Lab Assignment

Cybersecurity Professional Program

Microsoft Security

DHCP

MS-06-L1
Implementing DHCP

Lab Objective

Understand what DHCP is used for and how it can be managed by a server.

Lab Mission

Install and configure DHCP services on a Windows server in a domain environment.

Lab Duration

30–40 minutes

Requirements

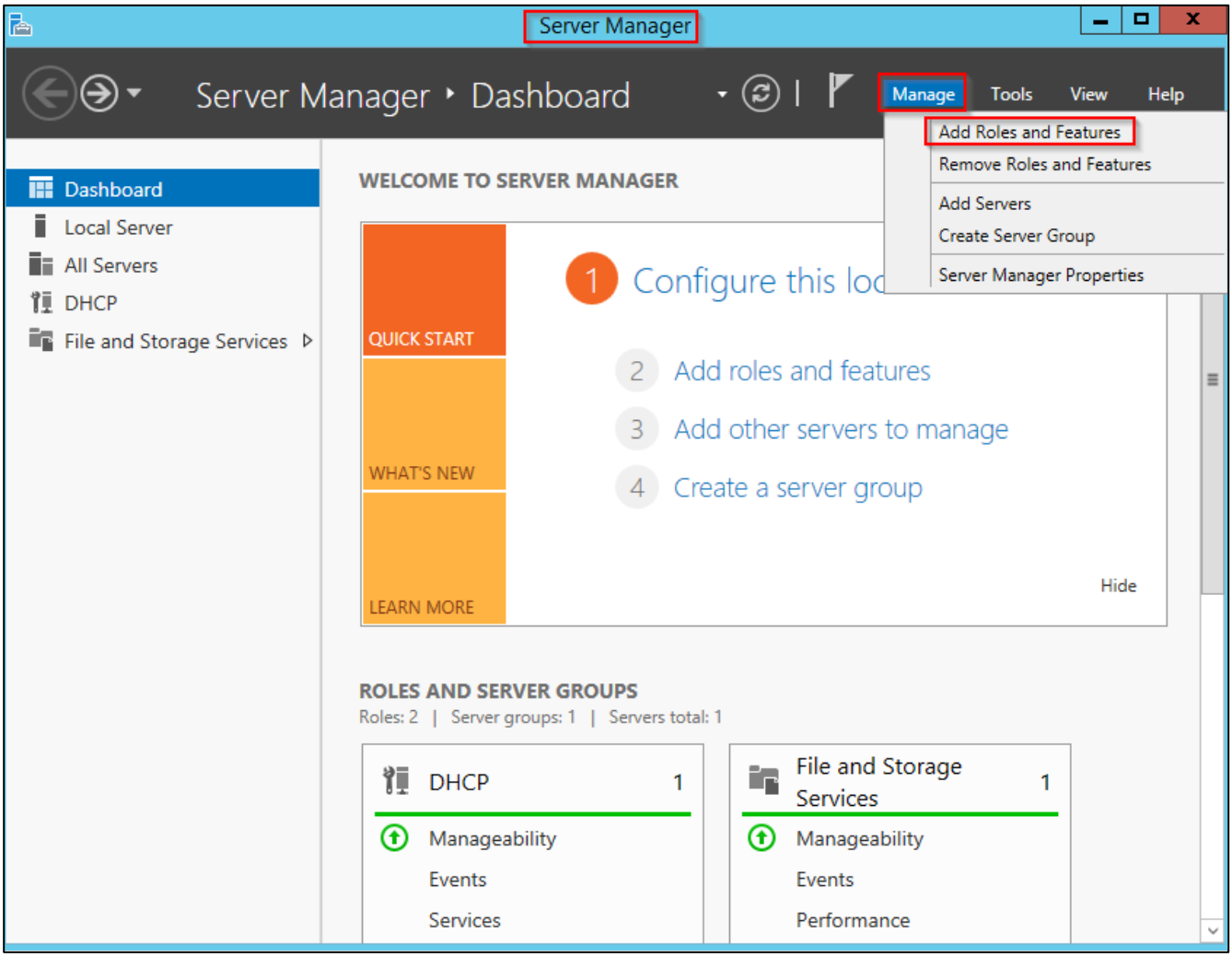
- Basic understanding of DHCP and how to configure DHCP as a service
- Knowledge of the Windows Server environment

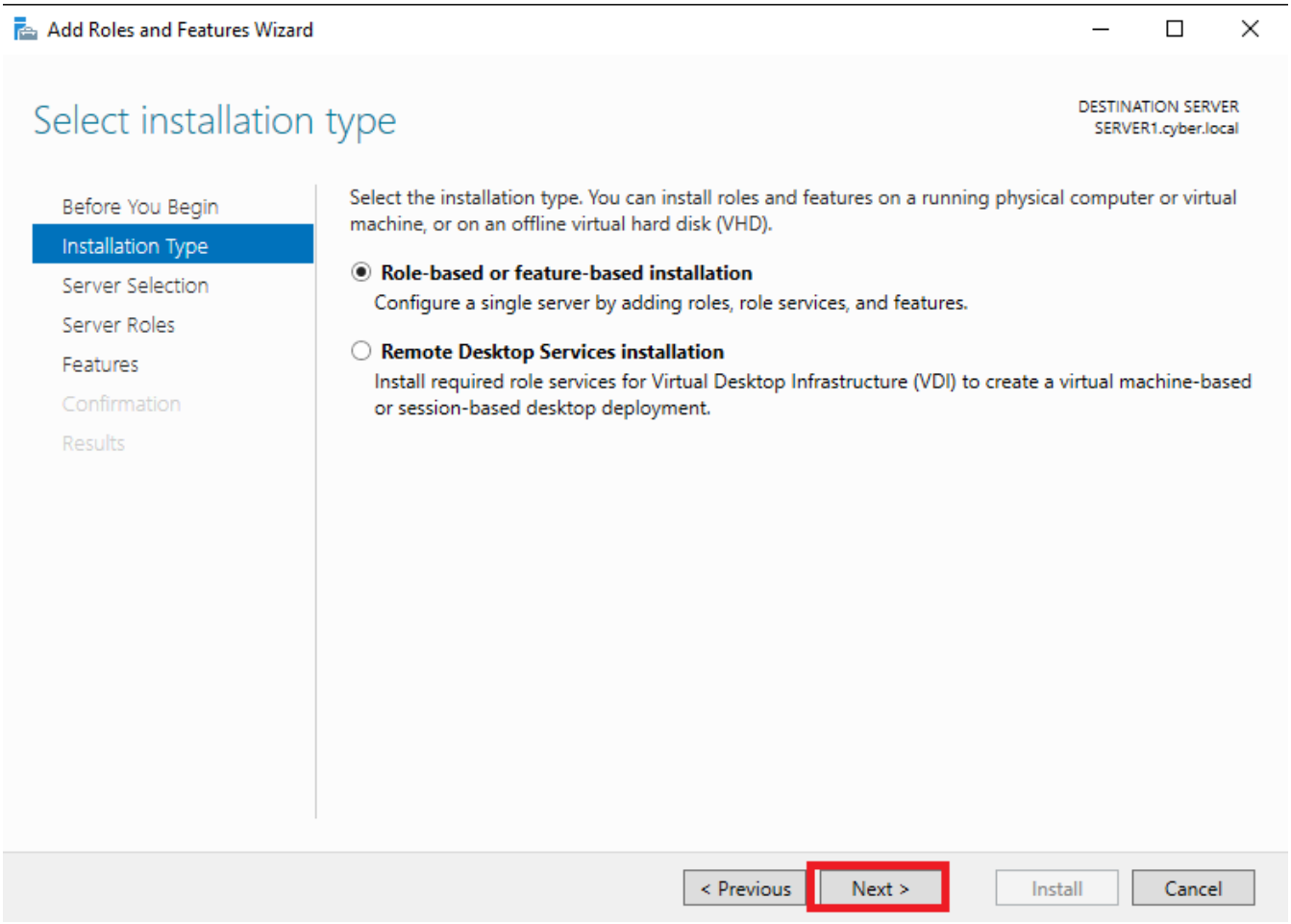
Resources

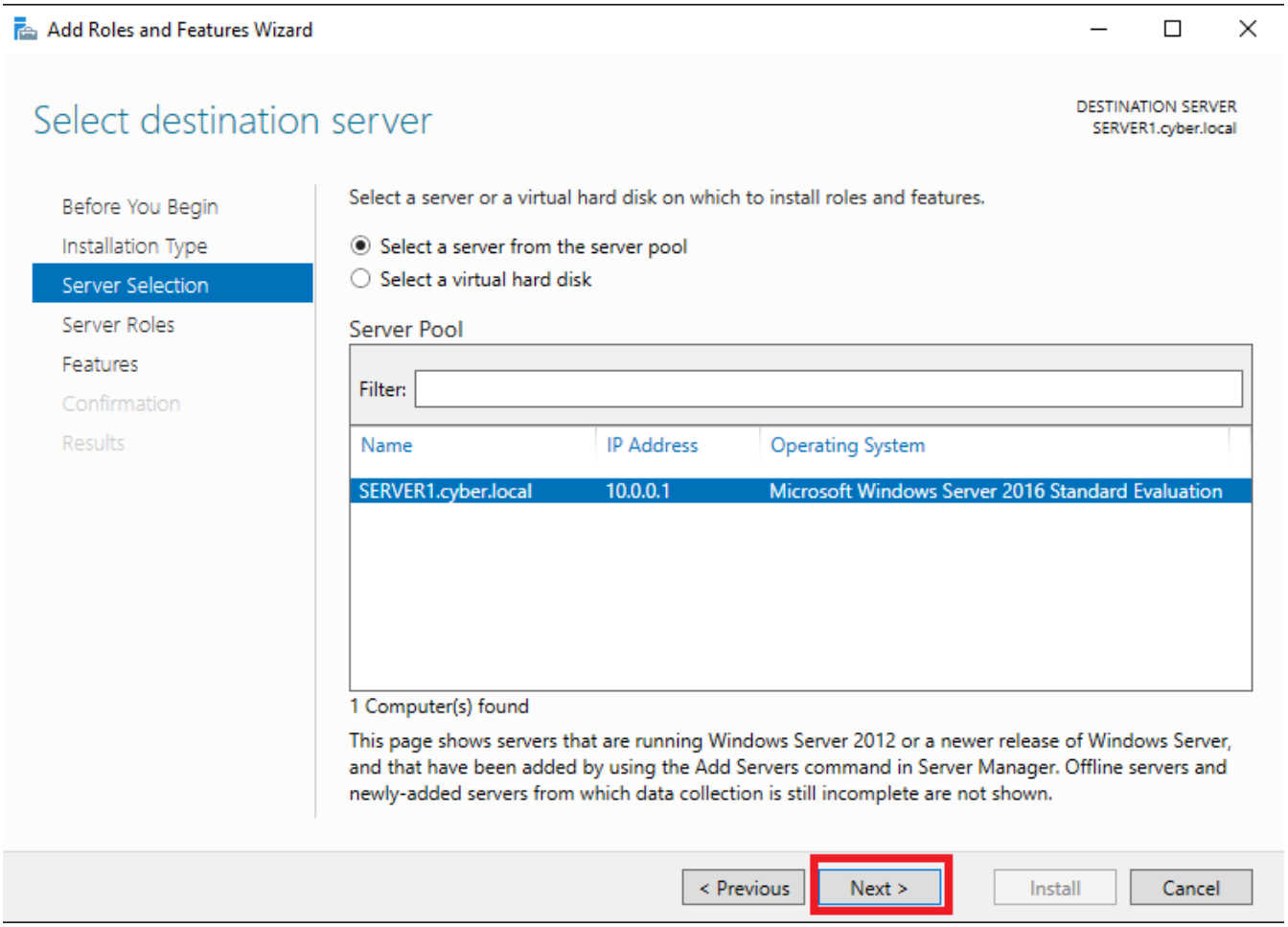
- Environment & Tools
    - VirtualBox
        - Server1 (DC) Windows Server 2016
        - Windows 7 Client

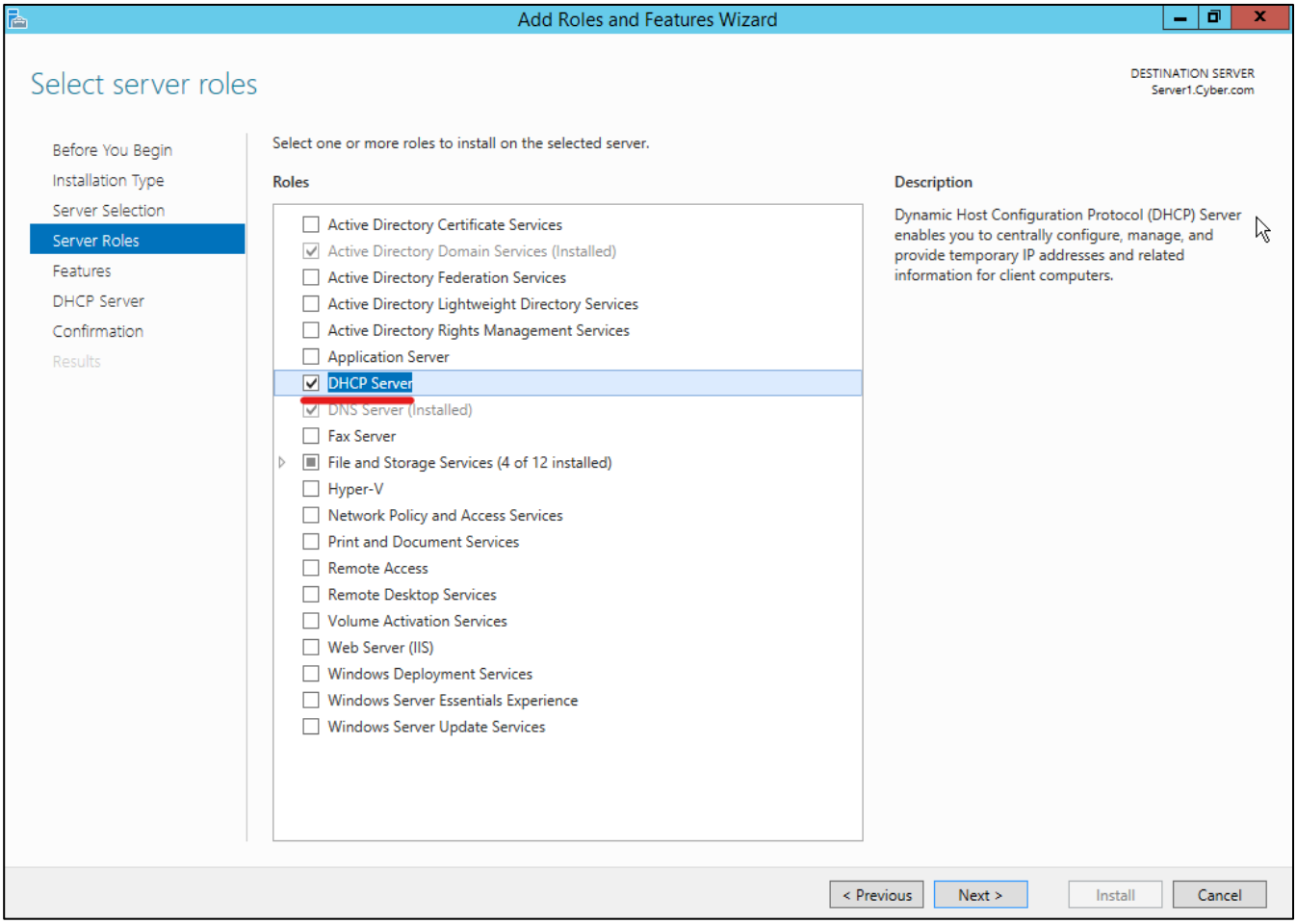
Lab Task: Install and Configure DHCP

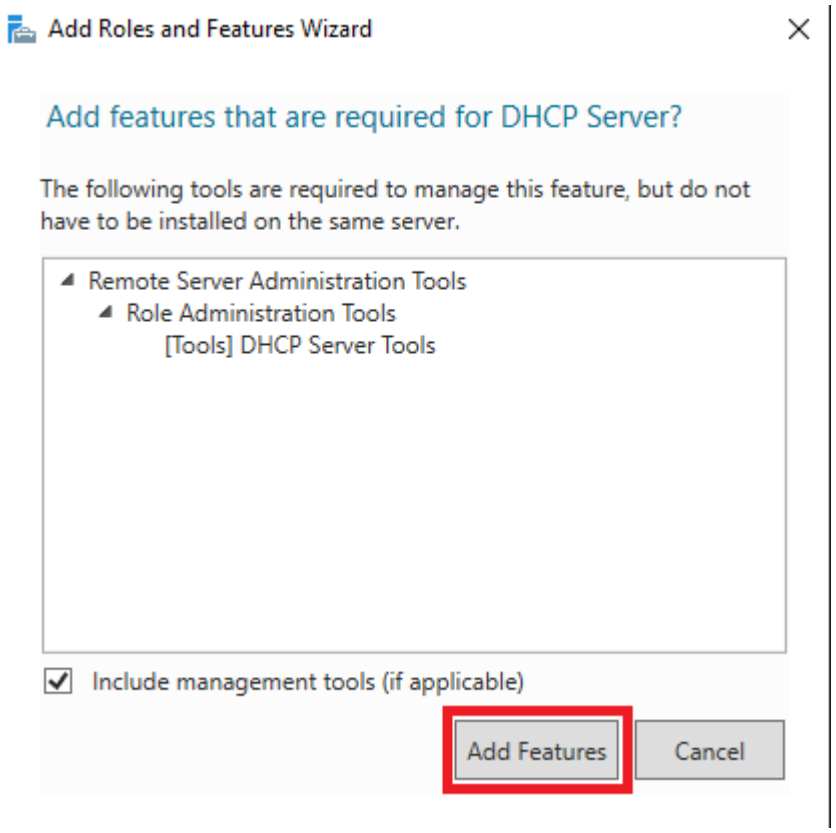
1 Install the DHCP role on Server1. On Server1, go to **Server Manager** > **Manage** > ***Add Roles and Features***, and install the DHCP Server role, as shown below.

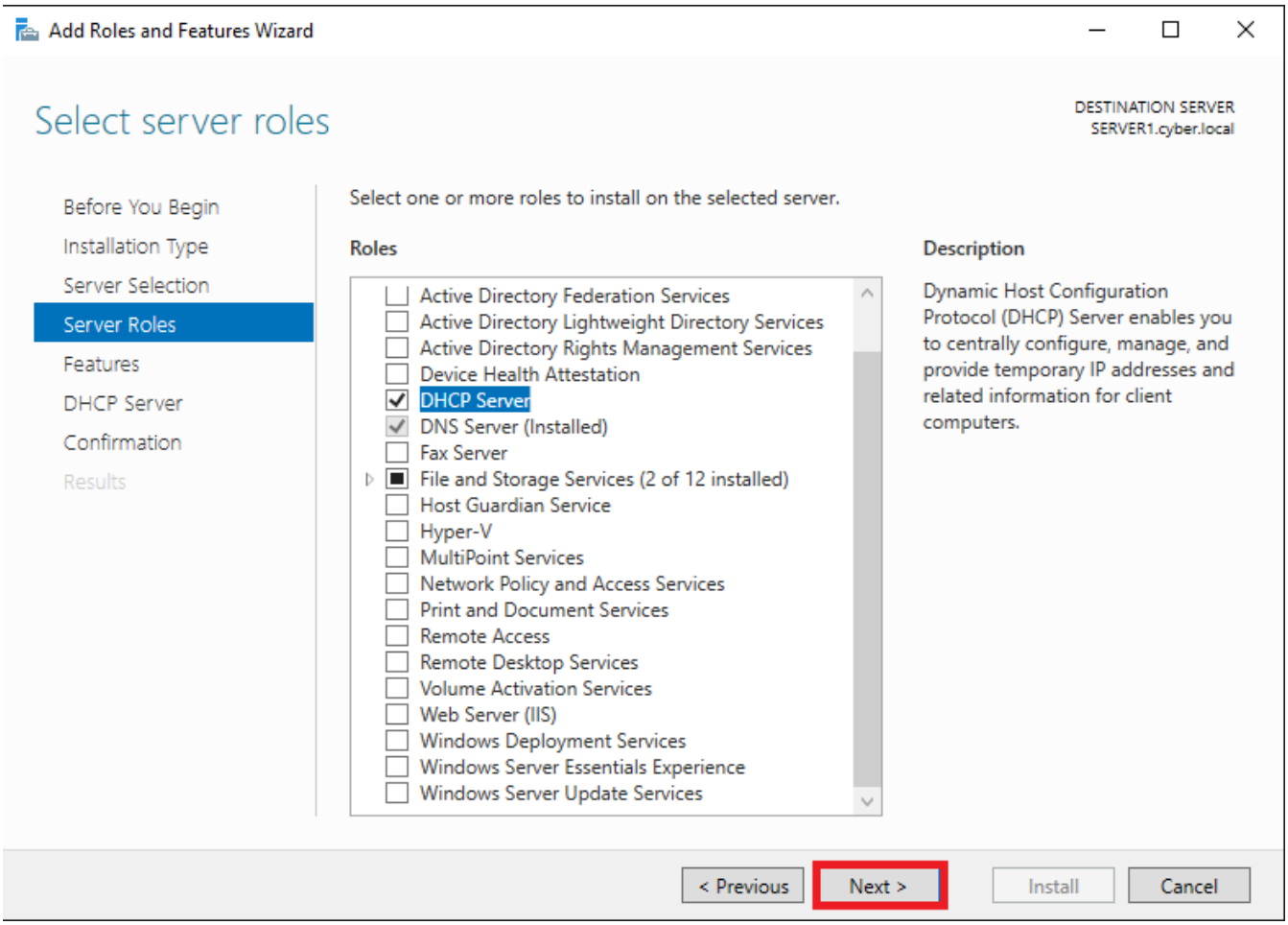


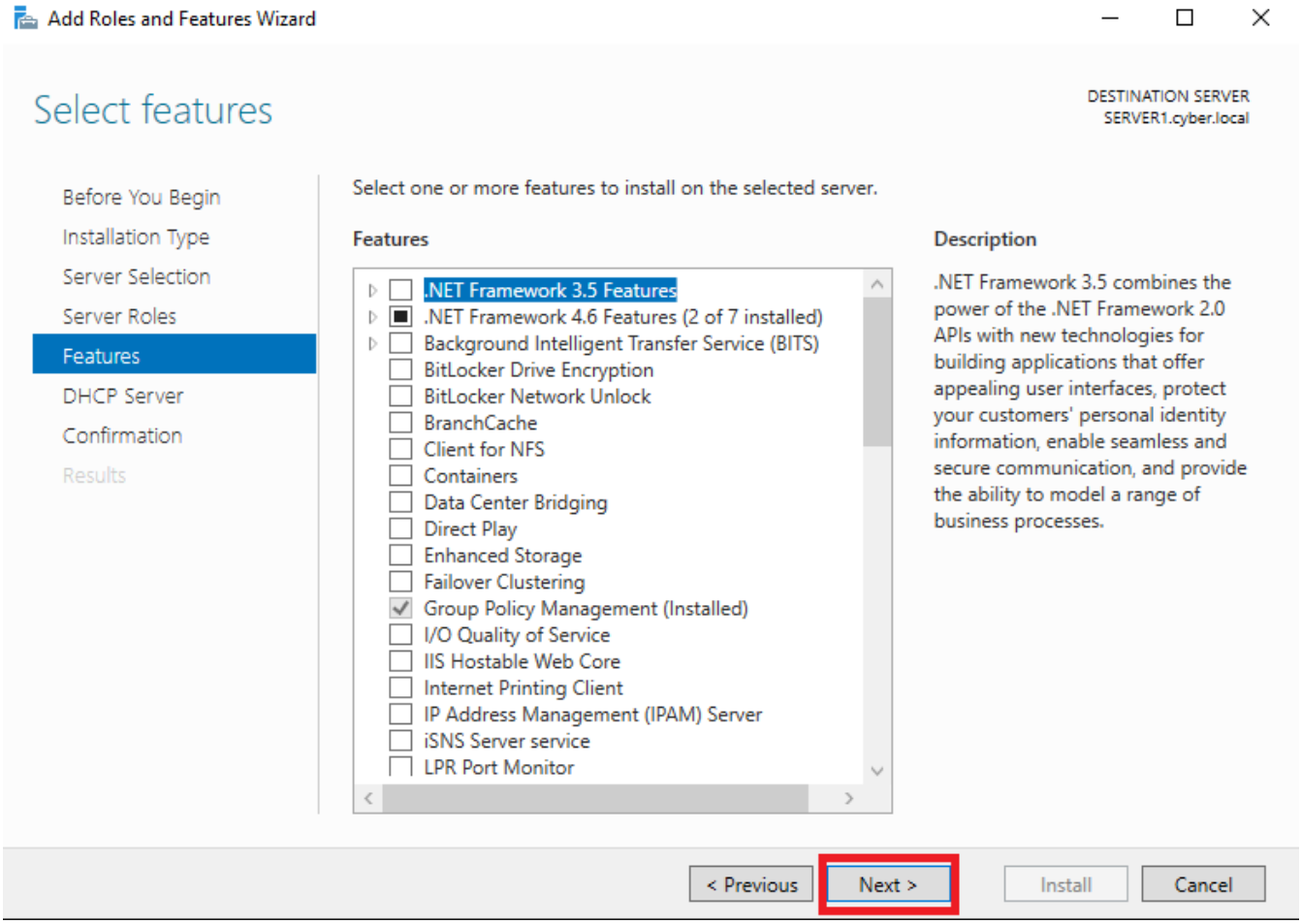

Add Roles and Features Wizard
Select installation type
DESTINATION SERVER
SERVER1.cyber.local
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results
Select the installation type. You can install roles and features on a running physical computer or virtual machine, 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.
< Previous
Next >
Install
Cancel

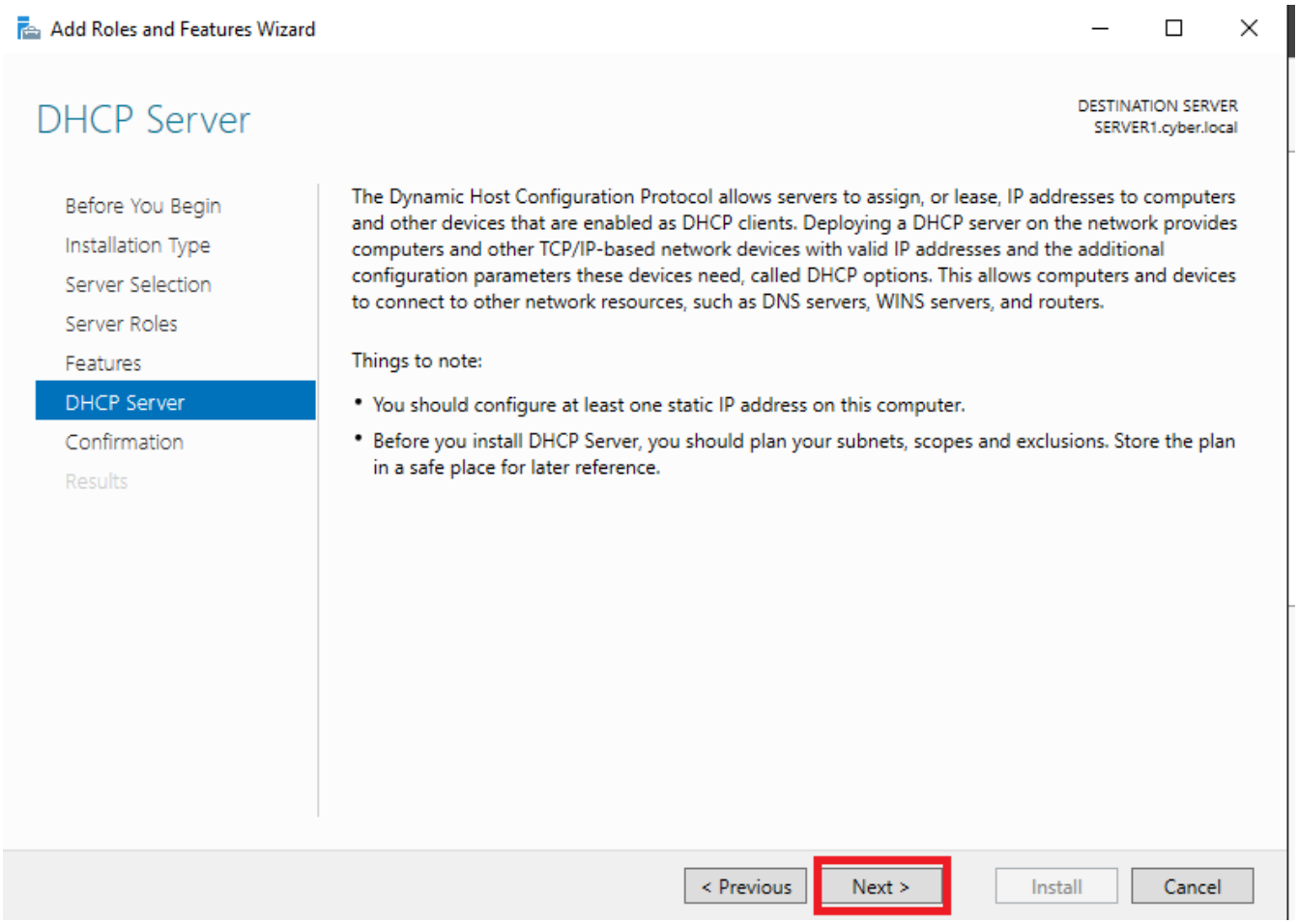

Add Roles and Features Wizard
Select destination server
DESTINATION SERVER
SERVER1.cyber.local
Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results
Select a server or a virtual hard disk on which to install roles and features.
Select a server from the server pool
Select a virtual hard disk
Server Pool
Filter:
Name
IP Address
Operating System
SERVER1.cyber.local
10.0.0.1
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.
< Previous
Next >
Install
Cancel

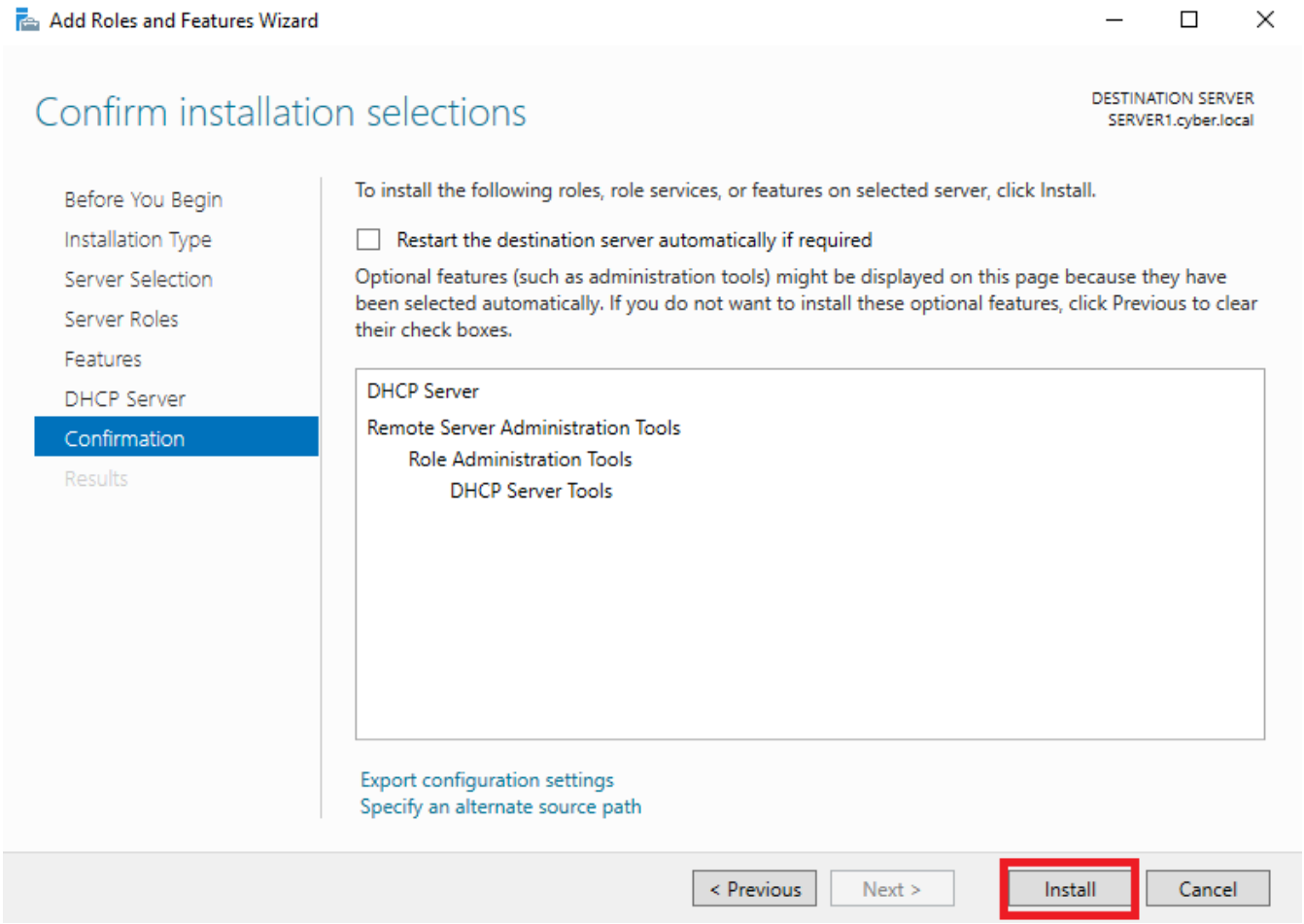

Add Roles and Features Wizard
Select server roles
DESTINATION SERVER
Server1.Cyber.com
Before You Begin
Installation Type
Server Selection
Server Roles
Features
DHCP Server
Confirmation
Results
Select one or more roles to install on the selected server.
Roles
Active Directory Certificate Services
Active Directory Domain Services (Installed)
Active Directory Federation Services
Active Directory Lightweight Directory Services
Active Directory Rights Management Services
Application Server
DHCP Server
DNS Server (Installed)
Fax Server
File and Storage Services (4 of 12 installed)
Hyper-V
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
Description
Dynamic Host Configuration Protocol (DHCP) Server enables you to centrally configure, manage, and provide temporary IP addresses and related information for client computers.
< Previous
Next >
Install
Cancel


Add Roles and Features Wizard
Add features that are required for DHCP Server?
The following tools are required to manage this feature, but do not have to be installed on the same server.
Remote Server Administration Tools
Role Administration Tools
[Tools] DHCP Server Tools
Include management tools (if applicable)
Add Features
Cancel

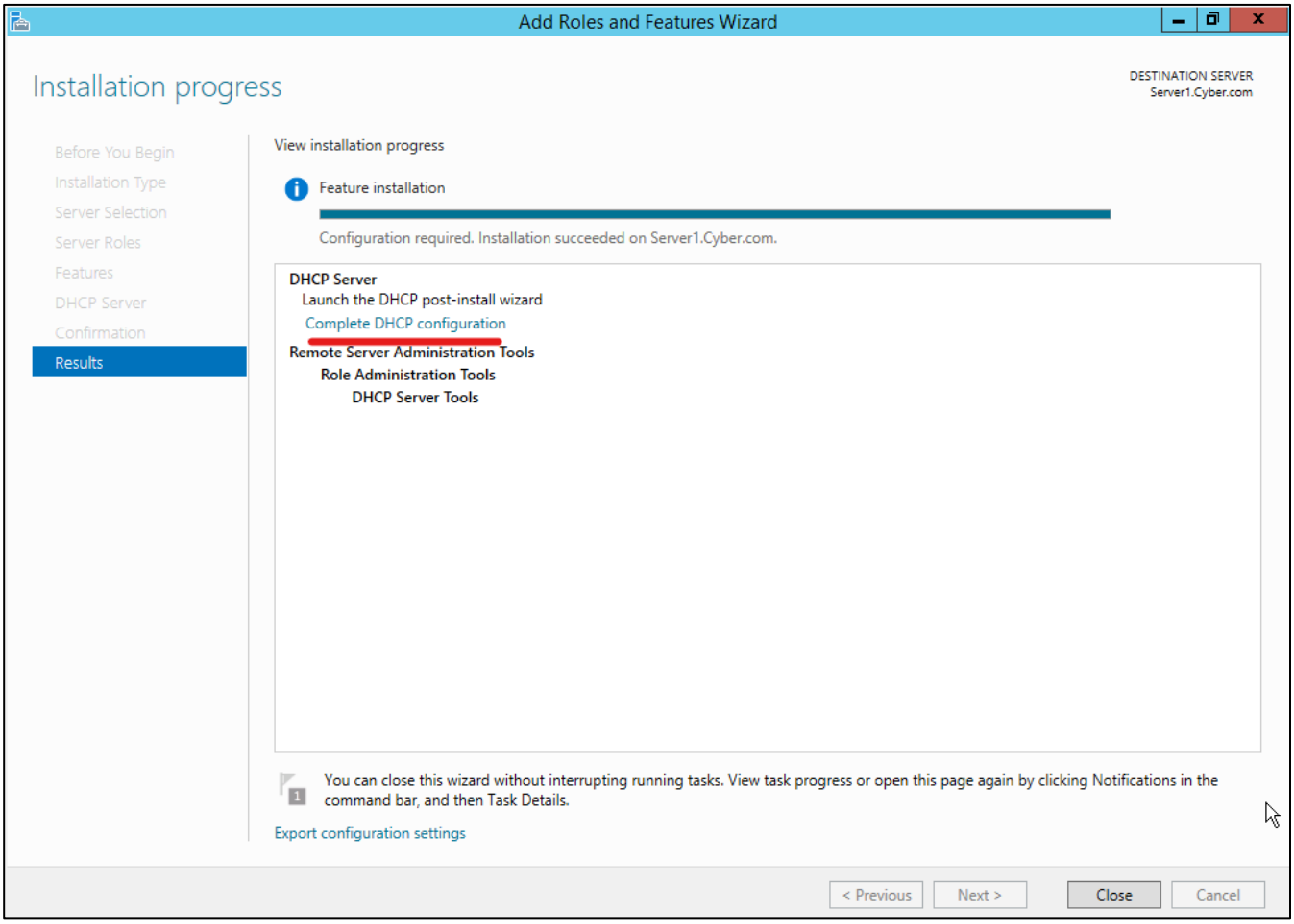

Add Roles and Features Wizard
Select server roles
DESTINATION SERVER
SERVER1.cyber.local
Before You Begin
Installation Type
Server Selection
Server Roles
Features
DHCP Server
Confirmation
Results
Select one or more roles to install on the selected server.
Roles
Active Directory Federation Services
Active Directory Lightweight Directory Services
Active Directory Rights Management Services
Device Health Attestation
DHCP Server
DNS Server (Installed)
Fax Server
File and Storage Services (2 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
Description
Dynamic Host Configuration Protocol (DHCP) Server enables you to centrally configure, manage, and provide temporary IP addresses and related information for client computers.
< Previous
Next >
Install
Cancel

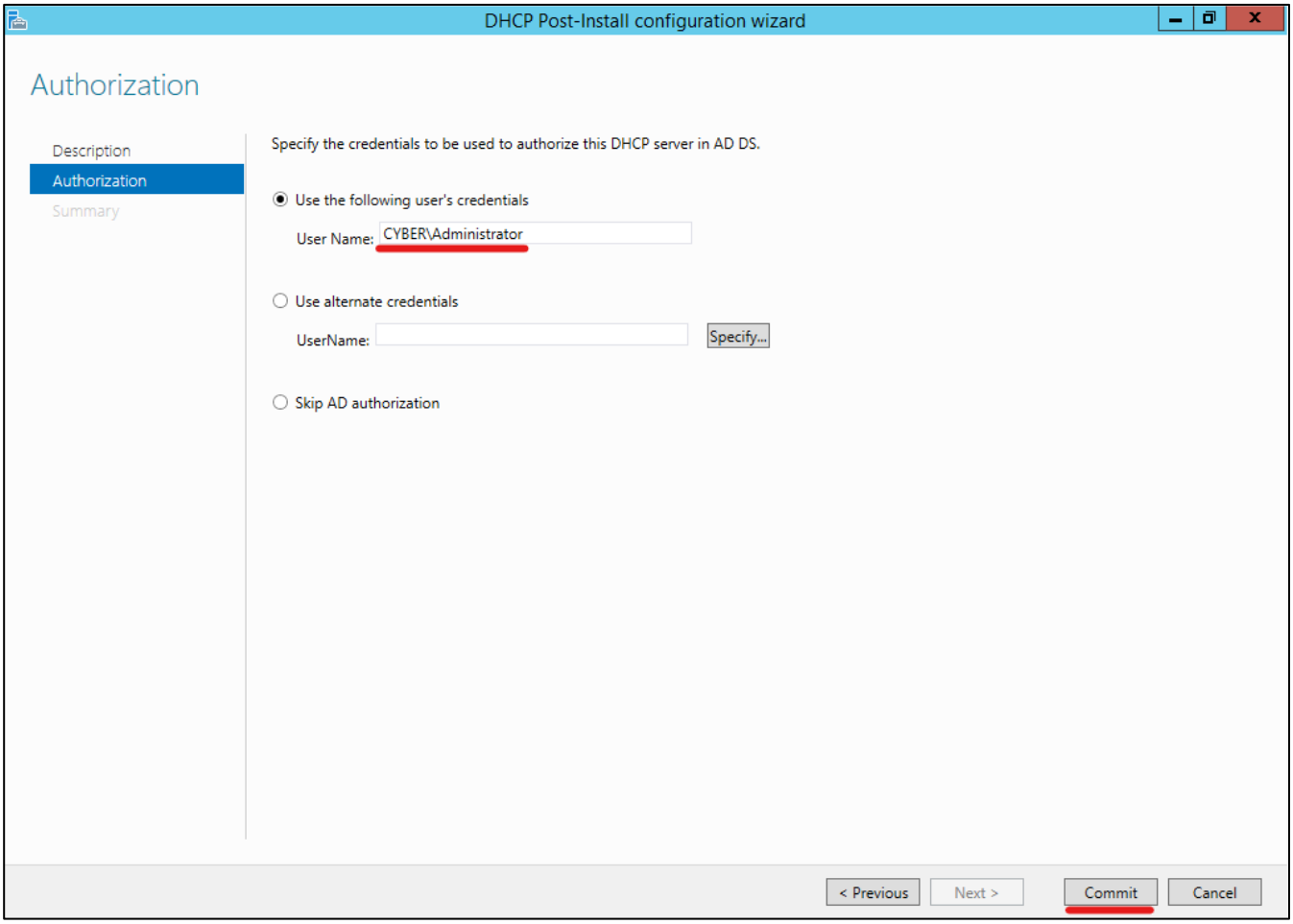

Add Roles and Features Wizard
Select features
DESTINATION SERVER
SERVER1.cyber.local
Before You Begin
Installation Type
Server Selection
Server Roles
Features
DHCP Server
Confirmation
Results
Select one or more features to install on the selected server.
Features
.NET Framework 3.5 Features
.NET Framework 4.6 Features (2 of 7 installed)
Background Intelligent Transfer Service (BITS)
BitLocker Drive Encryption
BitLocker Network Unlock
BranchCache
Client for NFS
Containers
Data Center Bridging
Direct Play
Enhanced Storage
Failover Clustering
Group Policy Management (Installed)
I/O Quality of Service
IIS Hostable Web Core
Internet Printing Client
IP Address Management (IPAM) Server
iSNS Server service
LPR Port Monitor
Description
.NET Framework 3.5 combines the power of the .NET Framework 2.0 APIs with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identity information, enable seamless and secure communication, and provide the ability to model a range of business processes.
< Previous
Next >
Install
Cancel


Add Roles and Features Wizard
DHCP Server
DESTINATION SERVER
SERVER1.cyber.local
Before You Begin
Installation Type
Server Selection
Server Roles
Features
DHCP Server
Confirmation
Results
The Dynamic Host Configuration Protocol allows servers to assign, or lease, IP addresses to computers and other devices that are enabled as DHCP clients. Deploying a DHCP server on the network provides computers and other TCP/IP-based network devices with valid IP addresses and the additional configuration parameters these devices need, called DHCP options. This allows computers and devices to connect to other network resources, such as DNS servers, WINS servers, and routers.
Things to note:
• You should configure at least one static IP address on this computer.
• Before you install DHCP Server, you should plan your subnets, scopes and exclusions. Store the plan in a safe place for later reference.
< Previous
Next >
Install
Cancel

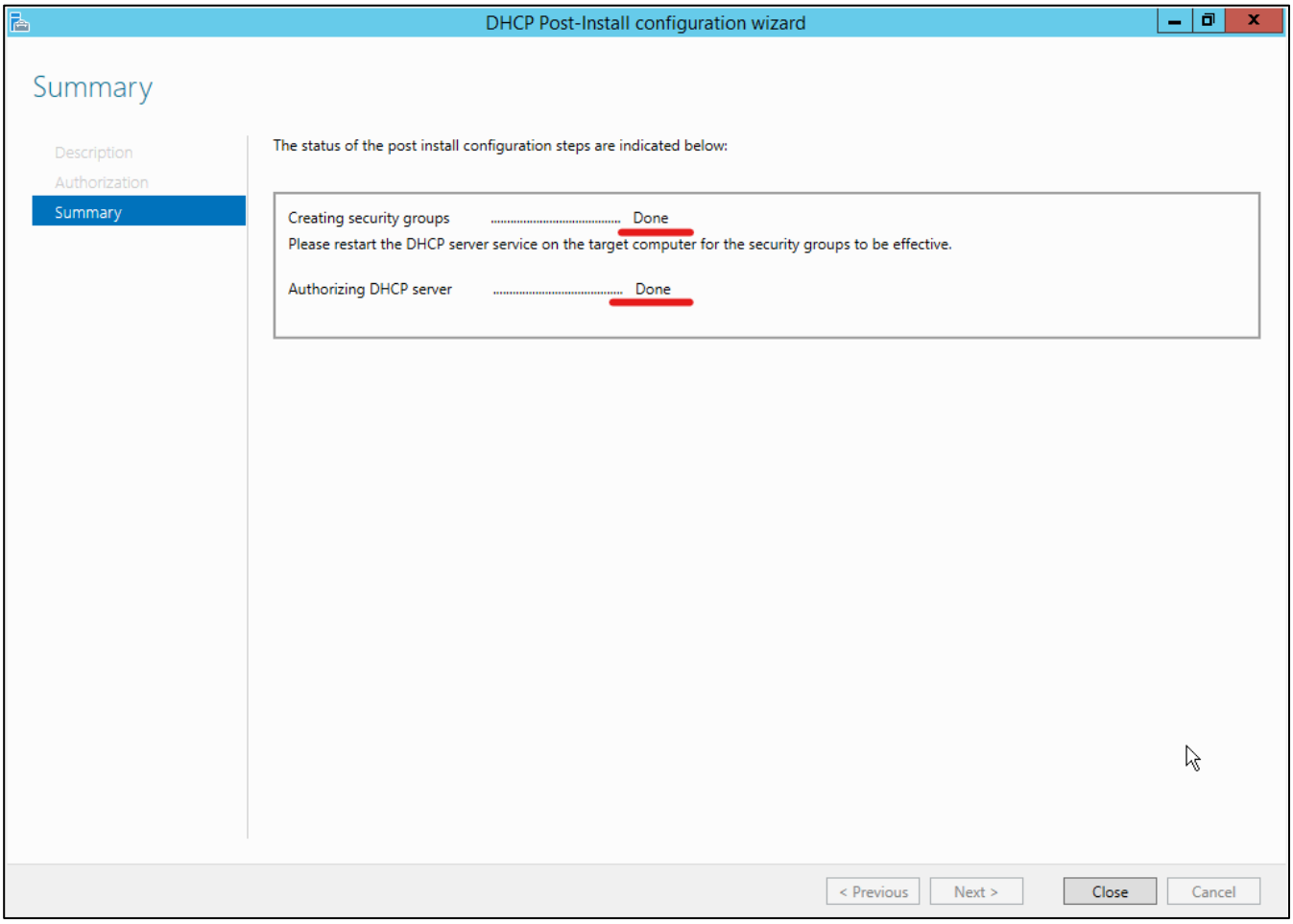

Add Roles and Features Wizard
Confirm installation selections
DESTINATION SERVER
SERVER1.cyber.local
Before You Begin
Installation Type
Server Selection
Server Roles
Features
DHCP Server
Confirmation
Results
To install the following roles, role services, or features on selected server, click Install.
Restart the destination server automatically if required
Optional features (such as administration tools) might be displayed on this page because they have been selected automatically. If you do not want to install these optional features, click Previous to clear their check boxes.
DHCP Server
Remote Server Administration Tools
Role Administration Tools
DHCP Server Tools
Export configuration settings
Specify an alternate source path
< Previous
Next >
Install
Cancel

2 Complete the installation with the wizard and authorize the DHCP server by clicking **Complete DHCP configuration**. Click **Next** on the description windows and **Commit** on the authorization window. Make sure the credentials specified are those of the administrator.

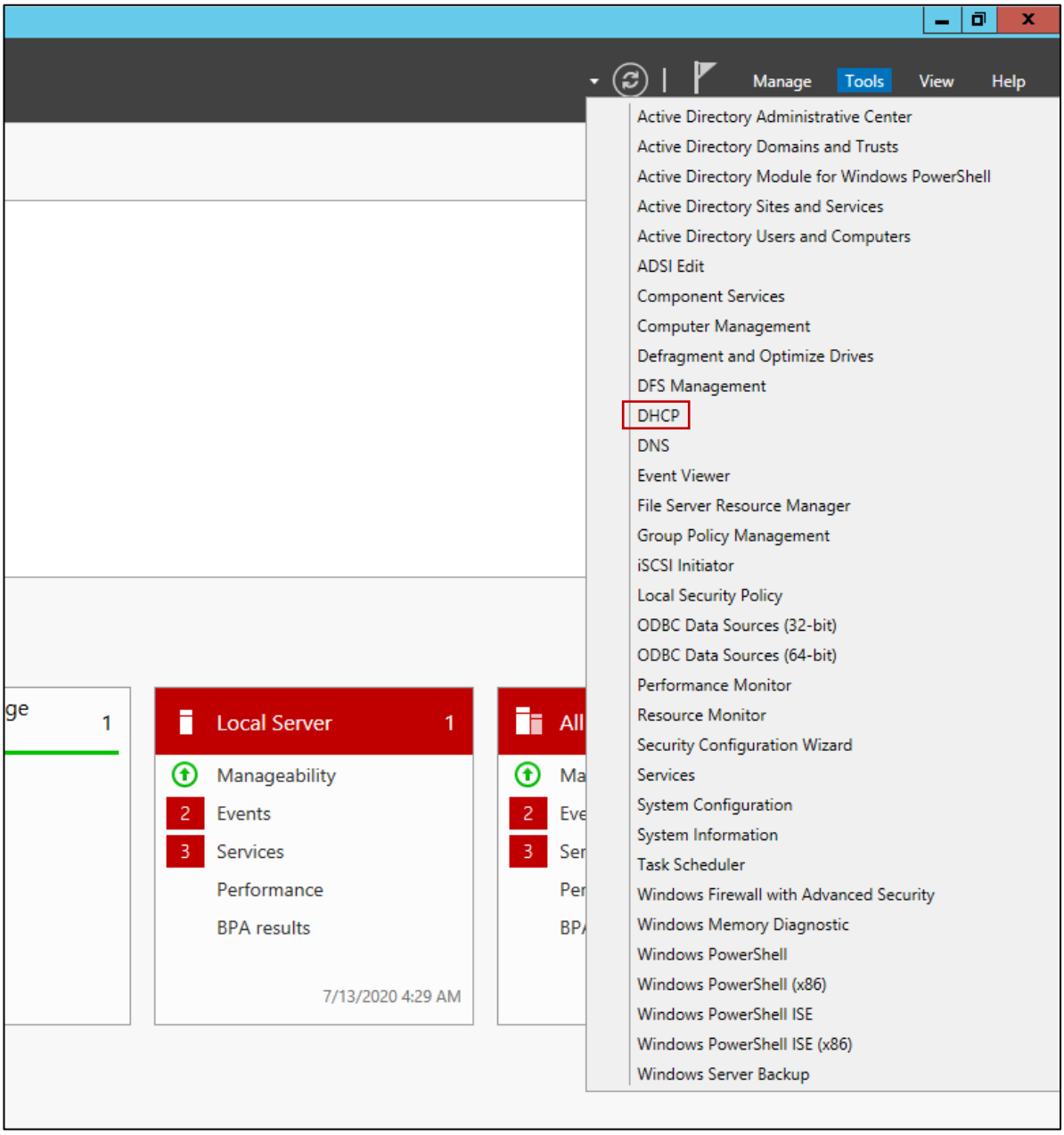


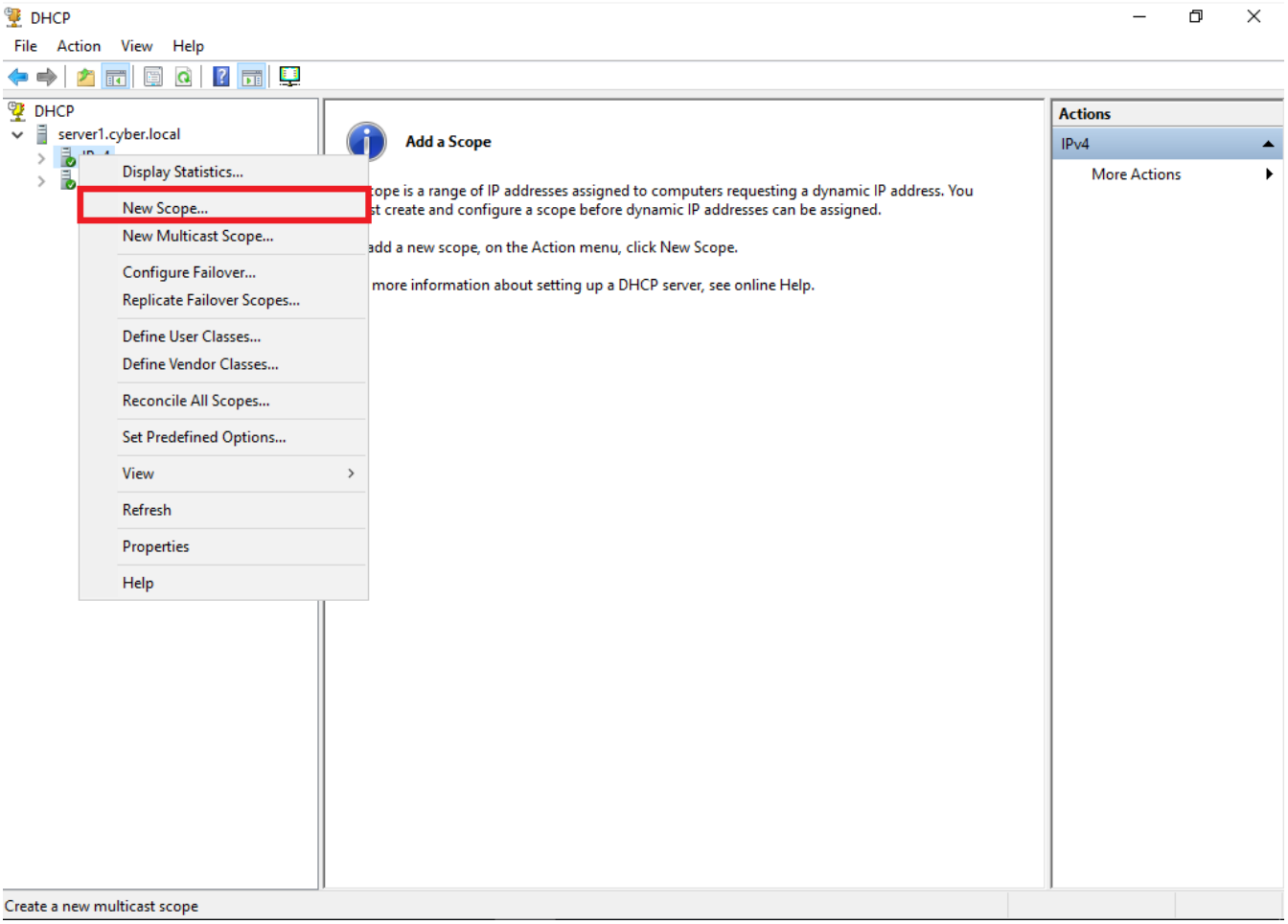

DHCP Post-Install configuration wizard
Authorization
Description
Authorization
Summary
Specify the credentials to be used to authorize this DHCP server in AD DS.
Use the following user's credentials
User Name: CYBER\Administrator
Use alternate credentials
UserName:
Specify...
Skip AD authorization
< Previous
Next >
Commit
Cancel

3 After clicking **Commit**, the summary windows should display the status of the steps. Make sure you see *Done* for both. Close this window and the next window.

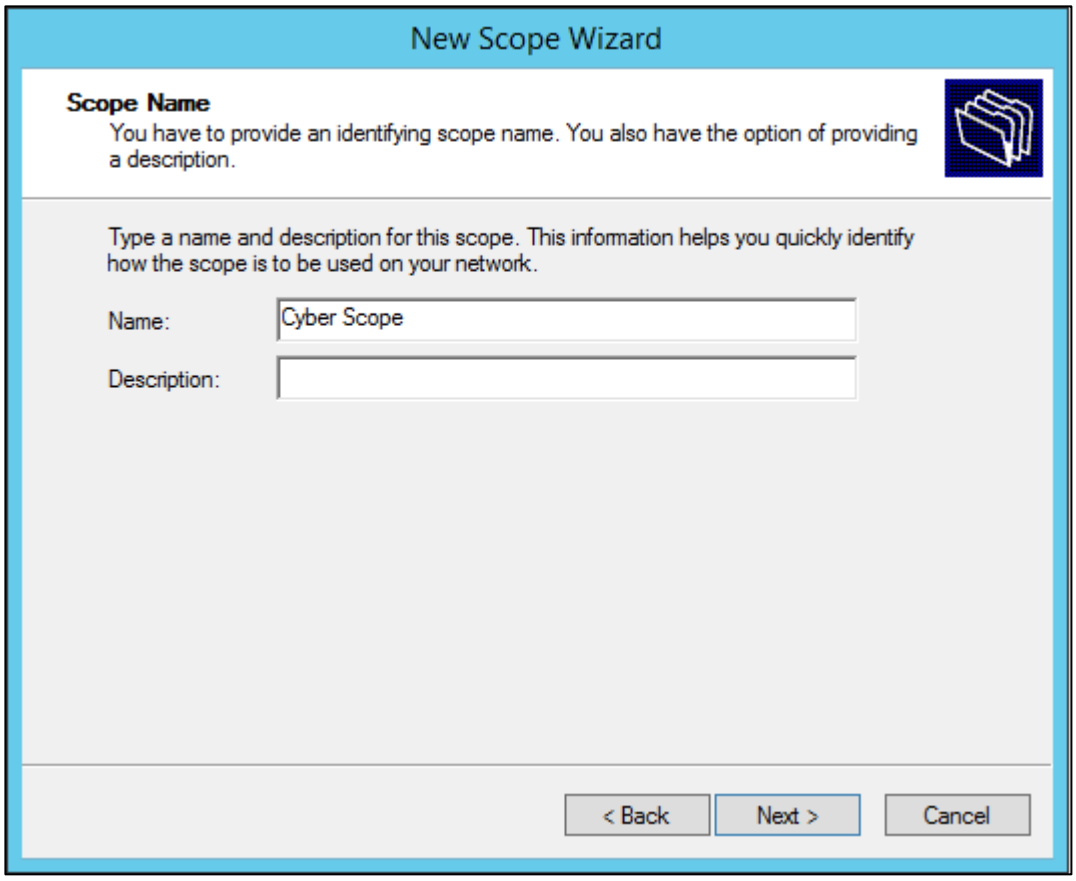


4 Open the DHCP interface by clicking **Tools** and ***DHCP*** and start creating a new scope by expanding ***server1.cyber.com*** and ***IPv4***. Right-click ***IPv4*** and select ***New Scope…***

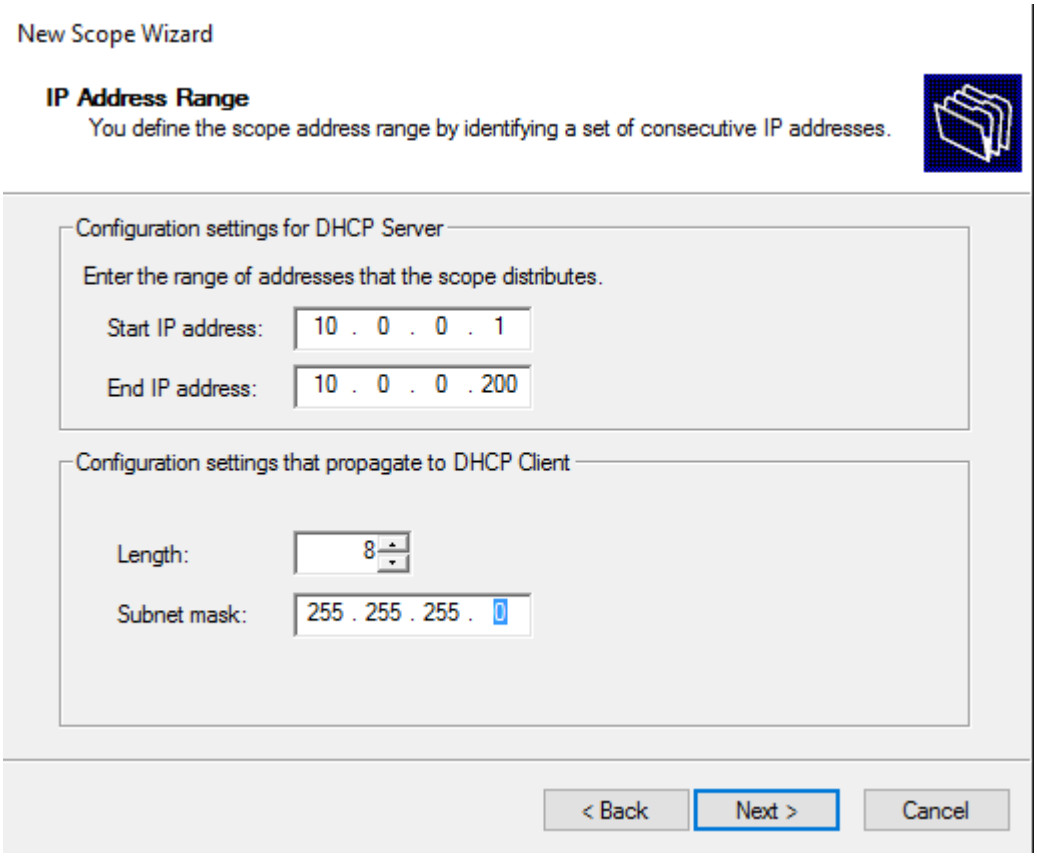



DHCP
File Action View Help
DHCP
server1.cyber.local
Display Statistics...
New Scope...
New Multicast Scope...
Configure Failover...
Replicate Failover Scopes...
Define User Classes...
Define Vendor Classes...
Reconcile All Scopes...
Set Predefined Options...
View
Refresh
Properties
Help
Add a Scope
cope is a range of IP addresses assigned to computers requesting a dynamic IP address. You
st create and configure a scope before dynamic IP addresses can be assigned.
add a new scope, on the Action menu, click New Scope.
more information about setting up a DHCP server, see online Help.
Actions
IPv4
More Actions
Create a new multicast scope

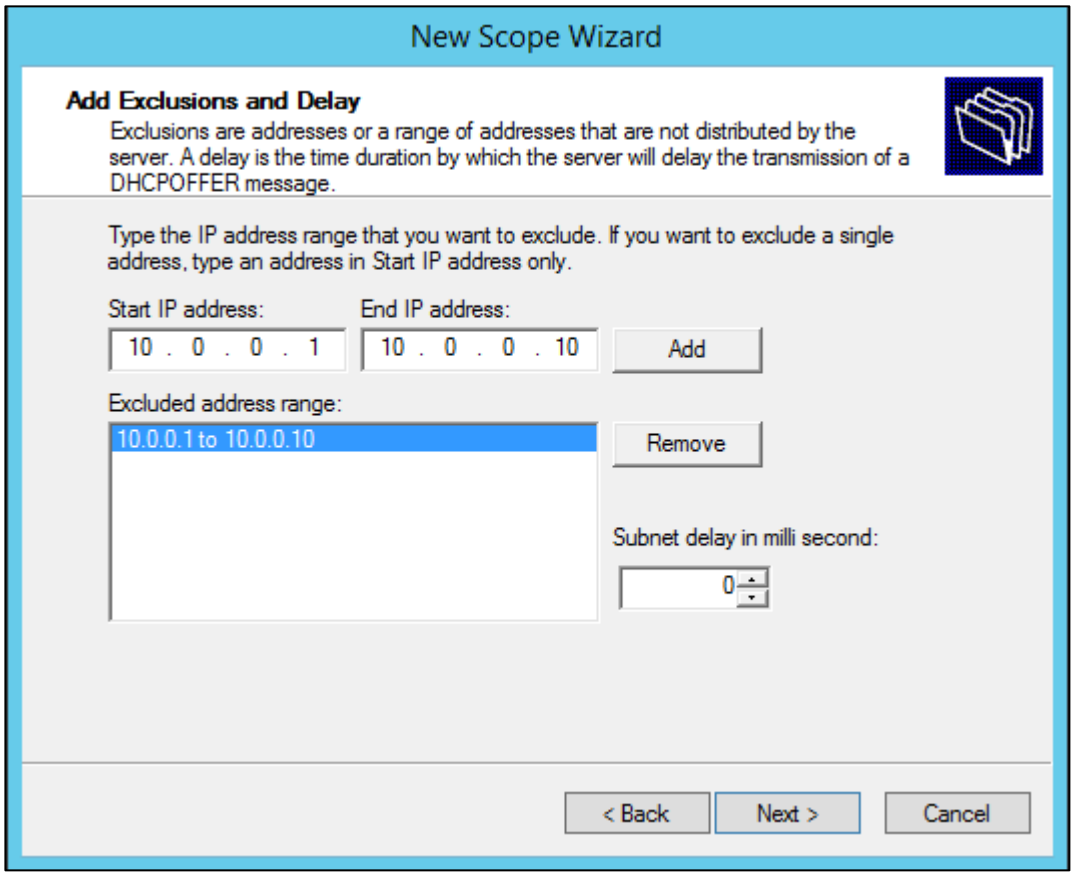
5 Name the scope **Cyber Scope** and click **Next**. The description is optional.



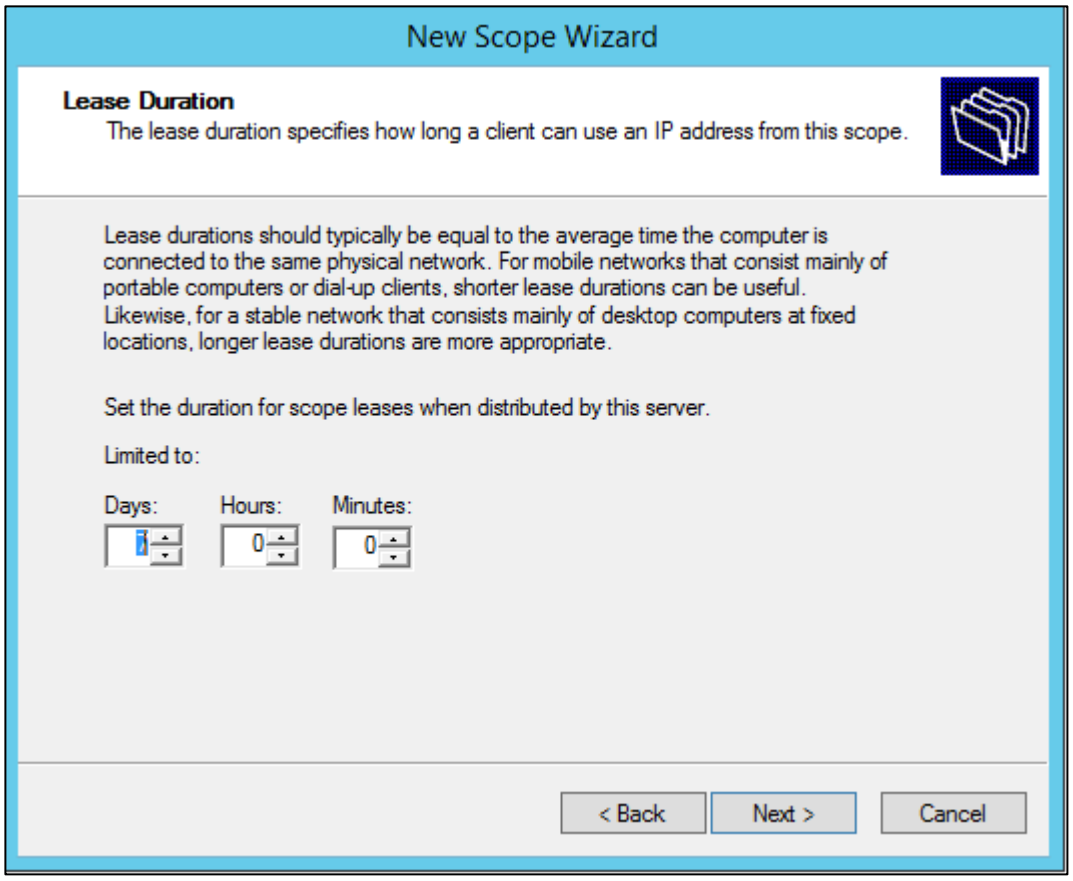
6 Set the IP address range to ***10.0.0.1–10.0.0.200***, with subnet mask ***255.255.255.0*** and click **Next**.



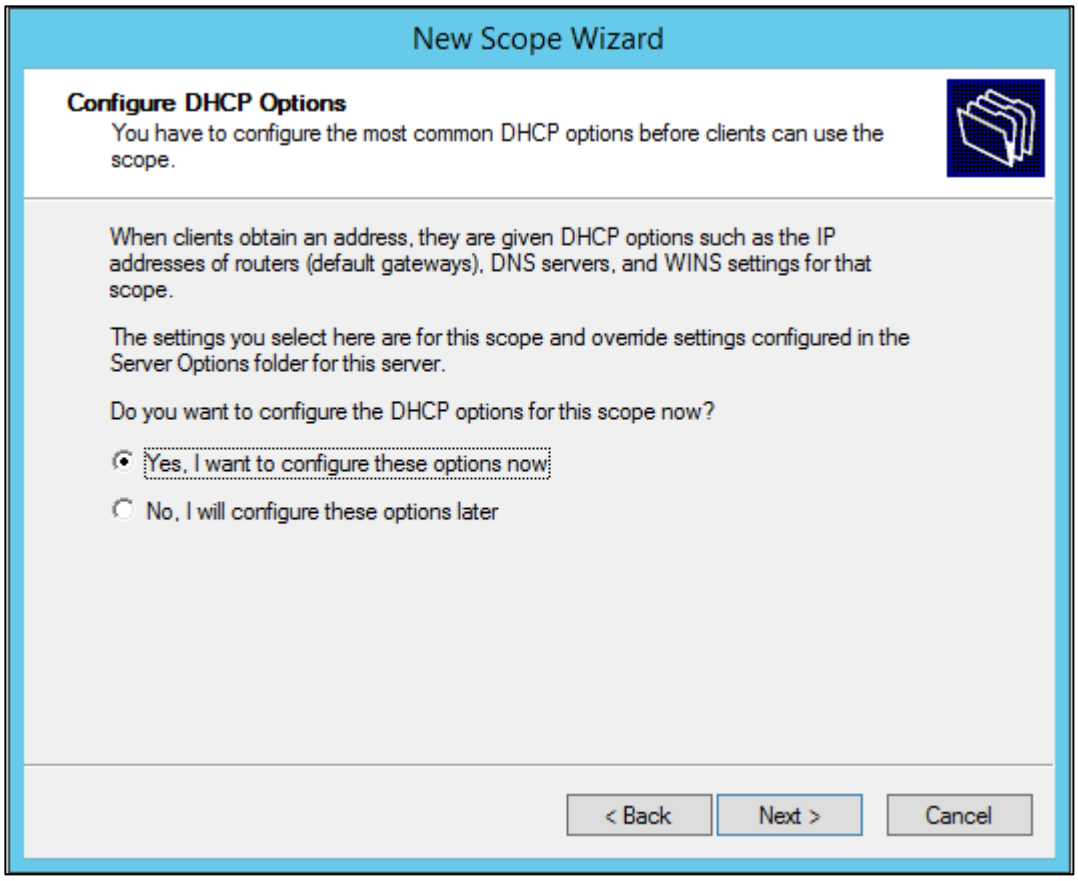
7 Exclude the range ***10.0.0.1–10.0.0.10*** from the DHCP allocation and click **Next**.



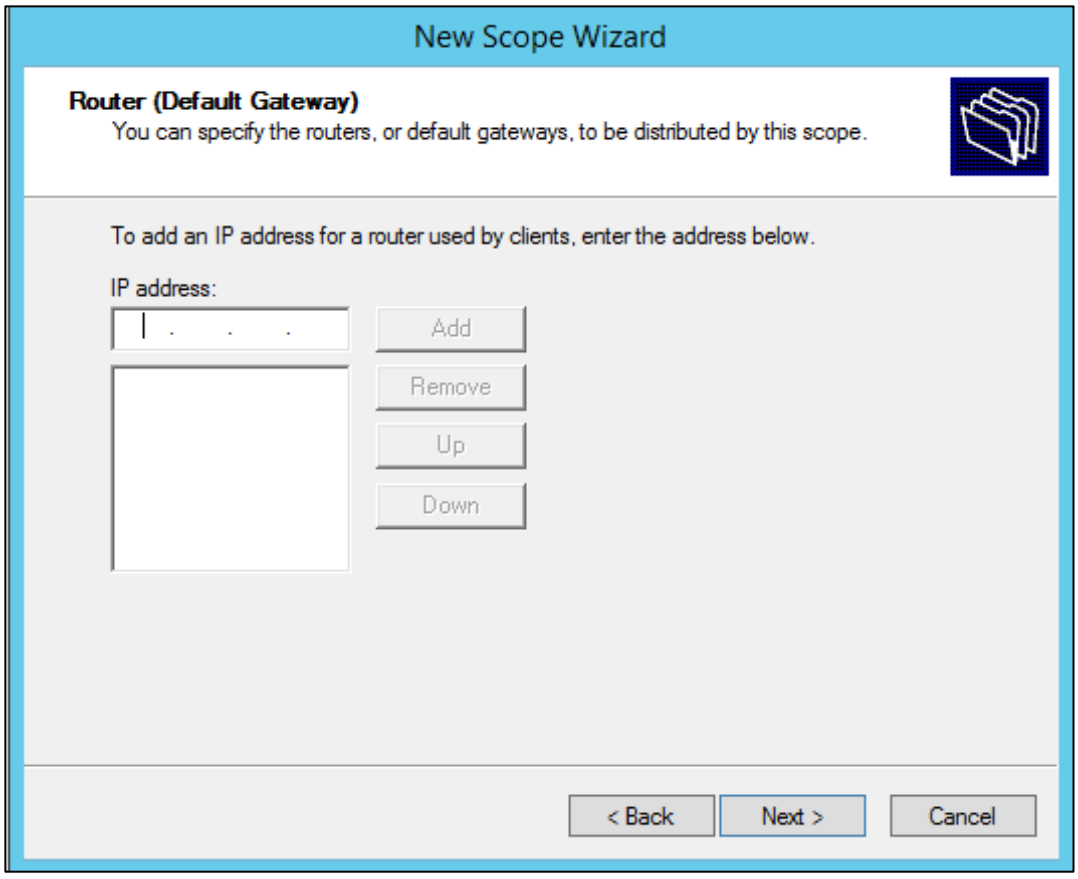
8 Set the lease duration to seven days and click **Next**.



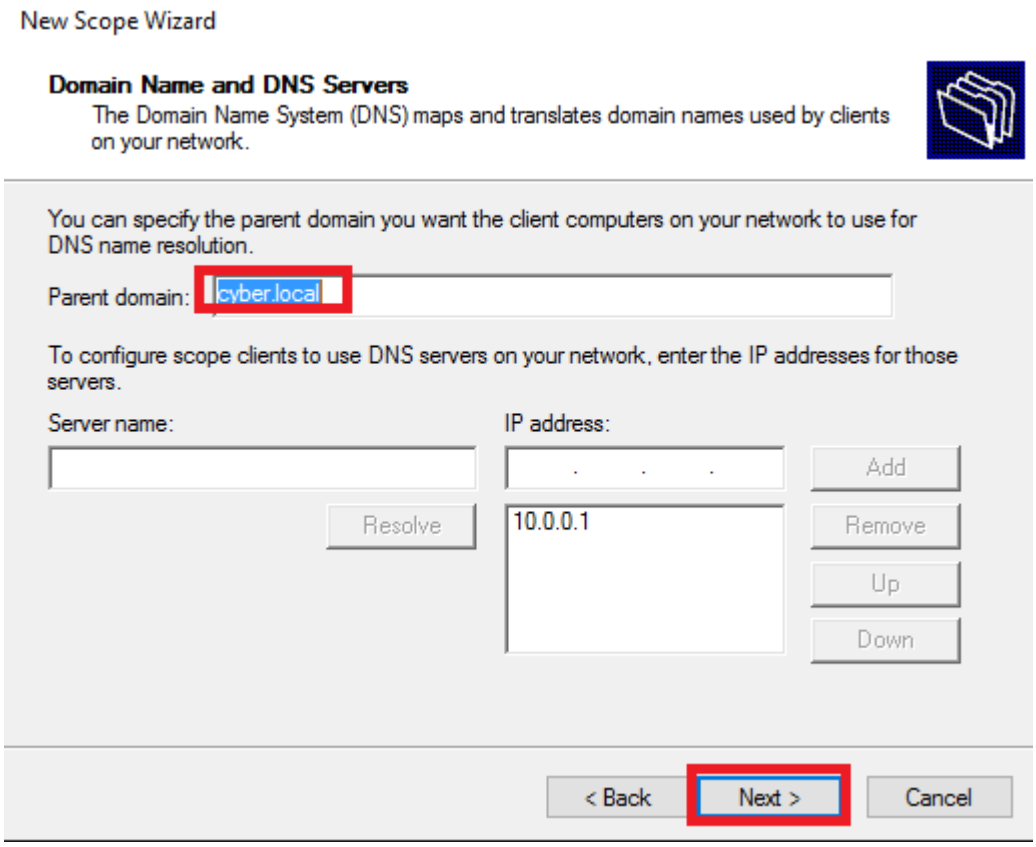
9 When asked if you want to configure DHCP options, select ***Yes…*** and click **Next**.



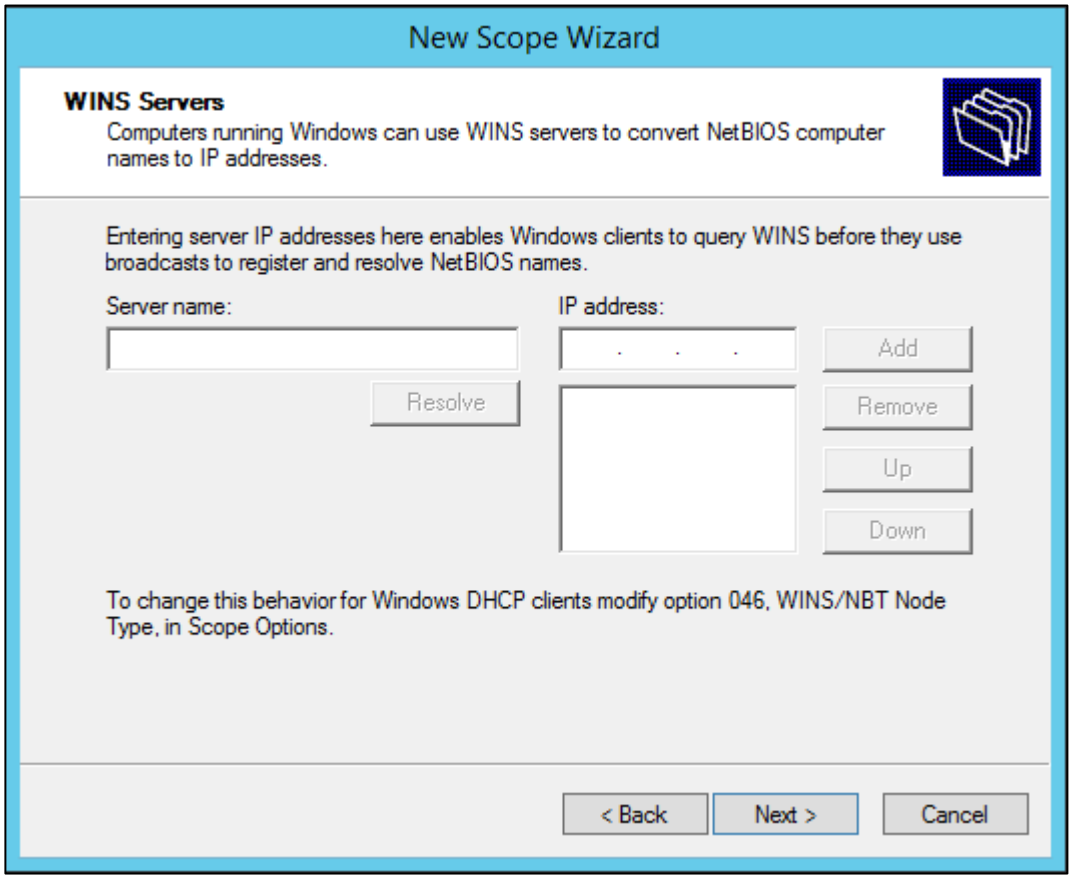
10 Leave the Router (Default Gateway) fields blank and click **Next**.



11 In the DNS configuration step, make sure the parent domain is ***cyber.local*** and add the address ***10.0.0.1***, then click **Next**.

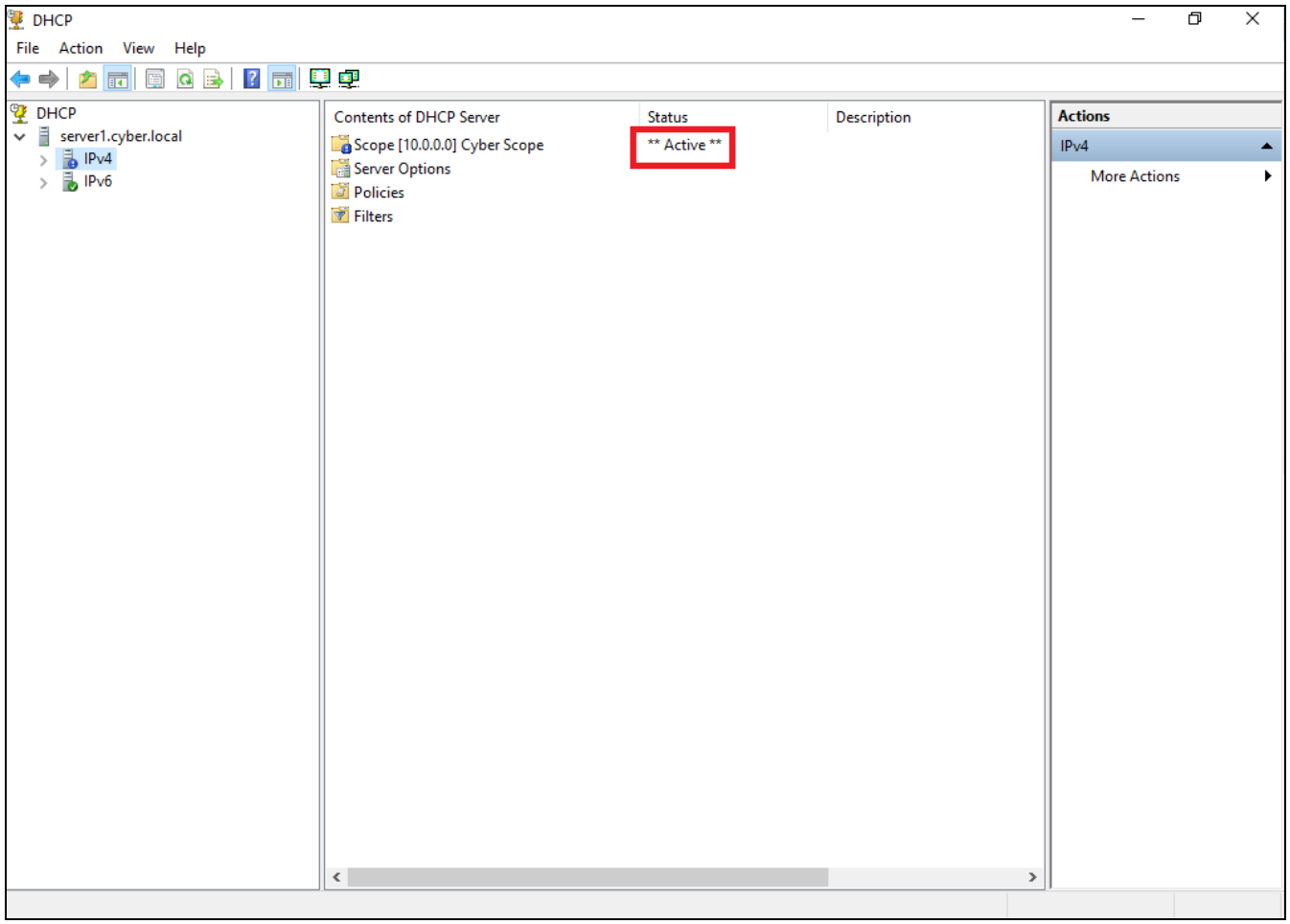


12 Skip the configuration of the WINS server by leaving all fields blank and clicking **Next**.



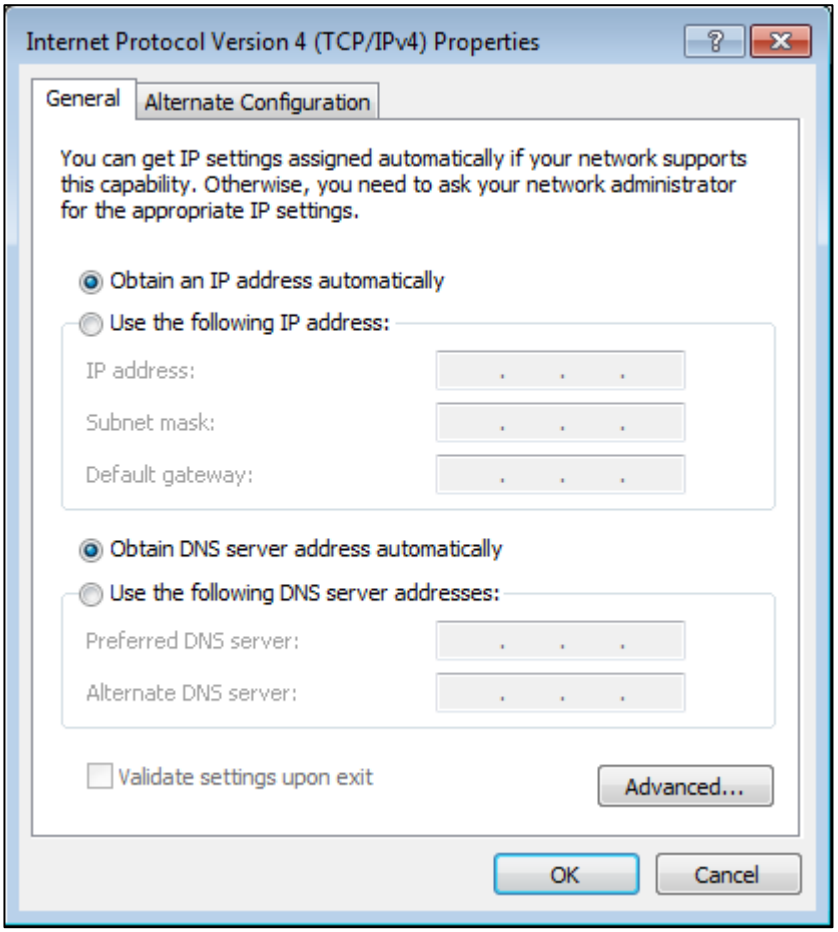
13 Select the option to activate the scope now and click **Next**. In the completion window that appears, click **Finish**.

14 Open the DHCP management tool and verify that the scope was created and activated.

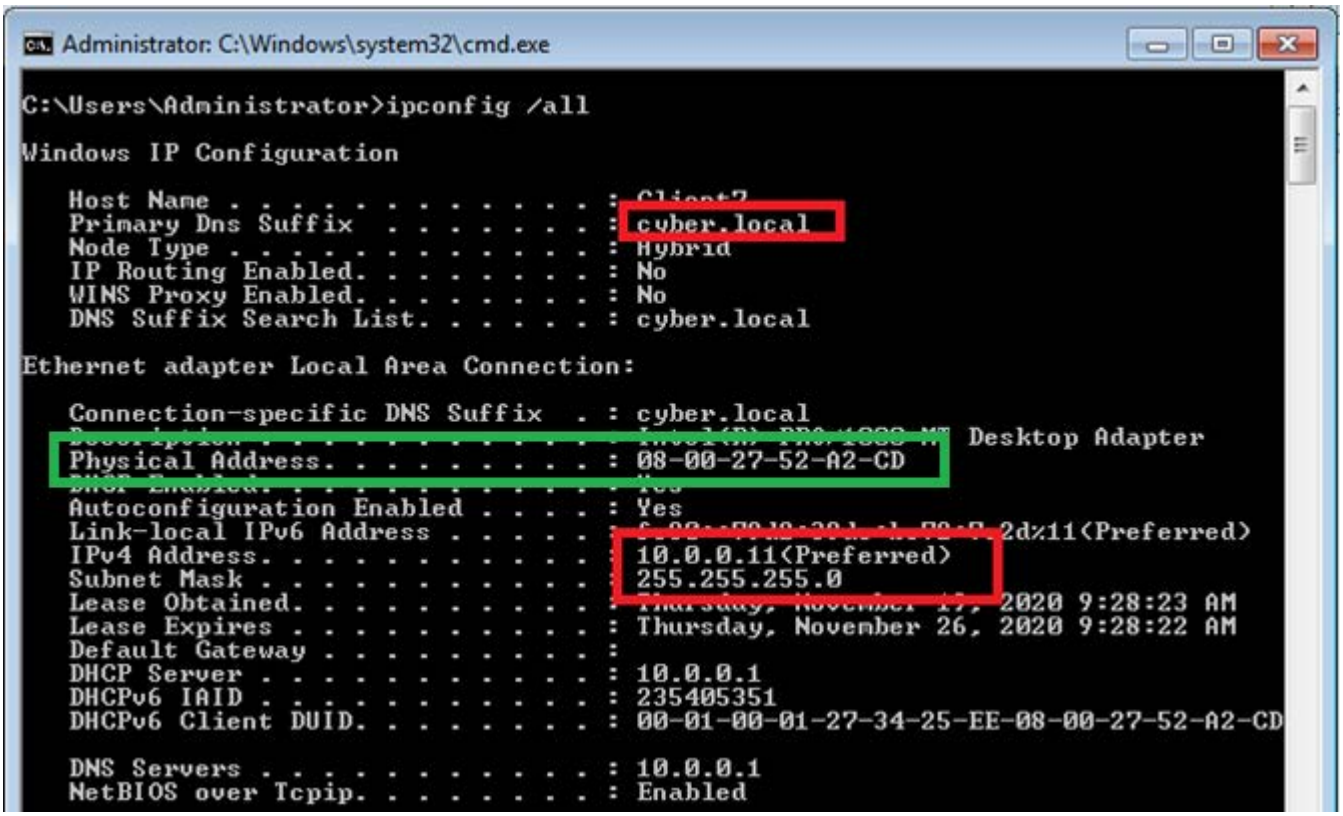


15 Log into Client7 and configure the client to obtain an IP address.

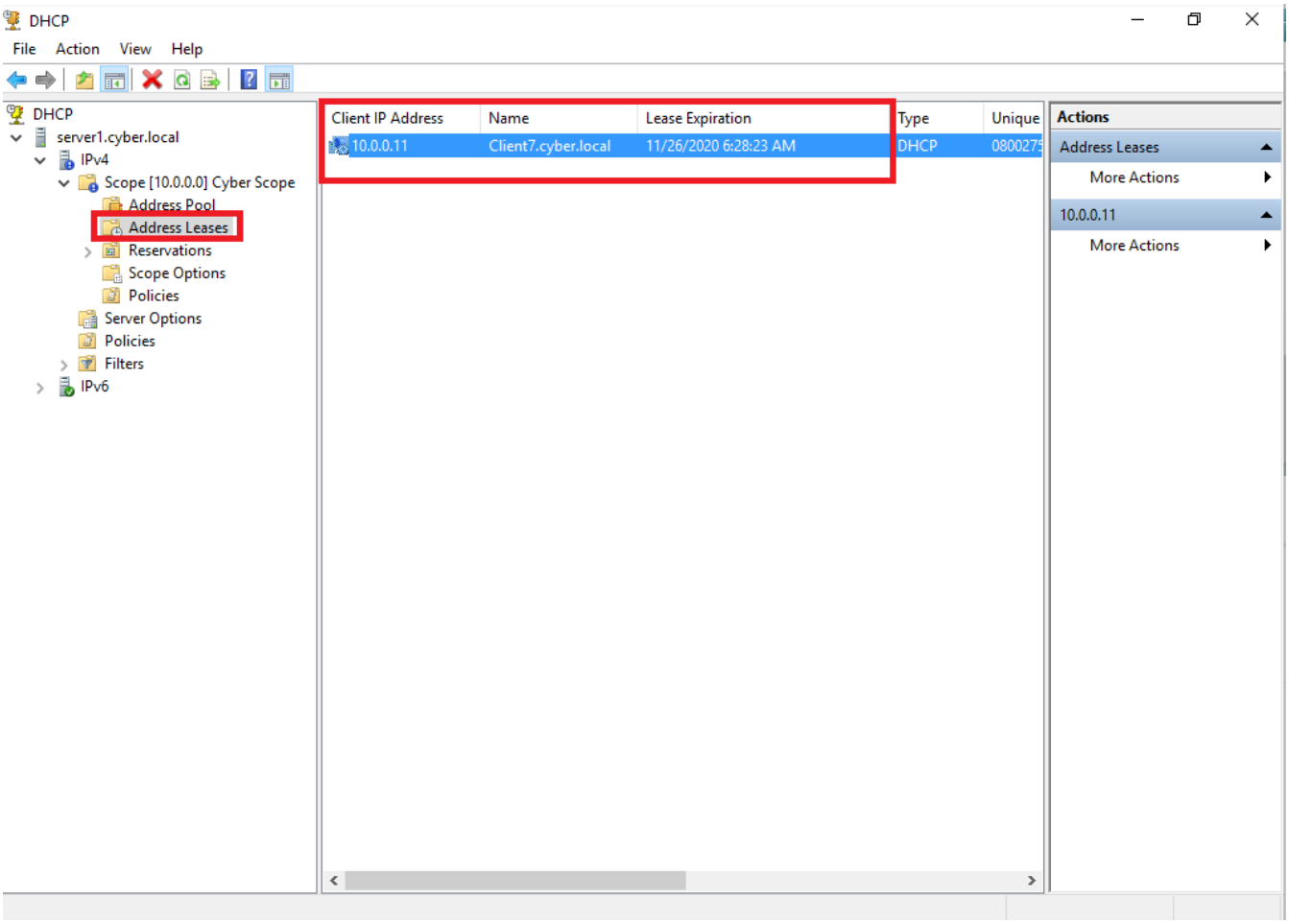
- Go to the client and log in as **cyber\administrator**.
- Open **Network and Internet Settings** and go to **Adapter Settings**.
- Right-click your adapter (local area connection) and click **Properties**.
- Open TCP/IPv4 settings and change to ***Obtain an IP address automatically*** (do this for the DNS settings as well).



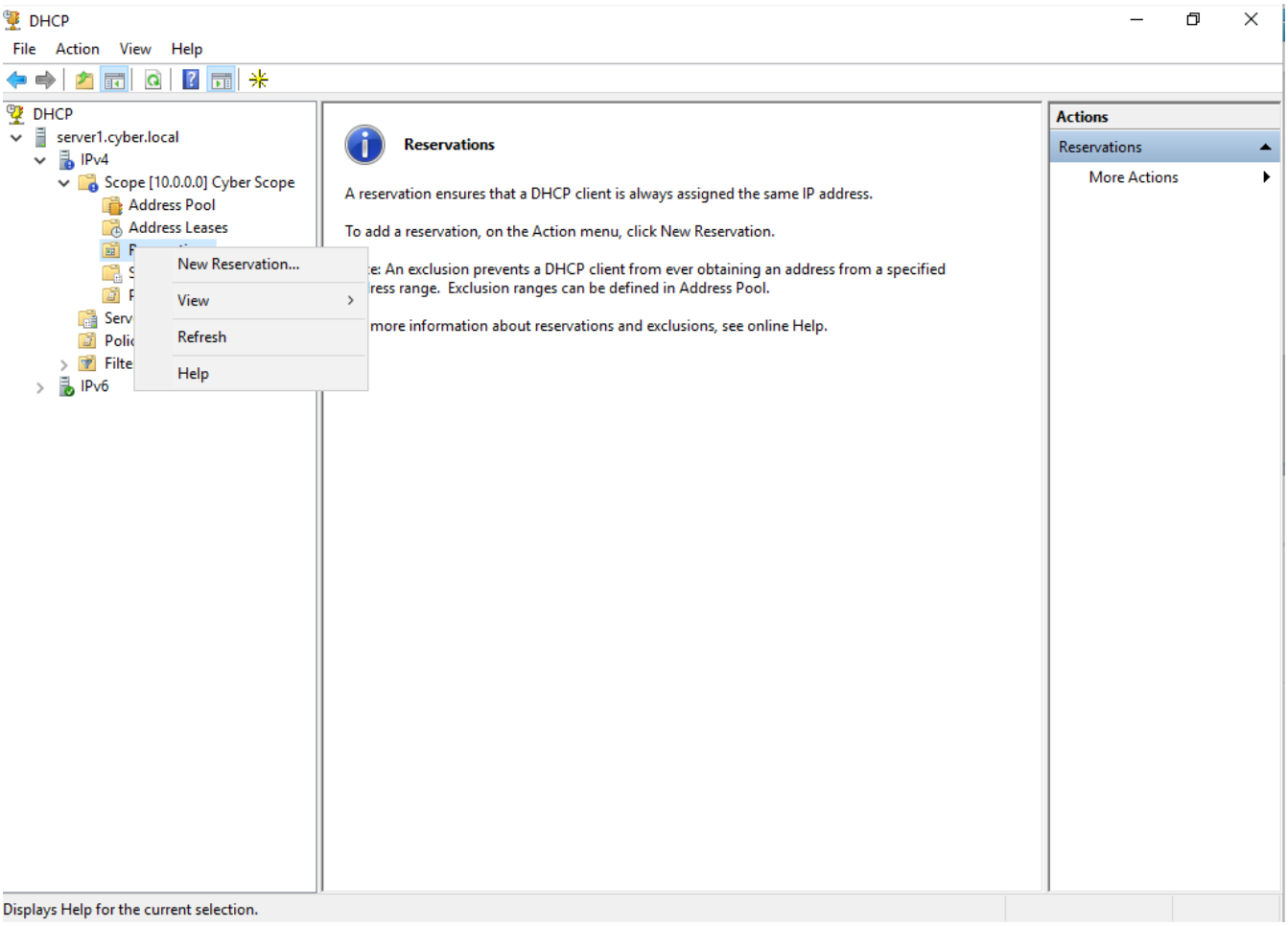
16 Open the command prompt and run the ***ipconfig /all*** command to determine if the DHCP server assigned an IP address to the client. *Note the **physical address**, or **MAC address**, in the green box below is **08002752A2CD (yours may be different)**. You will need this when you configure the DHCP reservation in Step 19.*



17 Go to the DHCP server and view address leases. In the DHCP console, go to ***IPv4*** > ***Scope*** > ***Address Leases***, and view the client's lease settings.



18 Open the DHCP management tool, click your scope to expand it, and right-click ***Reservations*** to create a new reservation.



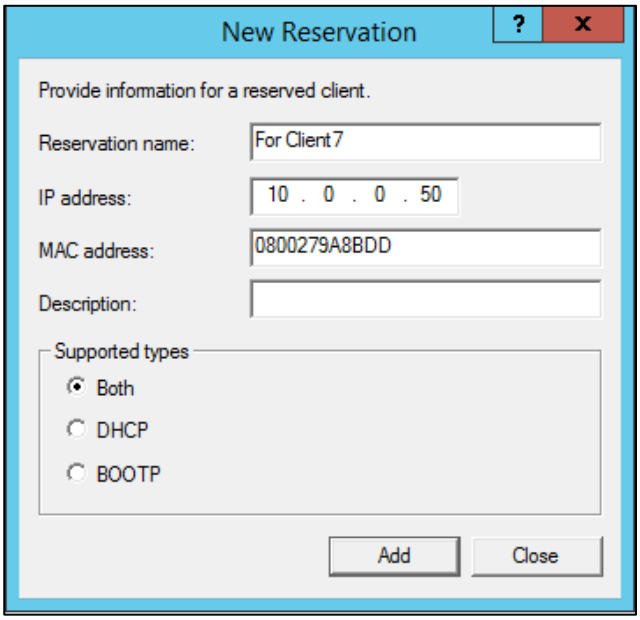
19 Configure the DHCP reservations for the client with the name **For Client7**, as follows:

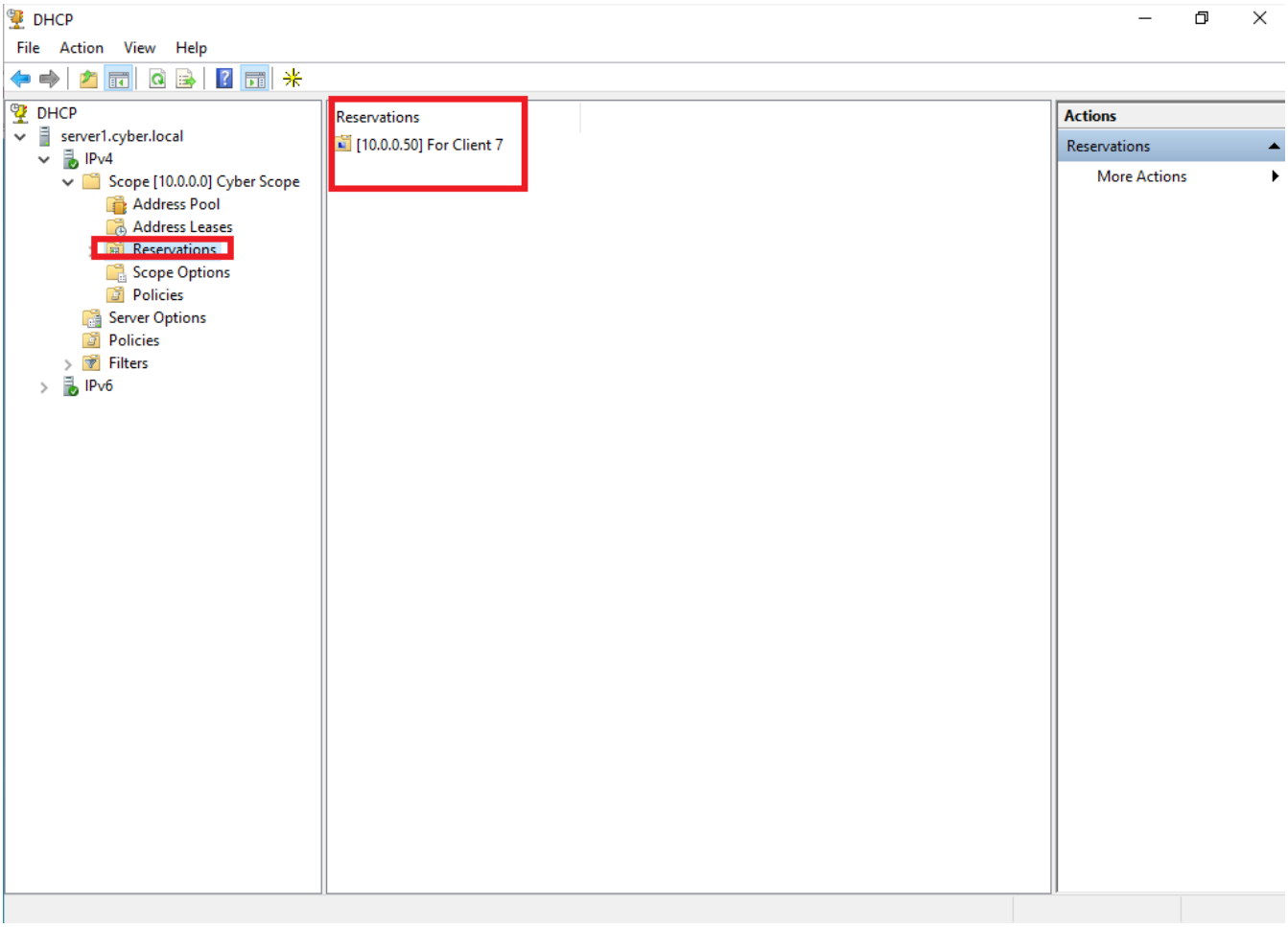
IP address: ***10.0.0.50***

MAC address: **Refer to Step 16 and use your Physical/MAC address, which may be different**.

Description: Optional

Support types: Select ***Both***




DHCP
File Action View Help
DHCP
server1.cyber.local
IPv4
Scope [10.0.0.0] Cyber Scope
Address Pool
Address Leases
Reservations
Scope Options
Policies
Server Options
Policies
Filters
IPv6
Reservations
[10.0.0.50] For Client 7
Actions
Reservations
More Actions

20 Check the client settings to verify the reservations by requesting the IP again using ***ipconfig /renew***. **Note:** If you receive an error message, try ***ipconfig*** instead. The system may have already assigned the reservation.