Assignment:

CREATING A FAILOVER

Task description:

On the DHCP1 server, which is a member of the ita.lan domain, install the DHCP server role and configure the DHCP server with a scope address range of 192.168.201.101 to 192.168.201.151.

On the DHCP2 server, which is also a member of the ita.lan domain (the server's IP address is 192.168.201.2), install the DHCP server role. Don't forget to authorize the servers in Active Directory.

You need to implement a DHCP failover.

A replication failover must be performed using the following parameters:

- *Partner server: 192.168.201.2*
- *Relationship Name: NameSurname (here you need to set your first and last name)*
- *Maximum Client Lead Time: 5 minute*
- *Mode: Host Standby*
- *Role of partner server: Standby*
- *Address reserved for standby server: 20%*
- *Shared secret: 12345DHCP*

On the DHCP2 server, in the DHCP console, under the IPv4 node, verify that Scope First Name is configured. Then, on the CLT-1 client computer (it must be logged on as a domain administrator), set the network adapter to automatically search for an IP address. Check the IP address of the DHCP server. After that, on the DHCP1 server, stop the DHCP service and restore the IP address on the CLT-1 client computer.

Submit the solution in the form of a text document, in which you will gradually describe the stages of solving the task according to the step-by-step system. Additional requirements, in addition to the text solution, attach screenshots of the following stages of solving the task:

1. *presence of Scope NameSurname in the IPv4 node on the DHCP2 server after failover setup;*
2. *The IP address received by the CLT-1 client immediately after the failover was set;*
3. *The IP address that the client received immediately after the IP address was restored, after a failover was initiated."*

Course: Network Server Services **Module**: DHCP Implementation

Student: Jovan Ljušić

Content:

SERVER INSTALLATION

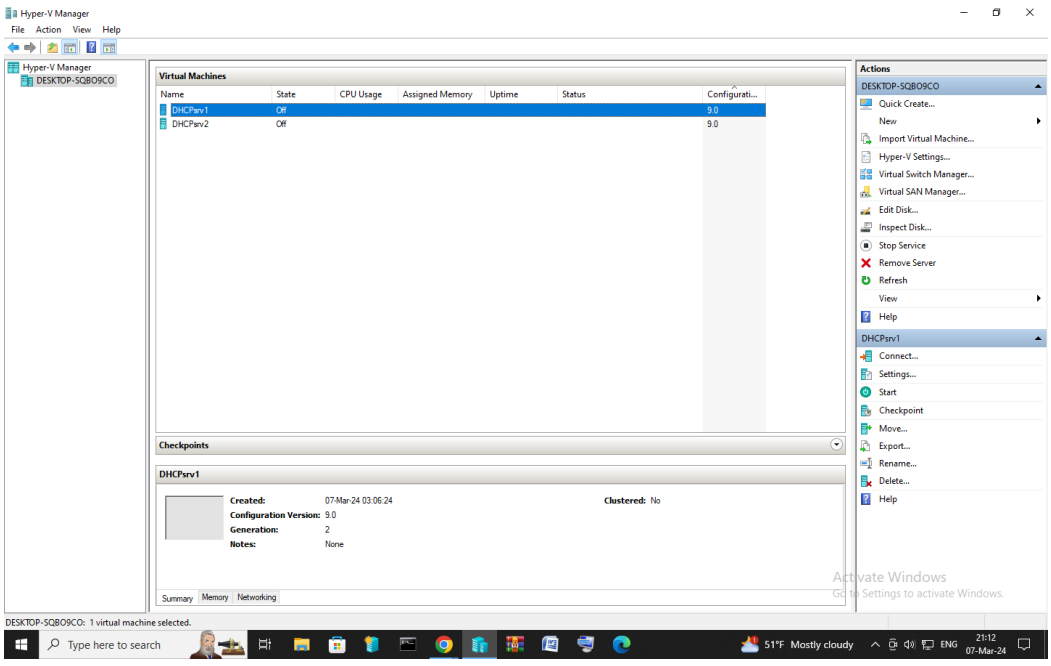
This document presents a step-by-step approach to solving a specific task, outlining the methodology, execution, and expected outcomes. By following the instructions, the reader will gain hands-on experience in applying technical concepts to practical situations, reinforcing both theoretical knowledge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

At the very beginning of this task, I started with the creation of a virtual machine. In this task, two servers are provided with certain settings as each step will be illustrated.

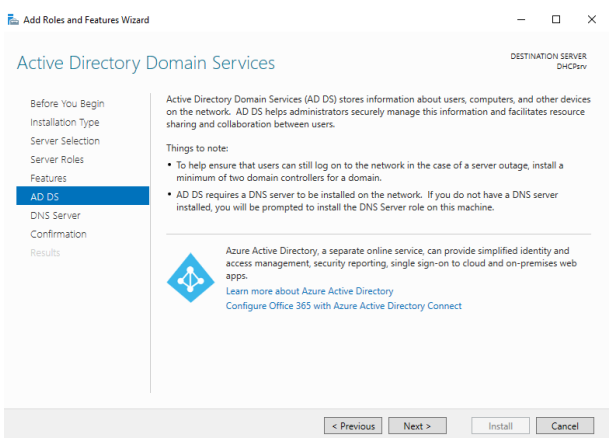
On the DHCP1 server, which is a member of the ita.lan domain, install the DHCP server role and configure the DHCP server with a scope range of 192.168.201.101 through 192.168.201.151.

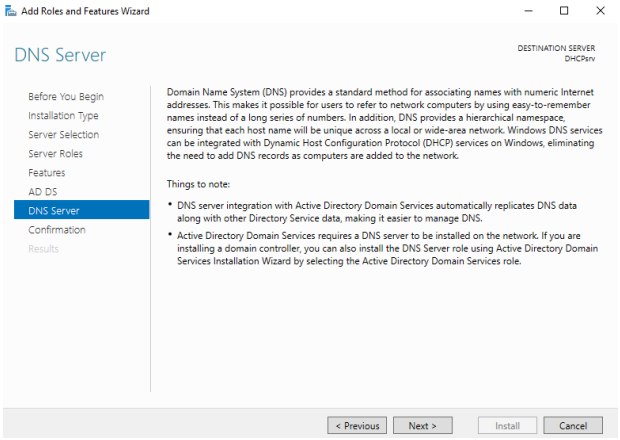
On the DHCP2 server, which is also a member of the ita.lan domain (the server's IP address is 192.168.201.2), install the DHCP server role. Don't forget to authorize the servers in Active Directory.

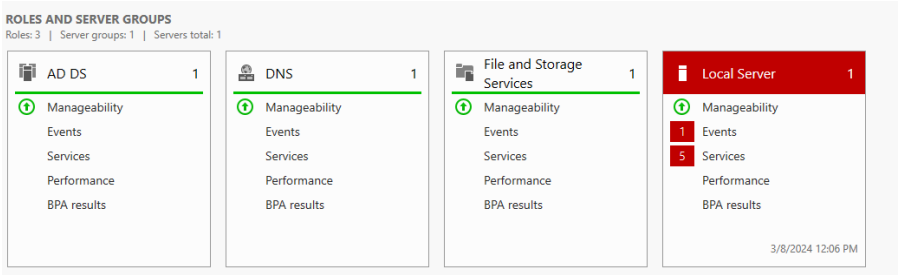


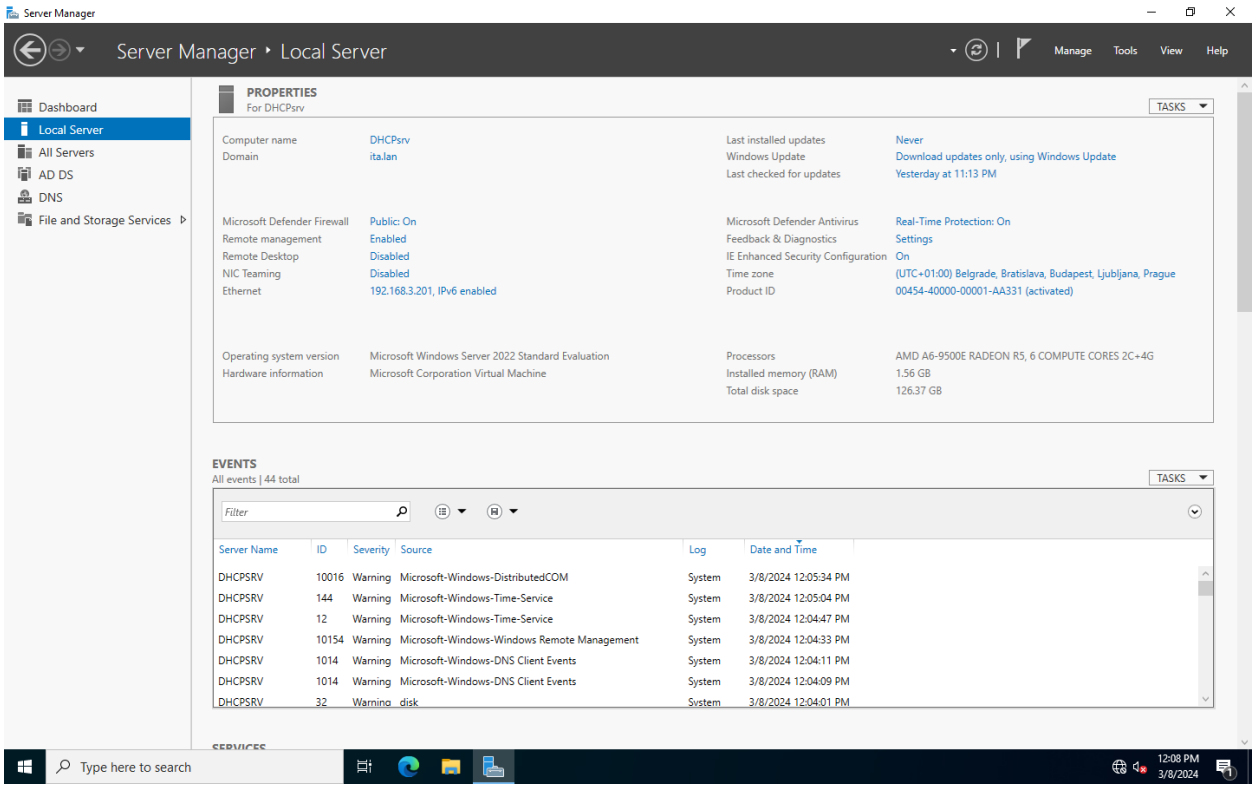
On the server named DHCPsrv1 I have enabled certain Roles such as :AD DS, DNS and DHCP.

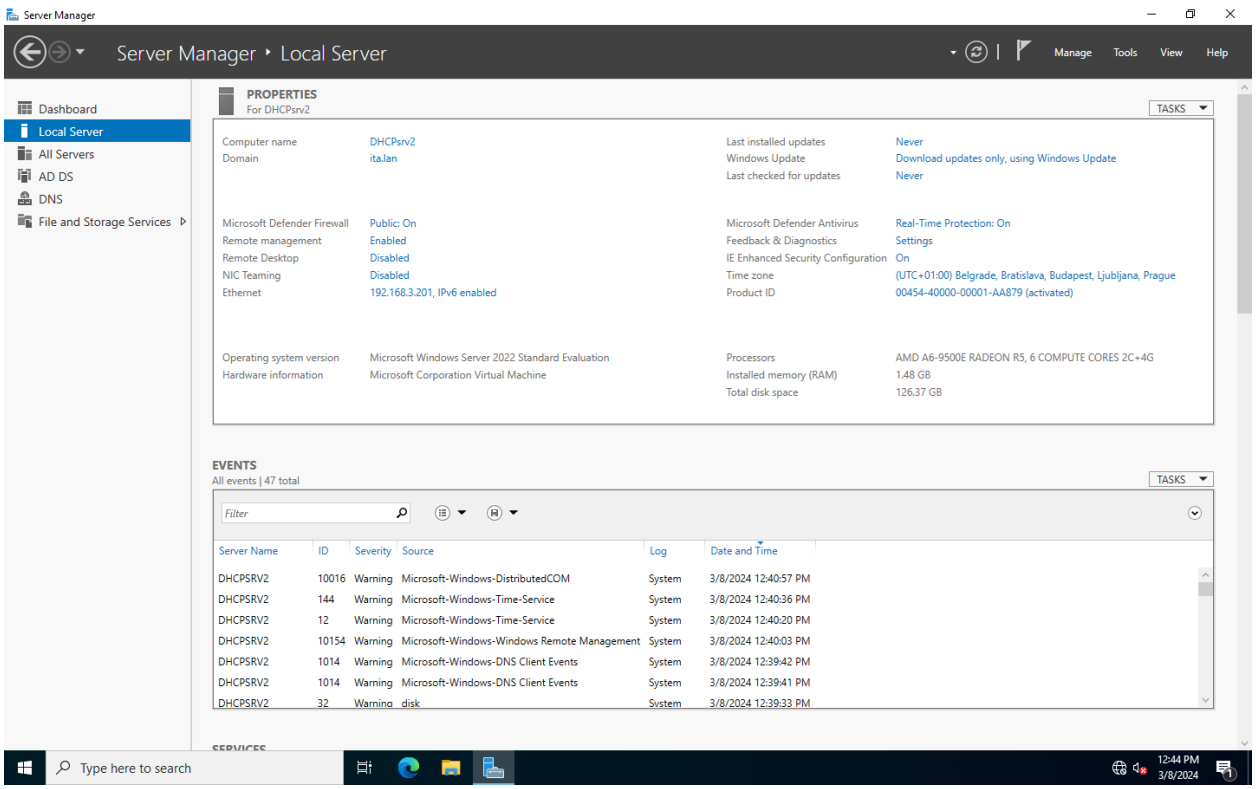
I'm also going to show the server settings with some screenshots.







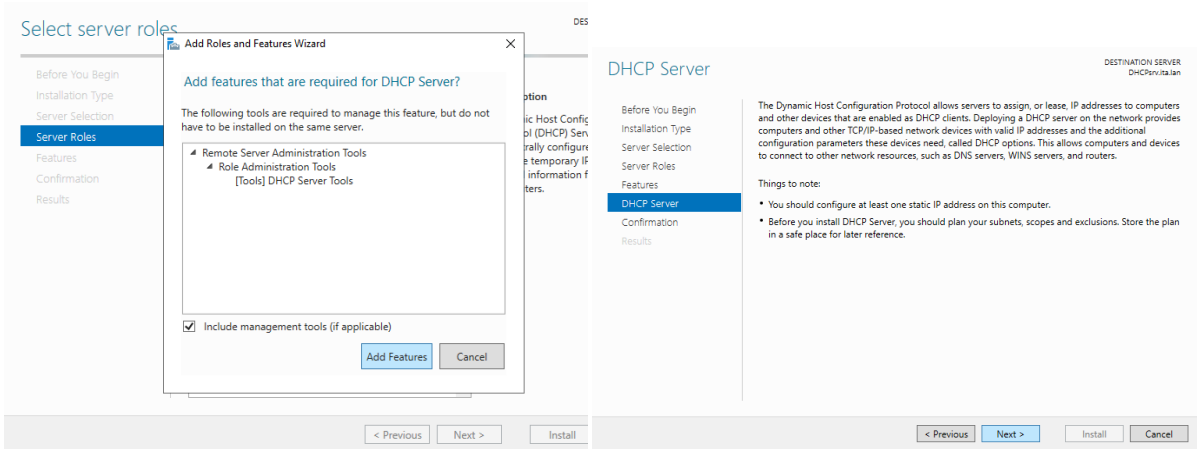


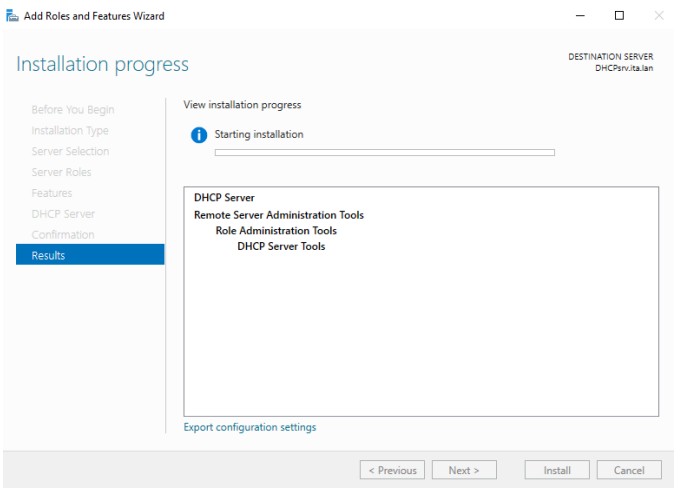


These two screenshots show the domain settings for both servers, as can be seen, while the next step is to install DHCP Role.

"On the DHCP1 server, which is a member of the ita.lan domain, install the DHCP server role and configure the DHCP server with an address range (scope) from 192.168.201.101 to 192.168.201.151."

I'm starting this part of the task on the DHCPsrv1 Server, also in order not to include a lot of screenshots, I'll leave only the parts that are important for installing the roll:

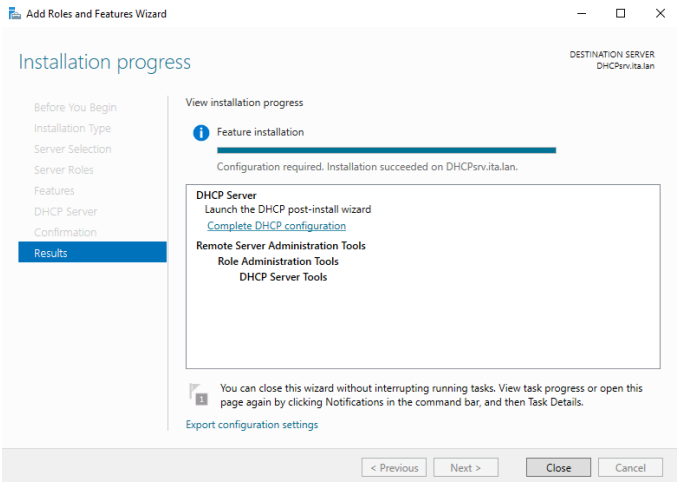


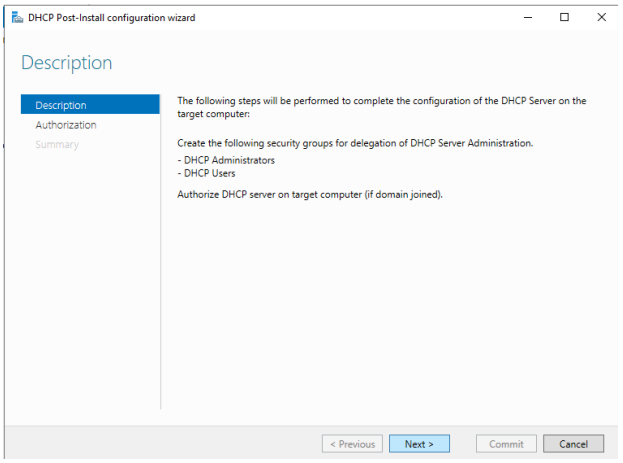


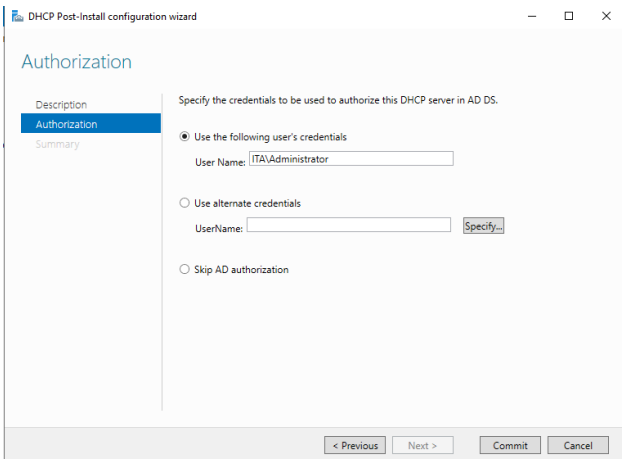
As you can see, here is a screenshot of the installation process, the previous steps that I didn't show are standard.

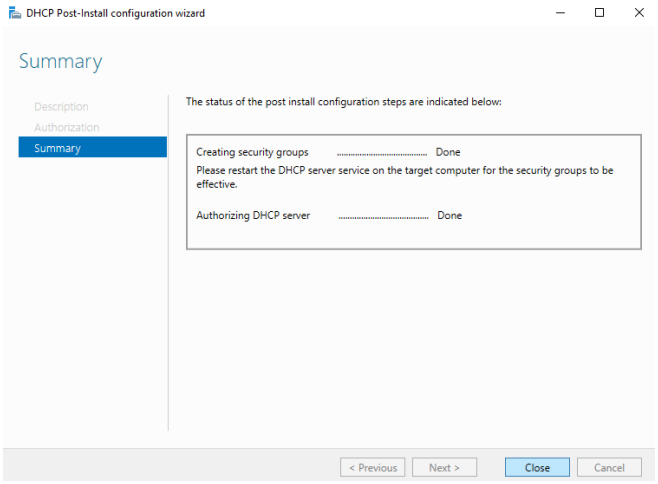
- Before you begin, the default option is Next
- Installation Type opcija je Role based
- Server Selectetion is the selected local server DHCPsrv1
- Server Roles – DHCP add Features
- If you don't want to use DHCP, then the next option is next.
- DHCP Server – Option next
- Confirmation and the last one includes the result of the operation.

Since the DHCP role requires post-installation settings, the following screenshots include:



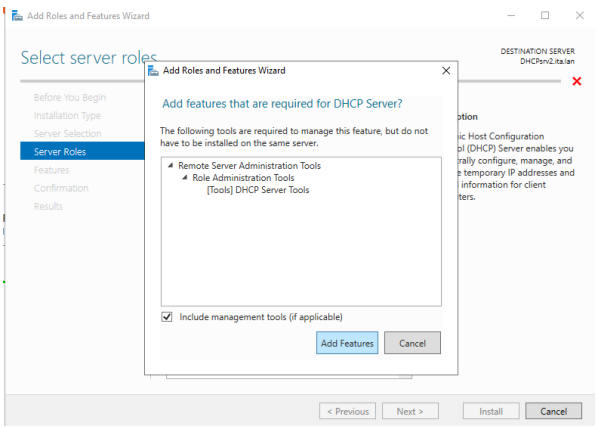


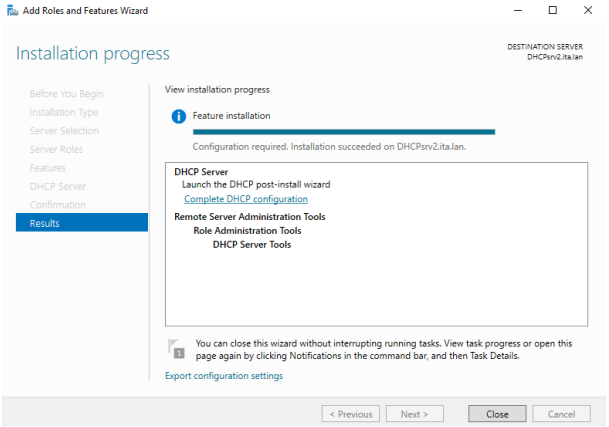


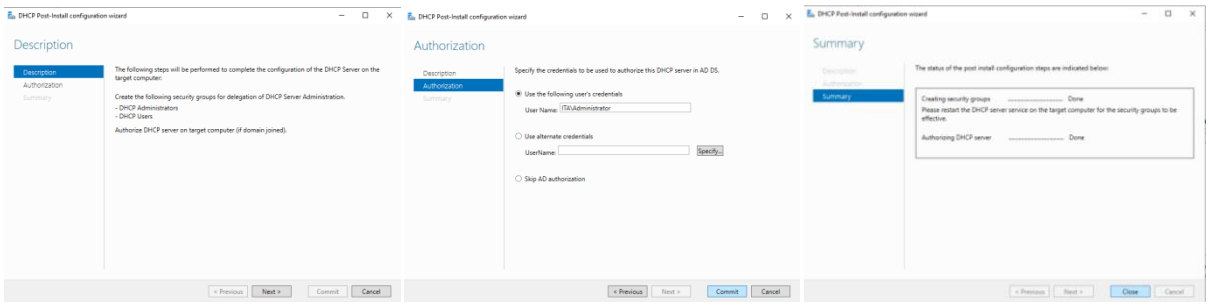


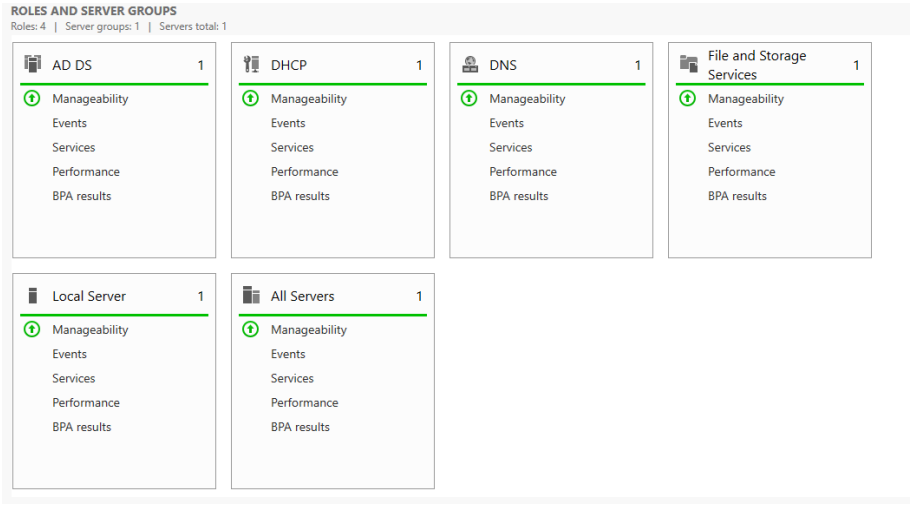
The procedure provided for DHCPsrv2 is identical and its settings in the task are provided for:

"On the DHCP2 server, which is also a member of the ita.lan domain (the server's IP address is 192.168.201.2), install the DHCP server role. Don't forget to authorize the servers in Active Directory.







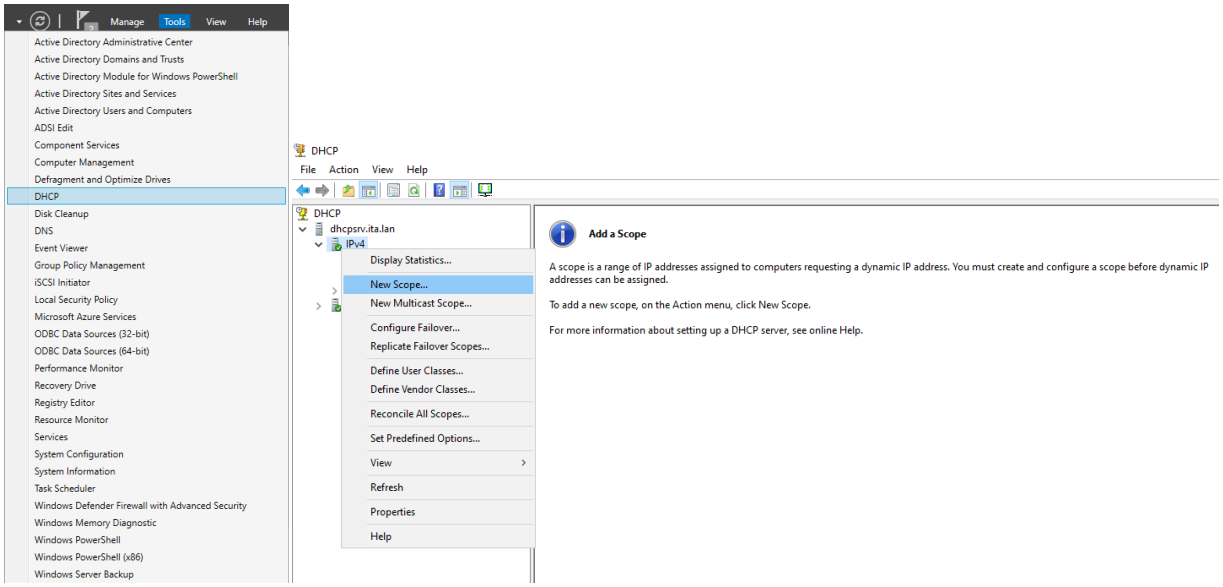


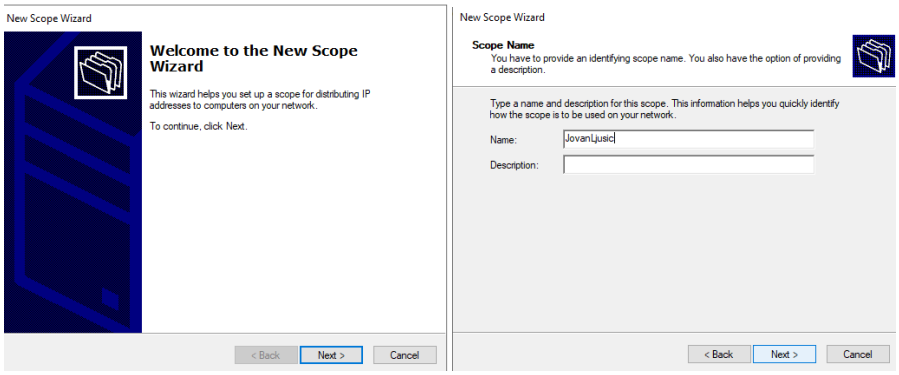
DHCP MANAGEMENT

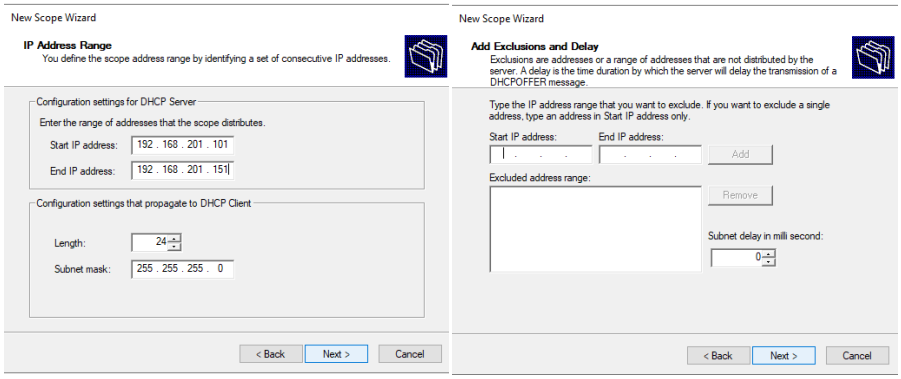
In order to implement a DHCP failover, it is necessary to perform certain items beforehand.

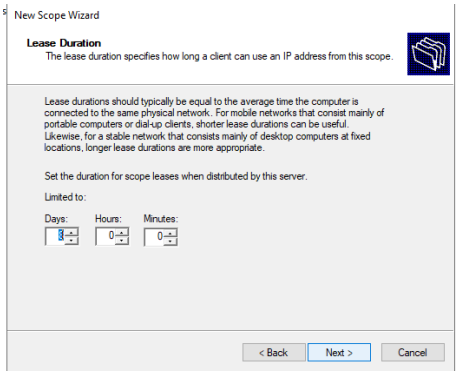
"You need to implement DHCP failover."

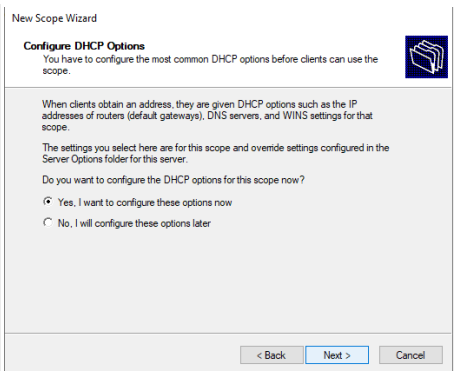
On DHCPsrv1 I implement Scope, which is followed by the following screenshots:

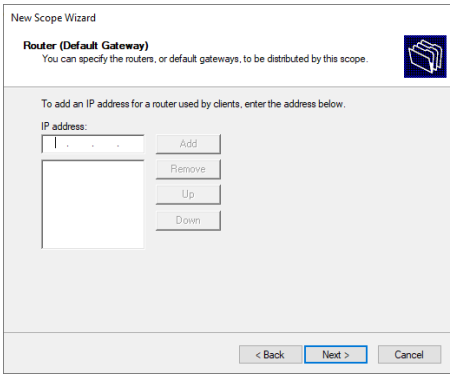

Manage
Tools
View
Help
Active Directory Administrative Center
Active Directory Domains and Trusts
Active Directory Module for Windows PowerShell
Active Directory Sites and Services
Active Directory Users and Computers
ADSI Edit
Component Services
Computer Management
Defragment and Optimize Drives
DHCP
Disk Cleanup
DNS
Event Viewer
Group Policy Management
iSCSI Initiator
Local Security Policy
Microsoft Azure Services
ODBC Data Sources (32-bit)
ODBC Data Sources (64-bit)
Performance Monitor
Recovery Drive
Registry Editor
Resource Monitor
Services
System Configuration
System Information
Task Scheduler
Windows Defender Firewall with Advanced Security
Windows Memory Diagnostic
Windows PowerShell
Windows PowerShell (x86)
Windows Server Backup
DHCP
File
Action
View
Help
DHCP
dhcpsrv.ita.lan
IPv4
Display Statistics...
New Scope...
New Multicast Scope...
Configure Failover...
Replicate Failover Scopes...
Define User Classes...
Define Vendor Classes...
Reconcile All Scopes...
Set Predefined Options...
View
Refresh
Properties
Help
Add a Scope
A scope is a range of IP addresses assigned to computers requesting a dynamic IP address. You must create and configure a scope before dynamic IP addresses can be assigned.
To add a new scope, on the Action menu, click New Scope.
For more information about setting up a DHCP server, see online Help.

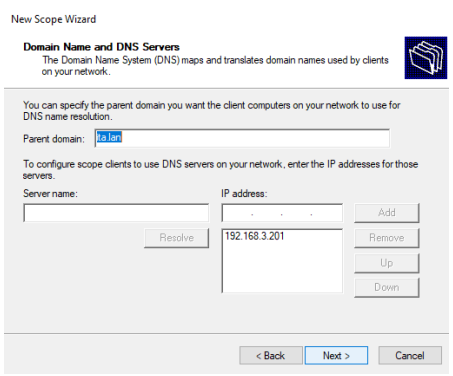

New Scope Wizard
Welcome to the New Scope Wizard
This wizard helps you set up a scope for distributing IP addresses to computers on your network.
To continue, click Next.
< Back
Next >
Cancel
New Scope Wizard
Scope Name
You have to provide an identifying scope name. You also have the option of providing a description.
Type a name and description for this scope. This information helps you quickly identify how the scope is to be used on your network.
Name:
JovanLjusic
Description:
< Back
Next >
Cancel

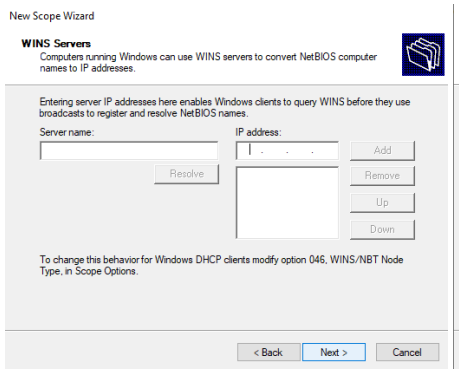

New Scope Wizard
IP Address Range
You define the scope address range by identifying a set of consecutive IP addresses.
Configuration settings for DHCP Server
Enter the range of addresses that the scope distributes.
Start IP address:
192 . 168 . 201 . 101
End IP address:
192 . 168 . 201 . 151
Configuration settings that propagate to DHCP Client
Length:
24
Subnet mask:
255 . 255 . 255 . 0
< Back
Next >
Cancel
New Scope Wizard
Add Exclusions and Delay
Exclusions are addresses or a range of addresses that are not distributed by the server. A delay is the time duration by which the server will delay the transmission of a DHCPOFFER message.
Type the IP address range that you want to exclude. If you want to exclude a single address, type an address in Start IP address only.
Start IP address:
End IP address:
Add
Excluded address range:
Remove
Subnet delay in milli second:
0
< Back
Next >
Cancel

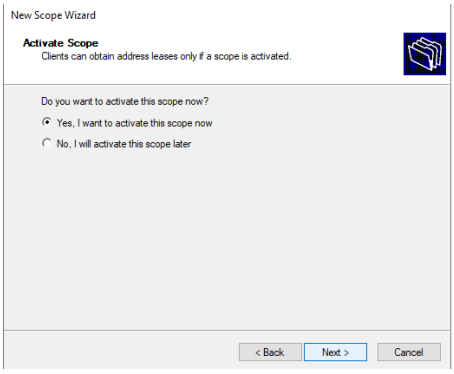

New Scope Wizard
Lease Duration
The lease duration specifies how long a client can use an IP address from this scope.
Lease durations should typically be equal to the average time the computer is connected to the same physical network. For mobile networks that consist mainly of portable computers or dial-up clients, shorter lease durations can be useful. Likewise, for a stable network that consists mainly of desktop computers at fixed locations, longer lease durations are more appropriate.
Set the duration for scope leases when distributed by this server.
Limited to:
Days:
Hours:
Minutes:
8
0
0
< Back
Next >
Cancel

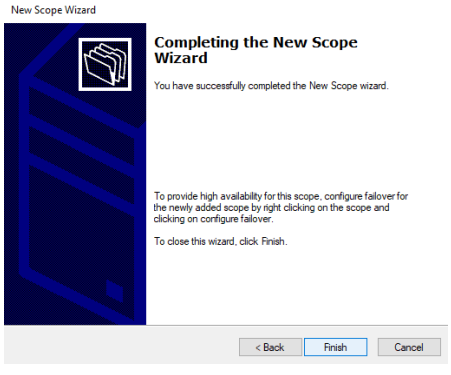

New Scope Wizard
Configure DHCP Options
You have to configure the most common DHCP options before clients can use the scope.
When clients obtain an address, they are given DHCP options such as the IP addresses of routers (default gateways), DNS servers, and WINS settings for that scope.
The settings you select here are for this scope and override settings configured in the Server Options folder for this server.
Do you want to configure the DHCP options for this scope now?
Yes, I want to configure these options now
No, I will configure these options later
< Back
Next >
Cancel


New Scope Wizard
Router (Default Gateway)
You can specify the routers, or default gateways, to be distributed by this scope.
To add an IP address for a router used by clients, enter the address below.
IP address:
Add
Remove
Up
Down
< Back
Next >
Cancel

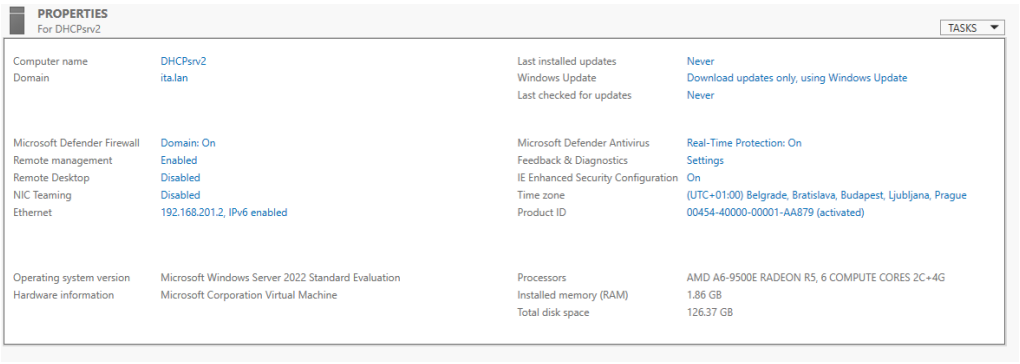

New Scope Wizard
Domain Name and DNS Servers
The Domain Name System (DNS) maps and translates domain names used by clients on your network.
You can specify the parent domain you want the client computers on your network to use for DNS name resolution.
Parent domain:
To configure scope clients to use DNS servers on your network, enter the IP addresses for those servers.
Server name:
IP address:
Resolve
192.168.3.201
Add
Remove
Up
Down
< Back
Next >
Cancel


New Scope Wizard
WINS Servers
Computers running Windows can use WINS servers to convert NetBIOS computer names to IP addresses.
Entering server IP addresses here enables Windows clients to query WINS before they use broadcasts to register and resolve NetBIOS names.
Server name:
IP address:
Resolve
Add
Remove
Up
Down
To change this behavior for Windows DHCP clients modify option 046, WINS/NBT Node Type, in Scope Options.
< Back
Next >
Cancel


New Scope Wizard
Activate Scope
Clients can obtain address leases only if a scope is activated.
Do you want to activate this scope now?
Yes, I want to activate this scope now
No, I will activate this scope later
< Back
Next >
Cancel


New Scope Wizard
Completing the New Scope Wizard
You have successfully completed the New Scope wizard.
To provide high availability for this scope, configure failover for the newly added scope by right clicking on the scope and clicking on configure failover.
To close this wizard, click Finish.
< Back
Finish
Cancel

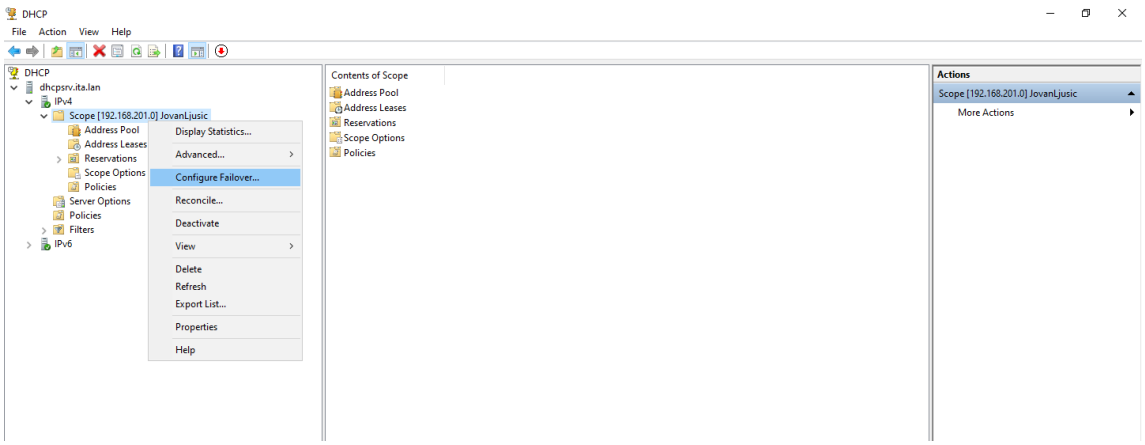
"On the DHCP2 server, which is also a member of the ita.lan domain (the server's IP address is 192.168.201.2)"

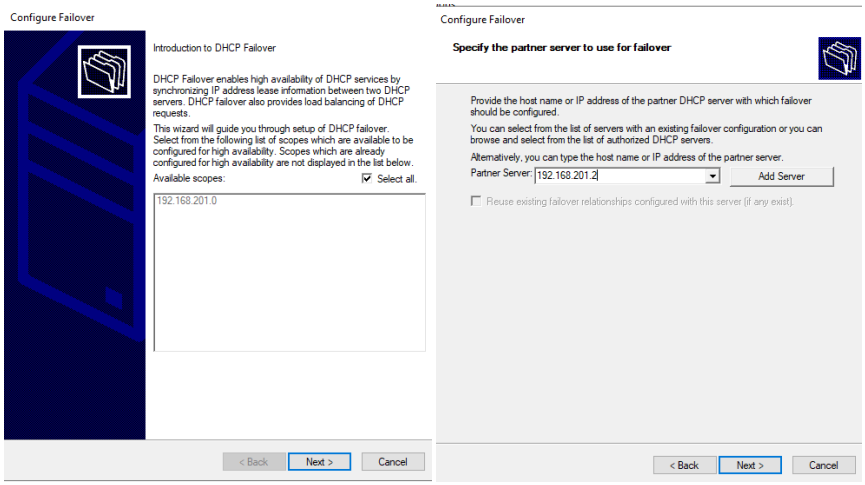


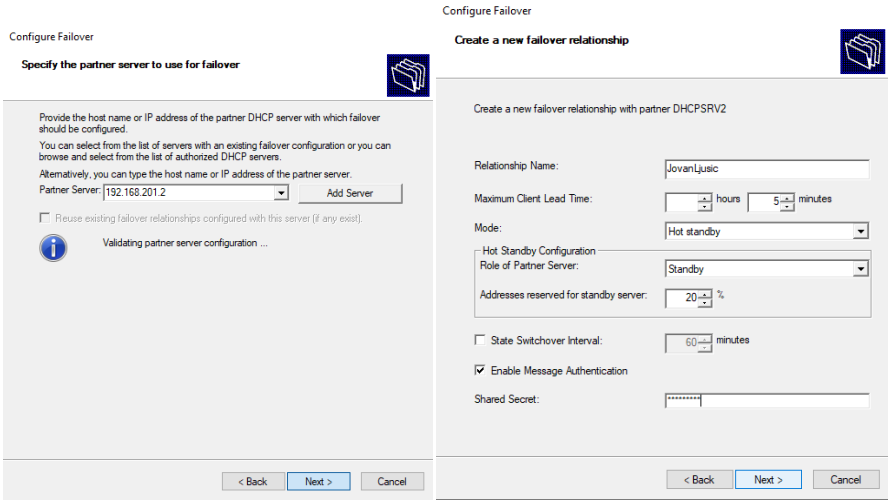
CREATING A FAILOVER

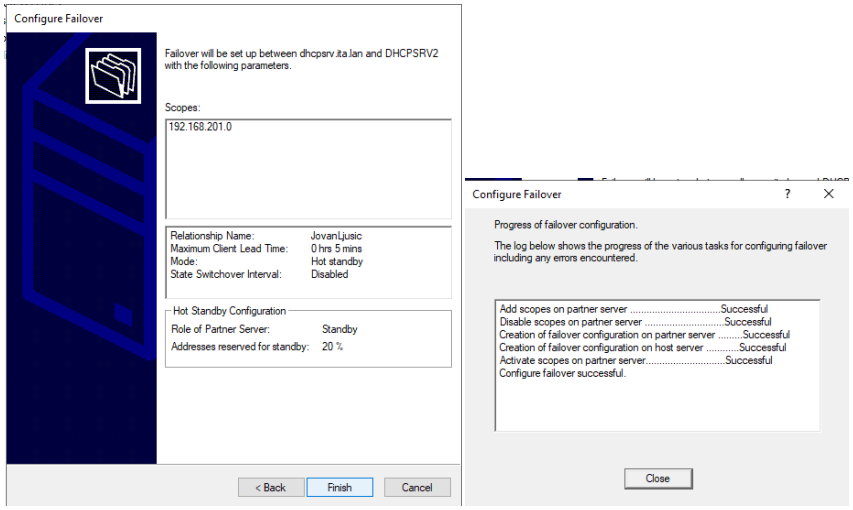
A replication failover must be performed using the following parameters:

- *Partner server: 192.168.201.2*
- *Relationship Name: NameSurname (here you need to set your first and last name)*
- *Maximum Client Lead Time: 5 minute*
- *Mode: Host Standby*
- *Role of partner server: Standby*
- *Address reserved for standby server: 20%*
- *Shared secret: 12345DHCP*





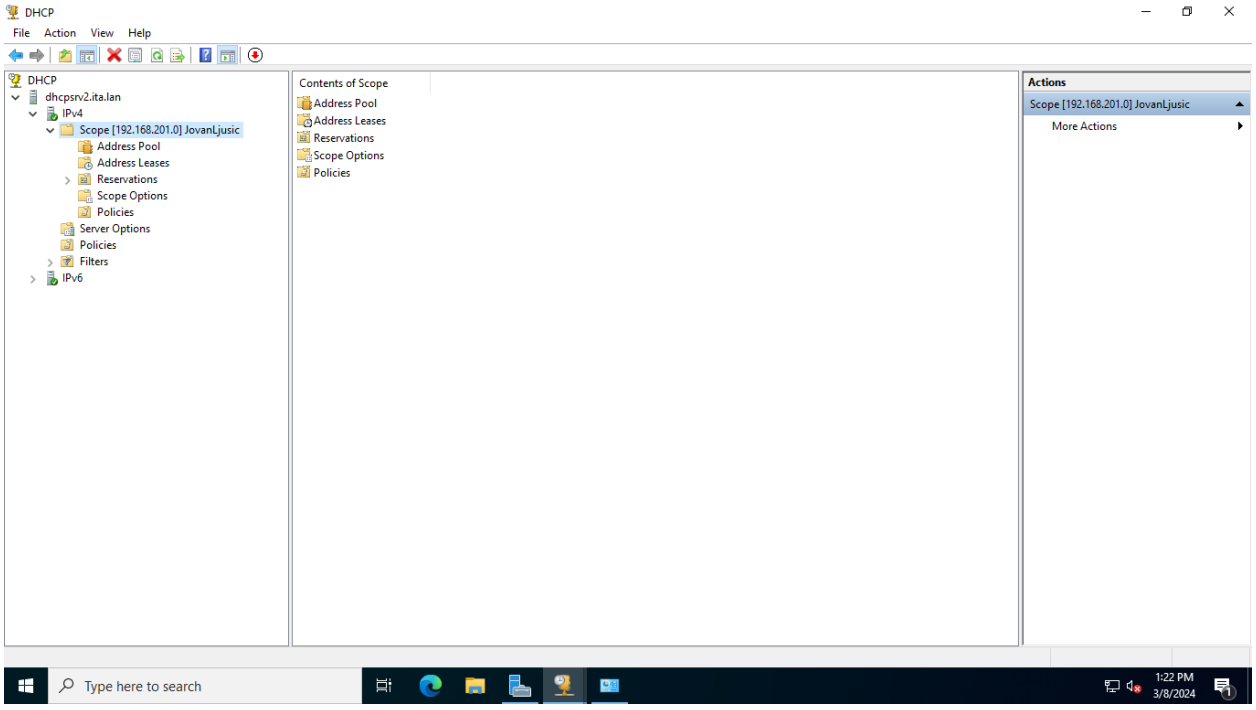


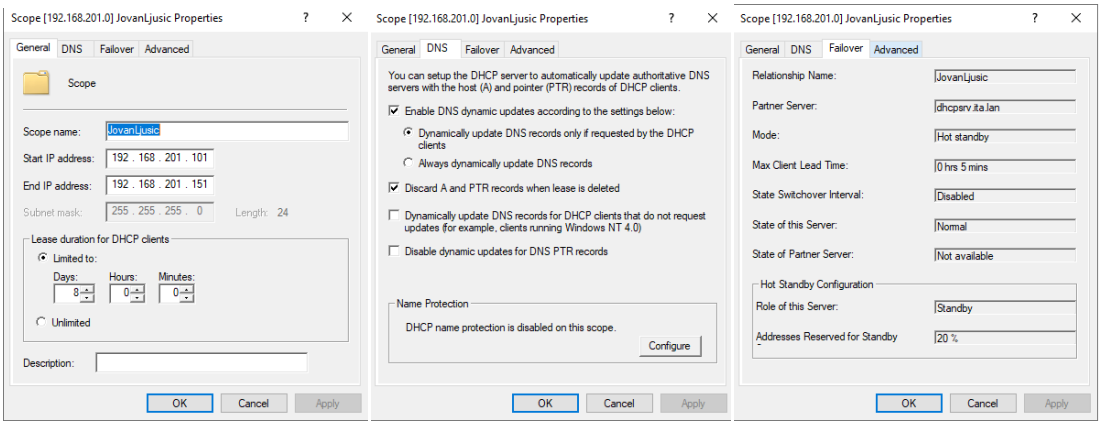


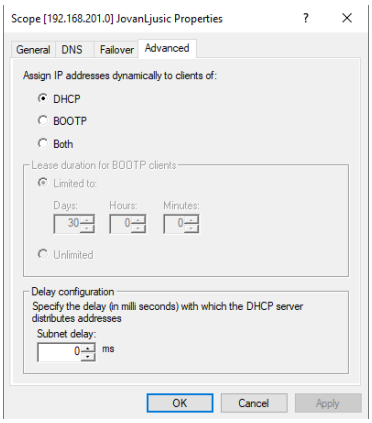
The failover has been created, now I will show the details from the partner server that the failover was successful.

POST-FAILOVER VIEW

"On the DHCP2 server, in the DHCP console, under the IPv4 node, verify that Scope First Name is configured. Then, on the CLT-1 client computer (it must be logged on as a domain administrator), set the network adapter to automatically search for an IP address. Check the IP address of the DHCP server. After that, on the DHCP1 server, stop the DHCP service and restore the IP address on the CLT-1 client computer.






Scope [192.168.201.0] JovanLjusic Properties
General
DNS
Failover
Advanced
Assign IP addresses dynamically to clients of:
DHCP
BOOTP
Both
Lease duration for BOOTP clients
Limited to:
Days:
30
Hours:
0
Minutes:
0
Unlimited
Delay configuration
Specify the delay (in milli seconds) with which the DHCP server distributes addresses
Subnet delay:
0
ms
OK
Cancel
Apply