😊 Local DNS

Azure Private DNS Zone is a service provided by Microsoft Azure that allows you to create a private domain in Azure's DNS system. This domain can be used to provide name resolution for resources within a virtual network (VNet) or between peered VNets.

Key Features and Benefits:

1. **Private DNS Name Resolution:** Allows you to resolve the names of resources in your virtual network without the need for public internet DNS.
2. **Integration with Azure Resources:** Seamlessly integrates with Azure Virtual Networks (VNets), Virtual Machine Scale Sets, and other Azure resources.
3. **Custom DNS Names:** You can define custom domain names (e.g., contoso.local) and map them to Azure resources.
4. **Centralized DNS Management:** Provides a central location to manage DNS settings for Azure resources, reducing the overhead of managing multiple DNS configurations.
5. **DNS Traffic Routing:** Helps in routing DNS queries between virtual networks when they are peered together, ensuring consistent name resolution across interconnected VNets.
6. **Security and Isolation:** Keeps DNS traffic within the Azure backbone network, enhancing security by avoiding exposure to the public internet.

😄 Use Cases:

1. **Private Domains for Azure Resources:** Use private DNS zones to define custom domain names for Azure VMs, Azure SQL Databases, Azure Storage accounts, etc., within a VNet.
2. **Centralized DNS Management:** Simplify DNS management by consolidating DNS configurations for various Azure resources under a single private DNS zone.
3. **Cross-VNet Name Resolution:** Facilitate name resolution across peered VNets without exposing internal resource names to the public internet.

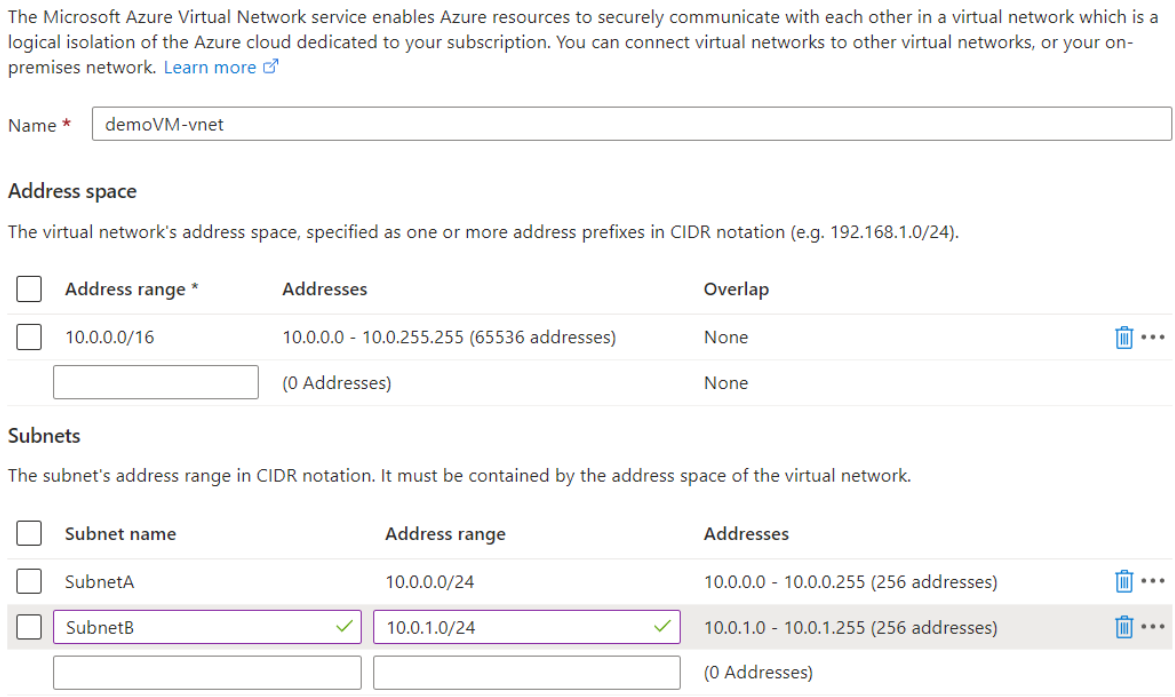
In this lab, we're setting up two Windows Server 2022 VMs in Azure to create a local DNS environment. The first VM is configured as a domain controller with Active Directory and DNS roles. The second VM is joined to this domain and configured to use the first VM's DNS. The goal is to enable internal DNS resolution and domain management within the virtual network, allowing you to resolve domain names to private IP addresses and access services using domain names.

😄 To begin with the Lab:

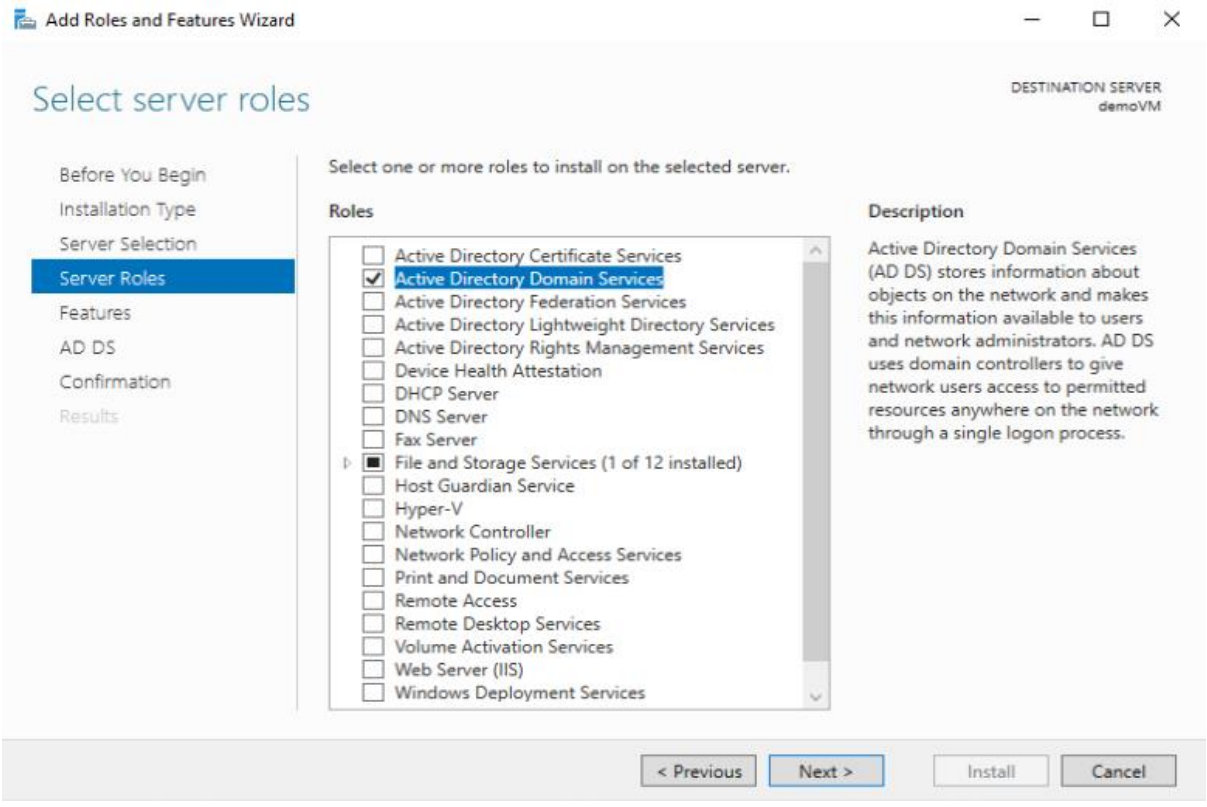
1. For this lab, we will create 2 VM based on Windows Server 2022, one virtual machine should public IP address and the other VM will not have any public IP address. Also, you should have a storage account on which you have to create a container and upload a setup file to it. This setup file will help you install IIS and

create a default HTML page on your VM while creating deployment by using a custom script extension.

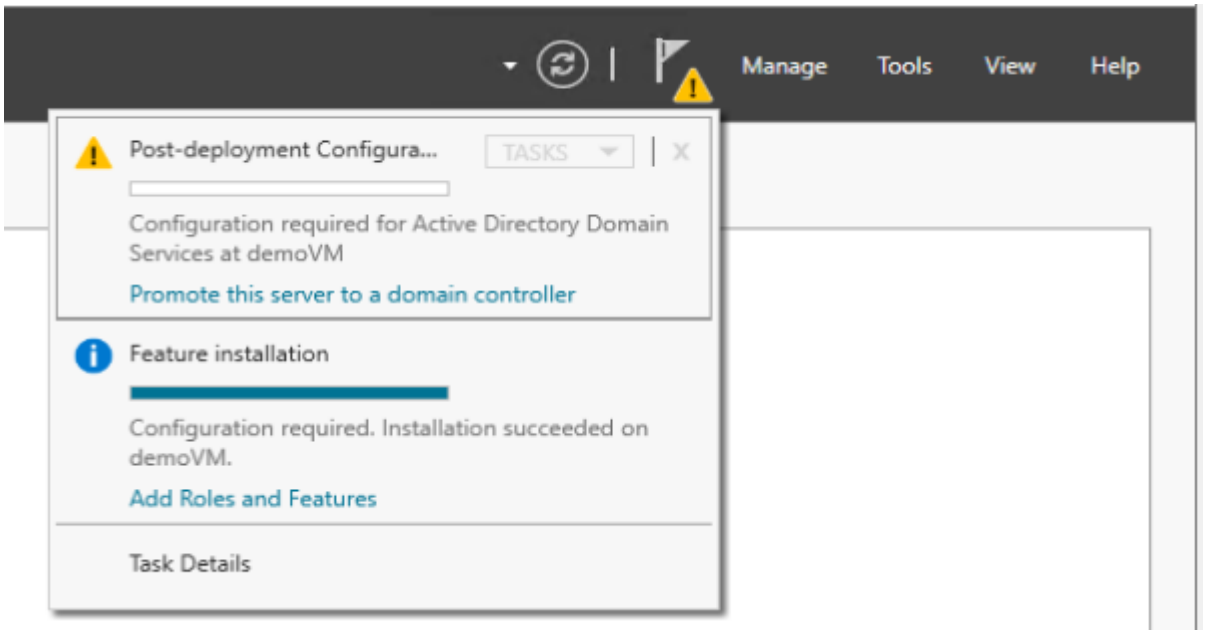
2. Everything is the same as we have seen before while creating your VM, you need to create a new virtual network and rename your subnets as shown below.



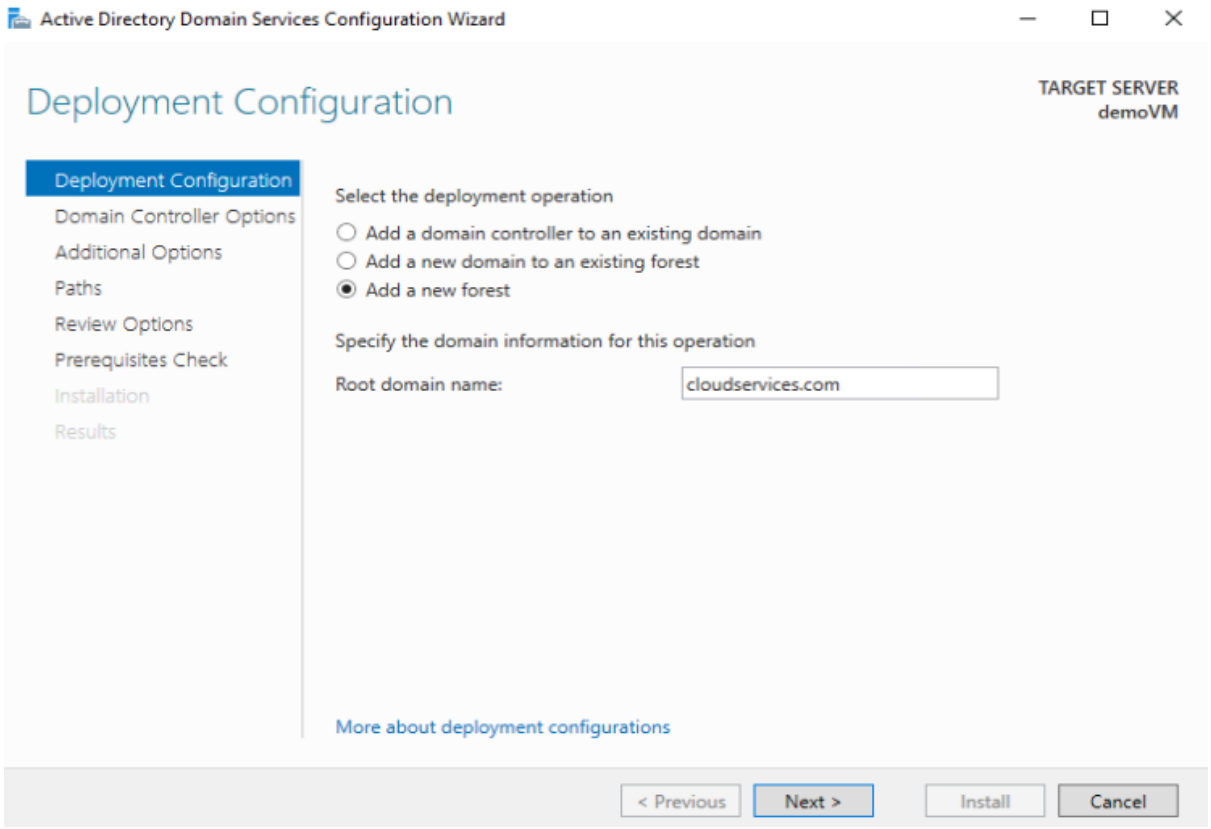
3. After that just go to the review page and create your VM. Now you need to log in to your VM and install a role for active directory domain services.



4. Once it is installed then you need to configure it and click on promote this server to a domain controller.

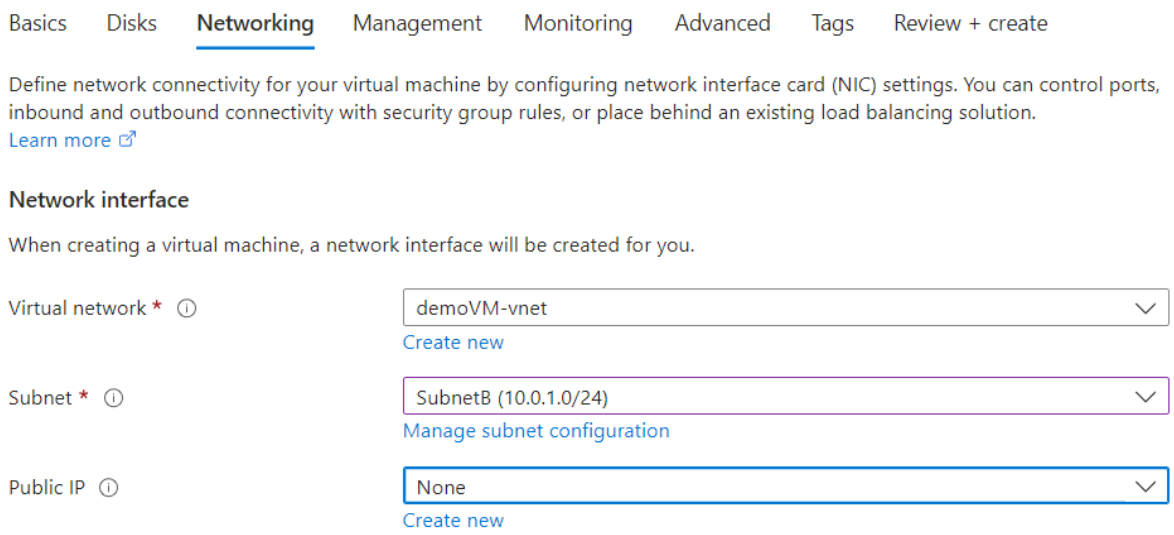


5. Then you need to choose to add a new forest and give a root domain name. You can use any domain name no matter what you don't need to buy any domain name for this.

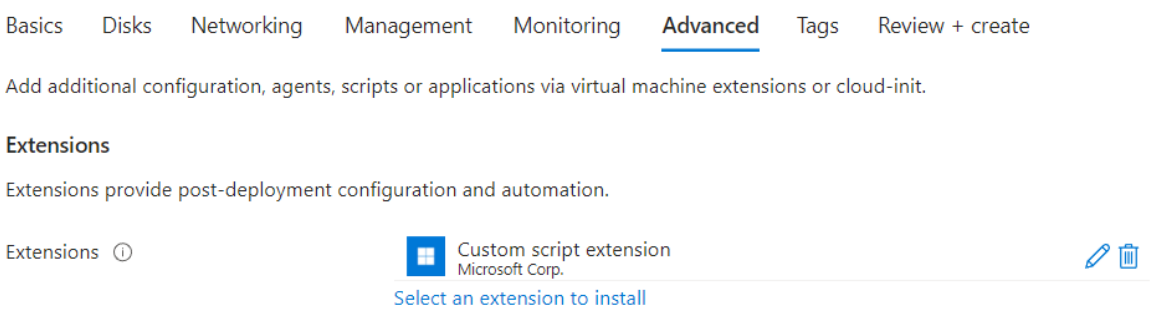


6. Then you need to give it a password. After that just move ahead and install it, also the server will restart itself if you need to log in again.

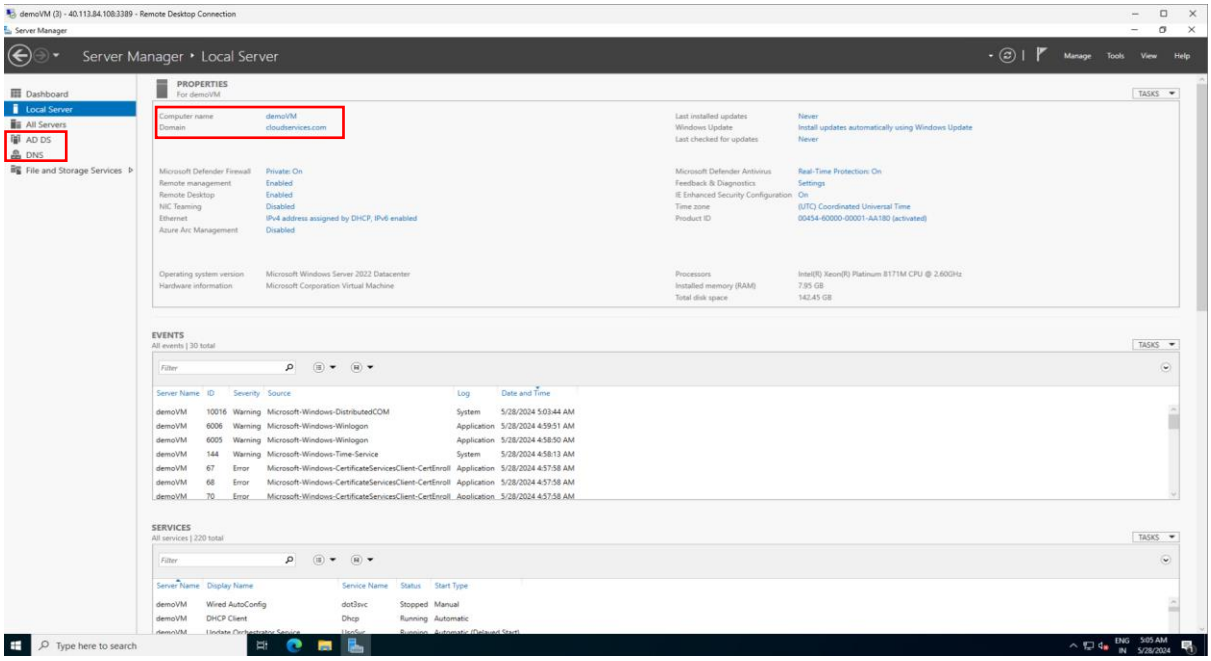
7. Now until it gets installed, we are going to create another VM. Remember to change the subnet and for public IP choose none.



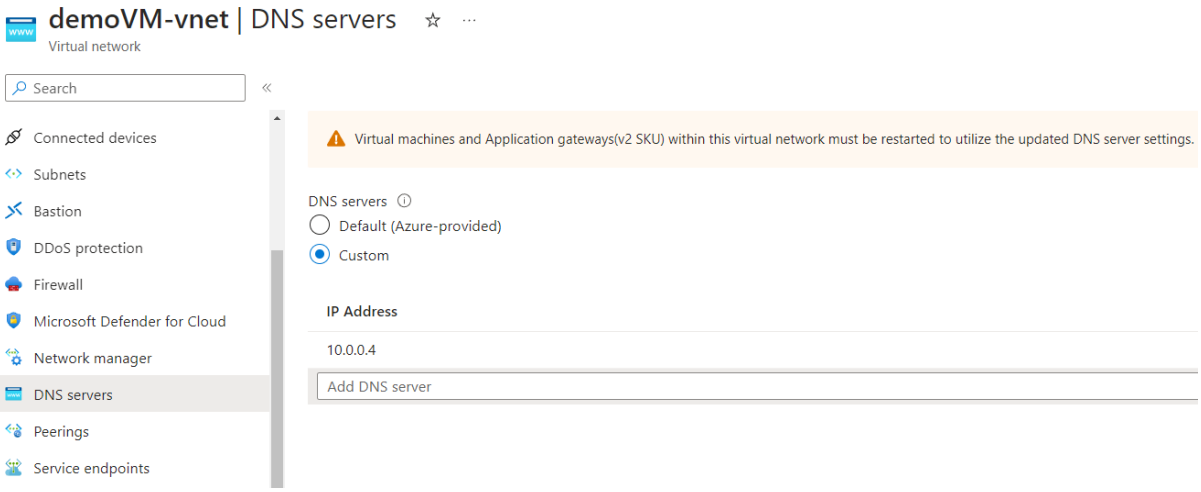
8. Then go to advance and in extensions you need to choose custom script extension then from your storage account choose the Setup file. Then create your VM as your VM does not have any public IP address which is why we have used a custom script extension to install IIS on it.



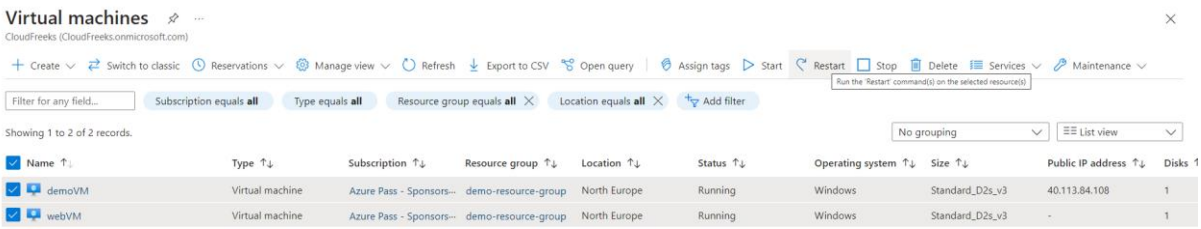
9. Now if you login back to your VM you can see that it is a part of the domain name which is cloudservices.com, also you can see that we have AD DS and DNS in place.



10. Now you need to go to the demo VM and go to its Virtual Network then from the left pane scroll down to DNS servers. Then click on Custom and give the Private IP address of your demo VM. And then click on save.

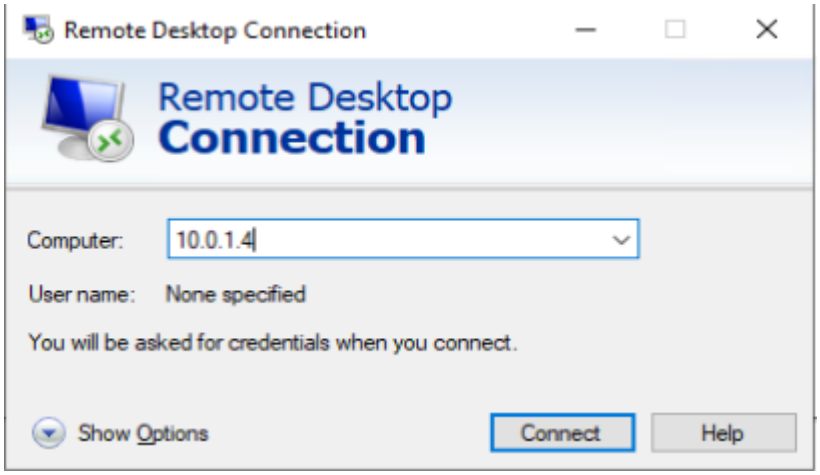


11. Now we are going to restart our virtual machines. For that go to virtual machines and choose both of your VMs and click on restart.

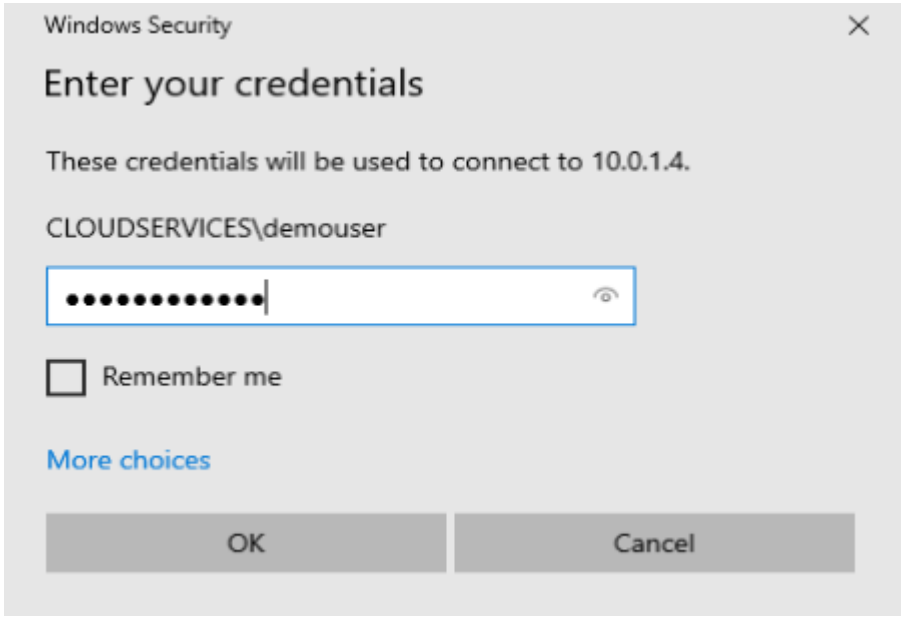


12. Now we need to log in again to our **demo VM** and in our **demo VM** we will open a remote desktop connection and use the Private IP of **web VM** and make an RDP connection with it.

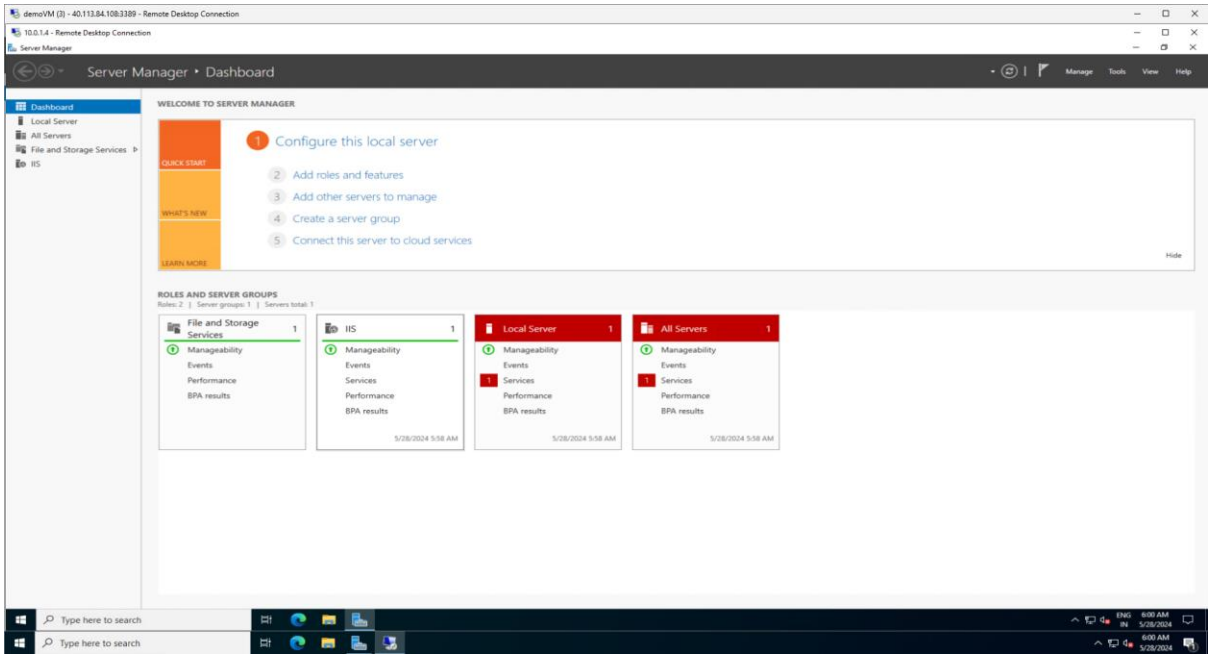
13. Open RDP then enter the Private IP of your **web VM** and click on connect.



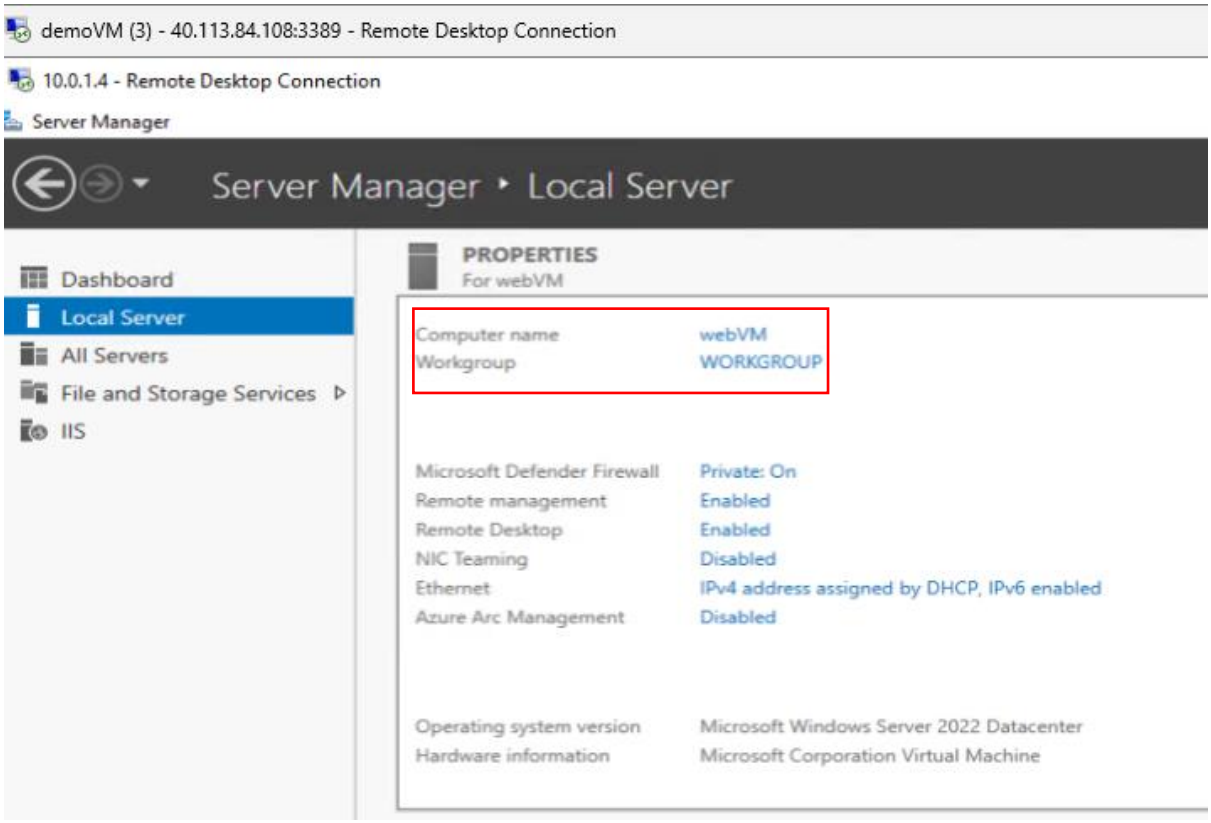
14. After that enter your password.



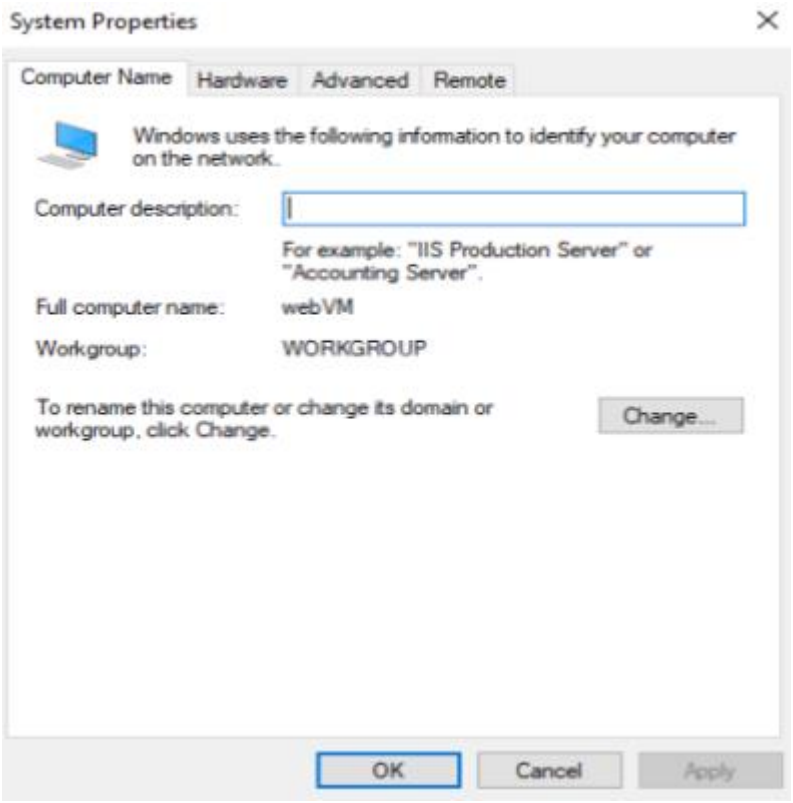
15. Below you can see that we got the server inside a server.

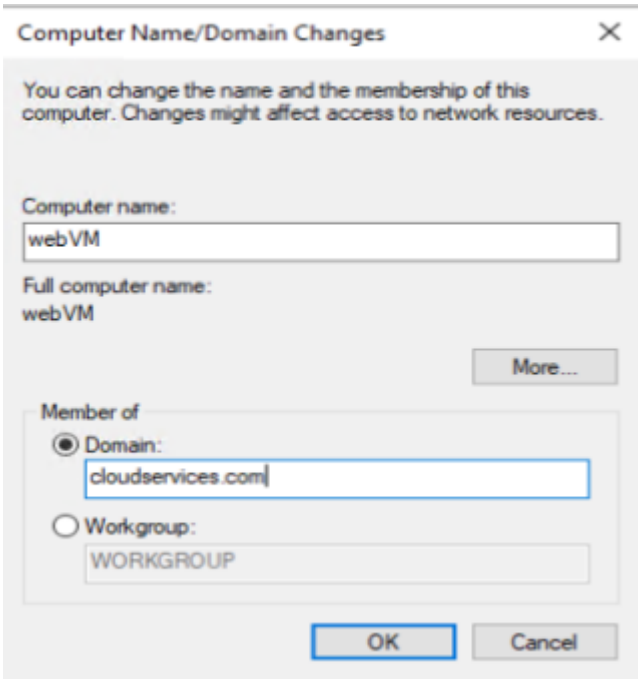


16. Now go to local servers and you can see that currently, our demo VM is a part of the work group. So, we need to change that for that click on it.

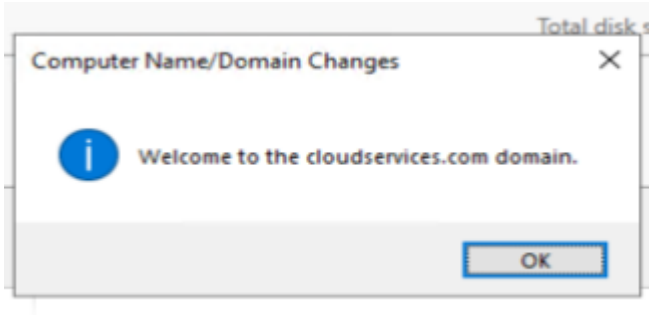


17. Then click on change. After that, you need to choose the domain and put the domain name.

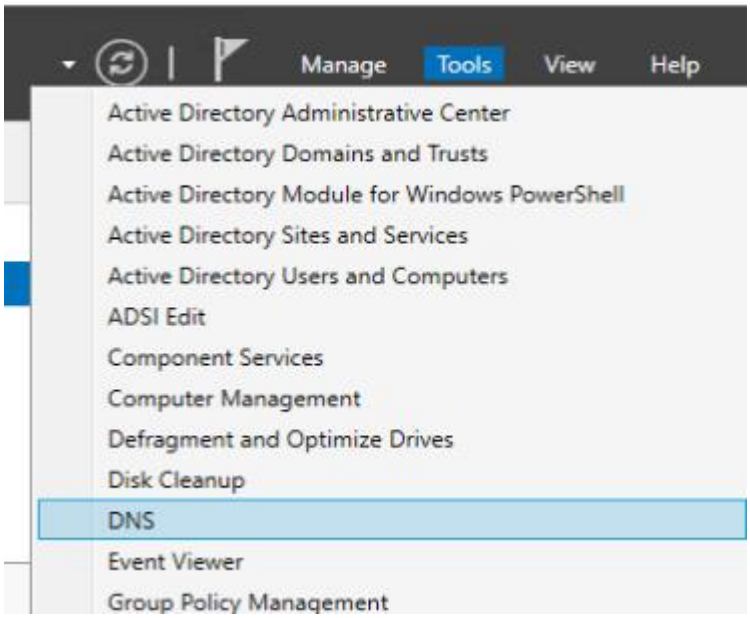




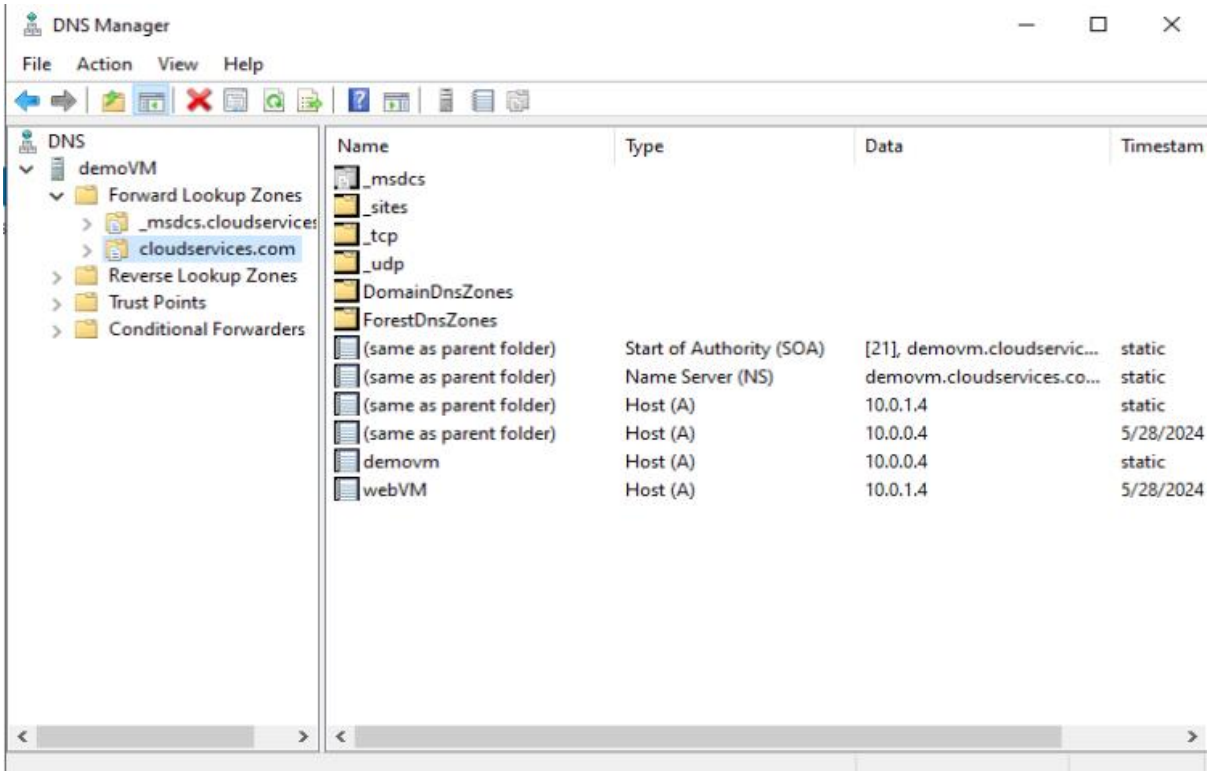
18. After that it will ask you for the username and password for your demo VM. Enter that and you will see that it is welcoming us. Then it will restart.



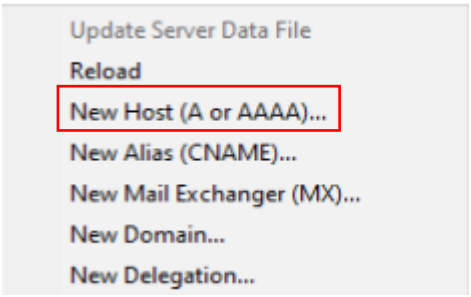
19. Now what you need to do, is in server manager click on tools then choose DNS.



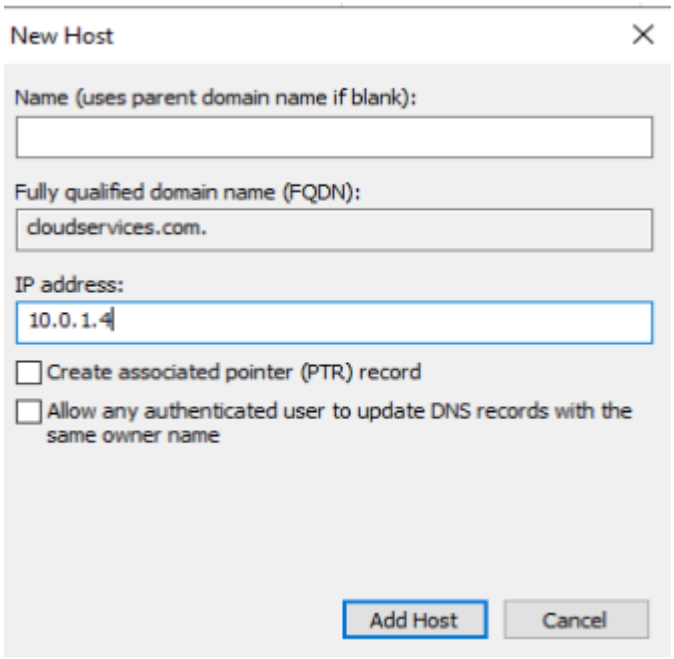
20. Then you need to expand **forward lookup zones** and choose cloudservices.com then you can see the hosts of your demo VM and web VM.



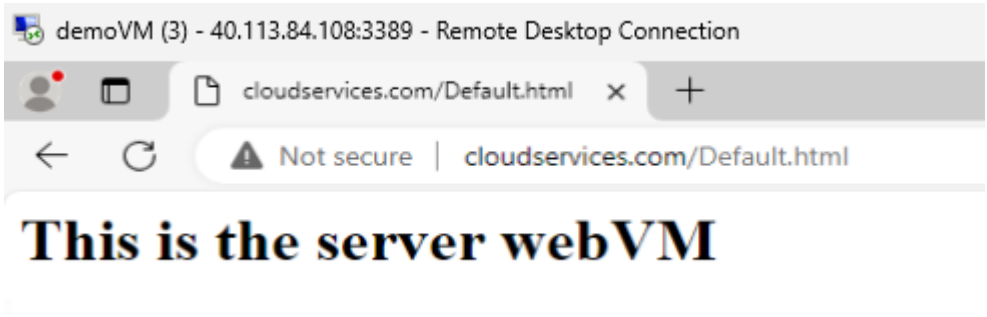
21. Now you need to right-click on empty space and choose New Host from the menu.



22. Then you need to enter the Private IP address of the web VM and click on add host.



23. After that open your Edge browser in the VM and use your domain to view your web page and you will see the results as expected.



24. Once you are done then delete all your resources.