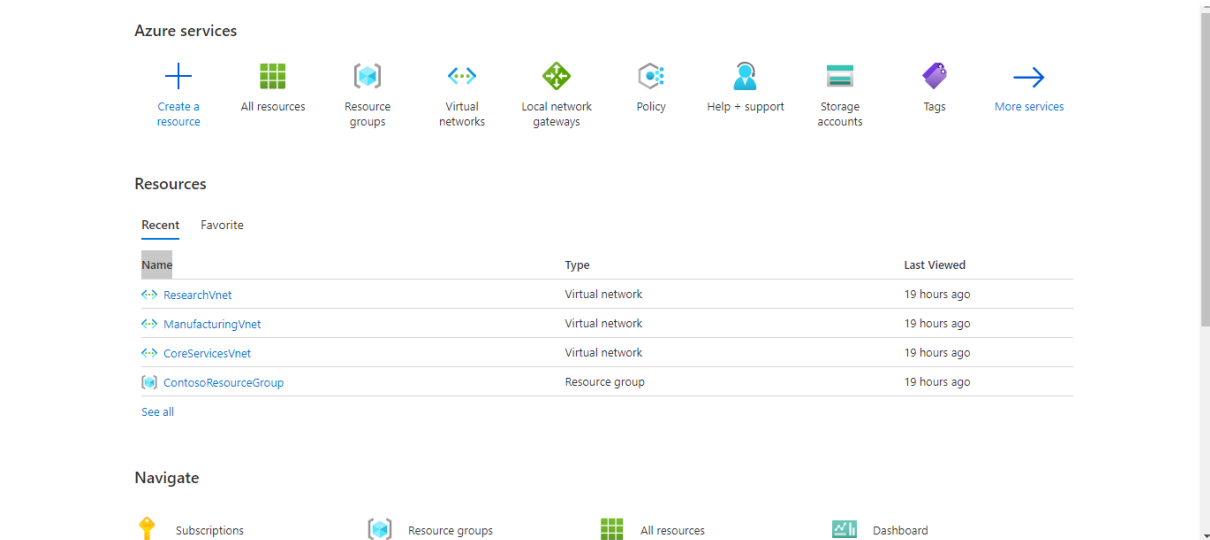
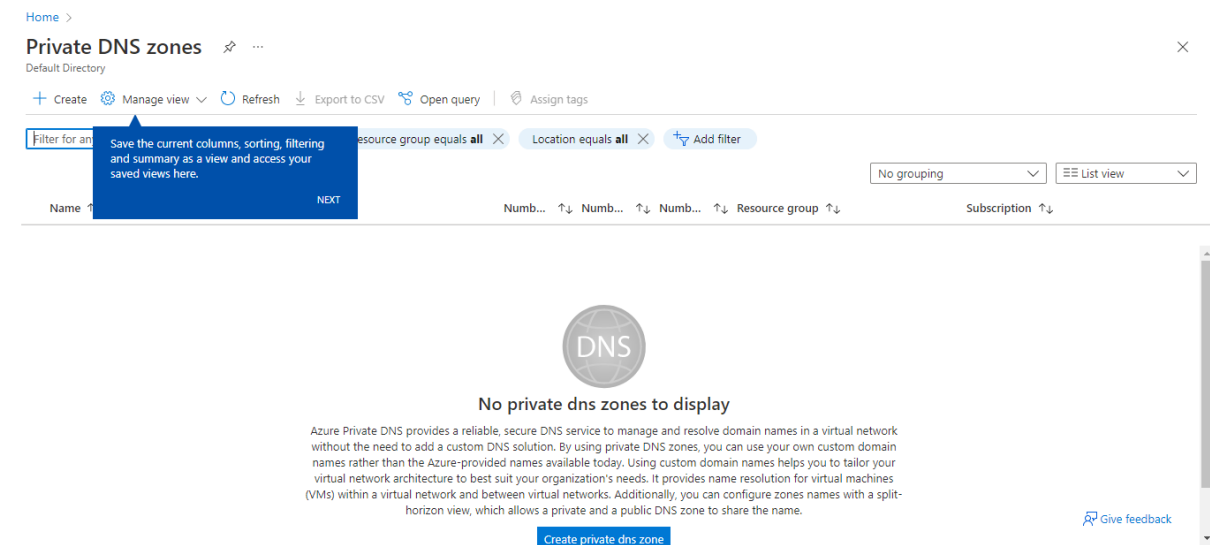


# Configure DNS settings in Azure

1. Go to Azure Portal.



2. On the Azure home page, in the search bar, enter dns, and then select Private DNS zones.



3. In Private DNS zones, select + Create.

Home > Private DNS zones >

Create Private DNS zone

✕

Basics

Tags

Review + create

A Private DNS zone provides name resolution services within virtual networks. A Private DNS zone is accessible only from the virtual networks that it is linked to and can't be accessed over internet. For example you can create a Private DNS zone named contoso.com and then create DNS records like www.contoso.com in this zone. You can then link the zone to a one or more virtual networks. [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 \*

Azure for Students

Resource group \*

Create new

Instance details

Name \* ⓘ

Resource group location ⓘ

Review + create

Previous

Next : Tags >

Download a template for automation

4. Use the information in the following table to create the private DNS zone.

Home > Private DNS zones >

Create Private DNS zone

✕

contoso.com and then create DNS records like www.contoso.com in this zone. You can then link the zone to a one or more virtual networks. [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 \*

Azure for Students

Resource group \*

ContosoResourceGroup

Create new

Instance details

Name \* ⓘ

Contoso.com ✓

Resource group location ⓘ

East US

📘 You can link virtual networks to this Private DNS zone after zone has been created.

Review + create

Previous

Next : Tags >

Download a template for automation

## 5. Wait until the deployment is complete, and then select Go to resource.

Home > **NoMarketplace-20220726104147** | Overview ⚙️ ...

Deployment

Search (Ctrl+/) < Delete Cancel Redeploy Refresh

Overview

Inputs

Outputs

Template

Deployment is in progress

Deployment name: NoMarketplace-20220726104147  
Subscription: [Azure for Students](#)  
Resource group: [ContosoResourceGroup](#)

Start time: 7/26/2022, 10:45:18 AM  
Correlation ID: 75e9e3a3-df2a-49fb-ad65-bbfba8954485 ⓘ

Deployment details (Download)

Resource	Type	Status	Operation details
No results.			

## 6. Verify that the zone has been created.

Home > **Contoso.com** ⚙️ ☆ ...

Private DNS zone

Search (Ctrl+/) < + Record set → Move Delete zone Refresh

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Virtual network links

Properties

Locks

Monitoring

Alerts

Metrics

Automation

Tasks (preview)

Essentials

JSON View

Resource group (move): [contosoresourcegroup](#)  
Subscription (move): [Azure for Students](#)  
Subscription ID: 2a8e3ab1-f621-4dd7-a587-e036a332e9c4  
Tags (edit): [Click here to add tags](#)

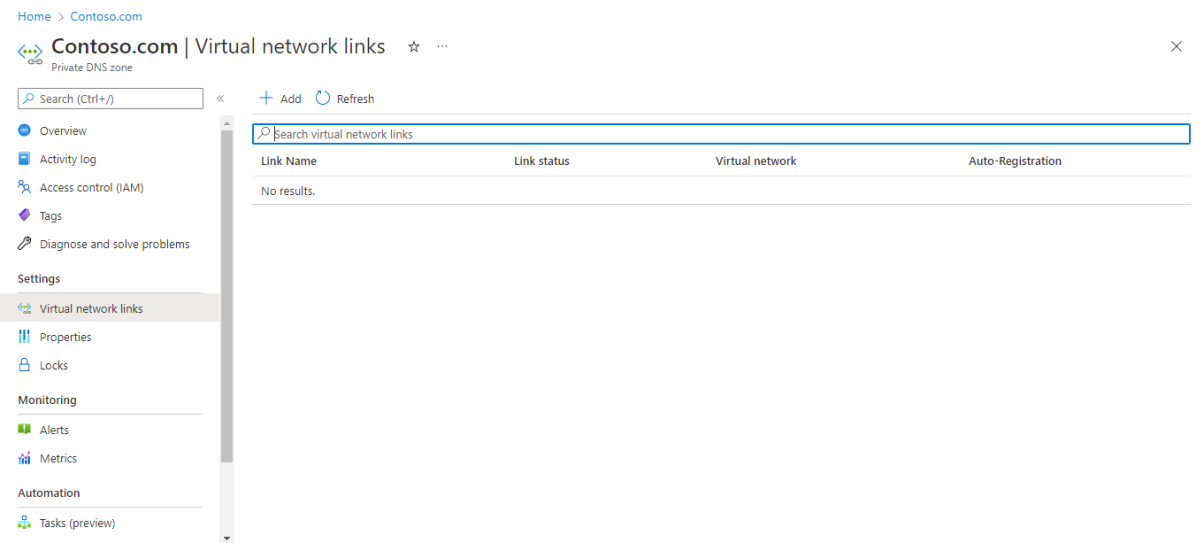
You can search for record sets that have been loaded on this page. If you don't see what you're looking for, you can try scrolling to allow more record sets to load.

Search record sets

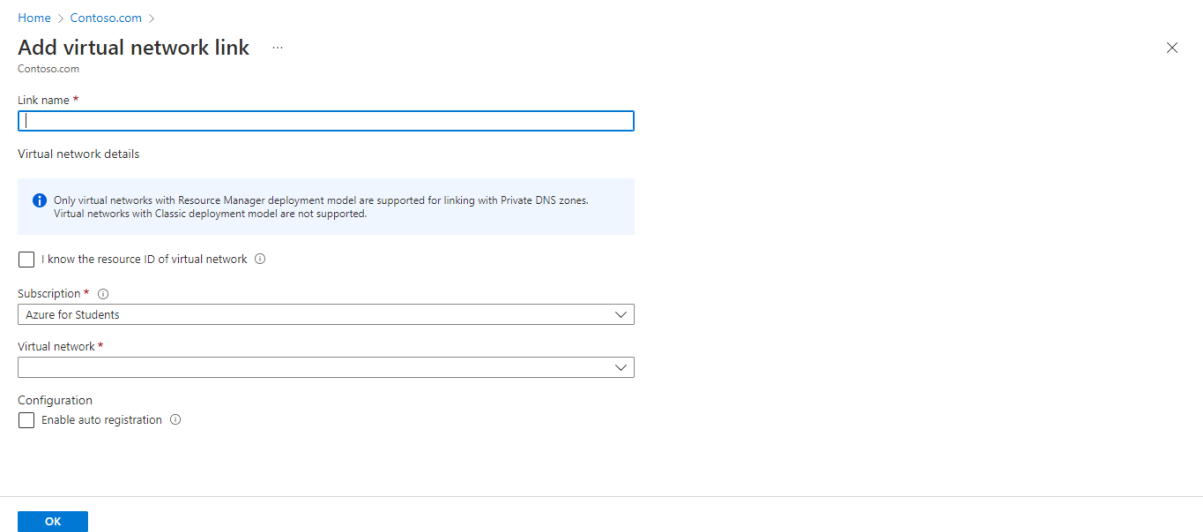
Name	Type	TTL	Value	Auto registered
@	SOA	3600	Email: azureprivatedns-host.microsoft.com Host: azureprivatedns.net Refresh: 3600 Retry: 300 Expire: 2419200 Minimum TTL: 10 Serial number: 1	False

Task 2: Link subnet for auto registration

1. In Contoso.com, under Settings, select Virtual network links.



2. On Contoso.com | Virtual network links, select + Add.



3. Use the information in the following table to add the virtual network link.

Home > Contoso.com >

Add virtual network link

Contoso.com

Link name \*

CoreServicesVnetLink

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 for Students

Virtual network \*

CoreServicesVnet (ContosoResourceGroup)

Configuration

☒ Enable auto registration

OK

4. Select Refresh.

Home > Contoso.com

Contoso.com | Virtual network links

Private DNS zone

Search (Ctrl+/)

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Virtual network links

Properties

Locks

Monitoring

Alerts

Metrics

Automation

Tasks (preview)

+ Add

Refresh

Search virtual network links

Link Name	Link status	Virtual network	Auto-Registration	
coreservicesvnetlink	Completed	CoreServicesVnet	Enabled	...

5. Verify that the CoreServicesVnetLink has been created, and that auto-registration is enabled.

Home > Contoso.com

Contoso.com | Virtual network links

Private DNS zone

Search (Ctrl+/)

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Virtual network links

Properties

Locks

Monitoring

Alerts

Metrics

Automation

Tasks (preview)

Search virtual network links

Link Name

Link status

Virtual network

Auto-Registration

coreservicesvnetlink

Completed

CoreServicesVnet

Enabled

...

6. ManufacturingVnet

Home > Contoso.com >

Add virtual network link

Contoso.com

Link name \*

ManufacturingVnetLink

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 for Students

Virtual network \*

ManufacturingVnet (ContosoResourceGroup)

Configuration

Enable auto registration

OK

Search (Ctrl+/)

«

+ Add ↻ Refresh

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Settings
  - Virtual network links
  - Properties
  - Locks
- Monitoring
  - Alerts
  - Metrics
- Automation
  - Tasks (preview)

Search virtual network links			
Link Name	Link status	Virtual network	Auto-Registration
coreservicesvnetlink	Completed	CoreServicesVnet	Enabled ***
manufacturingvnetlink	In progress	ManufacturingVnet	Enabled ***

## ResearchVnet

Contoso.com

Link name \*

ResearchVnetLink ✓

Virtual network details

**i** 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 for Students ▼

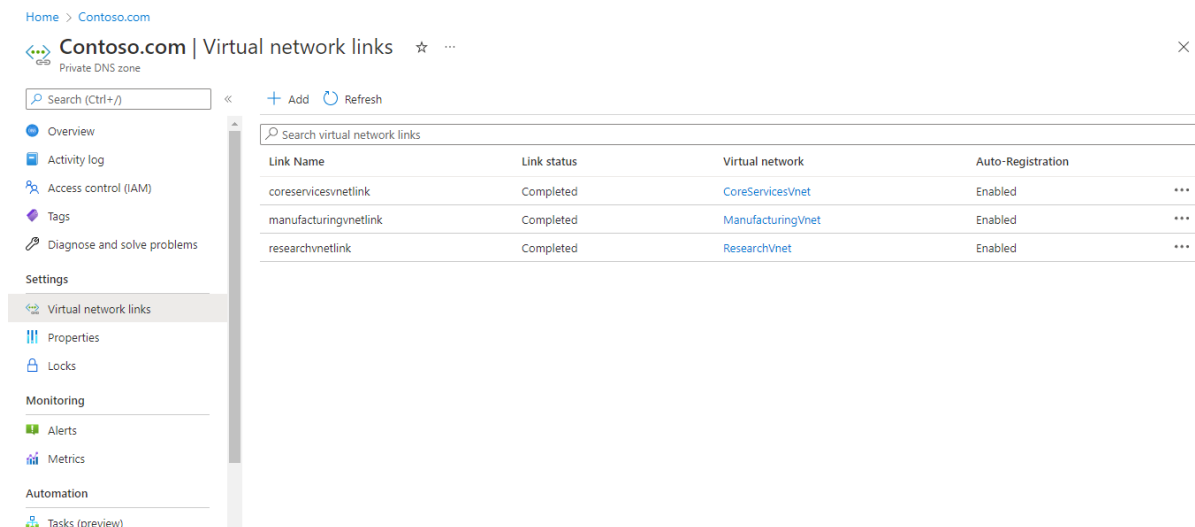
Virtual network \*

ResearchVnet (ContosoResourceGroup) ▼

Configuration

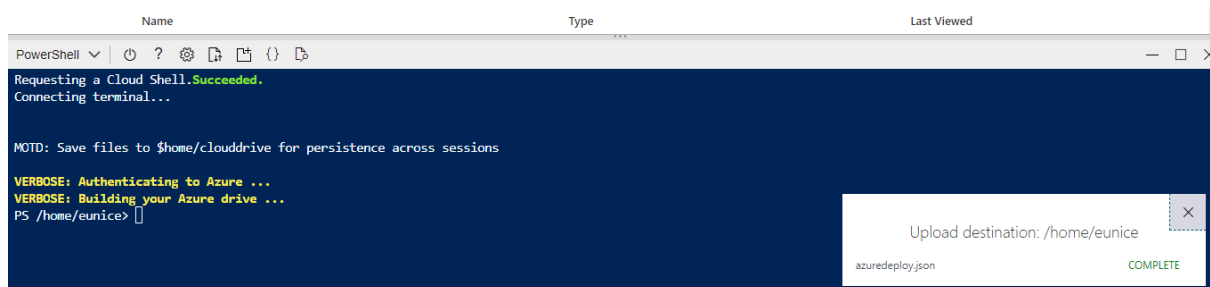
☒ Enable auto registration ⓘ

OK



### Task 3: Create Virtual Machines to test the configuration

1. In the Azure portal, open the PowerShell session within the Cloud Shell pane.



2. In the toolbar of the Cloud Shell pane, select the Upload/Download files icon, in the drop-down menu, select Upload and upload the following files azuredeploy.json and azuredeploy.parameters.json into the Cloud Shell home directory one by one from the source folder F:\Allfiles\Exercises\M01.



```
PowerShell | Name | Type | Last Viewed
Requesting a Cloud Shell.Succeeded.
Connecting terminal...

MOTD: Save files to $home/clouddrive for persistence across sessions

VERBOSE: Authenticating to Azure ...
VERBOSE: Building your Azure drive ...
PS /home/eunice> 
```

Upload destination: /home/eunice  
azuredeploy.json COMPLETE

### 3. Deploy the following ARM templates to create the VMs needed for this exercise:

```
PowerShell | Name | Type | Last Viewed
Requesting a Cloud Shell.Succeeded.
Connecting terminal...

MOTD: Save files to $home/clouddrive for persistence across sessions

VERBOSE: Authenticating to Azure ...
VERBOSE: Building your Azure drive ...
PS /home/eunice> $RGName = "ContosoResourceGroup"
PS /home/eunice> 
PS /home/eunice> New-AzResourceGroupDeployment -ResourceGroupName $RGName -TemplateFile azuredeploy.json -TemplateParameterFile azuredeploy.parameters.json

PS /home/eunice> $RGName = "ContosoResourceGroup"
PS /home/eunice> 
PS /home/eunice> New-AzResourceGroupDeployment -ResourceGroupName $RGName -TemplateFile azuredeploy.json -TemplateParameterFile azuredeploy.parameters.json
```

```
PowerShell | Name | Type | Last Viewed
PS /home/eunice> New-AzResourceGroupDeployment -ResourceGroupName $RGName -TemplateFile azuredeploy.json -TemplateParameterFile azuredeploy.parameters.json

DeploymentName      : azuredeploy
ResourceGroupName   : ContosoResourceGroup
ProvisioningState    : Succeeded
Timestamp           : 7/26/2022 9:50:08 AM
Mode                : Incremental
TemplateLink         : 
Parameters          : 
    Name      Type      Value
    =====
    vmName1   String    "testvm1"
    nicName1  String    "testvm1-nic"
```

```
ResearchVnet | Virtual network | 2 minutes ago
PowerShell | Name | Type | Last Viewed
vmName1      String    "testvm1"
nicName1     String    "testvm1-nic"
vmName2      String    "testvm2"
nicName2     String    "testvm2-nic"
vmSize       String    "Standard_DS1_v2"
adminUsername String    "TestUser"
adminPassword SecureString null

Outputs
DeploymentDebugLogLevel :

PS /home/eunice> 
```

#### 4. When the deployment is complete, go to the Azure portal home page, and then select Virtual Machines.

The screenshot shows the Azure portal's 'Virtual machines' page. At the top, there's a breadcrumb 'Home >' and the title 'Virtual machines' with a search icon and a close button. Below the title, it says 'Default Directory'. A toolbar contains buttons for '+ Create', 'Switch to classic', 'Reservations', 'Manage view', 'Refresh', 'Export to CSV', 'Open query', 'Assign tags', 'Start', 'Restart', 'Stop', and 'Delete'. A filter bar shows 'Filter for any field...' and several active filters: 'Subscription equals all', 'Type equals all', 'Resource group equals all', and 'Location equals all'. There's an 'Add filter' button. Below the filters, a table lists the virtual machines. The table has columns: Name, Type, Subscription, Resource group, Location, Status, Operating system, Size, and Public IP. Two rows are visible: 'testvm1' and 'testvm2', both of type 'Virtual machine', in the 'Azure for Students' subscription, 'ContosoResourceGroup' resource group, 'East US' location, with status 'Running', operating system 'Windows', size 'Standard\_DS1\_v2', and public IP '20.115.6.'. At the bottom, there's a pagination bar showing 'Page 1 of 1' and 'Showing 1 to 2 of 2 records'. A 'Give feedback' link is on the right.

Name	Type	Subscription	Resource group	Location	Status	Operating system	Size	Public IP
testvm1	Virtual machine	Azure for Students	ContosoResourceGroup	East US	Running	Windows	Standard_DS1_v2	20.115.6.
testvm2	Virtual machine	Azure for Students	ContosoResourceGroup	East US	Running	Windows	Standard_DS1_v2	20.115.2.

#### 5. Verify that both virtual machines have been created.

The screenshot shows the Azure portal's 'ContosoResourceGroup' resource group page. The left sidebar shows the 'Virtual machines' page with a search bar and a list of resources: 'testvm1' and 'testvm2'. The main content area shows the 'ContosoResourceGroup' page. At the top, there's a breadcrumb 'Home > Virtual machines >' and the title 'Virtual machines'. Below the title, it says 'Default Directory'. A toolbar contains buttons for '+ Create', 'Switch to classic', and '...'. A filter bar shows 'Filter for any field...' and several active filters: 'Type equals all', 'Location equals all', and 'Add filter'. Below the filters, a table lists the resources. The table has columns: Name, Type, and Location. Three rows are visible: 'contoso.com' (Private DNS zone, Global), 'CoreServicesVnet' (Virtual network, East US), and 'ManufacturingVnet' (Virtual network, West Europe). A blue callout box with the text 'Switch between a list view of your resources and a summary chart view of resource counts.' is overlaid on the right side of the table. At the bottom, there's a pagination bar showing 'Page 1 of 1' and 'Showing 1 to 14 of 14 records'.

Name	Type	Location
contoso.com	Private DNS zone	Global
CoreServicesVnet	Virtual network	East US
ManufacturingVnet	Virtual network	West Europe

### Virtual machines

Default Directory

+ Create ↺ Switch to classic ...

Filter for any field...

Name ↑↓

testvm1	...
testvm2	...

< Page 1 of 1 >

### ContosoResourceGroup

Resource group

Search (Ctrl+/)

+ Create ⚙️ Manage view 🗑️ Delete resource group 🔄 Refresh 📄 Export to CSV 🔗 Open query | ...

Overview

- Activity log
- Access control (IAM)
- Tags
- Resource visualizer
- Events

Settings

- Deployments
- Security
- Policies
- Properties
- Locks

Cost Management

- Cost analysis
- Cost alerts (in preview)

#### Essentials

Subscription [\(move\)](#)  
[Azure for Students](#)

Subscription ID  
2a8e3ab1-f621-4dd7-a587-e036a332e9c4

Tags [\(edit\)](#)  
[Click here to add tags](#)

Deployments  
[5 Succeeded](#)

Location  
East US

Switch between a list view of your resources and a summary chart view of resource counts. CLOSE

Resources Recommendations

Filter for any field...

Type equals all Location equals all + Add filter

Showing 1 to 14 of 14 records. ☐ Show hidden types No grouping

List view

<input type="checkbox"/> Name ↑↓	Type ↑↓	Location ↑↓
<input type="checkbox"/> contoso.com	Private DNS zone	Global
<input type="checkbox"/> CoreServicesVnet	Virtual network	East US
<input type="checkbox"/> ManufacturingVnet	Virtual network	West Europe

## Task 4: Verify records are present in the DNS zone

### 1. On the Azure Portal home page, select Private DNS zones.

Home >

### Private DNS zones

Default Directory

+ Create ⚙️ Manage view 🔄 Refresh 📄 Export to CSV 🔗 Open query 🏷️ Assign tags

Filter for any field...

resource group equals all Location equals all + Add filter

No grouping List view

<input type="checkbox"/> Name ↑↓	Numb... ↑↓	Numb... ↑↓	Numb... ↑↓	Resource group ↑↓	Subscription ↑↓
<input type="checkbox"/> contoso.com	1 / 25000	1 / 1000	1 / 100	ContosoResourceGroup	Azure for Students

< Previous Page 1 of 1 Next > Showing 1 to 1 of 1 records. Give feedback

Save the current columns, sorting, filtering and summary as a view and access your saved views here. NEXT

2. In Private DNS zones, select contoso.com.

Home > Private DNS zones >

Private DNS zones

Default Directory

+ Create

Manage view

...

Filter for any field...

Name ↑↓

contoso.com

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Virtual network links

Properties

Locks

Monitoring

Alerts

Metrics

Automation

Tasks (preview)

Contoso.com

Private DNS zone

Search (Ctrl+/)

+ Record set

Move

Delete zone

Refresh

Essentials

Resource group (move)

contosoresourcegroup

Subscription (move)

Azure for Students

Subscription ID

2a8e3ab1-f621-4dd7-a587-e036a332e9c4

Tags (edit)

Click here to add tags

You can search for record sets that have been loaded on this page. If you don't see what you're looking for, you can try scrolling to allow more record sets to load.

Search record sets

Name	Type	TTL	Value	Auto registered
------	------	-----	-------	-----------------

3. Verify that host (A) records are listed for both VMs, as shown:

Private DNS zones

Default Directory

+ Create

Manage view

...

Filter for any field...

Name ↑↓

contoso.com

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Virtual network links

Properties

Locks

Monitoring

Alerts

Metrics

Automation

Tasks (preview)

Contoso.com

Private DNS zone

Search (Ctrl+/)

+ Record set

Move

Delete zone

Refresh

contosoresourcegroup

Subscription (move)

Azure for Students

Subscription ID

2a8e3ab1-f621-4dd7-a587-e036a332e9c4

Tags (edit)

Click here to add tags

You can search for record sets that have been loaded on this page. If you don't see what you're looking for, you can try scrolling to allow more record sets to load.

Search record sets

Name	Type	TTL	Value	Auto registered
@	SOA	3600	Email: azureprivatedns-hos... Host: azureprivatedns.net Refresh: 3600 Retry: 300 Expire: 2419200 Minimum TTL: 10 Serial number: 1	False
testvm1	A	10	10.20.20.4	True
testvm2	A	10	10.20.20.5	True

## Connect to the Test VMs using RDP

### 1. On the Azure Portal home page, select Virtual Machines.

**Virtual machines** ✕

Default Directory

+ Create ▾ Switch to classic Reservations ▾ Manage view ▾ Refresh Export to CSV Open query | Assign tags Start Restart Stop Delete ...

Filter for any field... Subscription equals all Type equals all Resource group equals all Location equals all Add filter

No grouping List view

<input type="checkbox"/>	Name ↑↓	Type ↑↓	Subscription ↑↓	Resource group ↑↓	Location ↑↓	Status ↑↓	Operating system ↑↓	Size ↑↓	Public IP
<input type="checkbox"/>	testvm1	Virtual machine	Azure for Students	ContosoResourceGroup	East US	Running	Windows	Standard_DS1_v2	20.115.6.
<input type="checkbox"/>	testvm2	Virtual machine	Azure for Students	ContosoResourceGroup	East US	Running	Windows	Standard_DS1_v2	20.115.2.

< Previous Page 1 of 1 Next > Showing 1 to 2 of 2 records. Give feedback

### 2. Select TestVM1.

Home > Virtual machines >

**Virtual machines** ✕

Default Directory

+ Create ▾ Switch to classic ...

Filter for any field...

Name ↑↓

- testvm1
- testvm2

< Page 1 of 1 >

**testvm1** ✕

Virtual machine

Search (Ctrl+/)

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Settings Networking Connect Windows Admin Center (preview) Disks Size Microsoft Defender for Cloud Advisor recommendations Extensions + applications

Essentials

Resource group (move) ContosoResourceGroup

Status Running

Location East US

Subscription (move) Azure for Students

Subscription ID 2a8e3ab1-f621-4dd7-a587-e036a332e9c4

Tags (edit) Click here to add tags

Operating system Windows (Windows Server 2019 Datacenter)

Size Standard\_DS1\_v2 (1 vcpu, 3.5 GiB memory)

Public IP address 20.115.6.217

Virtual network/subnet CoreServicesVnet/DatabaseSubnet

DNS name Not configured

JSON View

Properties Monitoring Capabilities (8) Recommendations Tutorials

**Virtual machine**

Computer name testvm1

Health state

**Networking**

Public IP address 20.115.6.217

Public IP address (IPv6)

### 3. In TestVM1, select Connect > RDP.

Home > Virtual machines > testvm1

**Virtual machines**  
Default Directory

+ Create ▾ Switch to classic ...

Filter for any field...

Name ↑↓

- testvm1
- testvm2

< Page 1 of 1 >

**testvm1 | Connect**

Virtual machine

Search (Ctrl+/)

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Settings
- Networking
- Connect**
- Windows Admin Center (preview)
- Disks
- Size
- Microsoft Defender for Cloud
- Advisor recommendations
- Extensions + applications

To improve security, enable just-in-time access on this VM. →

RDP SSH Bastion

**Connect with RDP**

To connect to your virtual machine via RDP, select an IP address, optionally change the port number, and download the RDP file.

IP address \*  
Public IP address (20.115.6.217)

Port number \*  
3389

Download RDP File

Can't connect?

- Test your connection
- Troubleshoot RDP connectivity issues

Provide feedback

- Tell us about your connection experience

### 4. In TestVM1 | Connect, select Download RDP file.

Name	Date modified	Type	Size
Today (1)			
testvm1	2022/07/26 12:08	Remote Desktop ...	1 KB

### 6. On the Azure Portal home page, select Virtual Machines.

Virtual machines

Default Directory

+ Create ▾ Switch to classic Reservations ▾ Manage view ▾ Refresh Export to CSV Open query Assign tags Start Restart Stop Delete ...

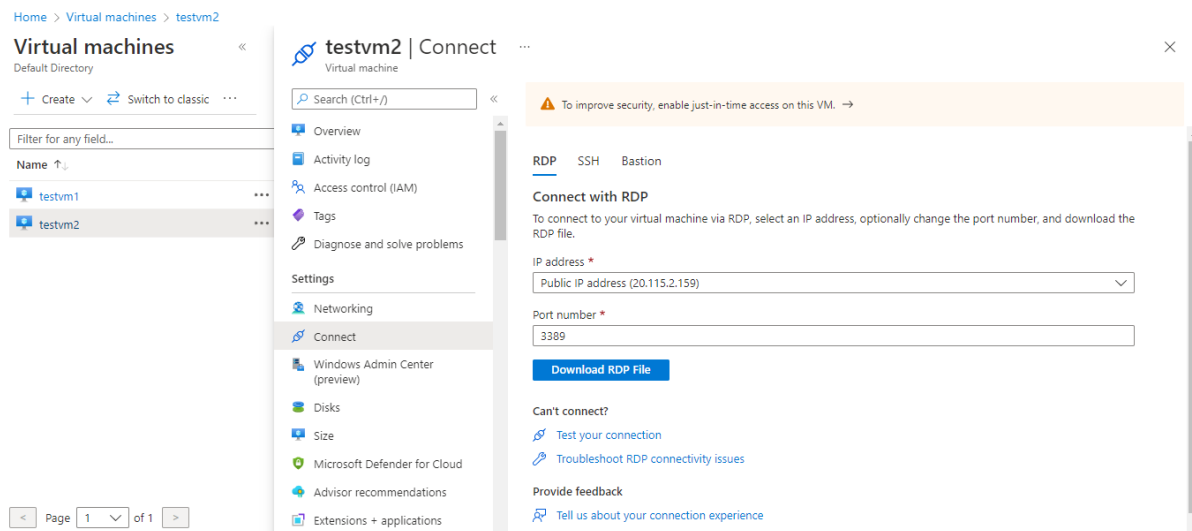
Filter for any field... Subscription equals all Type equals all Resource group equals all Location equals all Add filter

No grouping List view

Name	Type	Subscription	Resource group	Location	Status	Operating system	Size	Public IP
testvm1	Virtual machine	Azure for Students	ContosoResourceGroup	East US	Running	Windows	Standard_DS1_v2	20.115.6.
testvm2	Virtual machine	Azure for Students	ContosoResourceGroup	East US	Running	Windows	Standard_DS1_v2	20.115.2.

< Previous Page 1 of 1 Next > Showing 1 to 2 of 2 records. Give feedback

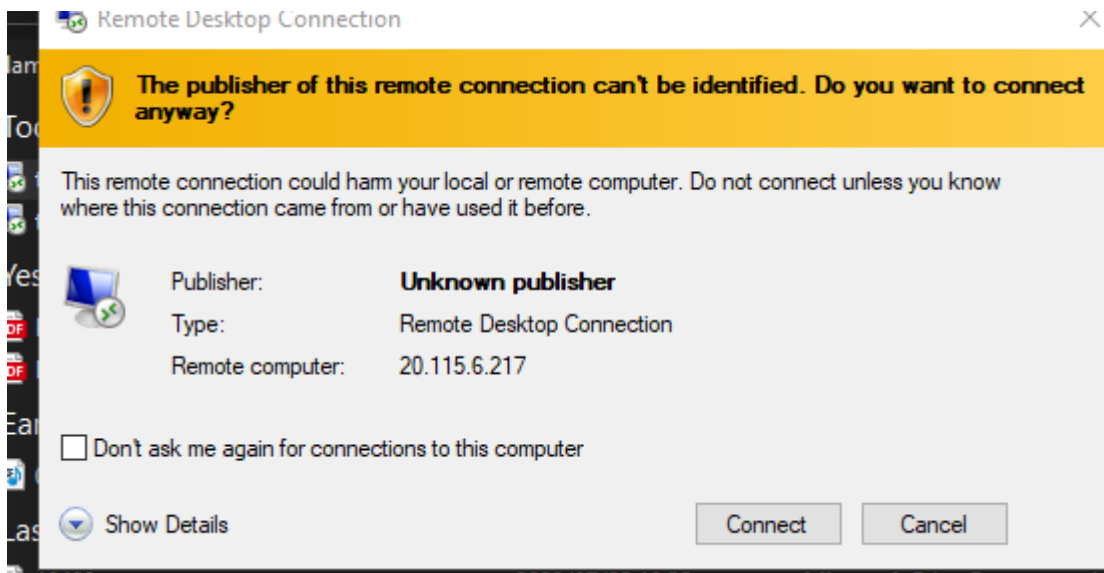
## 7-8) Select TestVM2.

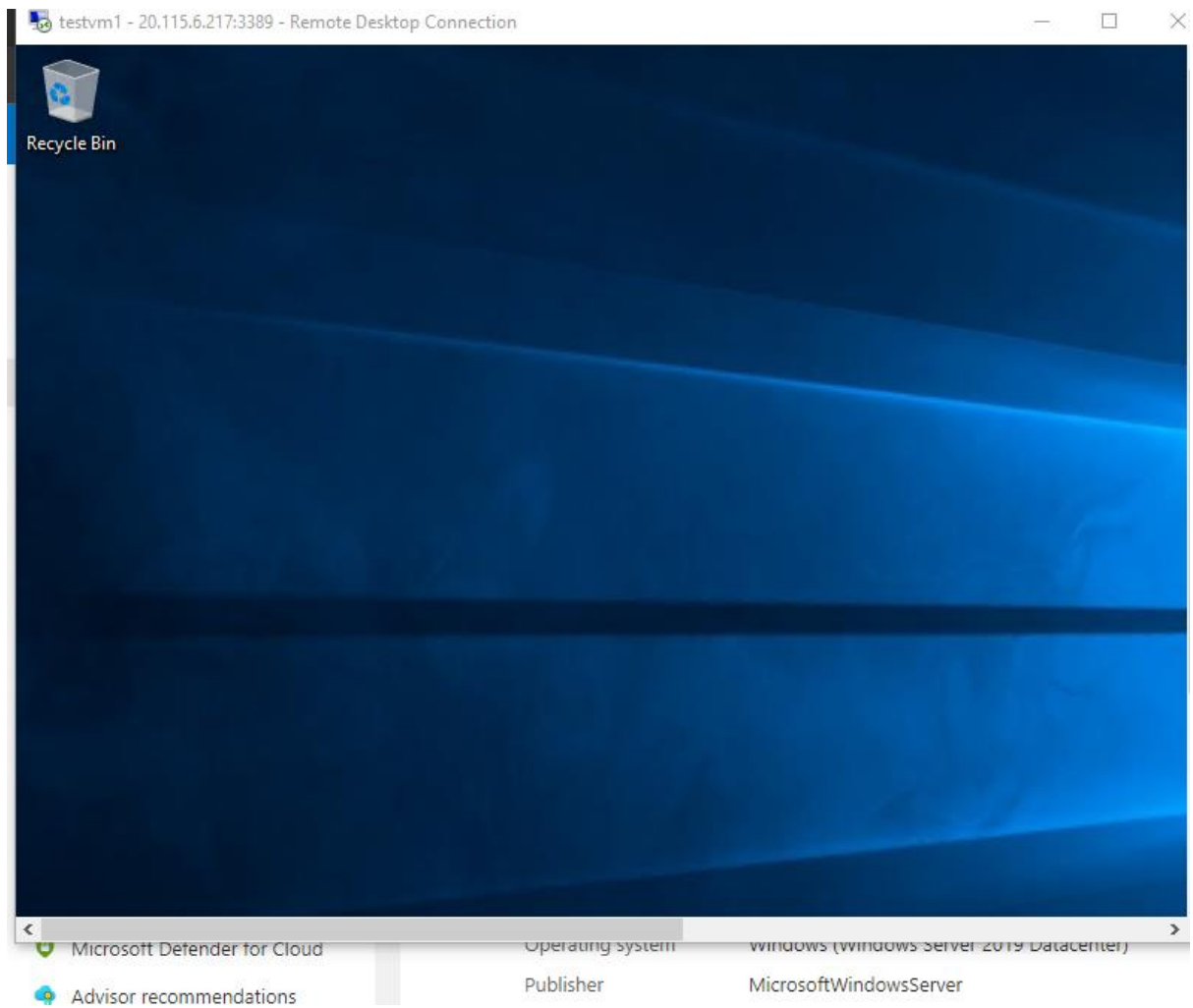


## 9-10 ). In TestVM2 | Connect, select Download RDP file.

Name	Date modified	Type	Size
▼ Today (2)			
testvm1	2022/07/26 12:08	Remote Desktop ...	1 KB
testvm2	2022/07/26 12:11	Remote Desktop ...	1 KB

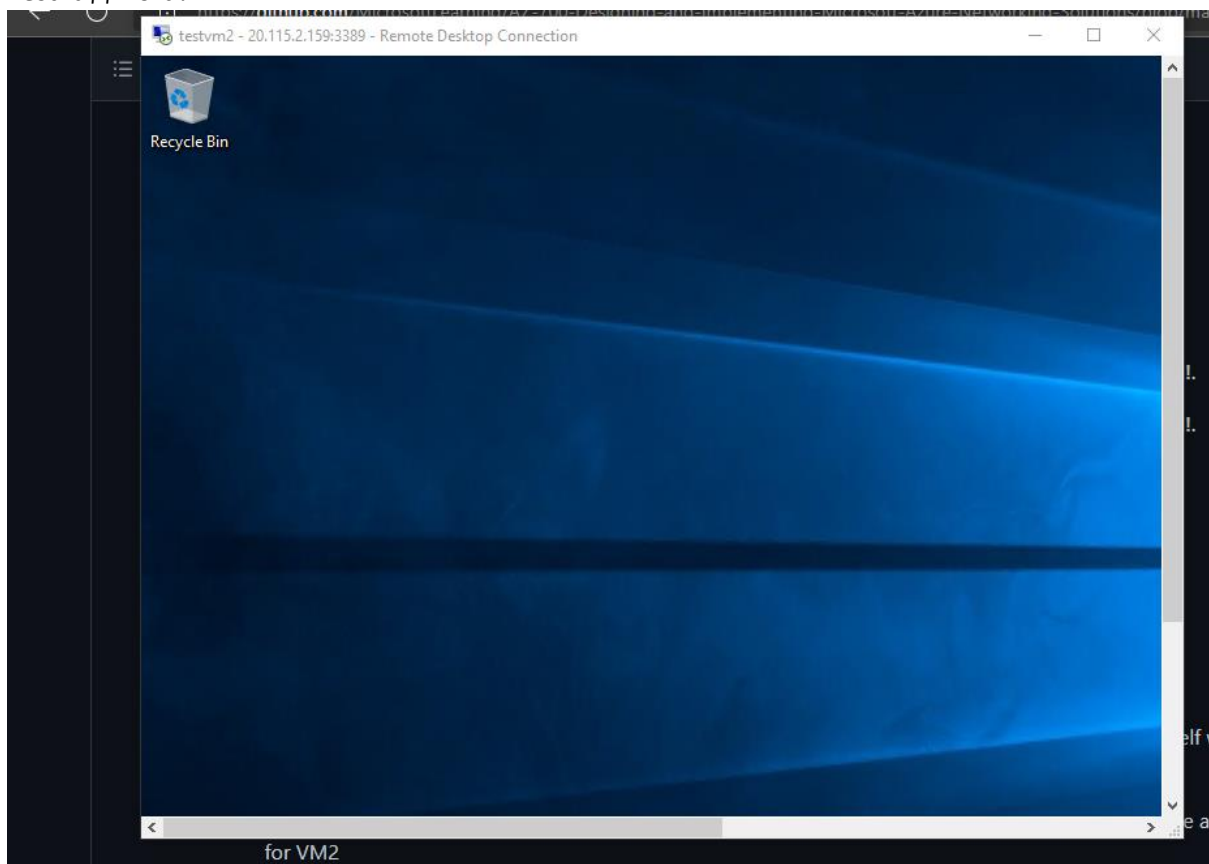
## 11. Connect to TestVM1 using the RDP file, and the username TestUser and the password TestPa\$\$w0rd!.





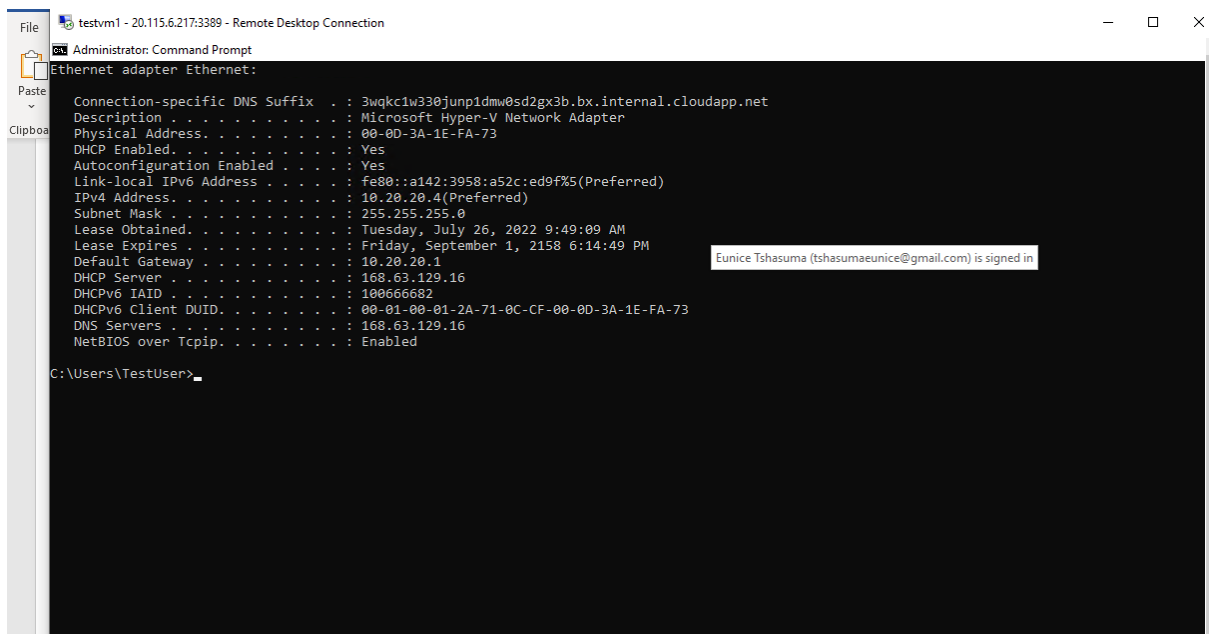


12. Connect to TestVM2 using the RDP file, and the username TestUser and the password TestPa\$\$w0rd!



13. On both VMs, in Choose privacy settings for your device, select Accept.

15. On TestVM1, open a command prompt and enter the command ipconfig /all



16. Verify that the IP address is the same as the one you noted in the DNS zone.

The screenshot shows a Remote Desktop Connection to a virtual machine named 'testvm1'. The left pane displays an Administrator Command Prompt with the following output:

```
Ethernet adapter Ethernet:  
Connection-specific DNS Suffix . : 3wqkc1w330junpidmw0sd2gx3b.bx.internal.cloudapp.net  
Description . . . . . : Microsoft Hyper-V Network Adapter  
Physical Address. . . . . : 00-0D-3A-1E-FA-73  
DHCP Enabled. . . . . : Yes  
Autoconfiguration Enabled . . . : Yes  
Link-local IPv6 Address . . . . : fe80::a142:3958:a52c:ed9f%5(Preferred)  
IPv4 Address. . . . . : 10.20.20.4(Preferred)  
Subnet Mask . . . . . : 255.255.255.0  
Lease Obtained. . . . . : Tuesday, July 26, 2022 9:49:09 AM  
Lease Expires . . . . . : Friday, September 1, 2158 6:14:49 PM  
Default Gateway . . . . . : 10.20.20.1  
DHCP Server . . . . . : 168.63.129.16  
DHCPv6 IATD . . . . . : 180666682  
DHCPv6 Client DUID. . . . . : 00-01-00-01-2A-71-0C-CF-00-0D-3A-1E-FA-73  
DNS Servers . . . . . : 168.63.129.16  
NetBIOS over Tcpip. . . . . : Enabled  
C:\Users\TestUser>
```

The right pane shows the VM's configuration page with the following settings:

Category	Property	Value
Networking	Public IP address	20.115.6.217
	Public IP address (IPv6)	-
	Private IP address	10.20.20.4
	Private IP address (IPv6)	-
	Virtual network/subnet	CoreServices/vnet/DatabaseSubnet
Size	Size	Standard DS1 v2
	VCPUs	1
	RAM	3.5 GiB
Disk	OS disk	testvm1_disk1_069e6848fcd24954a49af76f39ae9463
	Encryption at host	Disabled
	Azure disk encryption	Not enabled

17. Enter the command `ping TestVM2.contoso.com`. + 18. 18. Verify that the FQDN resolves to the IP address that you noted in the Private DNS zone. The ping itself will timeout because of the Windows Firewall that is enabled on the VMs.

The screenshot shows a Command Prompt with the following output:

```
C:\Users\TestUser>ping TestVM2.contoso.com  
  
Pinging TestVM2.contoso.com [10.20.20.5] with 32 bytes of data:  
Request timed out.  
Request timed out.  
Request timed out.  
Request timed out.  
  
Ping statistics for 10.20.20.5:  
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

19. Alternatively, you can enter the command `nslookup TestVM2.contoso.com` and verify that you receive a successful name resolution record for VM2

```
C:\Users\TestUser>nslookup TestVM2.contoso.com
Server: UnKnown
Address: 168.63.129.16
```

```
Non-authoritative answer:
Name: TestVM2.contoso.com
Address: 10.20.20.5
```

```
C:\Users\TestUser>
```

[LEARN MORE](#)