

# **Assignment**

## **Working with DHCP and DNS on IPAM**

### **Description of tasks:**

*"Install the IPAM server role. After installation, perform the initial IPAM configuration for the ita.lan domain. When the discovery process is complete, check the presence of the DNS and DHCP servers in IPAM (the servers in the first two tasks/assignments). Using the IPAM console, do the following:*

- *On the DHCP server, add a new scope: 192.168.202.1–192.168.202.99.*
- *Reserve the IP address 192.168.202.122 on the DHCP server.*
- *On the DNS server, create a new forward lookup link.lan zone.*
- *On the DNS server in the link.lan zone, create a new A record with the name HOST1 and the IP address 192.168.202.202.*
- *On the DNS server in the link.lan area, for the record A HOST1 HOST1. NameFirstName, create an alias record with the email name.*

*Submit the solution in the form of a text document, in which you will describe step by step the necessary stages in solving the task. Supplement the descriptions of the solution with screenshots that correspond to the stages of solving the task."*

**Course:** Network Server Services

**Module:** IPAM Implementation and IPAM Management

**Student:** Jovan Ljušić

## CONTENT

<b>Working with DHCP and DNS on IPAM .....</b>	<b>1</b>
1. INTRODUCTORY REMARKS OF THE ASSIGNMENT .....	3
2. IPAM SERVER INSTALLATION PROCESS .....	5
3. ADDITIONAL CONFIGURATION OF THE IPAM SERVER.....	8
4. ADDING A SCOPE .....	13
5. RESERVATION OF IP ADDRESSES .....	16
6. FORWARD LOOKUP ZONA .....	18
7. CREATE A NEW RECORD.....	20
8. CREATING A RECORD ALIAS.....	23

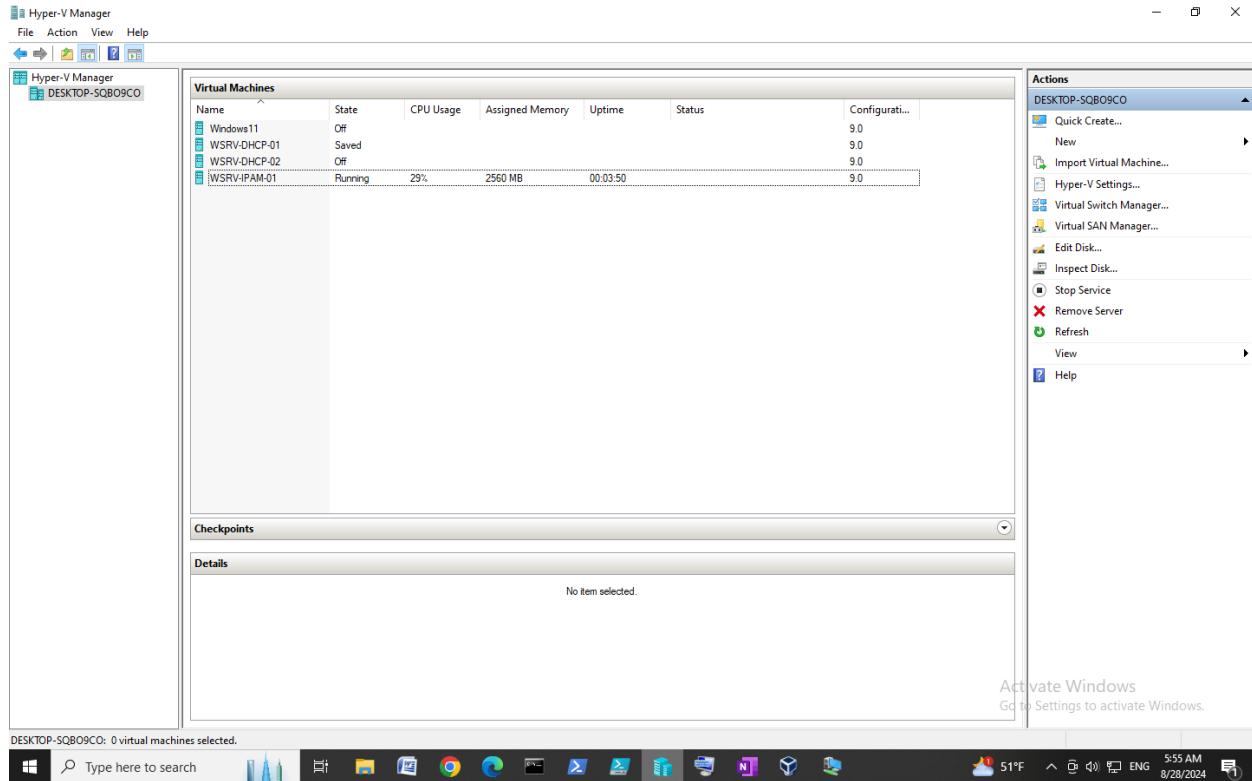
# 1. INTRODUCTORY REMARKS OF THE ASSIGNMENT

This document presents a step-by-step approach to solving a specific task, outlining the methodology, execution, and expected outcomes. By following the instructions, the reader will gain hands-on experience in applying technical concepts to practical situations, reinforcing both theoretical knowledge and problem-solving abilities.

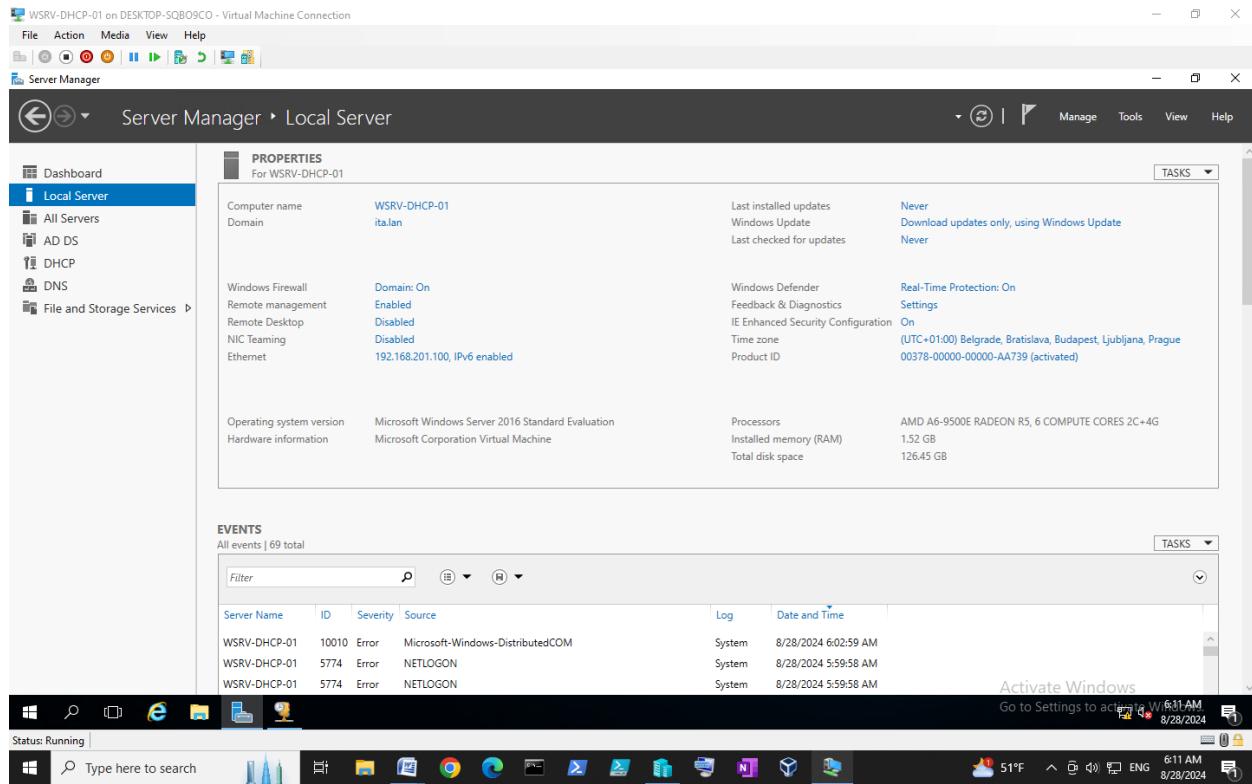
The structured approach ensures that each step is clearly defined, making the process easy to follow and implement in professional environments.

In the introduction to this task, first of all, three virtual machines will be used in use, in order to make IPAM functionality possible. The virtual machines that are used are called:

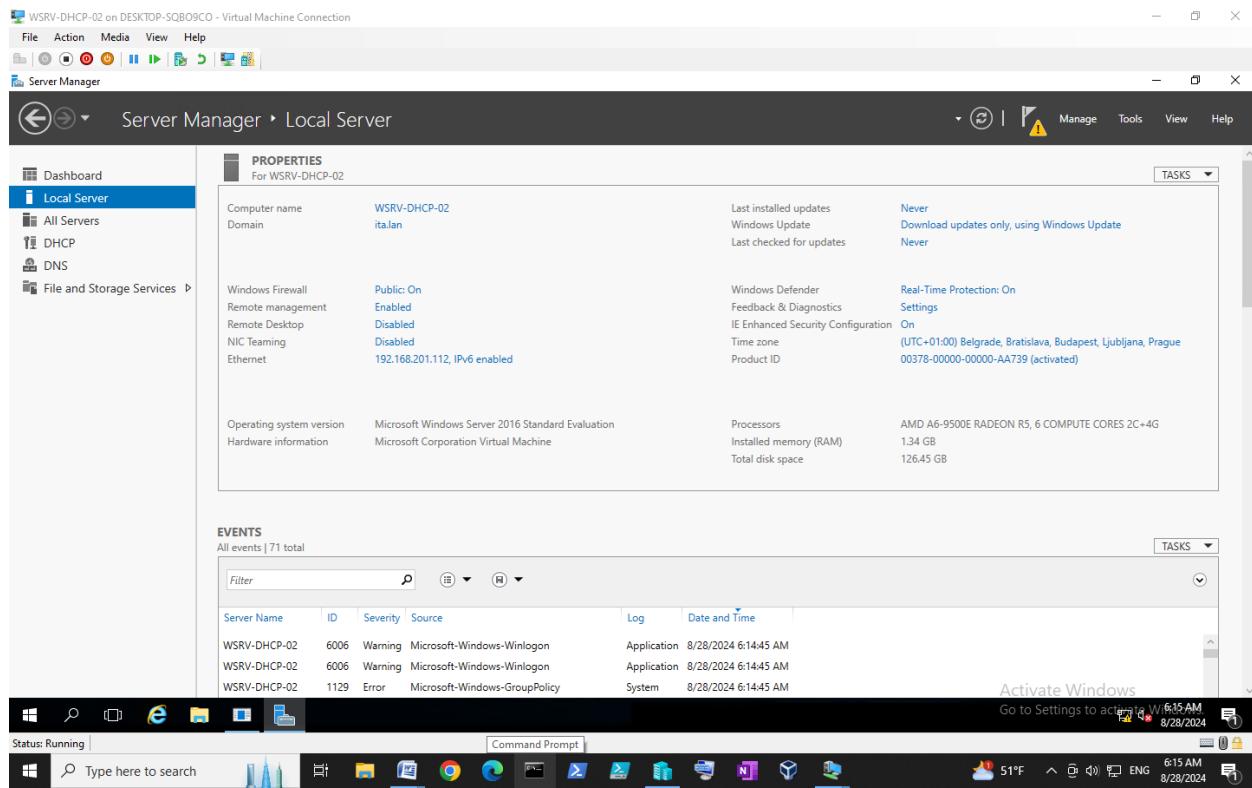
- **WSRV-DHCP-01(Windows Server 2016 Standard Evaluation-Desktop experience)**
- **WSRV-DHCP-02(Windows Server 2016 Standard Evaluation-Desktop experience)**
- **WSRV-IPAM-01(Windows Server 2016 Standard Evaluation-Desktop experience)**



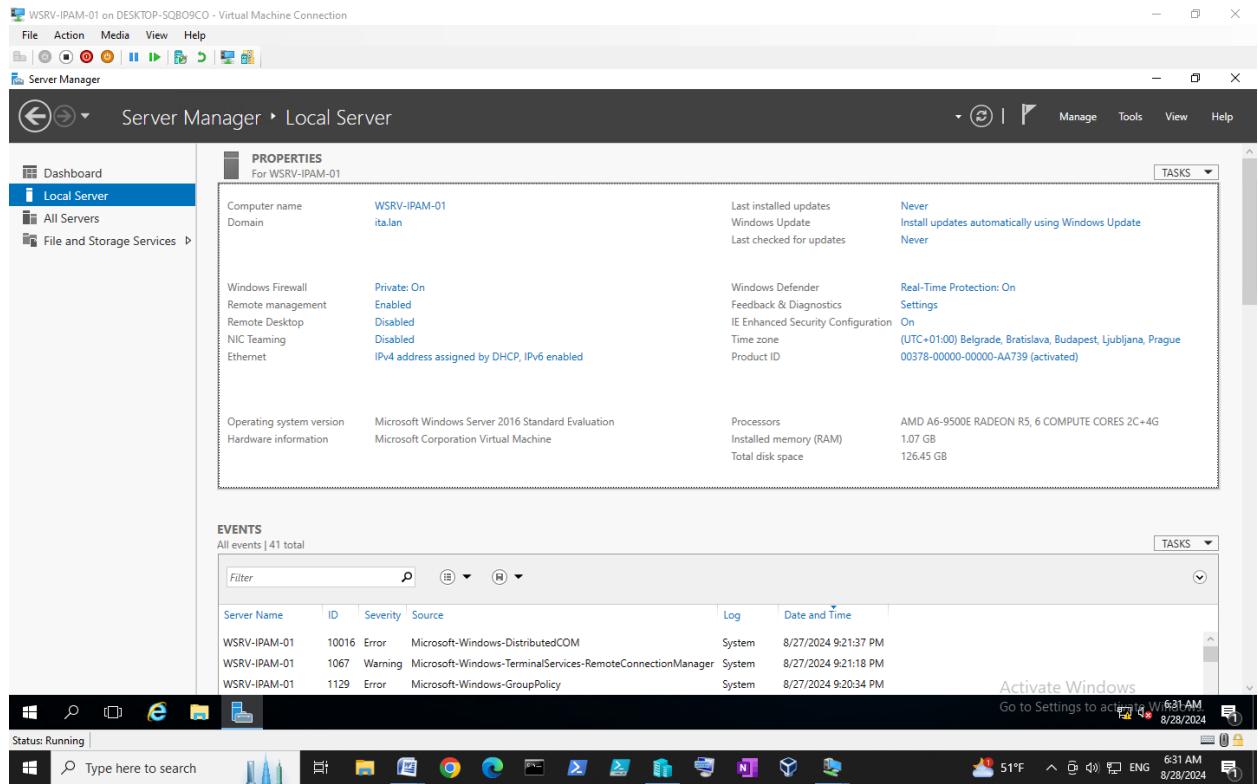
The following screenshots track the details of the servers that are in use, also as in previous tasks all server roles and features that have been running. The first screenshot shows WSRV-DHCP-01:



## 1 WSRV-DHCP-01



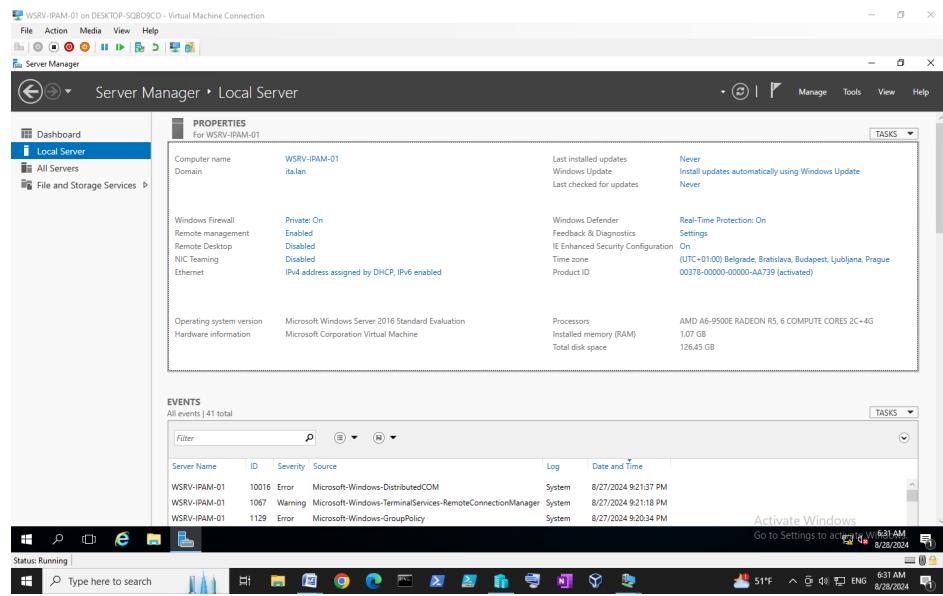
## 2 WSRV-DHCP-02



### 3 WSRV-IPAM-01

All three servers are members of the domain named "ita.lan", of which 3 servers are scheduled to be selected for the installation of the functionality called IPAM. The following heading follows the IPAM server installation process, which will be followed by screenshots with additional settings.

## 2. IPAM SERVER INSTALLATION PROCESS



**Add Roles and Features Wizard**

**Before you begin**

This wizard helps you install roles, role services, or features. You determine which roles, role services, or features to install based on the computing needs of your organization, such as sharing documents, or hosting a website.

To remove roles, role services, or features:  
Start the Remove Roles and Features Wizard

Before you continue, verify that the following tasks have been completed:

- The Administrator account has a strong password
- Network settings, such as static IP addresses, are configured
- The most current security updates from Windows Update are installed

If you must verify that any of the preceding prerequisites have been completed, close the wizard, complete the steps, and then run the wizard again.

To continue, click Next.

Skip this page by default

**Add Roles and Features Wizard**

**Select installation type**

Before You Begin  
Installation Type  
Server Selection  
Server Roles  
Features  
Confirmation  
Results

Select the installation type. You can install roles and features on a running physical computer or virtual machine, or on an offline virtual hard disk (VHD).

**Role-based or feature-based installation**  
Configure a single server by adding roles, role services, and features.

**Remote Desktop Services installation**  
Install required role services for Virtual Desktop Infrastructure (VDI) to create a virtual machine-based or session-based desktop deployment.

**Add Roles and Features Wizard**

**Select destination server**

Before You Begin  
Installation Type  
**Server Selection**  
Server Roles  
Features  
Confirmation  
Results

Select a server or a virtual hard disk on which to install roles and features.

Select a server from the server pool  
 Select a virtual hard disk

**Server Pool**

Filter:

Name	IP Address	Operating System
WSRV-IPAM-01.itlan	192.168.201.103	Microsoft Windows Server 2016 Standard Evaluation

1 Computer(s) found

This page shows servers that are running Windows Server 2012 or a newer release of Windows Server, and that have been added by using the Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.

**Add Roles and Features Wizard**

**Select server roles**

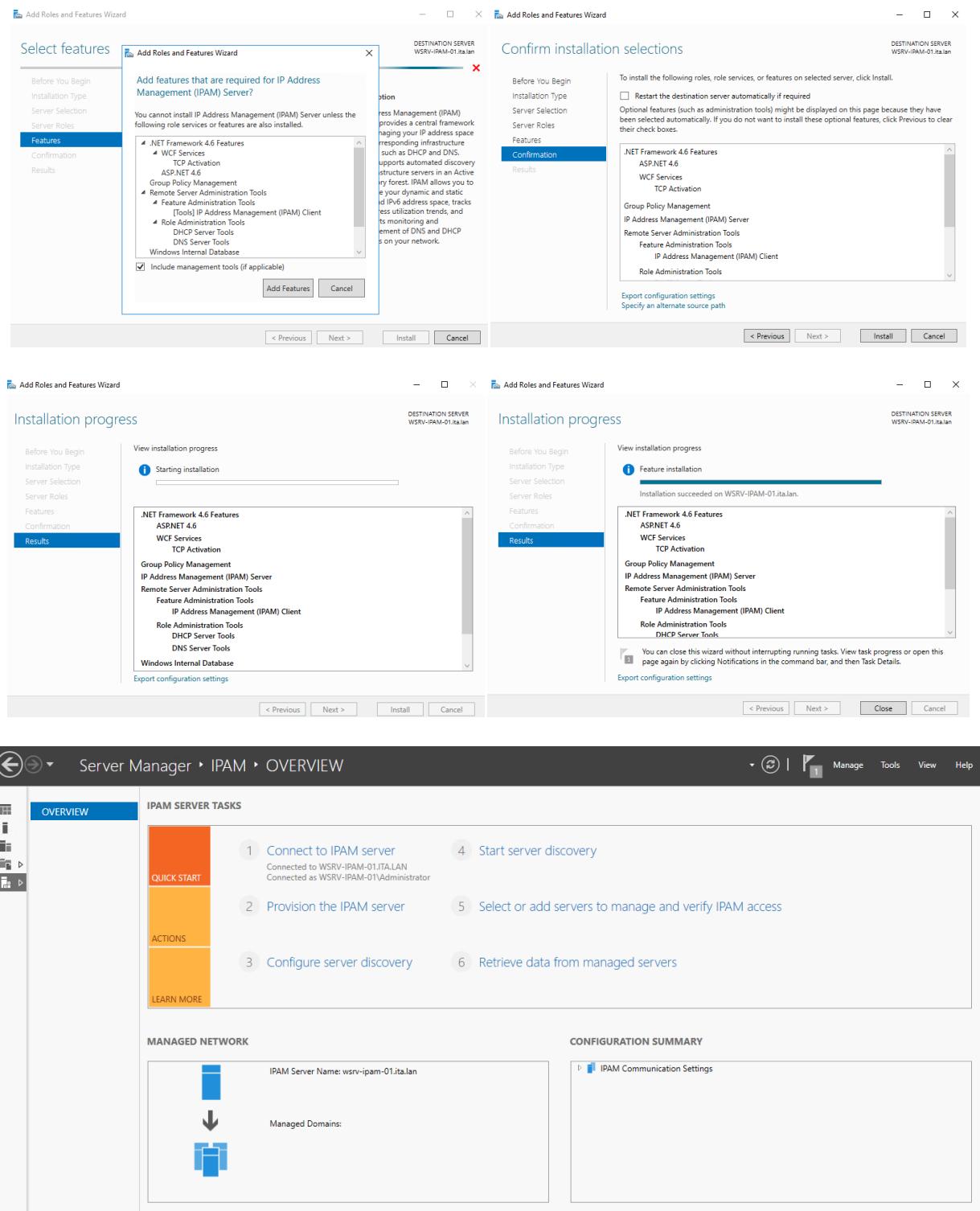
Before You Begin  
Installation Type  
Server Selection  
**Server Roles**  
Features  
Confirmation  
Results

Select one or more roles to install on the selected server.

**Description**

Active Directory Certificate Services (AD CS) is used to create certification authorities and related role services that allow you to issue and manage certificates used in a variety of applications.

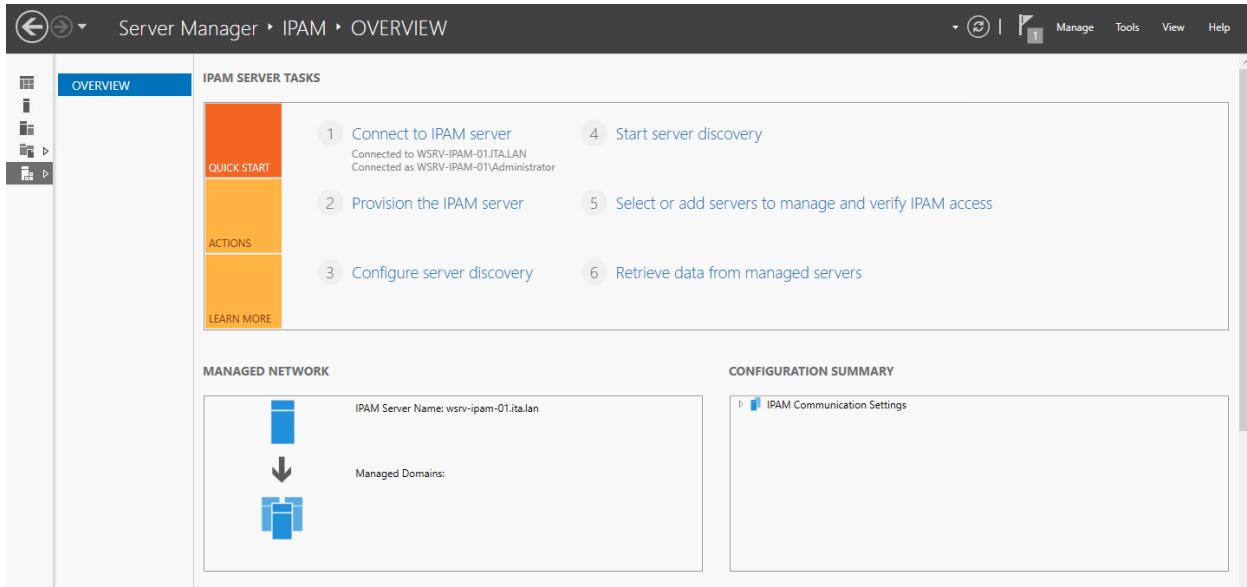
Active Directory Federation Services  
 Active Directory Lightweight Directory Services  
 Active Directory Rights Management Services  
 Device Health Attestation  
 DHCP Server  
 DNS Server  
 File and Storage Services (1 of 12 installed)  
 Host Guardian Service  
 Hyper-V  
 MultiPoint Services  
 Network Policy and Access Services  
 Print and Document Services  
 Remote Access  
 Remote Desktop Services  
 Volume Activation Services  
 Web Server (IIS)  
 Windows Deployment Services  
 Windows Server Essentials Experience  
 Windows Server Update Services



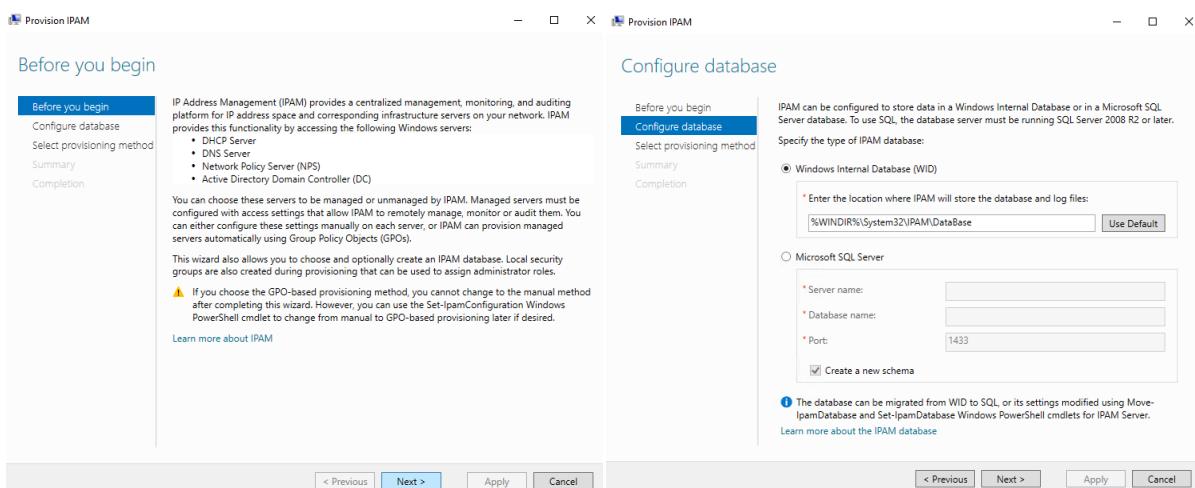
The IPAM Feature installation process is followed step by step through screenshots. There are no special features that would mark this process as essential. Except that in the Roles section, none of the fields are selected, but in the Features section, **IP Address Management (IPAM)** is selected, and then **the Install** field.

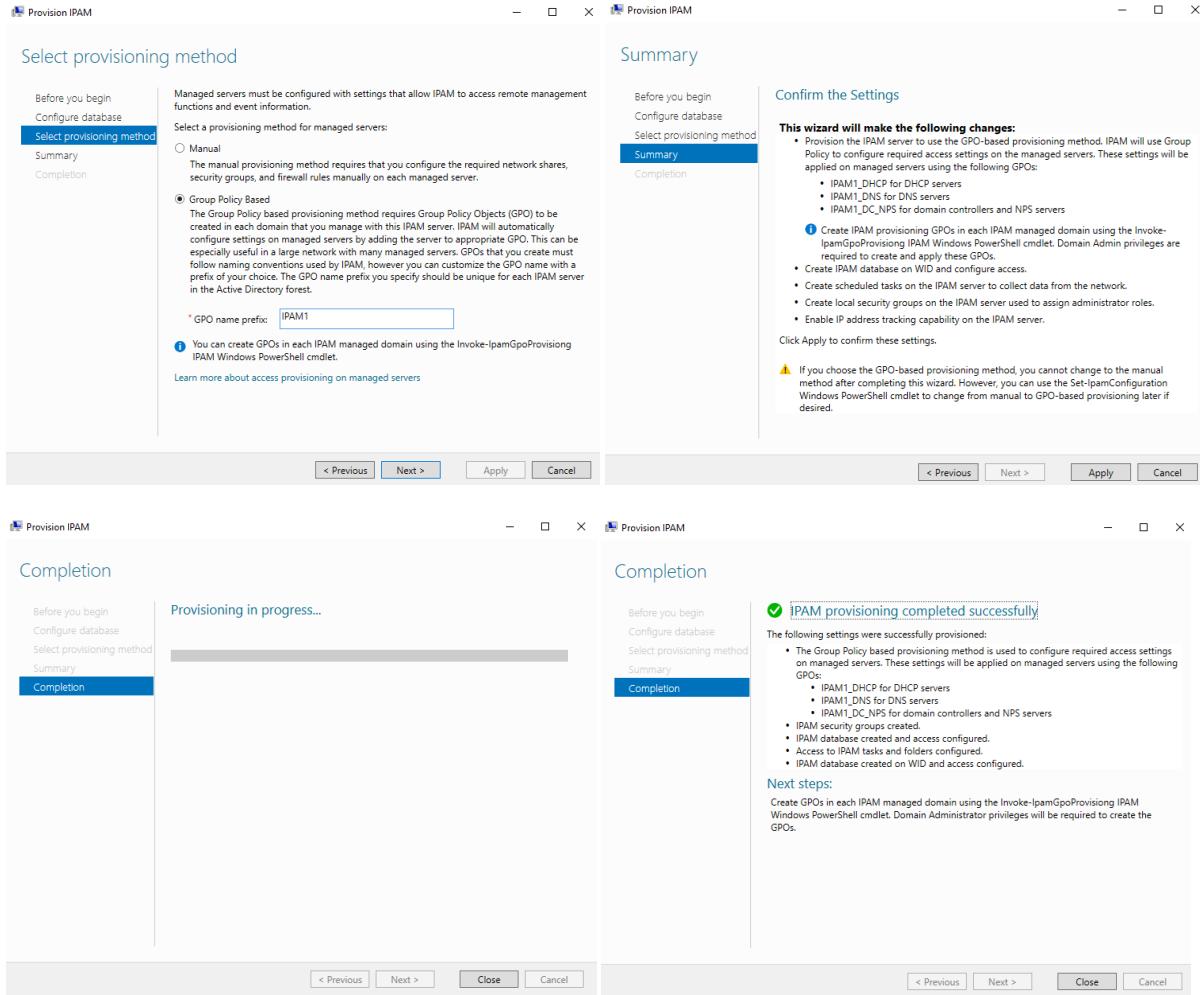
### 3. ADDITIONAL CONFIGURATION OF THE IPAM SERVER

"Install the IPAM server role. After installation, perform the initial IPAM configuration for the ita.lan domain. When the discovery process is complete, check the presence of DNS and DHCP servers in IPAM (servers in the first two tasks/assignments)."



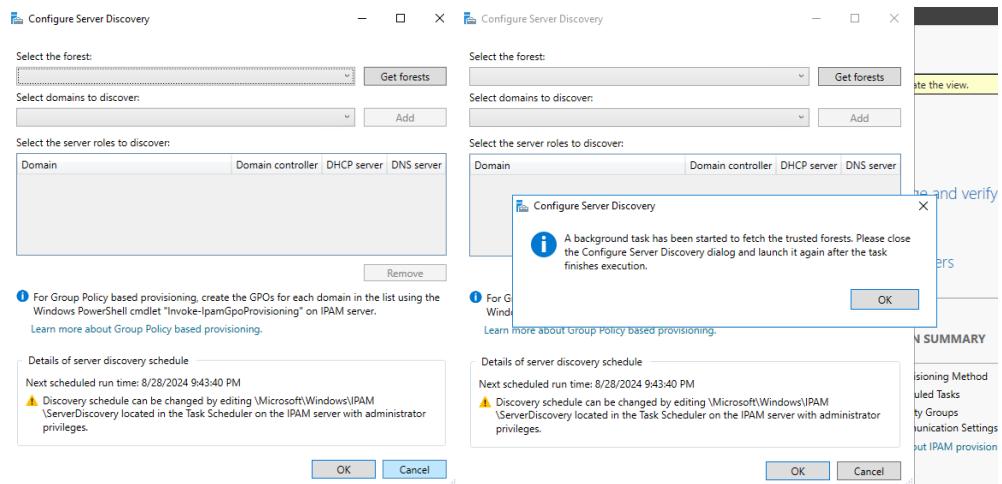
The first option on the IPAM server is **Connect to IPAM server**, in which the server is already connected. After that, the next step follows the option **Provision the IPAM server**. In which we choose **the WID** location for storing the database and log files. The screenshots show all the actions related to this step:

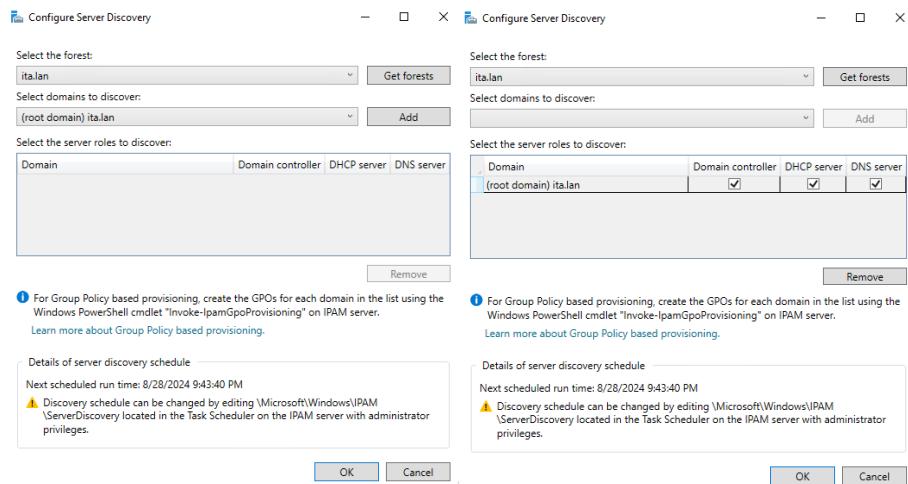




## The GPO prefix for the IPAM server is IPAM1.

The next step is to **Configure Server Discovery**. Section **Get forest**, to discover forest I domain.





The following action follows the discovery of the server and it is necessary to start the search process, in the Start section of the **server discovery**.

**OVERVIEW**

**IPAM SERVER TASKS**

- 1 Connect to IPAM server  
Connected to WSRV-IPAM-01.ITA.LAN  
Connected as WSRV-IPAM-01\Administrator
- 2 Provision the IPAM server  
Completed on Tuesday, August 27, 2024
- 3 Configure server discovery  
Domains selected - 1
- 4 Start server discovery
- 5 Select or add servers to manage and verify IPAM access
- 6 Retrieve data from managed servers

**MANAGED NETWORK**

IPAM Server Name: wsrv-ipam-01.ita.lan  
Managed Domains: ita.lan

**CONFIGURATION SUMMARY**

- Access Provisioning Method
- IPAM Scheduled Tasks
- IPAM Security Groups
- IPAM Communication Settings

Activate Windows  
Go to Settings to activate  
Windows 6:53 AM  
8/28/2024

**OVERVIEW**

**IPAM SERVER TASKS**

- 1 Connect to IPAM server
- 2 Provision the IPAM server
- 3 Configure server discovery
- 4 Start server discovery
- 5 Select or add servers to manage and verify IPAM access
- 6 Retrieve data from managed servers

**MANAGED NETWORK**

IPAM Server Name: wsrv-ipam-01.italan  
Managed Domains: ital.an

**CONFIGURATION SUMMARY**

- Access Provisioning Method
- IPAM Scheduled Tasks
- IPAM Security Groups
- IPAM Communication Settings

**SERVER INVENTORY**

**IPv4**

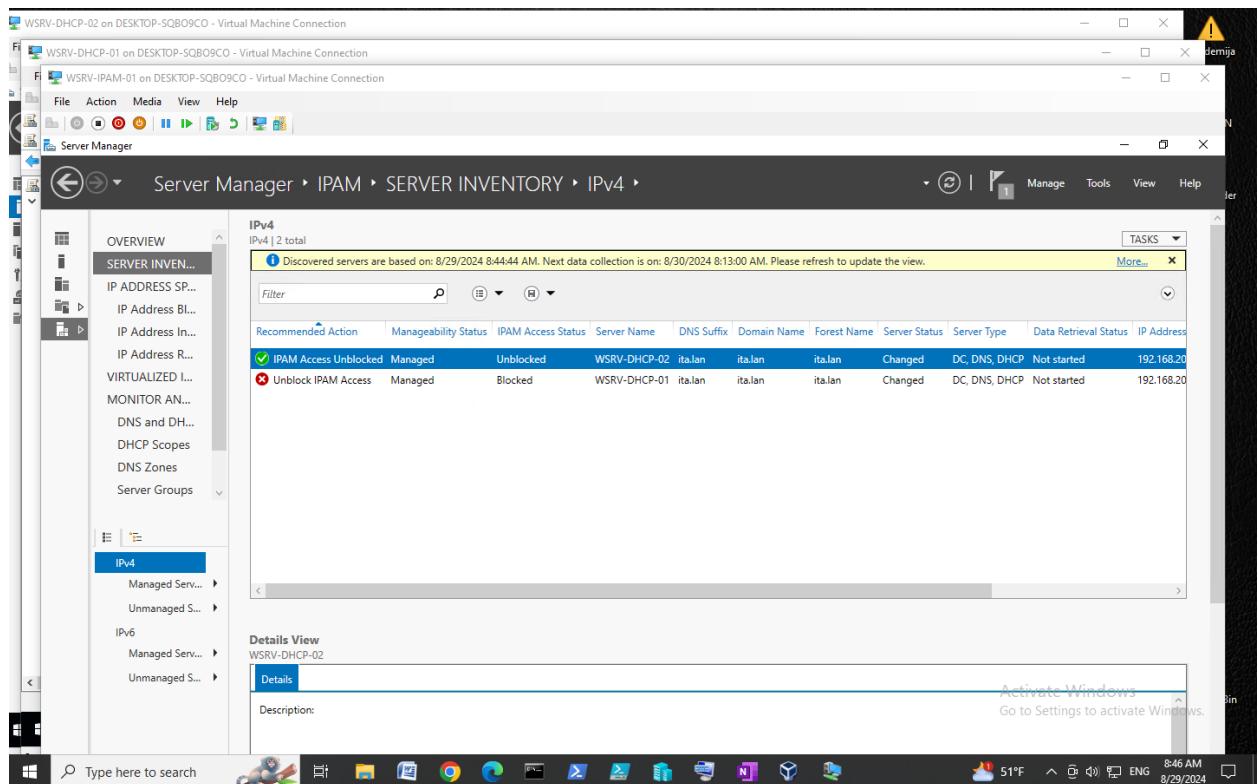
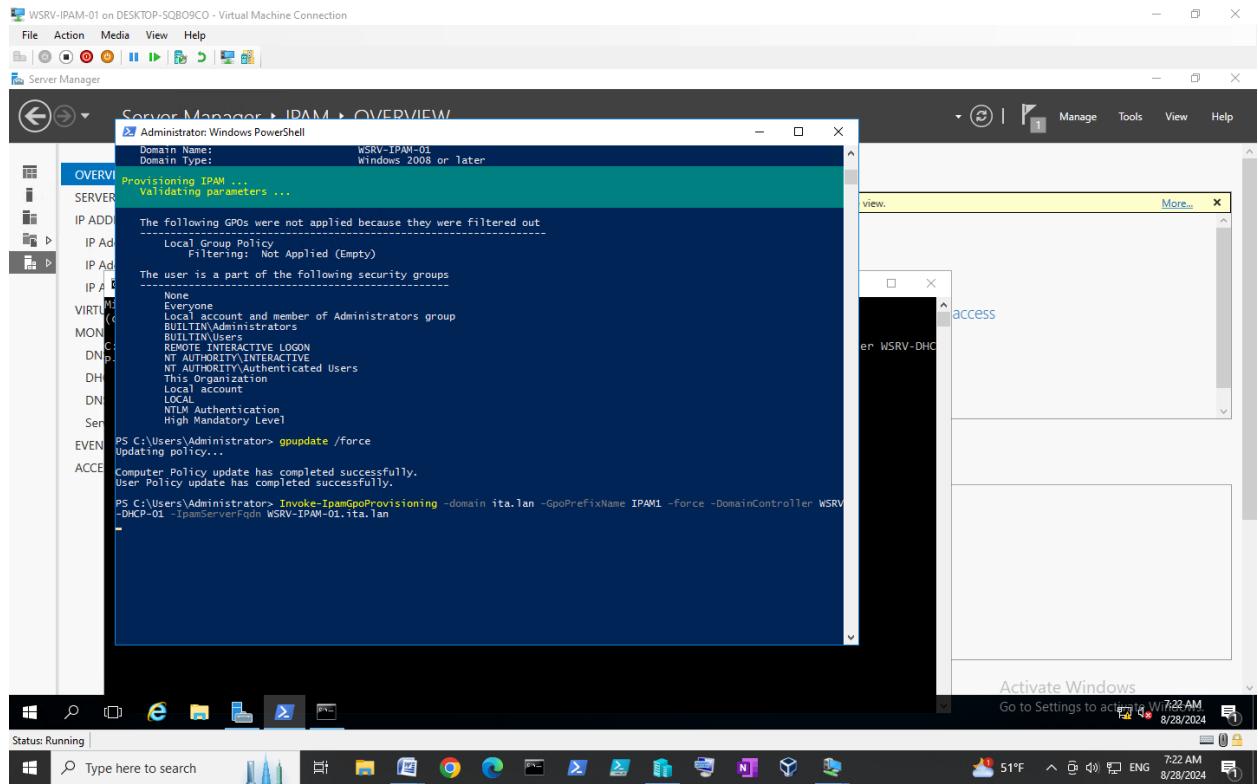
Recommended Action	Manageability Status	IPAM Access Status	Server Name	DNS Suffix	Domain Name	Forest Name	Server Status	Server Type	Data Retrieval Status	IP Address
Set Manageability Status Unspecified	Blocked	wsrv-dhcp-02	.italan	.italan	.italan	.italan	New	DHCP	Not started	192.168.20
Unlock IPAM Access	Managed	WSRV-DHCP-01	.italan	.italan	.italan	.italan	New	DC, DNS, DHCP	Not started	192.168.20

**IPv6**

Managed Serv...	Unmanaged S...
wsrv-dhcp-02	

**Activate Windows**  
Go to Settings to activate Windows.

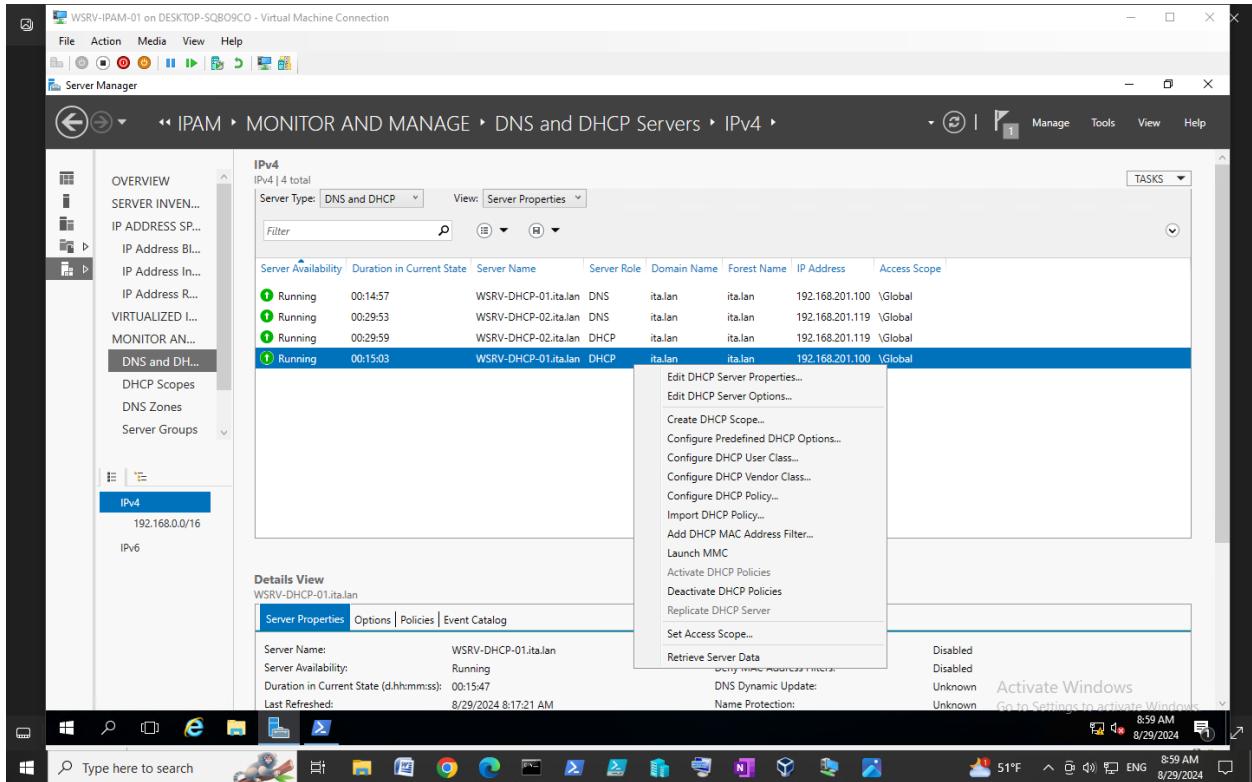
The servers have been found, but it is not yet possible to manage them, so some more settings need to be made.

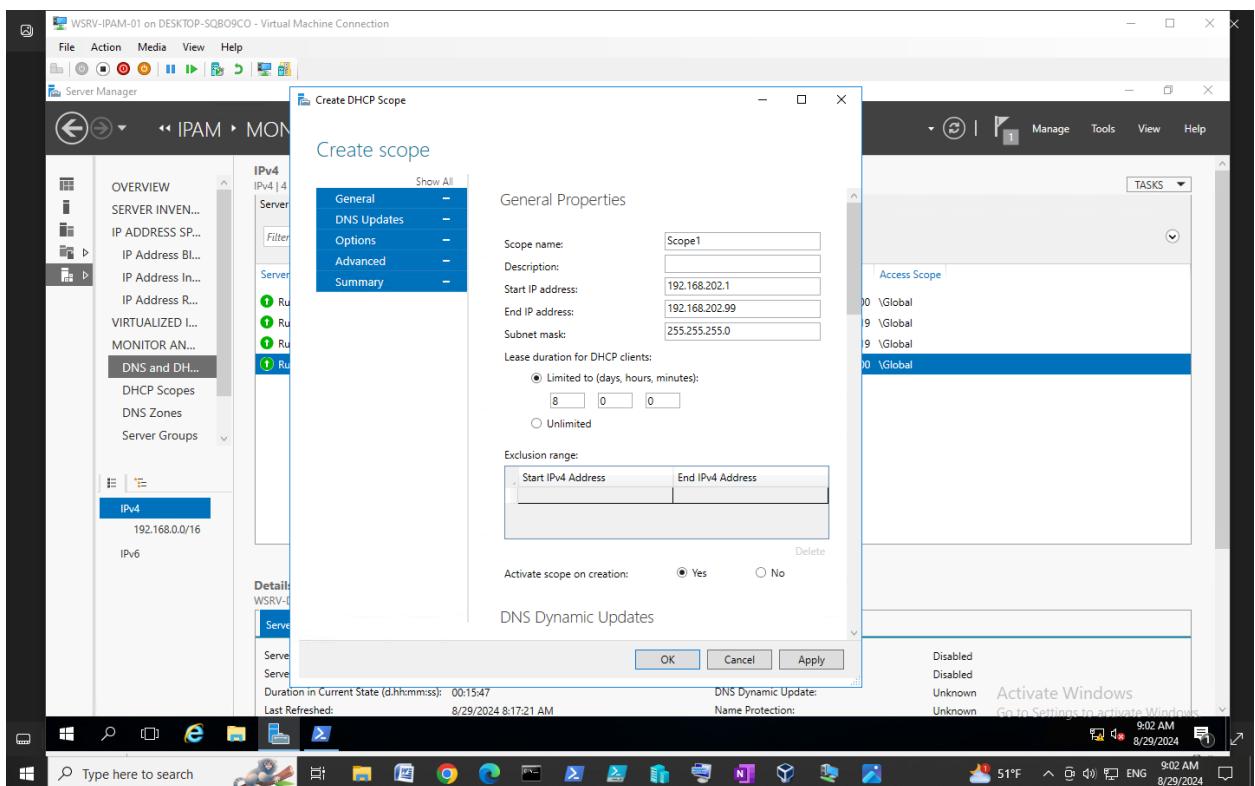
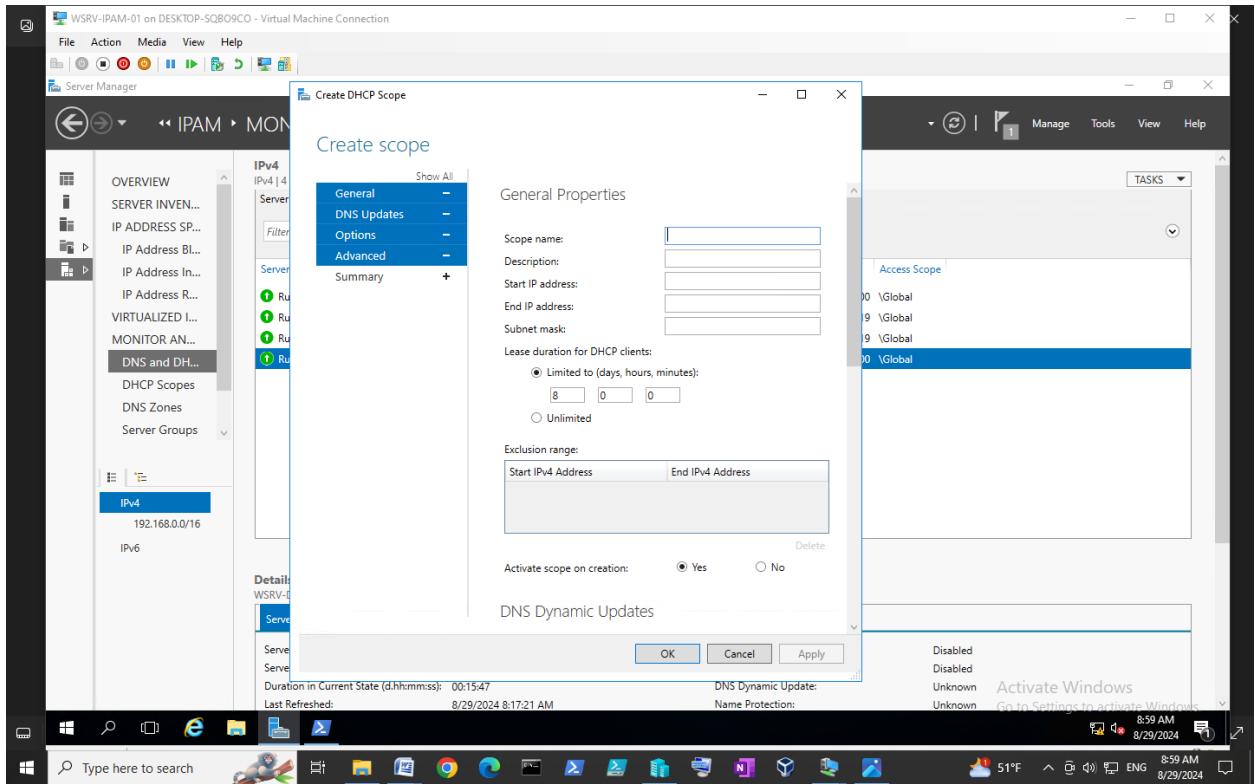


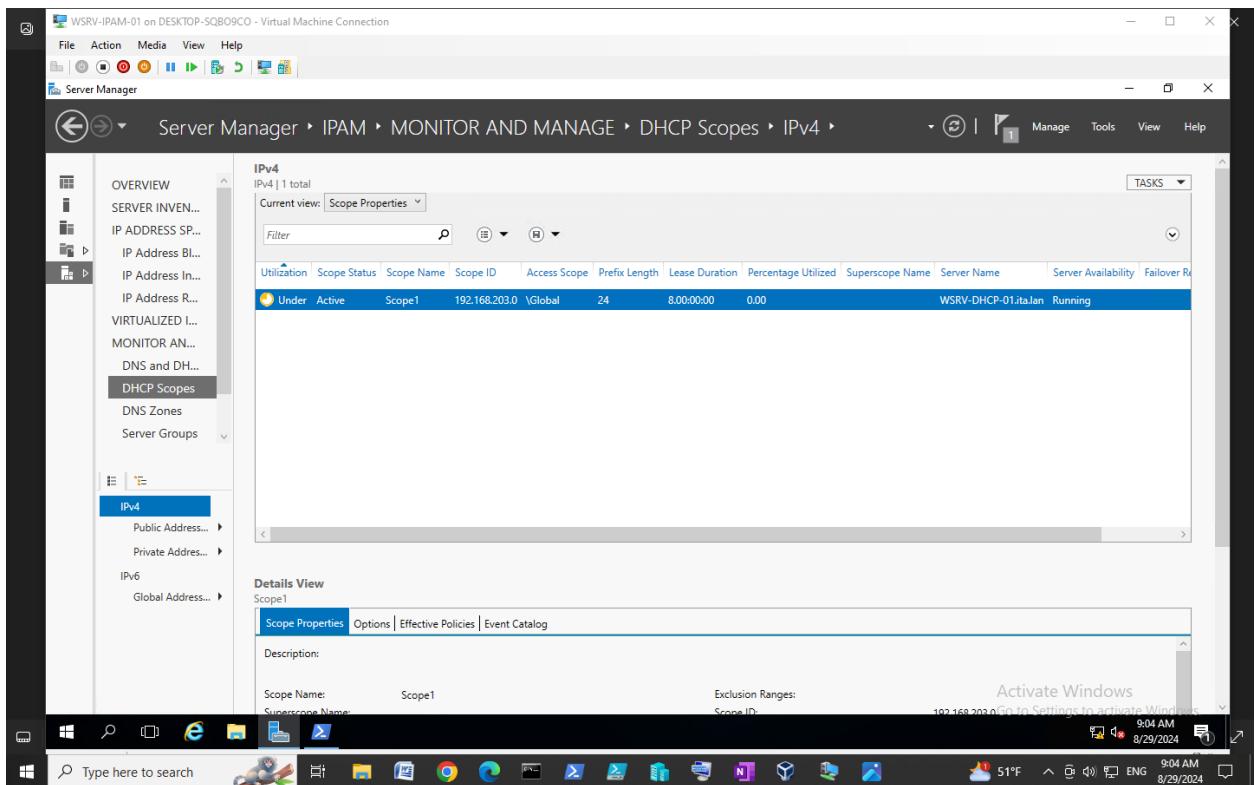
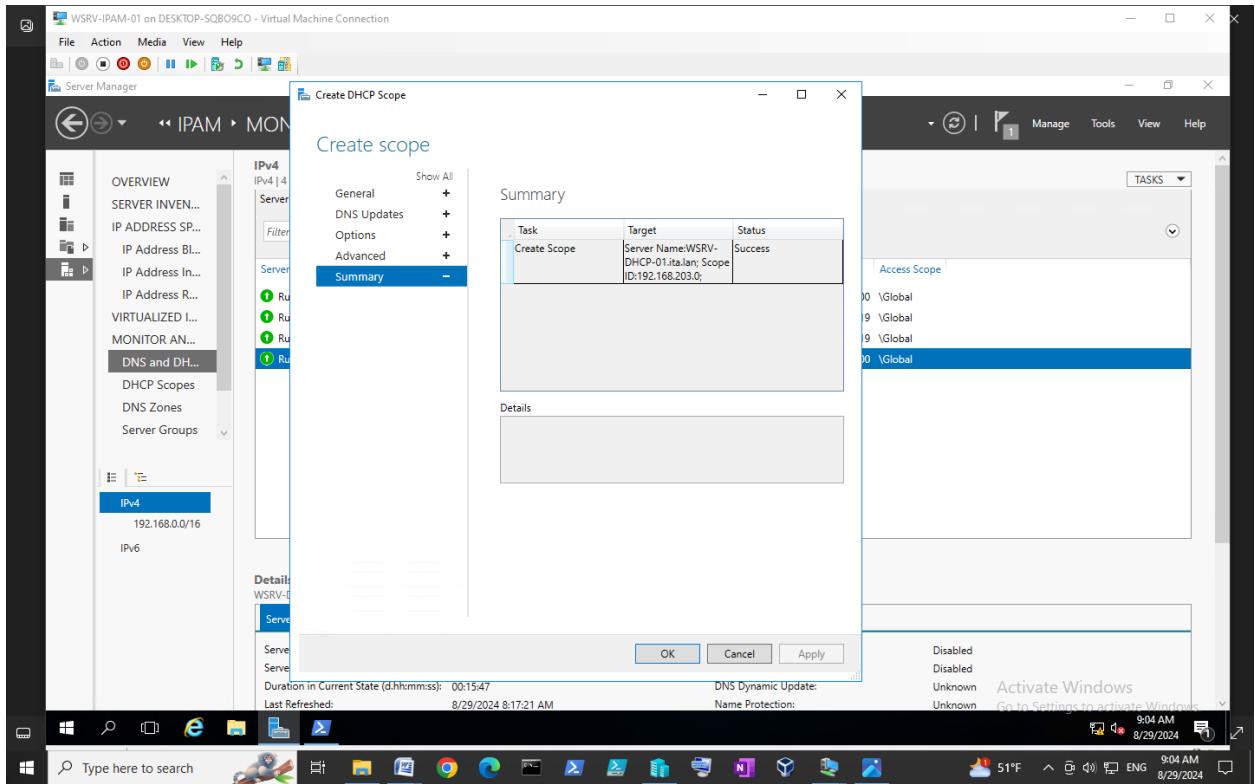
By setting up group policies via Powershell or manually, you can set up the ability to manage servers. Where the end result is that the field is plotted as correct. The next step is to add a scope.

## 4. ADDING A SCOPE

- On the DHCP server, add a new scope: 192.168.202.1–192.168.202.99.

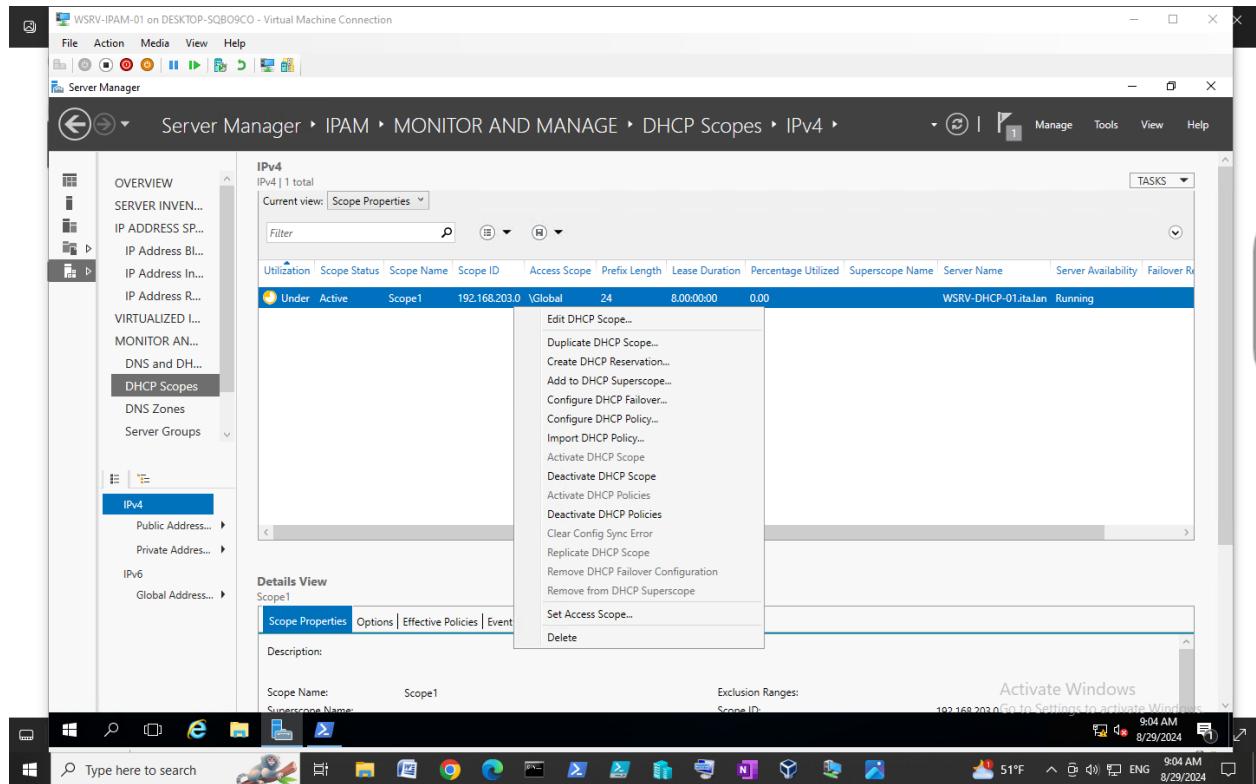


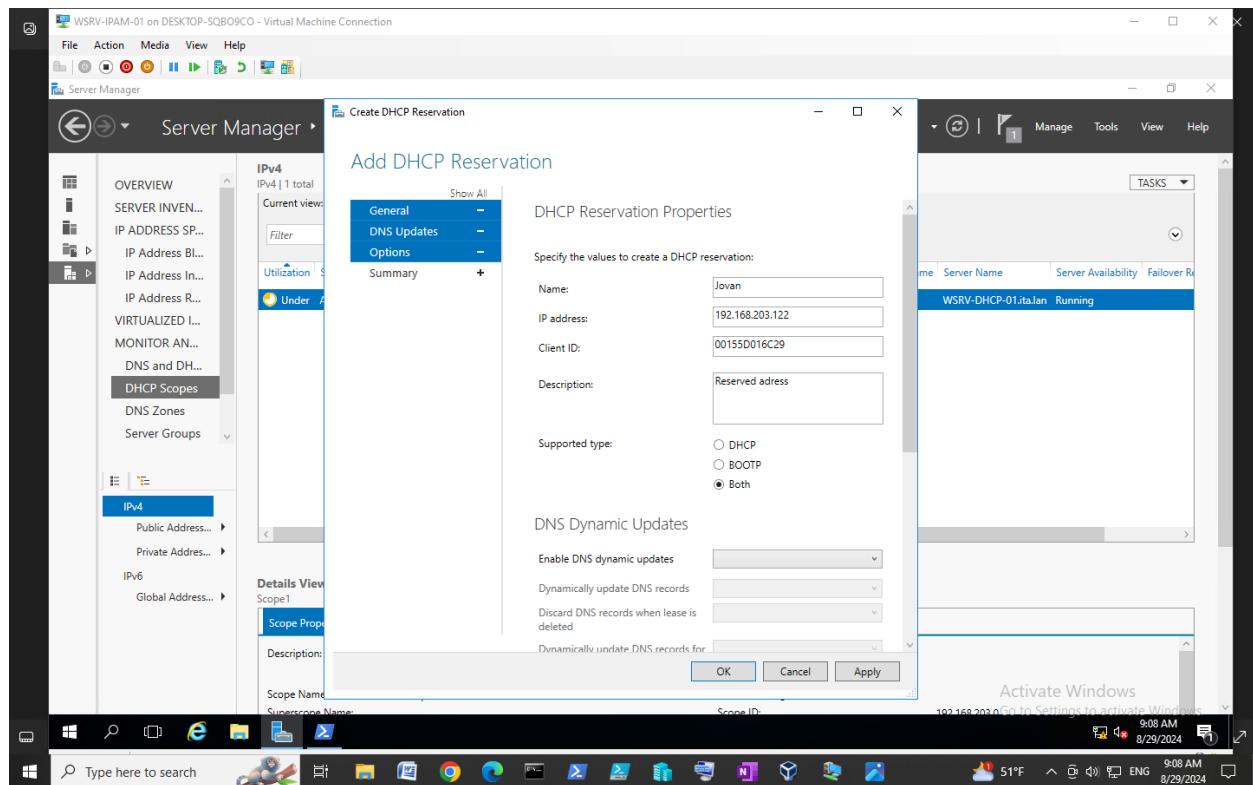
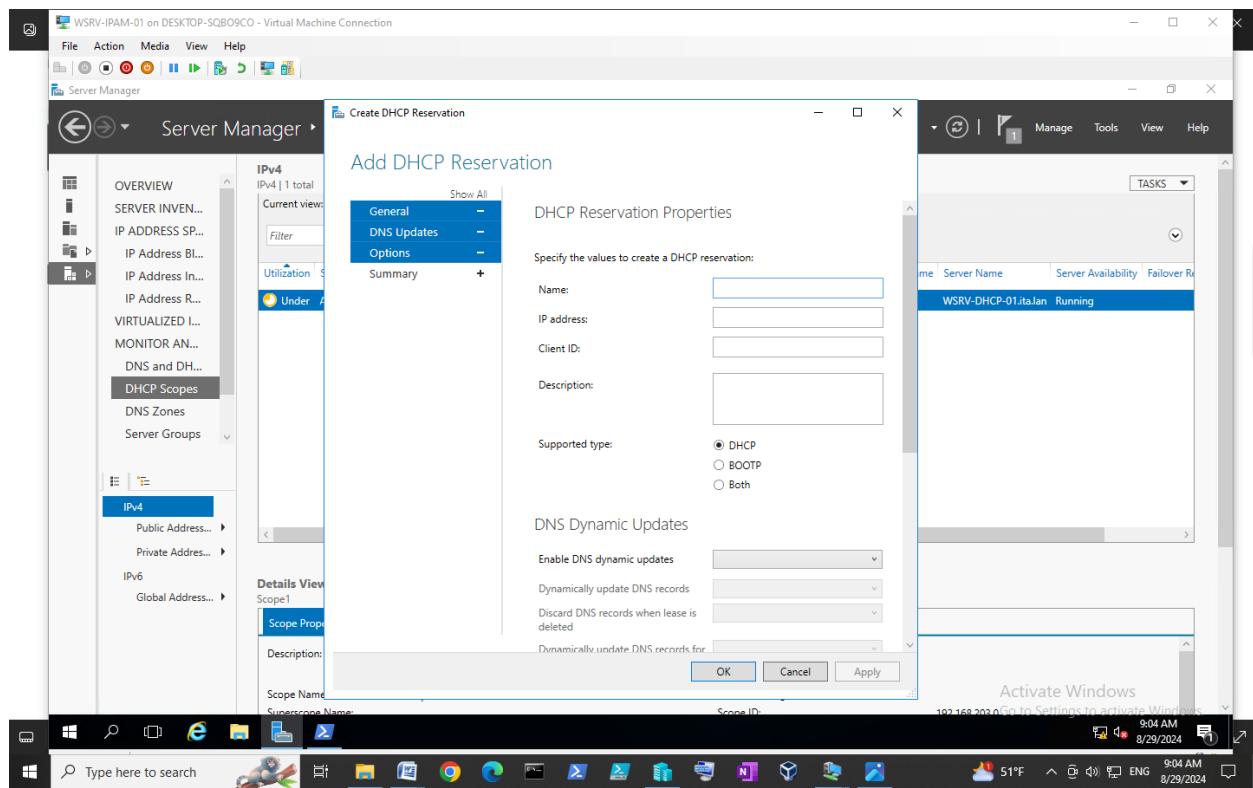


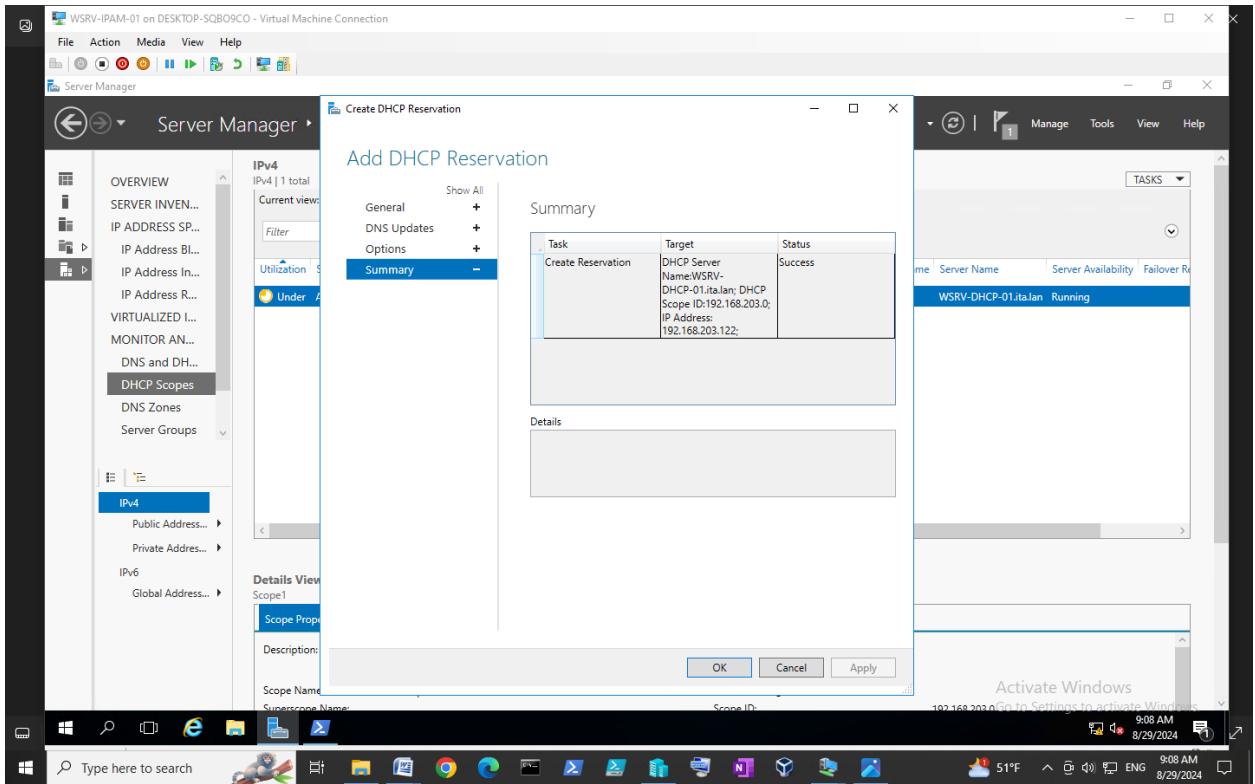


## 5. RESERVATION OF IP ADDRESSES

- Reserve the IP address 192.168.202.122 on the DHCP server.







## 6. FORWARD LOOKUP ZONA

- *On the DNS server, create a new forward lookup link.lan zone.*

WSRV-IPAM-01 on DESKTOP-SQB09CO - Virtual Machine Connection

File Action Media View Help

Server Manager

< IPAM > MONITOR AND MANAGE > DNS and DHCP Servers > IPv4 >

**IPv4**

IPv4 | 4 total  
Server Type: DNS and DHCP View: Server Properties

Filter

Server Availability	Duration in Current State	Server Name	Server Role	Domain Name	Forest Name	IP Address	Access Scope
Running	00:25:38	WSRV-DHCP-01.ita.lan	DHCP	ita.lan	ita.lan	192.168.201.100	\Global
Running	00:40:34	WSRV-DHCP-02.ita.lan	DHCP	ita.lan	ita.lan	192.168.201.119	\Global
Running	00:25:33	WSRV-DHCP-03.ita.lan	DNS	ita.lan	ita.lan	192.168.201.100	\Global
Running	00:40:28	WSRV-DHCP-04.ita.lan	DNS	ita.lan	ita.lan	192.168.201.119	\Global

TASKS

Launch MMC  
Create DNS zone...  
Create DNS conditional forwarder...  
Set Access Scope...  
Retrieve Server Data

OVERVIEW SERVER INVEN... IP ADDRESS SP... IP Address Bl... IP Address In... IP Address R... VIRTUALIZED I... MONITOR AN... DNS and DH... DHCP Scopes DNS Zones Server Groups

IPv4 192.168.0.0/16 IPv6

Details View WSRV-DHCP-01.ita.lan

Server Properties DNS Zones Event Catalog

Server Name: WSRV-DHCP-01.ita.lan Server Availability: Running Duration in Current State (d:hh:mm:ss): 00:25:40 Last Refreshed: 8/29/2024 8:15:34 AM

Server IPv6 addresses: Roles Running: DNS Number of Zones: 0 Zone Status for All zones: No Data

Activate Windows Go to Settings > Activate Windows

9:09 AM 8/29/2024

Type here to search

WSRV-IPAM-01 on DESKTOP-SQB09CO - Virtual Machine Connection

File Action Media View Help

Server Manager

< IPAM > MONITOR AND MANAGE > DNS and DHCP Servers > IPv4 > Create DNS zone

**Create DNS zone**

IPv4 IPv4 | 4 total Server Type:

Show All  
General Advanced Summary

General Properties

Zone category: Forward Lookup zone  
Zone type: Primary zone  
Zone name: link.ita.lan

Advanced Properties

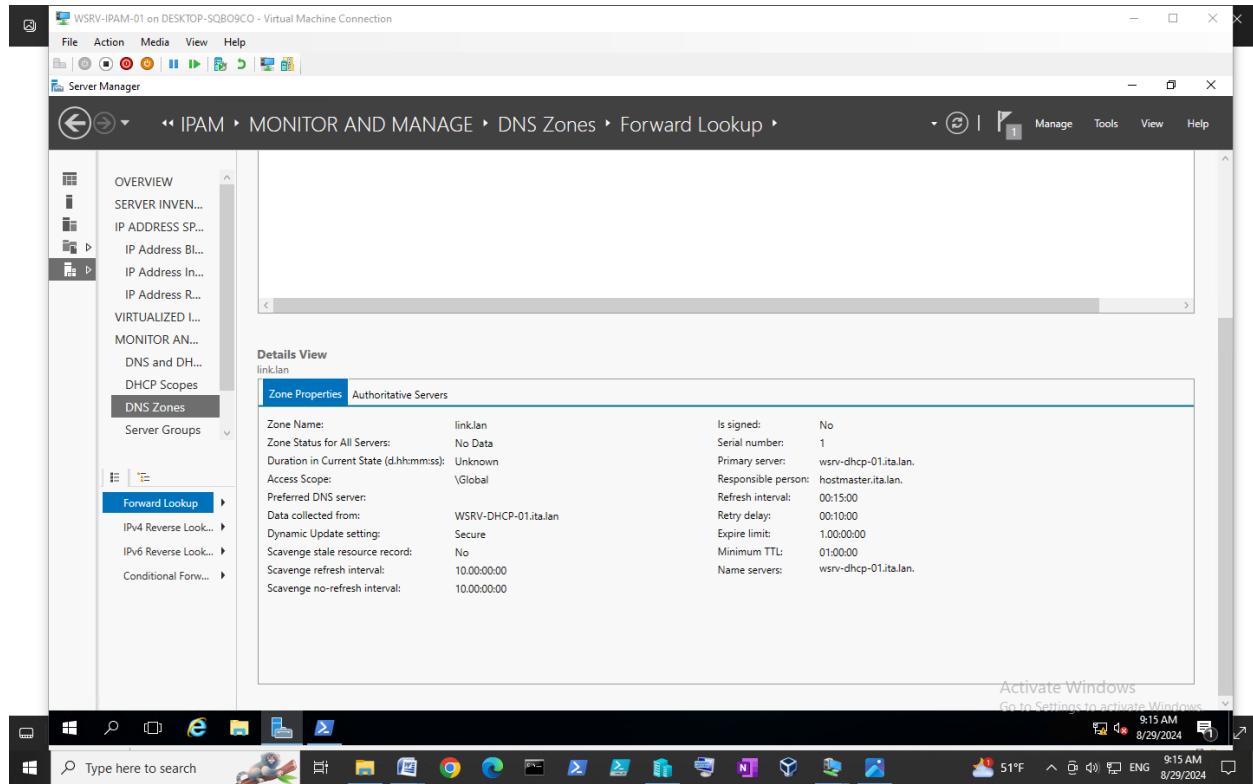
Store the zone in: Active Directory  
AD zone replication scope: Domain  
Directory partition:  
Dynamic update: Allow only secure dynamic updates (rec)

OK Cancel Apply

Activate Windows Go to Settings > Activate Windows

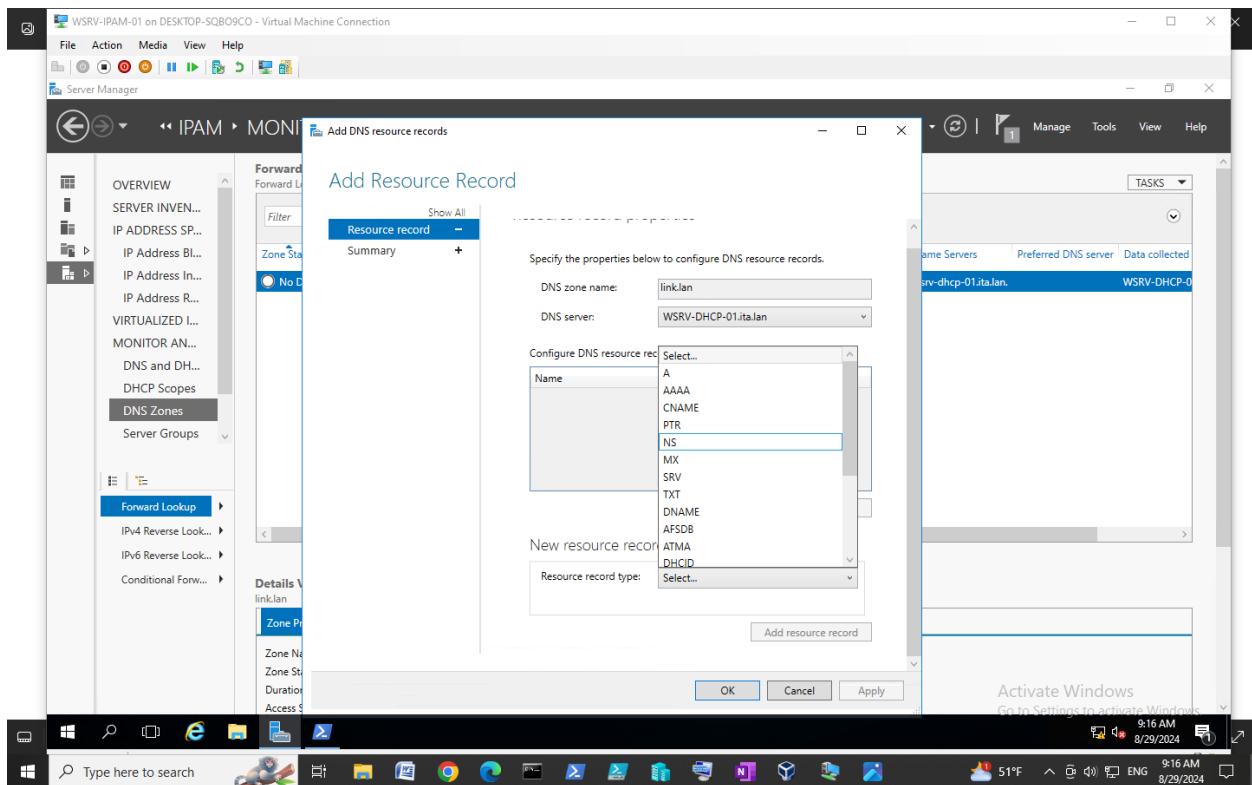
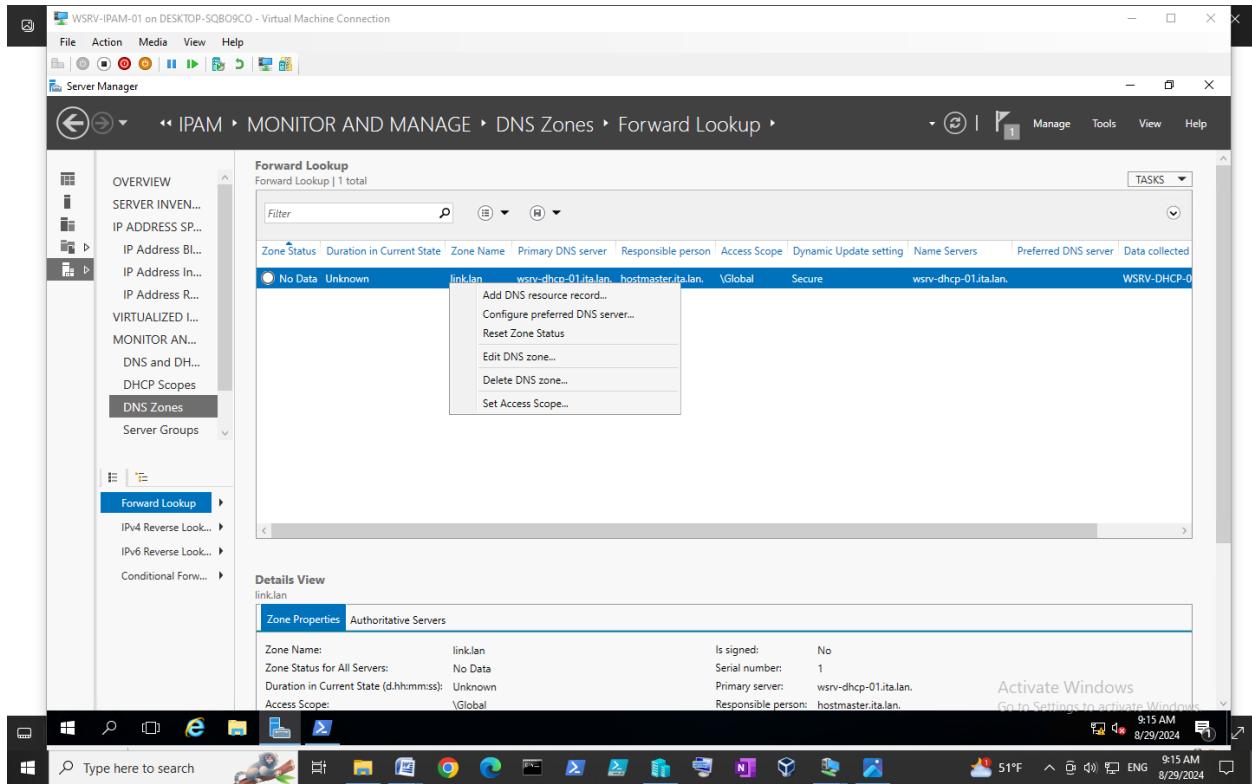
9:15 AM 8/29/2024

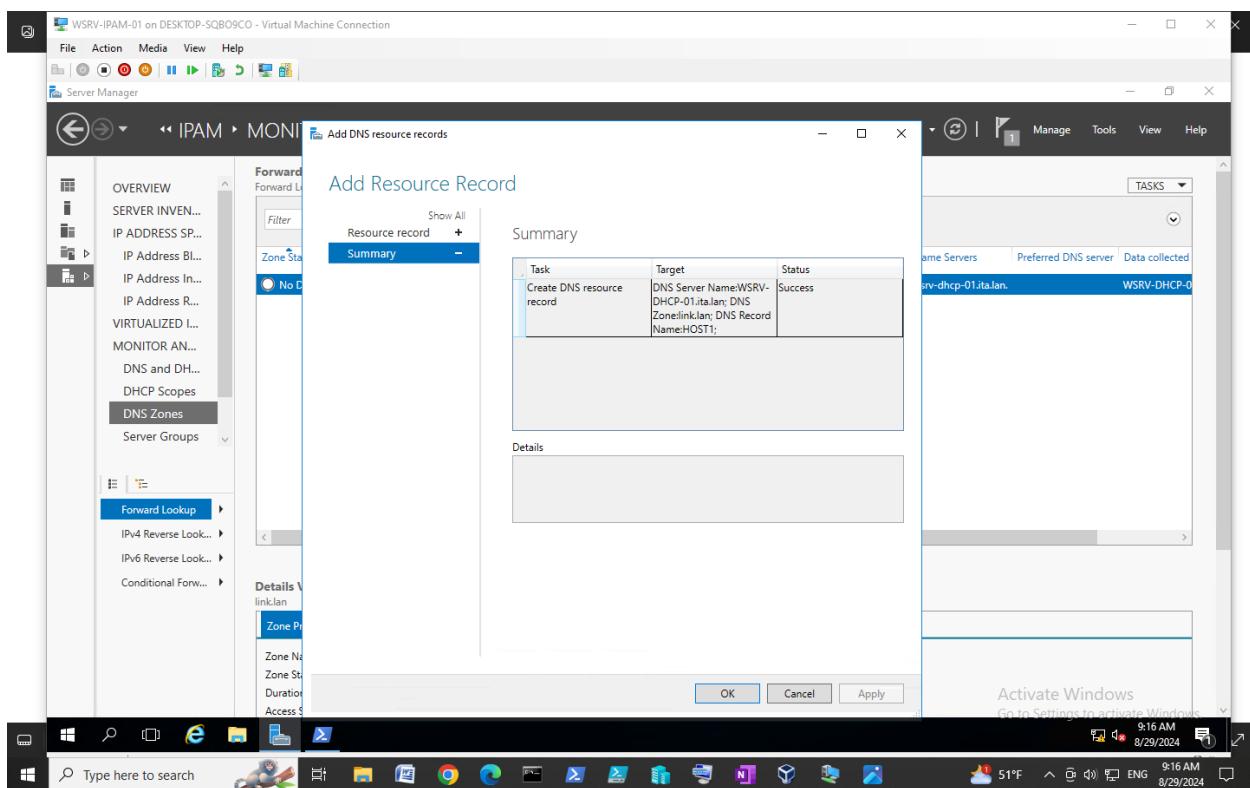
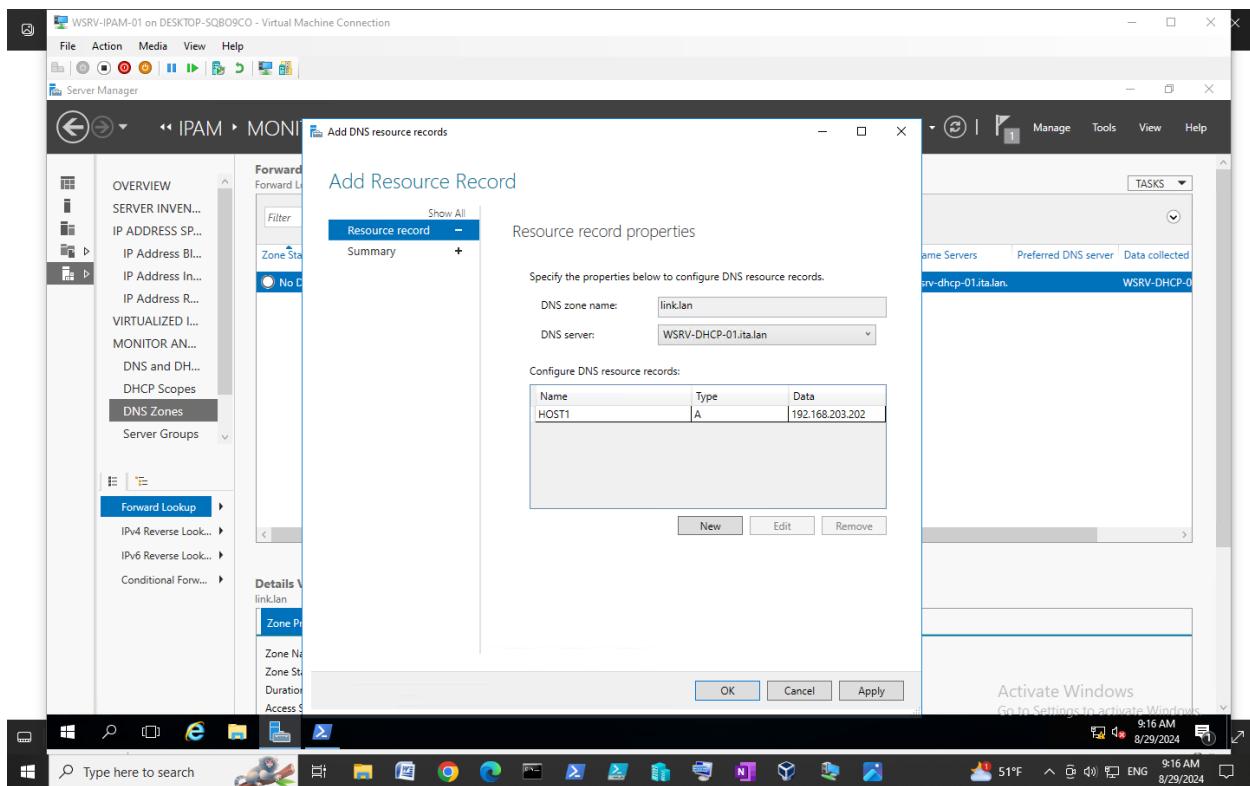
Type here to search



## 7. CREATE A NEW RECORD

- On the DNS server in the link.lan zone, create a new A record with the name HOST1 and the IP address 192.168.202.202.





## 8. CREATING AN ALIAS RECORD

- On the DNS server in the link.lan area, for the record A HOST1 HOST1. NameFirstName, create an alias record with the email name.

