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Cert Guide

Learn, prepare, and practice for exam success

MCSA 70-741

Networking with Windows Server 2016

PEARSON IT CERTIFICATION

You can initiate the database restoration process from the DHCP console by right-clicking the DHCP server and then clicking Restore or by using the PowerShell cmdlet **Restore-DhcpServer**. During the restoration, process the DHCP Server service is automatically restarted.

Key Topic

Moving a DHCP Database

You might have to move the DHCP server role to another server (for example, as part of the migration process from Windows Server 2012 R2 to Windows Server 2016). If so, you also need to move the DHCP database to the same target server. This ensures that client leases are retained and reduces the likelihood of client configuration issues.

The steps for moving a DHCP database follow:

Step 1. Back up the DHCP database on the old server.

Step 2. Stop the old DHCP Server service.

Step 3. Copy the DHCP database to the new server and, if necessary, install the DHCP server role.

Step 4. Restore the database.

Step 5. Start the DHCP Server service.

Key Topic

DHCP Server Migration

When you decommission an outdated or old server (for example, Windows Server 2003), you must migrate the services from the old server to a new server. Migrating the DHCP server is not difficult, but you must use command-line utilities to export the DHCP data from the old server to a file and then import the data from that file to the new DHCP server. You can use **netsh** or Windows PowerShell commands to accomplish this. The following list outlines how to migrate a DHCP server.

Step 1. Install the DHCP server role on the computer that will be the new DHCP server.

Step 2. Stop the DHCP service on the current DHCP server.

Step 3. Export the DHCP data from the current server.

Step 4. Copy the DHCP data to the new server (or make it available on the network).

Step 5. Import the DHCP data to the new server.

Use Windows PowerShell to export DHCP data with the **Export-DhcpServer** cmdlet. The following command exports DHCP data from the DHCP server D1 to a file named d1.xml:

```
Export-DhcpServer
-ComputerName D1
-Leases
-File C:\d1.xml
```

DHCP Data Import

Use Windows PowerShell to import DHCP data with the **Import-DhcpServer** cmdlet. The following command imports DHCP data from the DHCP data file D1.xml to the new DHCP server D2:

```
Import-DhcpServer
-ComputerName D2
-Leases
-File C:\export\d1.xml
-BackupPath C:\dhcp\
```

Exporting and Importing DHCP Data with netsh

You also can still use **netsh** commands by opening an elevated command prompt and pressing Enter at the end of each line:

You export DHCP data with **netsh** in this way:

```
Netsh
DHCP
Server D1
Export C:\D1.txt all
```

You import DHCP data with **netsh** as follows:

```
Netsh
DHCP
Server D2
Import C:\D1.txt all
```

DHCP Server Installation

As a first step to implementing a DHCP solution, you need to know how to install and authorize a DHCP server. You can install the DHCP server role by using the following:

- The Add Roles and Features Wizard in Server Manager
- Windows PowerShell (**Add-WindowsFeature** *DHCP*)

The DHCP server role can be installed only on Windows Server operating systems. You can install the DHCP server on a DC, but any server running Windows Server can host the DHCP server (except a Windows Server 2016 Nano Server). For example, a branch office file and print server might also act as the local DHCP server. Local administrative rights are required to perform the installation, and the server must have a static IP address.

Key Topic

TIP A DHCP server cannot be installed on a Windows Server 2016 Nano Server: no Nano Server package is available for a DHCP server.

TIP You should *not* install a DHCP server on an application server, Exchange, or SQL Server.

The following list outlines the main steps of a DHCP server installation process:

Key Topic

Step 1. Install the DHCP server role with Server Manager or PowerShell (**Add-WindowsFeature DHCP -includeManagementTools**).

Step 2. Perform DHCP server post-installation tasks (creating DHCP security groups, restarting DHCP service, authorizing DHCP server in ADDS).

Step 3. Configure the DHCP server settings.

Figure 6-2 shows how to install the DHCP server role with PowerShell.

```
PS C:\> Install-WindowsFeature DHCP -IncludeManagementTools

Start Installation...
    90%
    [oooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooo
```

Figure 6-2 Installing the DHCP Server Role with PowerShell

Figure 6-3 shows a successful DHCP server role installation and verification with PowerShell.

```
PS C:\> Install-WindowsFeature DHCP -IncludeManagementTools

Success Restart Needed Exit Code      Feature Result
------- -------------- ---------      --------------
True    No             Success        {DHCP Server, DHCP Server Tools}

PS C:\> get-windowsfeature DHCP

Display Name                                            Name                       Install State
------------                                            ----                       -------------
[X] DHCP Server                                         DHCP                           Installed
```

Figure 6-3 DHCP Server Role Installation and Verification with PowerShell

Figures 6-4 and 6-5 show the DHCP server post-installation configuration tasks in the Server Manager.

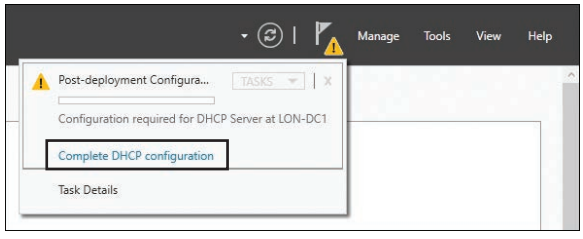

Figure 6-4 DHCP Server Post-installation Tasks (Initial Step)

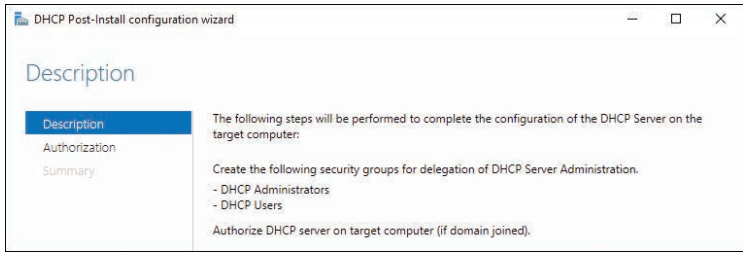

Figure 6-5 DHCP Server Post-Install Configuration Wizard (Description)

Figure 6-6 shows the DHCP Post-Install Configuration Wizard Authorization page. On the Authorization page, you choose the credentials to be used to authorize the DHCP server in ADDS (the user must be a member of the Enterprise Admins security group).

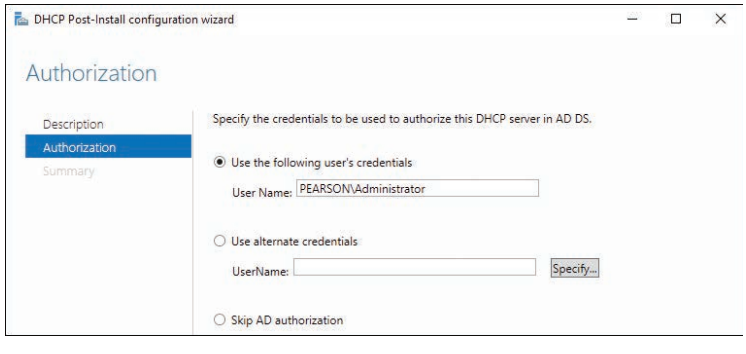

Figure 6-6 DHCP Server Post-Install Configuration Wizard (Authorization)

Figure 6-7 shows the Summary page of the DHCP Post-Install Configuration Wizard.

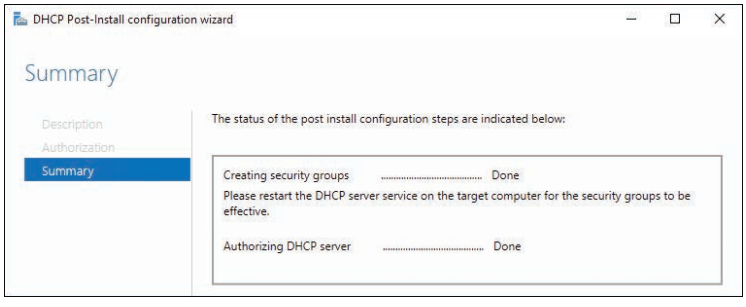

Figure 6-7 DHCP Server Post-Install Configuration Wizard (Summary)

Alternatively, you can authorize a DHCP server through PowerShell (see Figure 6-8).

```
PS C:\> Add-DhcpServerInDC -DnsName LON-DC1
PS C:\> get-dhcpserverinDC

IPAddress               DnsName
---------               -------
172.16.0.10             lon-dc1
```

Figure 6-8 Authorize and Verify Successful DHCP Server Authorization with PowerShell

You also can authorize a DHCP server through the DHCP Manager (see Figures 6-9 and 6-10).

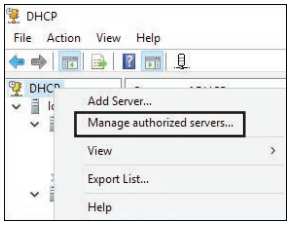

Figure 6-9 DHCP Manager: Manage Authorized Servers

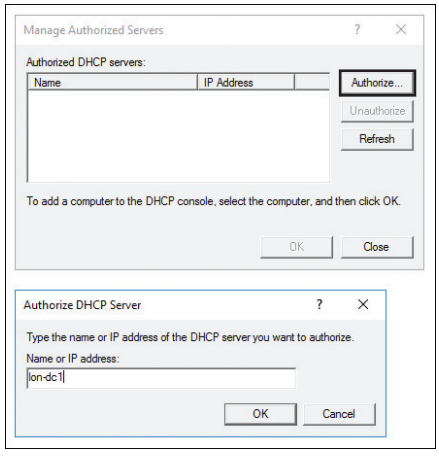

Figure 6-10 Authorize DHCP Server Through the DHCP Manager

You can verify which DHCP servers are authorized in ADDS through the DHCP Manager and the Manage Authorized Servers window (see Figure 6-11).

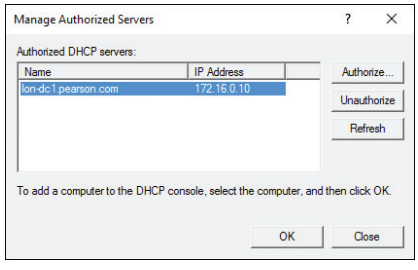

Figure 6-11 Verifying Authorized DHCP Servers in the DHCP Manager

You also can verify that your DHCP server is successfully authorized in ADDS through the DHCP Manager. When you see the green check marks by IPv4 and IPv6, as in Figure 6-12, you know that the DHCP server is authorized.

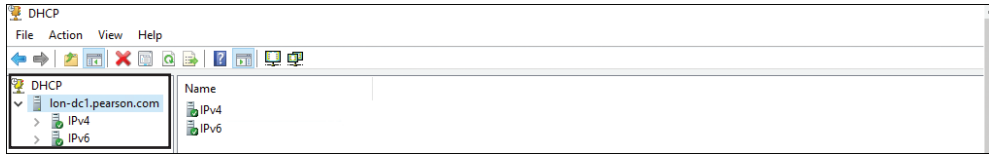

Figure 6-12 DHCP Manager Green Check Marks by IPv4 and IPv6