitialValues%3A%7BsubscriptionId%3A%5B9c95a83d-2817-...

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All services > Private DNS zones >

Create Private DNS Zone

...

Running final validation...

BasicsPrivate DNS Zone EditorVirtual Network LinksTagsReview + Create

View automation template

Basics

Subscription

Azure subscription 1

Resource group

az104-rg4

Resource group location

East US

Name

private.contoso.com

DNS Zone Record Set(s)

Number of record sets

0 record set(s)

Virtual network link(s)

Number of Virtual Network Links

0 virtual network link(s)

Create

< Previous

Next >

Give feedback

Adding virtual network link

portal.azure.com/#view/Microsoft_Azure_PrivateDNS/AddVnetLink.ReactView/zoneResourceId/%2Fsubscriptions%2F9c95a83d-2817-48dc-9b2e-0c496f8b0cfb%2FresourceGroups%2F...

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Sign out

All services > private.contoso.com_1768081426315 | Overview > private.contoso.com | Virtual Network Links >

Add Virtual Network Link

private.contoso.com

Link name *

manufacturing-link

Virtual network details

Only virtual networks with Resource Manager deployment model are supported for linking with Private DNS zones. Virtual networks with Classic deployment model are not supported.

I know the resource ID of virtual network

Subscription *

Azure subscription 1

Virtual Network *

ManufacturingVnet (az104-rg4)

Configuration

Enable auto registration

Enable fallback to internet

Create

Cancel

Give feedback

Adding a record set

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Add record set

private.contoso.com

Name

sensorvm

.private.contoso.com

Type

A – IPv4 Address records

TTL *

1

TTL unit

Hours


IP address

10.1.1.4

0.0.0.0

Add

Cancel

 Give feedback