How to Configure Windows DHCP Log

V012

2025/08/14

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Contents

Preface

This document describes how N-Reporter users can configure Windows DHCP logging using the open-source tool NXLog.

NXLog converts Windows DHCP logs into syslog format and forwards them to N-Reporter for normalization, auditing, and analysis.

This document applies to Windows Server 2003, 2008, 2012, 2016, 2019, and 2022.

Note: This document is provided solely as a reference for configuring log output. It is recommended that you contact the device or software vendor for assistance with the appropriate log export methods.

1. NXLog

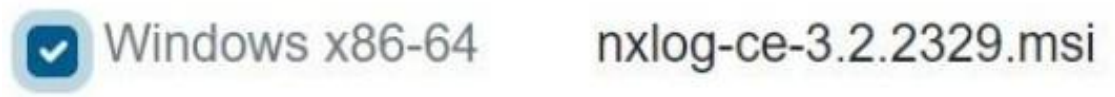
1.1 NXLog Installation

(1) Download NXLog CE (Community Edition)

Please go to: https://nxlog.co/products/nxlog-community-edition/download

Download the latest version of nxlog-ce-x.x.xxxx.msi.

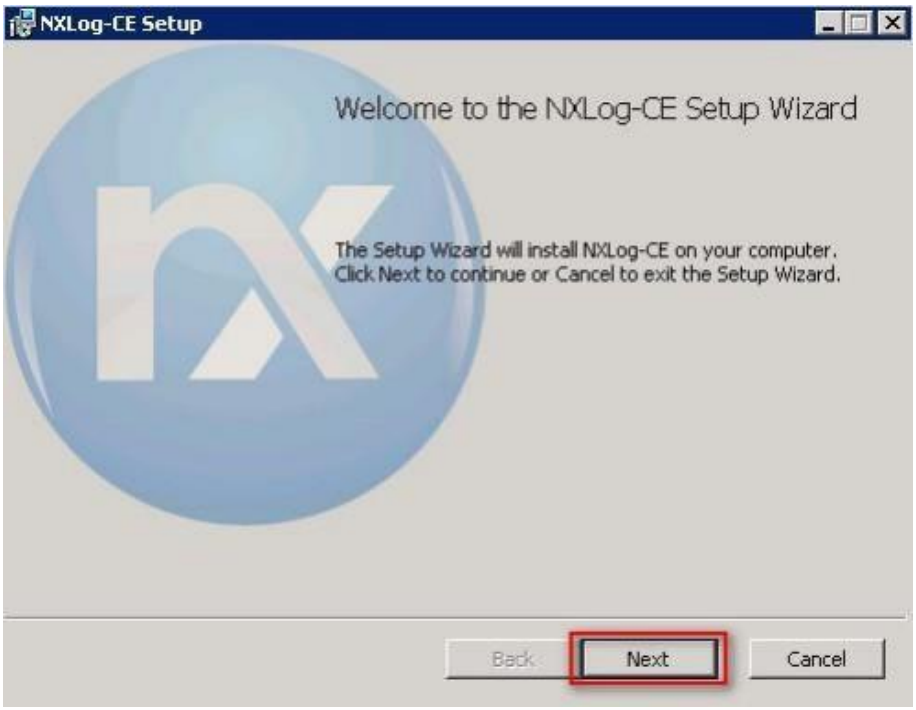
Example Here: **nxlog-ce-3.2.2329.msi**



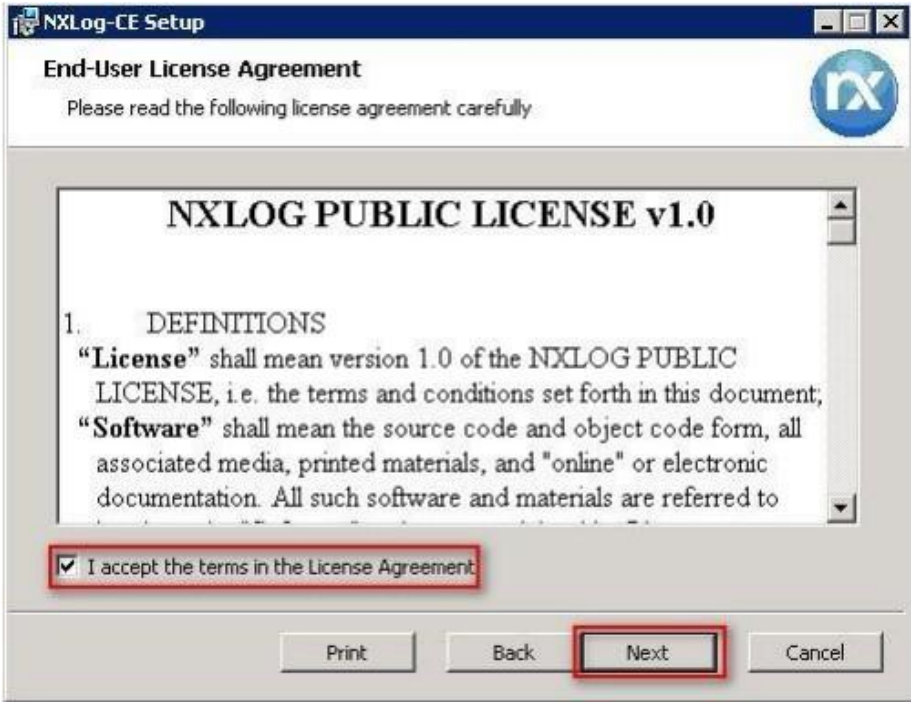
(2) Install NXLog

<2.1> For Windows Server **2008** or later:

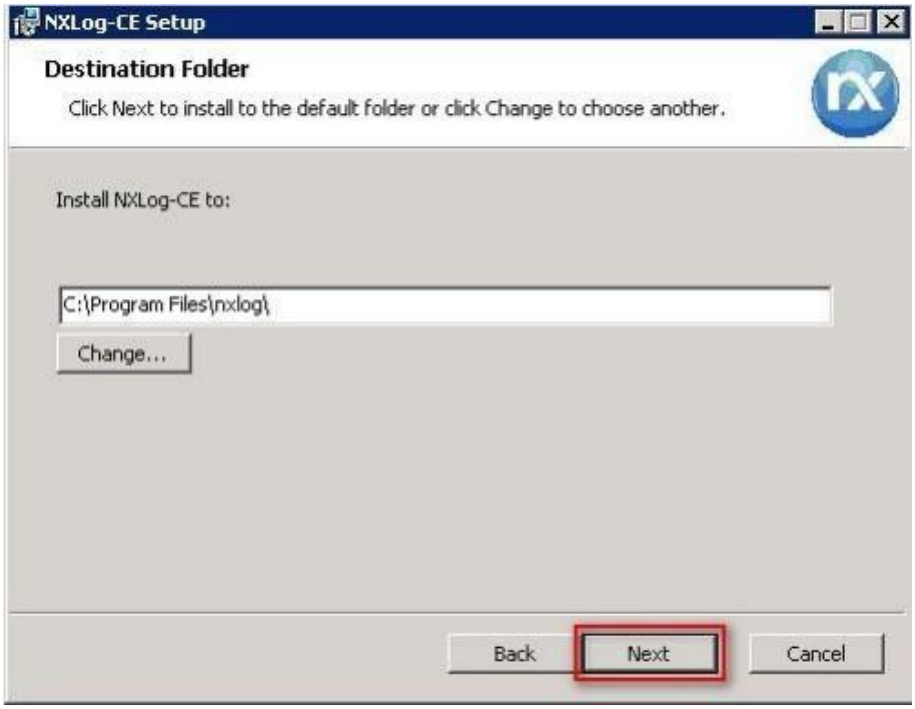
Double-click "**nxlog-ce-3.2.2329.msi.**"



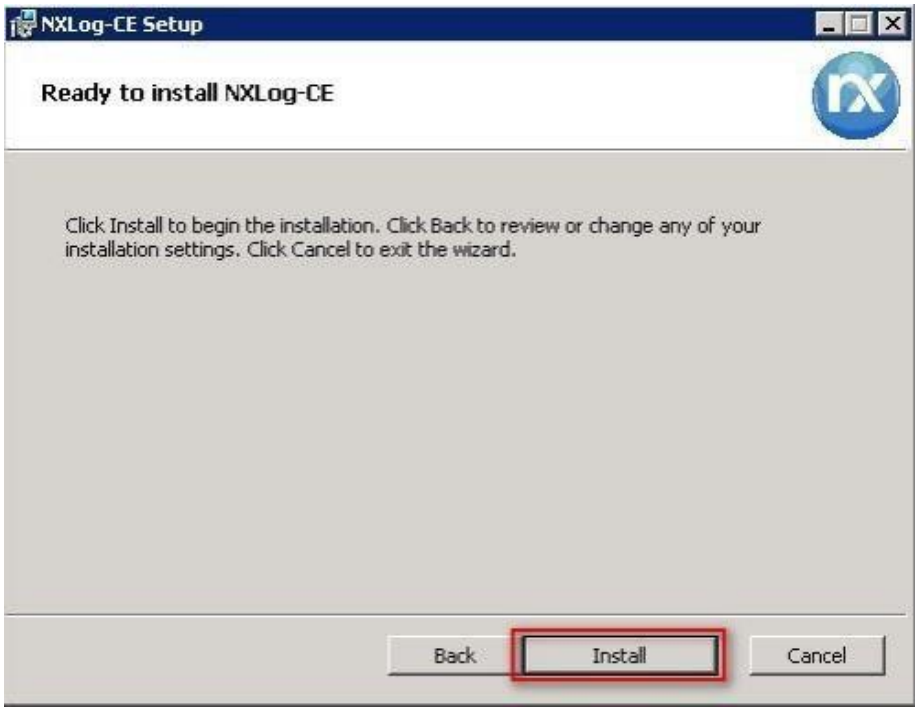
(3) Select “I accept the terms in the License Agreement,” then click “Next.”



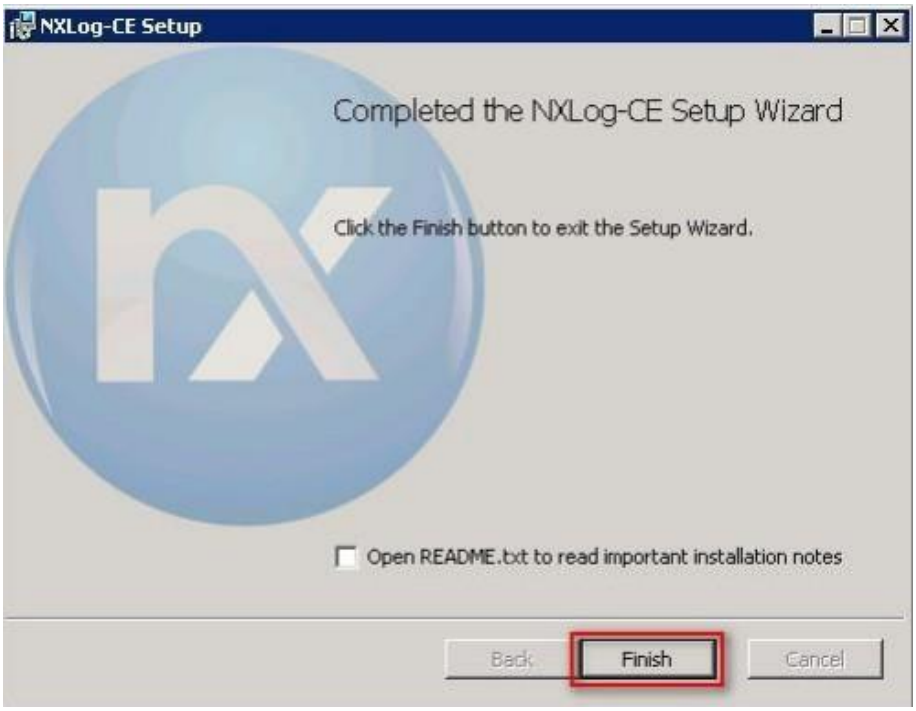
(4) Click “Next.” (The default installation path is (C:\Program Files\nxlog\).



(5) Click “Install.”

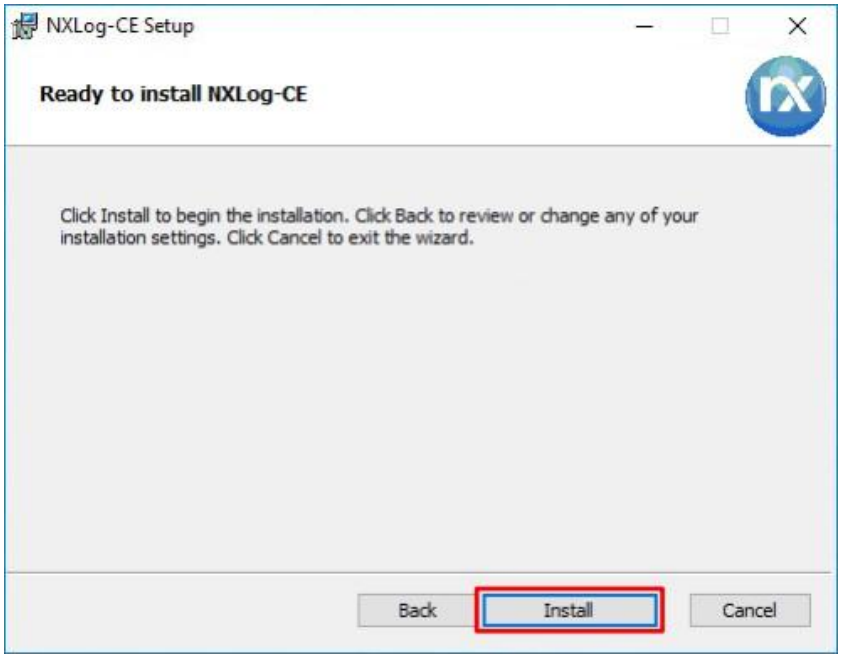


(6) Click “Finish.”



<2.2> For Windows Server **2003**:

Download File: **nxlog-ce-3.2.2329.msi.** → Select “Install” and proceed until the installation completes. → Click “Finish” to exit.

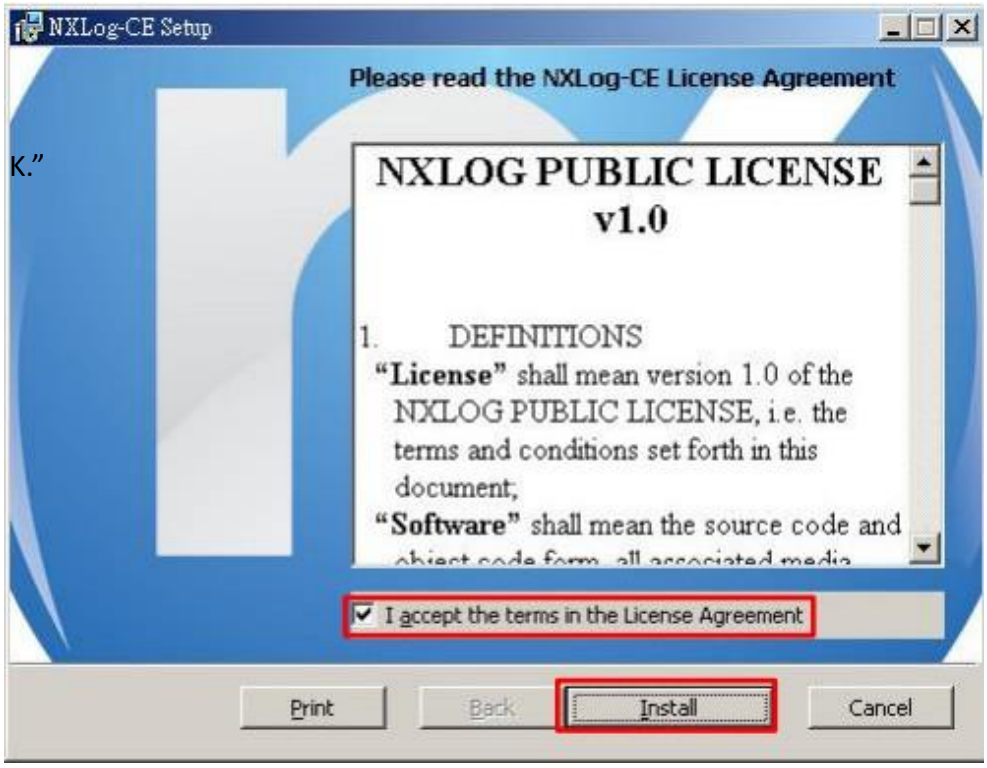


<2.3> For Windows **2000**:

(1) Navigate to the NXLog CE legacy download page:https://sourceforge.net/projects/nxlog-ce/

(2) Click “See All Activity” and download the Windows 2000–compatible version “/**nxlog-ce-2.8.1248.msi**.”

(3) Launch “**nxlog-ce-2.8.1248.msi**,” and accept the license terms, click “**Install**,” and then “**Finish**.”



K.”

1.2 Download NXLog Configuration File

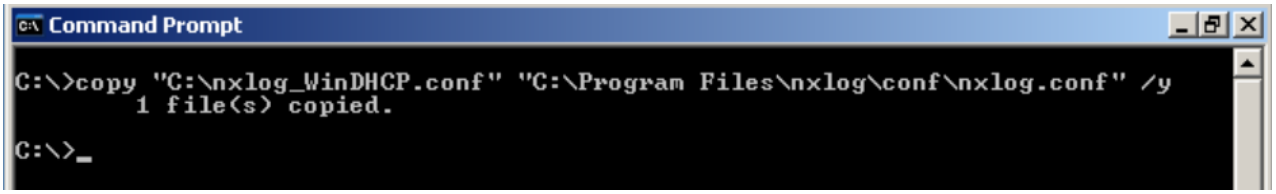
1.2.1 For Windows Server 2003 or earlier:

(1) Open “Command Prompt.”

(2) Download the “NXLog DHCP configuration file” and overwrite the existing NXLog configuration file in the Windows system.

Download link: http://www.npartner.com/download/tech/nxlog_WinDHCP.conf

```
C:\> copy "C:\nxlog_WinDHCP.conf" "C:\ Program Files \nxlog\conf\nxlog.conf" /y
```



Note: The example above is for a 64-bit operating system. For a 32-bit operating system, replace the highlighted text with: **'C:\ Program Files (x86)\nxlog\conf\nxlog.conf'**

1.2.2 For Windows Server 2008 or later

(1) Open “Windows PowerShell.”

(2) Download the “NXLog DHCP configuration file” and overwrite the existing NXLog configuration file in the Windows system.

Download link: http://www.npartner.com/download/tech/nxlog_WinDHCP.conf

```
PS C:\> Invoke-WebRequest -Uri`http://www.npartner.com/download/tech/nxlog_WinDHCP.conf' -
OutFile 'C:\ Program Files\nxlog\conf\nxlog.conf'
```

Note: This example is for a 64-bit operating system. For a 32-bit system, replace the highlighted text with: **'C:\ Program Files(x86)\nxlog\conf\nxlog.conf'**

1.3 NXLog Configuration

```
## Please set the ROOT to the folder your nxlog was installed into, otherwise it will not start.
define NCloud   192.168.8.4
define DhcpPath C:\Windows\System32\LogFiles\DHCP
define ROOT     C:\Program Files\nxlog
define CERTDIR  %ROOT%\cert
define CONFDIR  %ROOT%\conf
define LOGDIR   %ROOT%\data
define LOGFILE  %LOGDIR%\nxlog.log
LogFile %LOGFILE%

Moduledir %ROOT%\modules
CacheDir  %ROOT%\data
Pidfile   %ROOT%\data\nxlog.pid

## Load the modules needed by the outputs
<Extension syslog>
  Module xm_syslog
</Extension>

## For DHCP log file use the following:
<Input in_dhcplog>
  Module       im_file
  File         '%DhcpPath%\Dhcp*.log'
  SavePos      TRUE
  ReadFromLast TRUE
</Input>

<Output out_dhcplog>
  Module om_udp
  Host   %NCloud%
  Port   514
  Exec   $SyslogFacilityValue = 20;
  Exec   to_syslog_bsd();
</Output>

<Route dhcplog>
  Path  in_dhcplog => out_dhcplog
</Route>
```


Please set the ROOT to the folder your nxlog was installed into, otherwise it will not start.

define NCloud 192.168.3.88

define DhcpPath C:\Windows\System32\LogFiles\DHCP

define ROOT C:\Program Files\nxlog

define CERTDIR %ROOT%\cert

define CONFDIR %ROOT%\conf

define LOGDIR %ROOT%\data

define LOGFILE %LOGDIR%\nxlog.log

LogFile %LOGFILE%

Moduledir %ROOT%\modules

CacheDir %ROOT%\data

Pidfile %ROOT%\data\nxlog.pid

Load the modules needed by the outputs

<Extension syslog>

```
Module xm_syslog
</Extension>
## For DHCP log file use the following:
<Input in_dhcplog>
Module im_file
File '%DhcpPath%\Dhcp*.log'
SavePos TRUE
ReadFromLast TRUE
</Input>
<Output out_dhcplog>
Module om_udp
Host %NCloud%
Port 514
Exec $SyslogFacilityValue = 20;
Exec to_syslog_bsd();
</Output>
<Route dhcplog>
Path in_dhcplog => out_dhcplog
</Route>
```

Enter the N-Reporter system IP address in the blue text section.

```
define NCloud 192.168.3.88
```

This example is based on a 64-bit operating system.

For a 32-bit operating system, use the following setting instead:

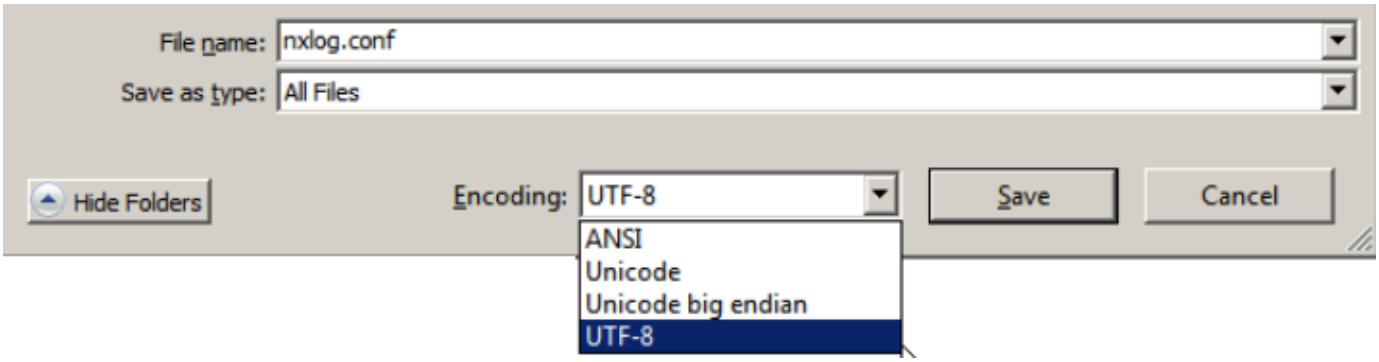
```
define ROOT C:\Program Files (x86)\nxlog
```

If NXLog cannot access the System32 folder path, specify “Sysnative”.

Sysnative is a redirected folder:

```
define DhcpPath C:\Windows\Sysnative\LogFiles\DHCP
```

Note: After modifying the configuration file, save it as a new file to overwrite the original. For Save as type, select “All Files (*.*)”. For Encoding, select UTF-8 to avoid encoding errors that could prevent the service from starting.



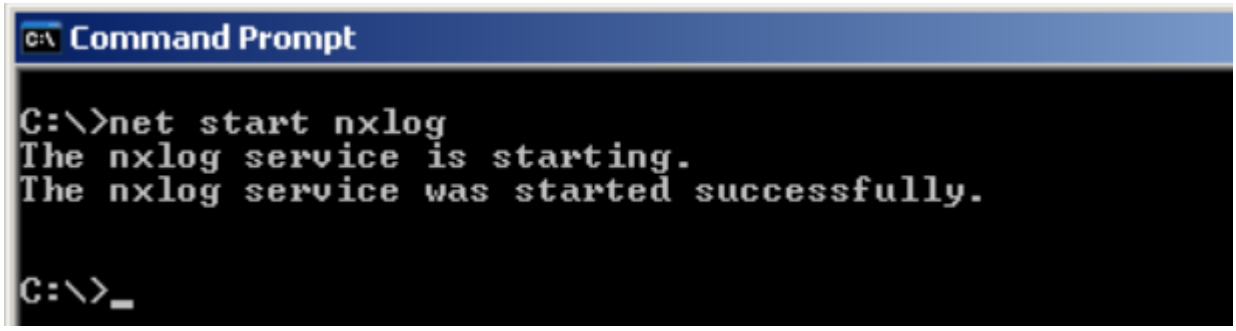
1.4 Starting the NXLog Service

1.4.1 For Windows Server 2003 or earlier

(1) Open “Command Prompt.”

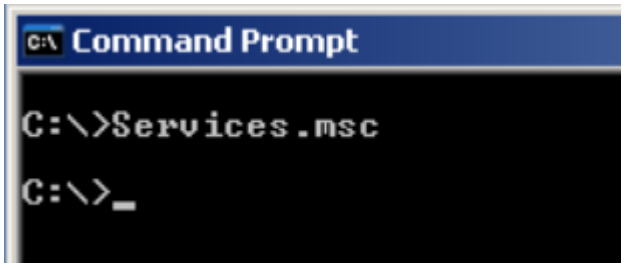
(2) Start the NXLog service and verify that there are no error messages:

```
C:\> net start nxlog
C:\> type "C:\Program Files\nxlog\data\nxlog.log"
```

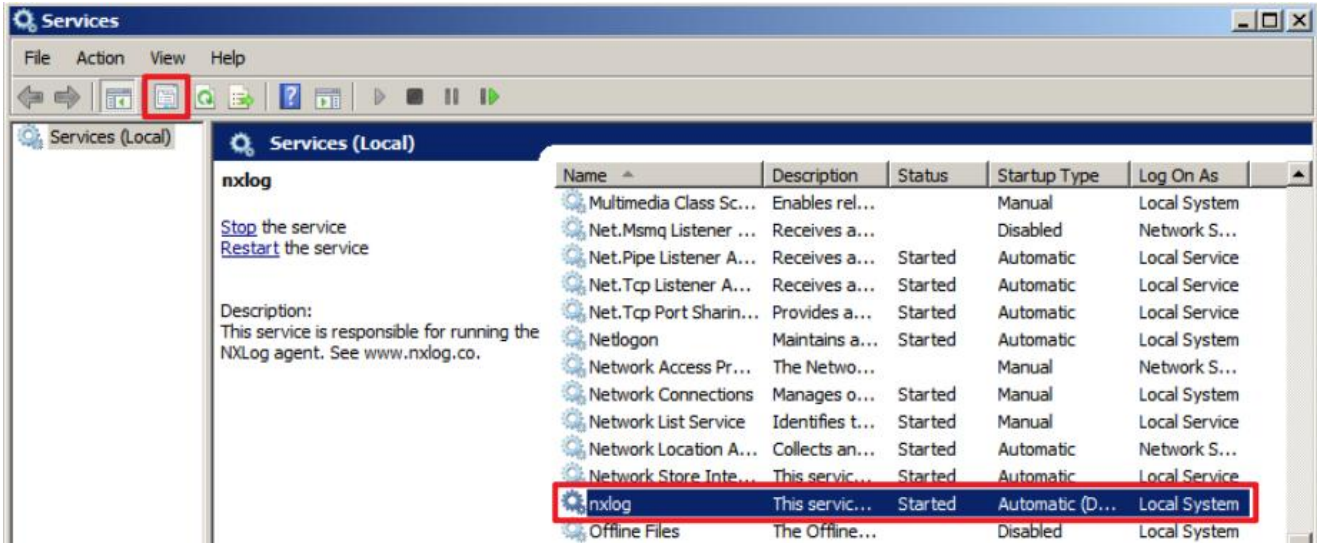


(3) Enter the command below to open the **Services** console:

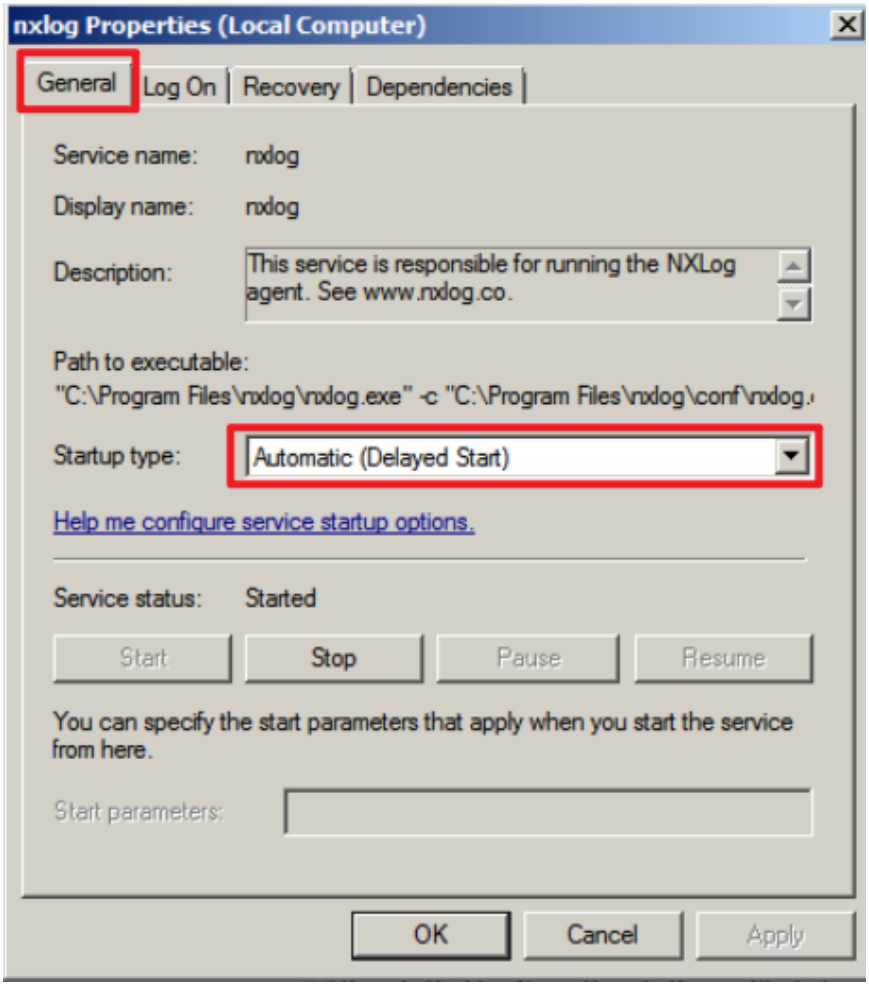
```
C:\> Services.msc
```



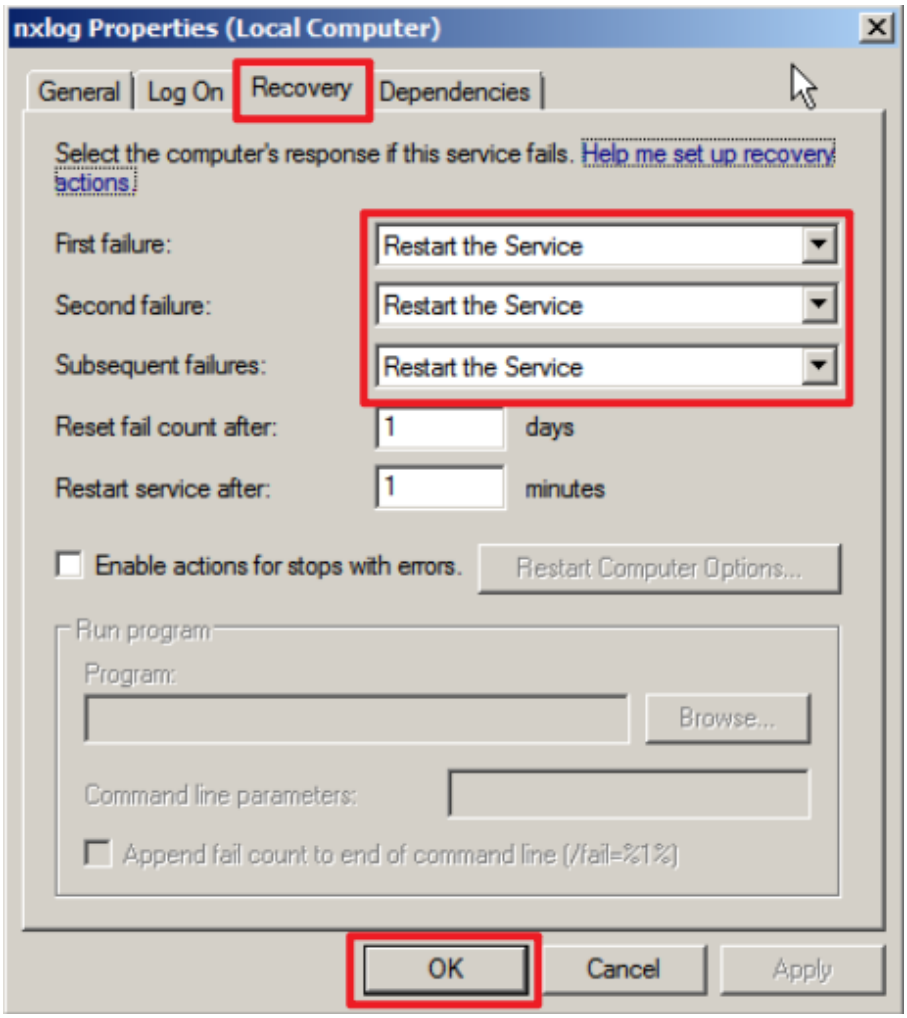
(4) Open the NXLog service properties: select “NXLog” → Click “Properties.”



(5) On the General tab, verify that Startup type is set to Automatic (Delayed Start).



(6) On the Recovery tab, verify that First failure, Second failure, and Subsequent failures are all set to "Restart the Service", then click "OK."

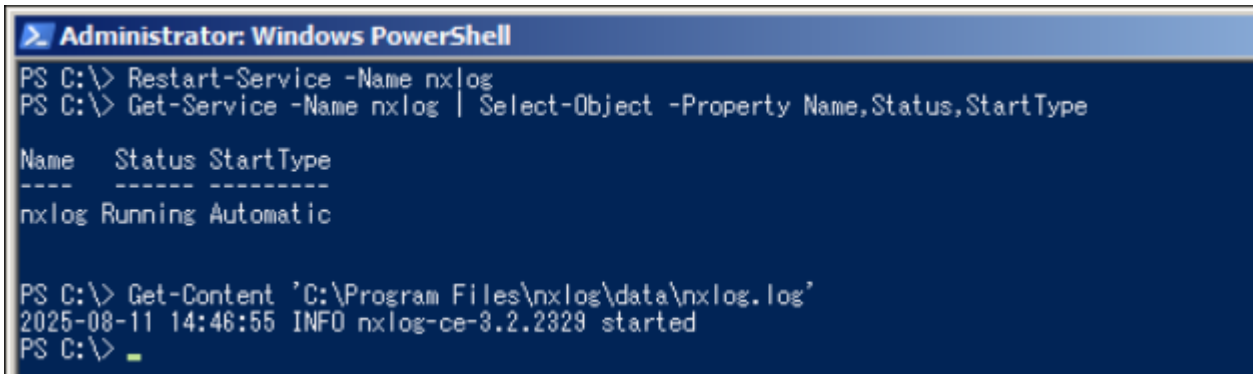


1.4.2 For Windows Server 2008 or later

(1) Open “Windows Powershell.”

(2) Restart the NXLog service, verify that it is running, and ensure there are no error messages:

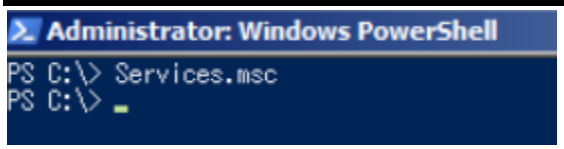
```
PS C:\> Restart-Service -Name nxlog
PS C:\> Get-Service -Name nxlog | Select-Object -Property Name,Status,StartType
PS C:\> Get-Content 'C:\ Program Files\ nxlog\data\nxlog.log'
```



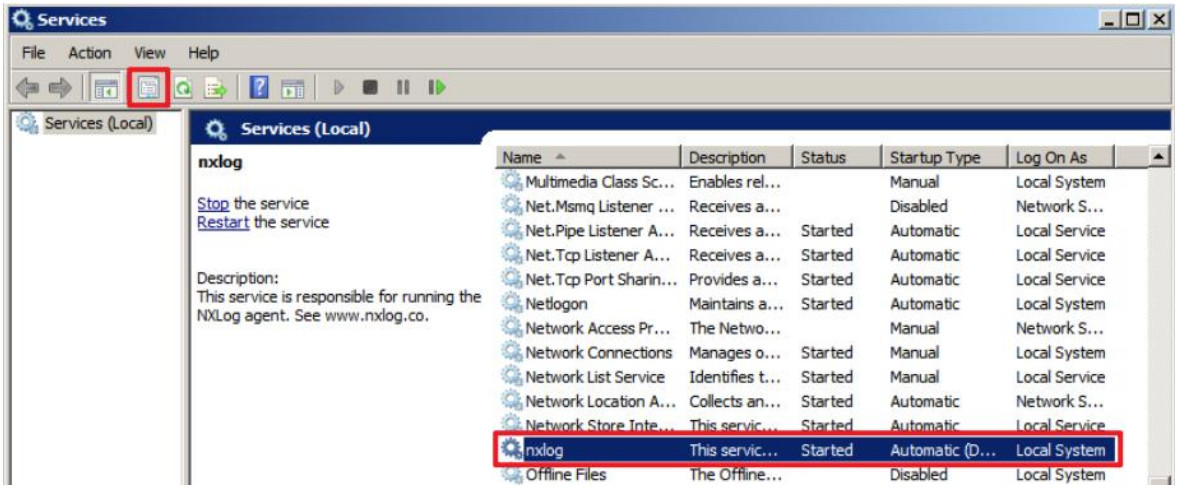
Note: This example is for a 64-bit operating system. For a 32-bit system, replace the highlighted text with: **'C:\Program Files(x86)\nxlog\conf\nxlog.conf'**

(3) Enter the command below to open the **Services** console:

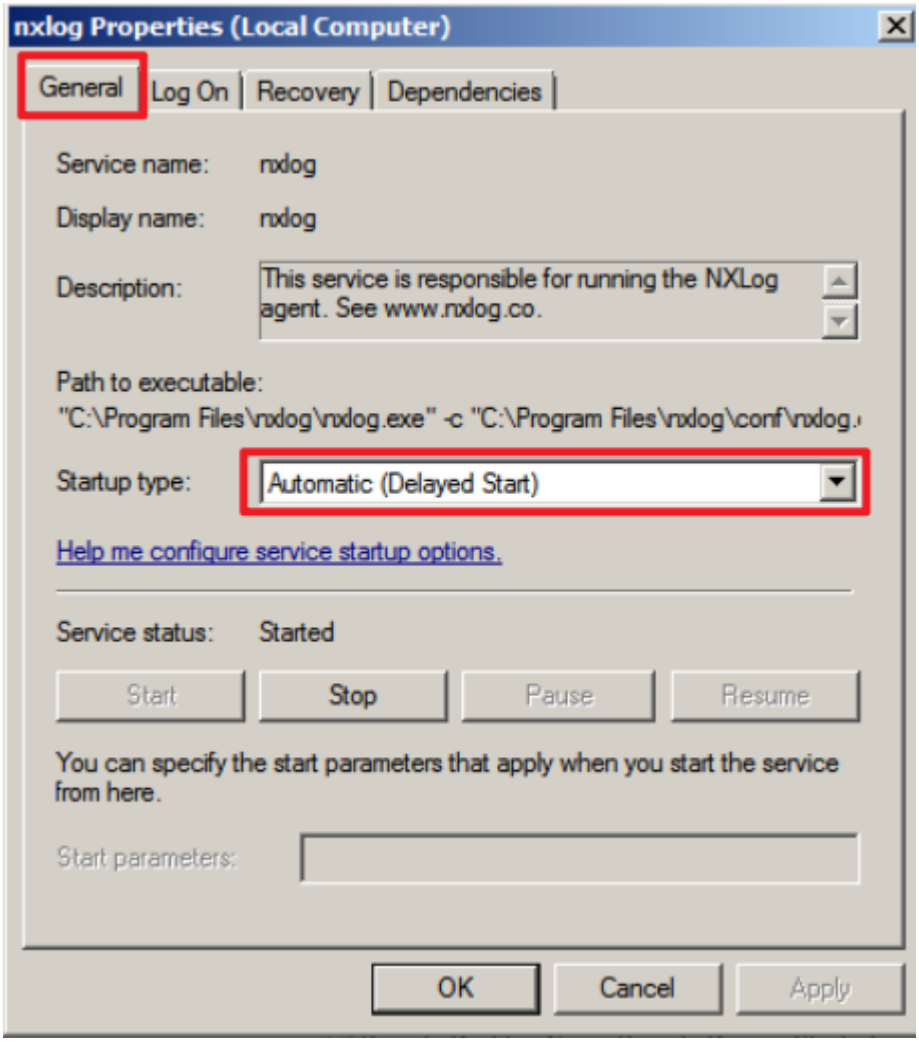
```
PS C:\> Services.msc
```



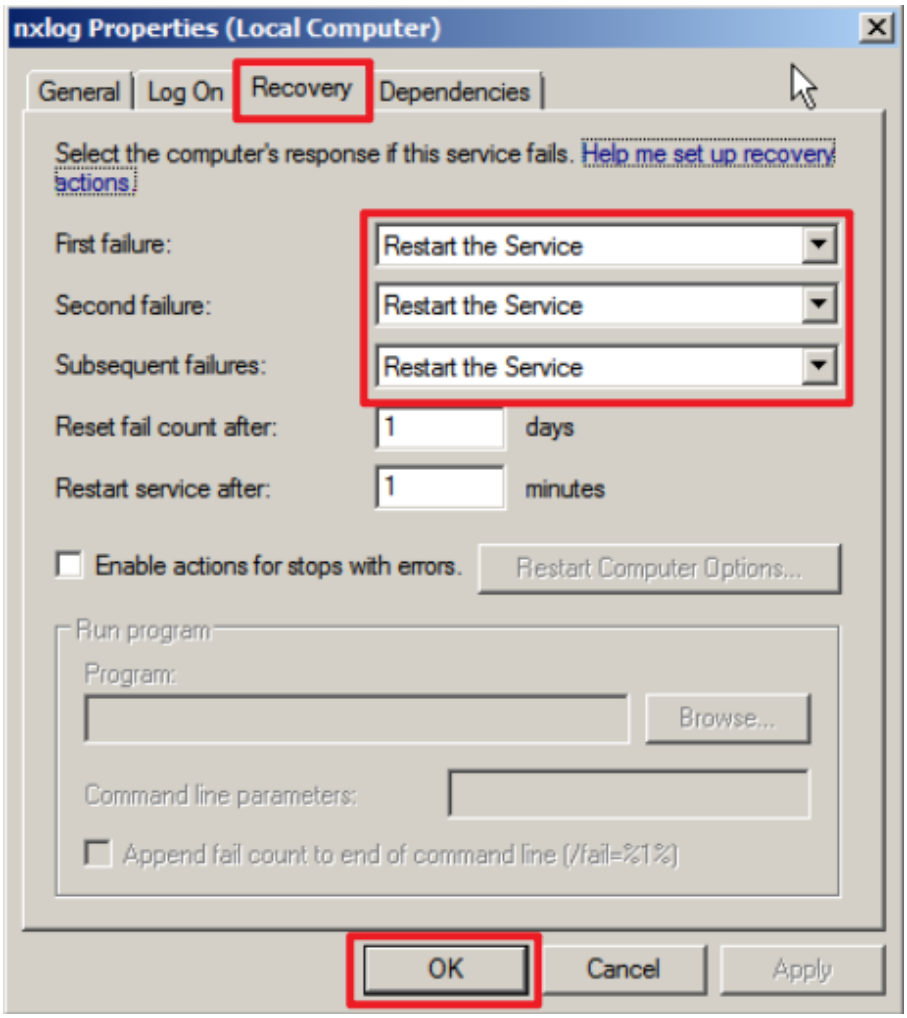
(4) Open the NXLog service properties: select “NXLog” →  Click “Properties.”



(5) On the General tab, verify that Startup type is set to Automatic (Delayed Start).



(6) On the Recovery tab, verify that First failure, Second failure, and Subsequent failures are all set to "Restart the Service", then click "OK."

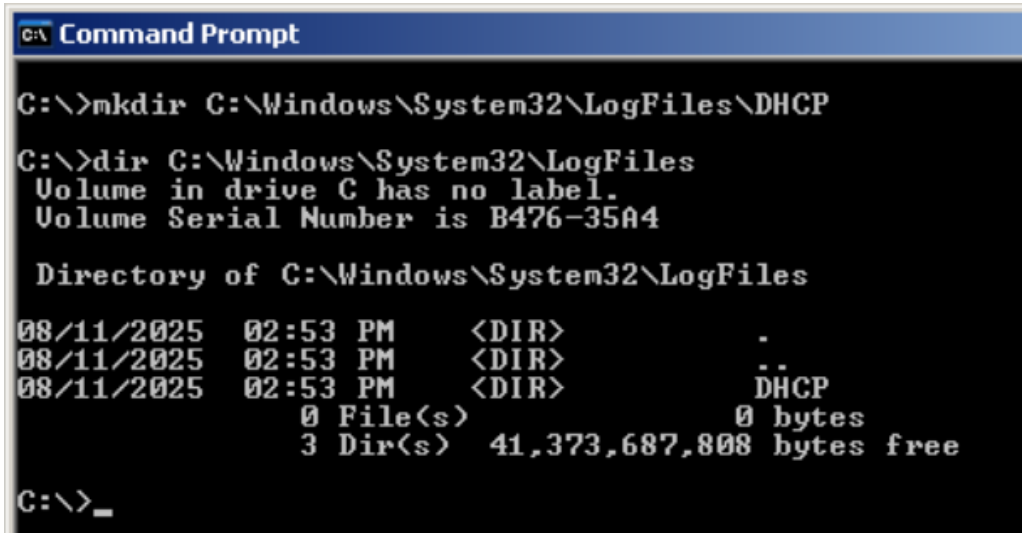


2. Windows Server 2003

(1) Open “Command Prompt.”

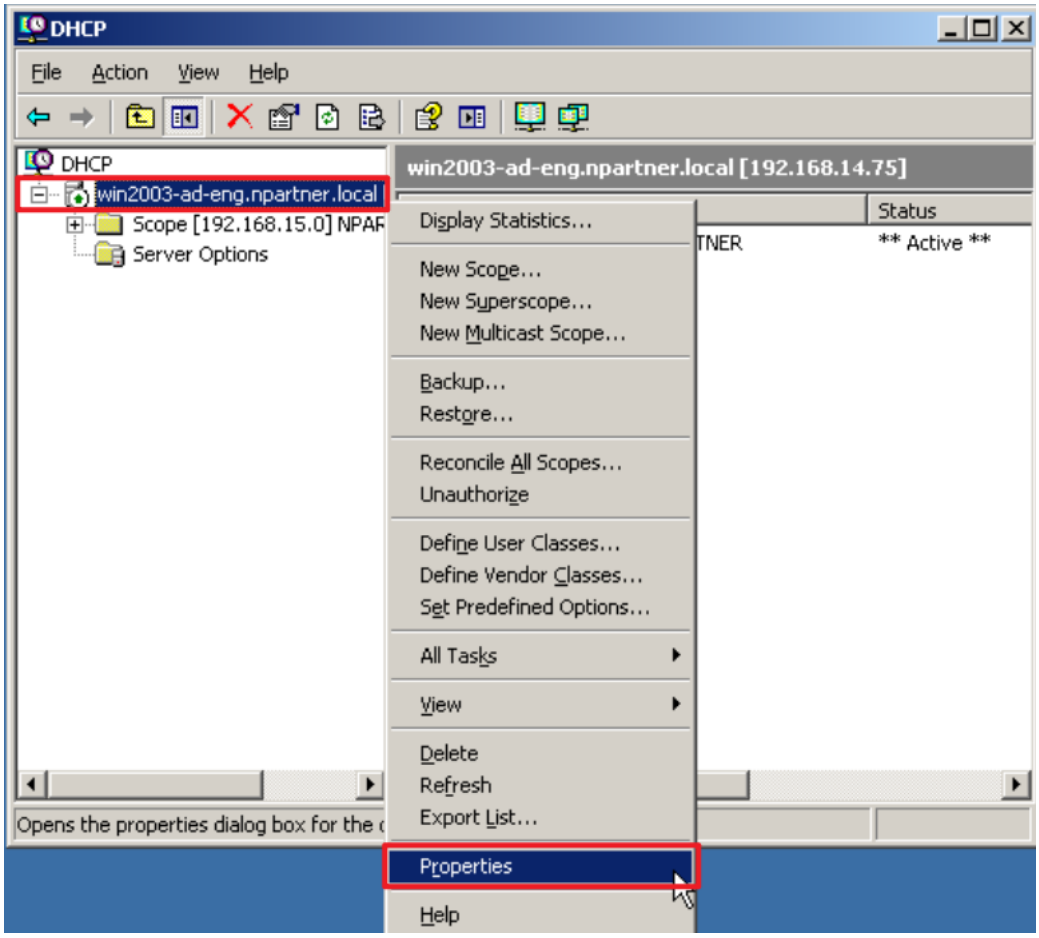
(2) Enter the command below to create the DHCP log folder:

```
C:\> mkdir C:\Windows\System32\LogFiles\DHCP
C:\> dir C:\Windows\System32\LogFiles
```

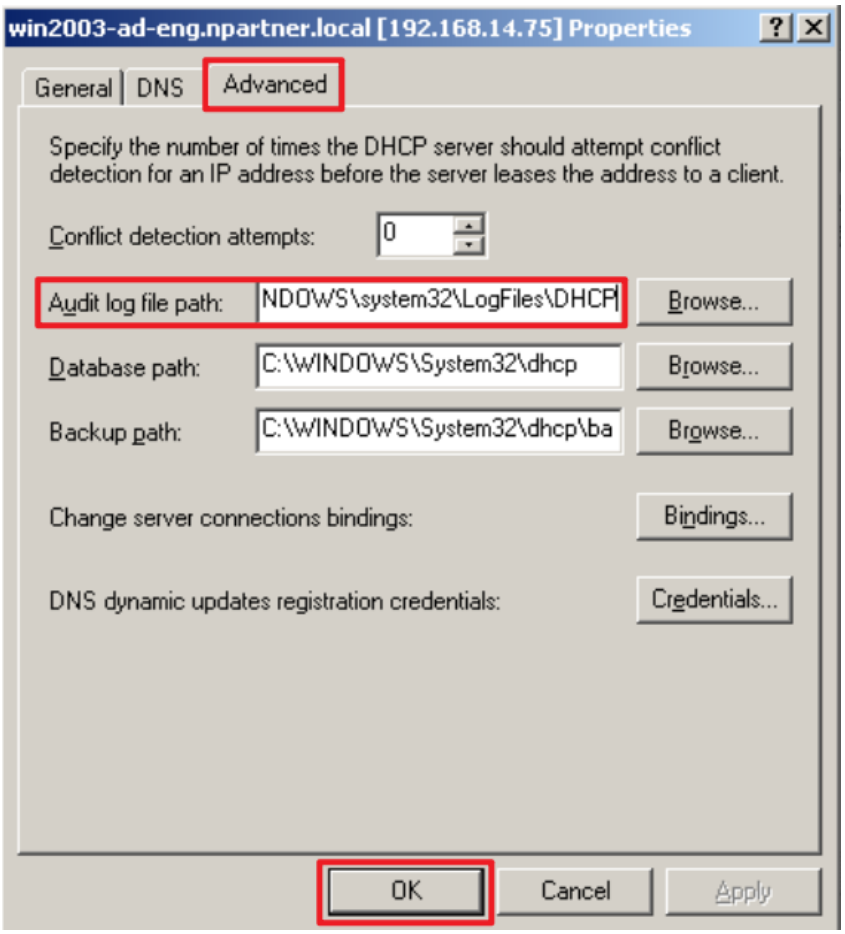


(3) Open DHCP.

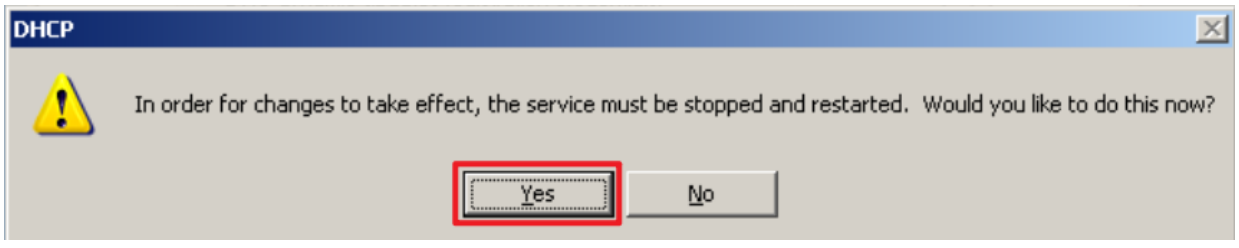
(4) Right-click “DHCP Server” (the example here is **win2003-ad-eng.npartner.local**) → select “Properties.”



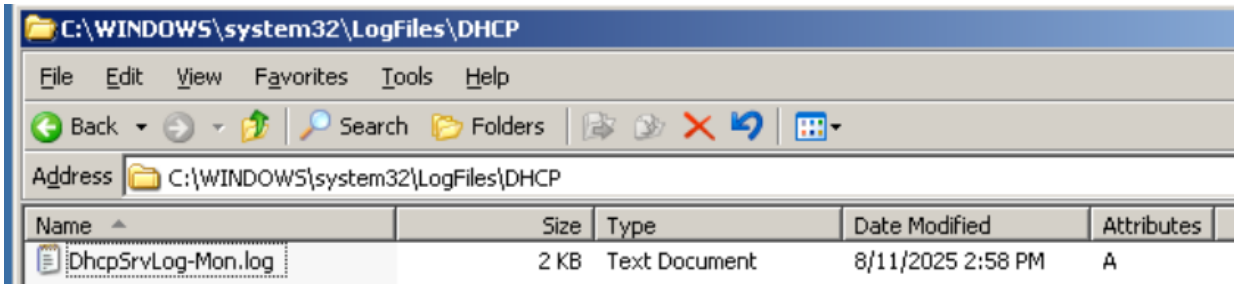
(5) On the Advanced tab, enter the audit log file path: **C:\Windows\System32\LogFiles\DHCP** and click "OK."



(6) Click "Yes" to restart the DHCP Server service.



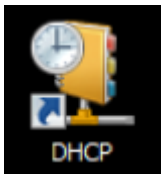
(7) Verify that the file Dhcp.log has been generated.



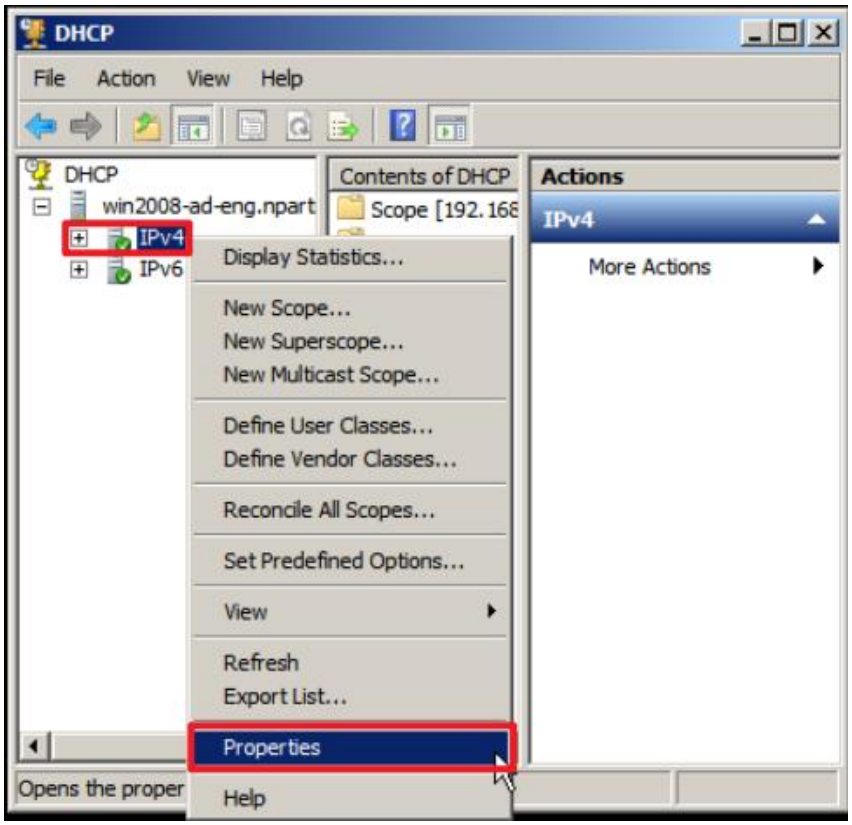
3. Windows Server 2008

3.1 DHCP IPv4

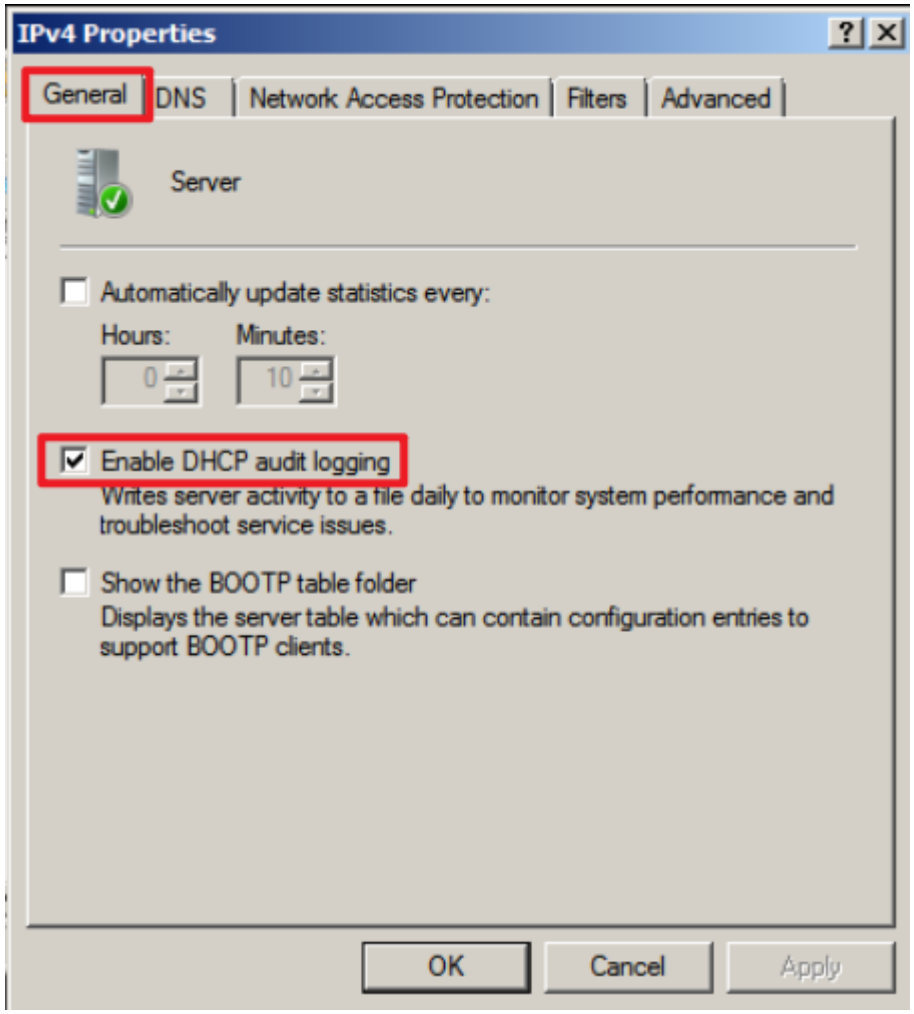
(1) Open **DHCP**.



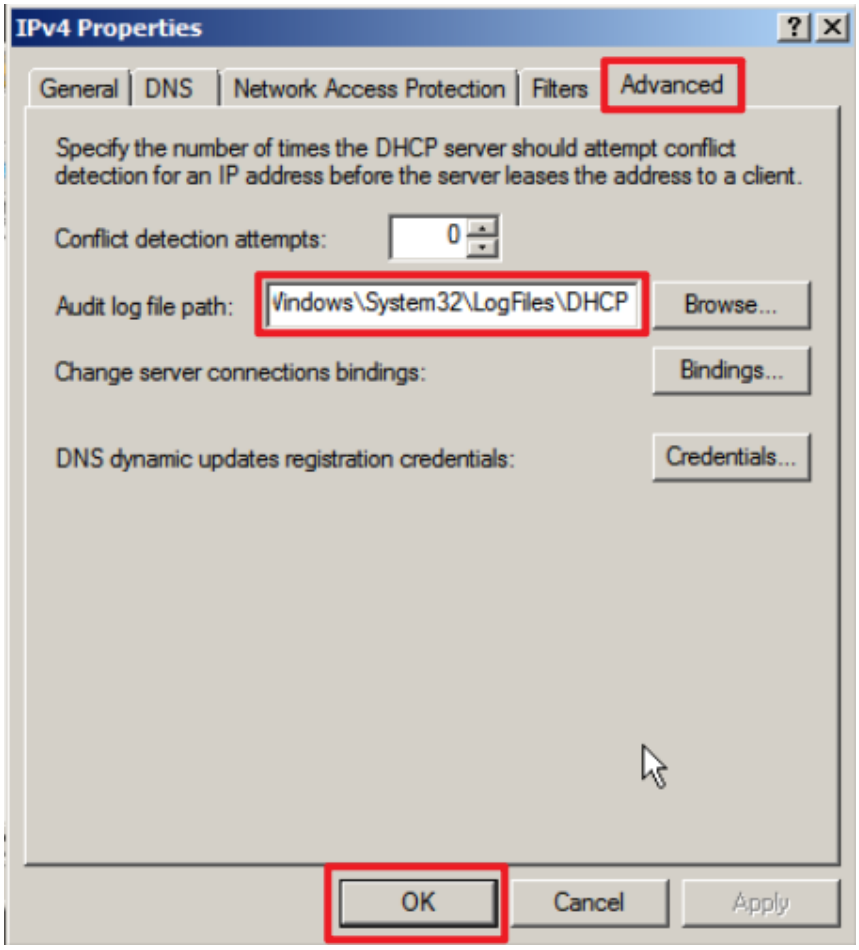
(2) Right-click “IPv4” → select “Properties.”



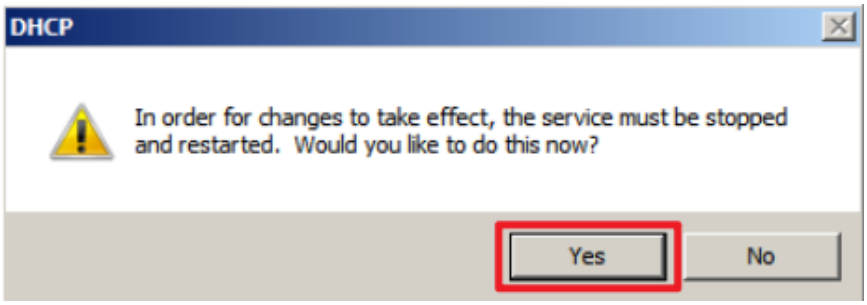
(3) On the General tab, verify that “Enable DHCP audit logging” is selected.



(4) On the Advanced tab, enter the audit log file path: **C:\Windows\System32\LogFiles\DHCP** and click "OK."

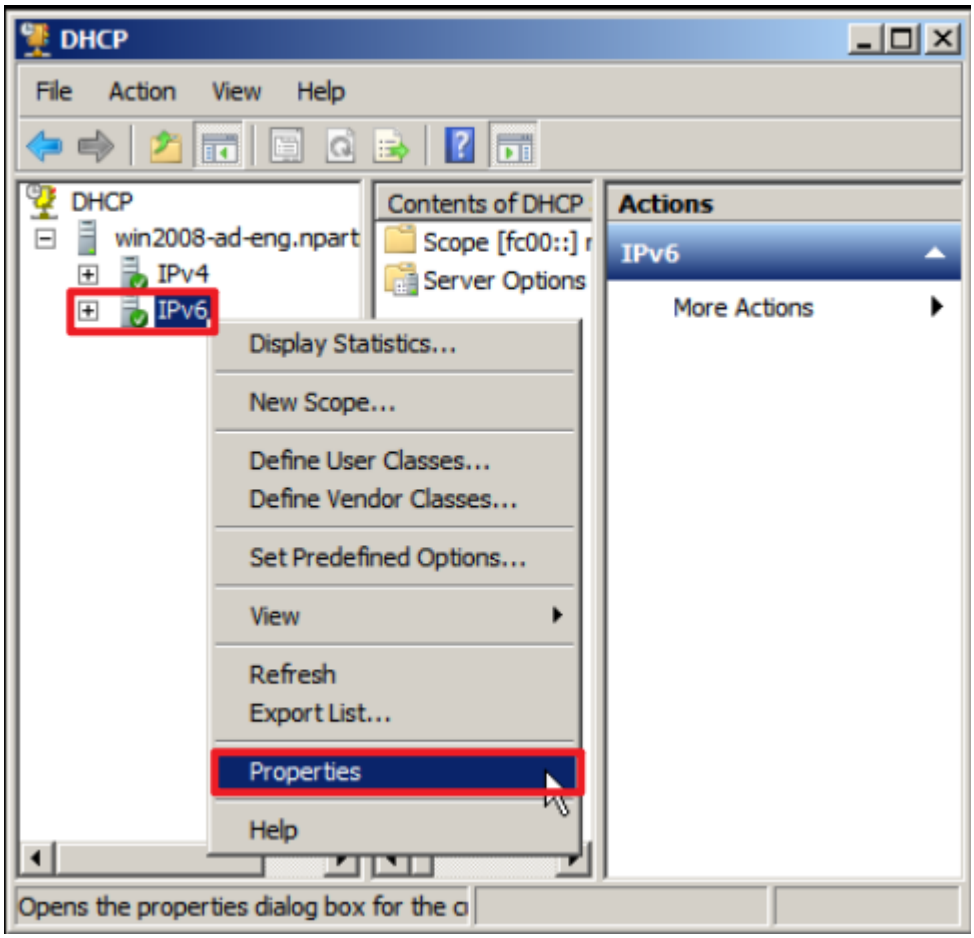


(5) Click "Yes" to restart the DHCP Server service.

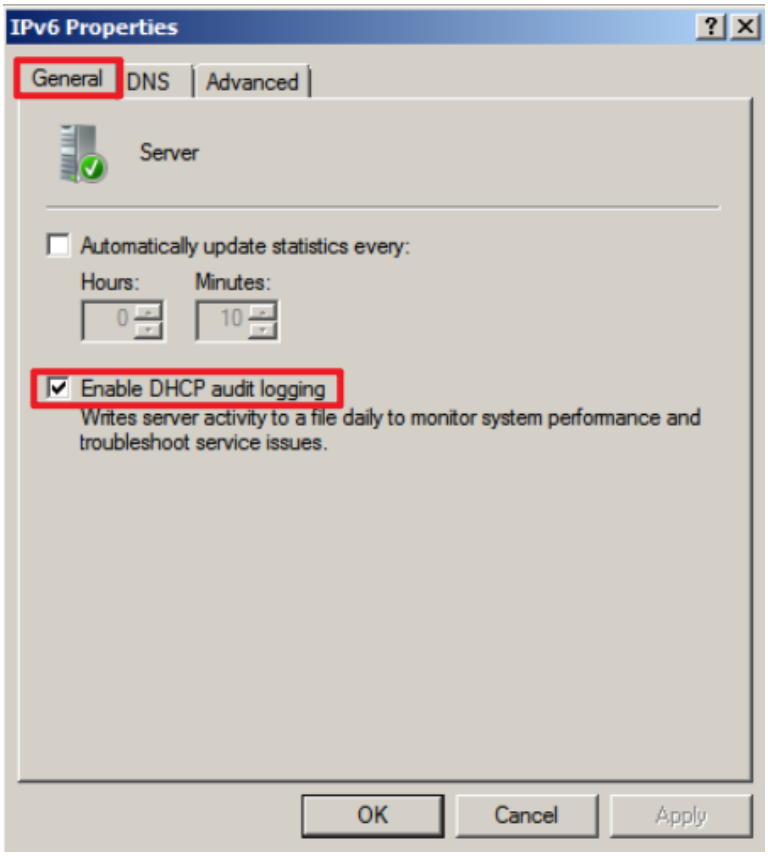


3.2 DHCP IPv6

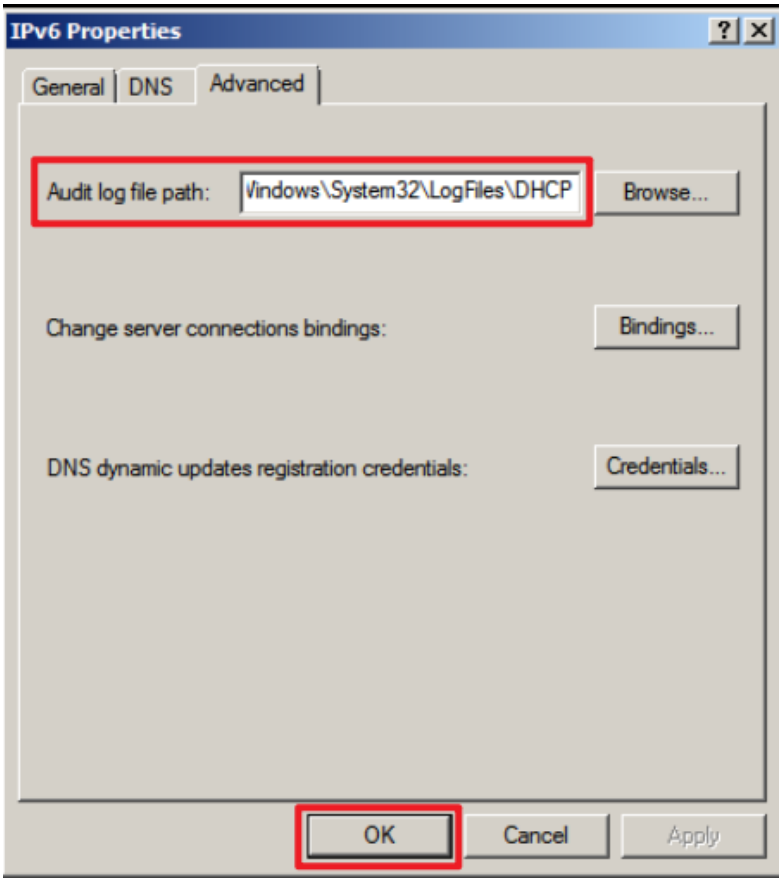
(1) Right-click “IPv6” → select “Properties.”



(2) On the General tab, verify that “Enable DHCP audit logging” is selected.



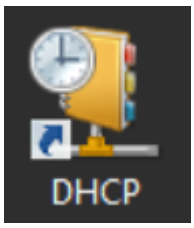
(3) On the Advanced tab, enter the audit log file path: **C:\Windows\System32\LogFiles\DHCP** and click “OK.”



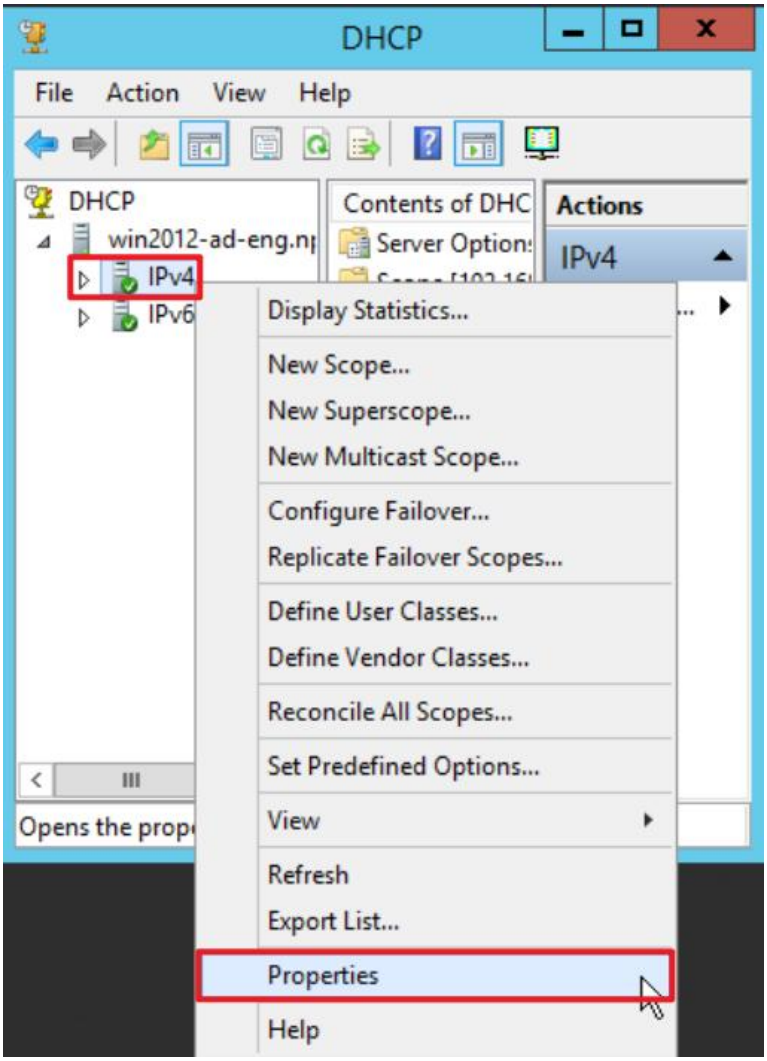
4. Windows Server 2012

4.1 DHCP IPv4

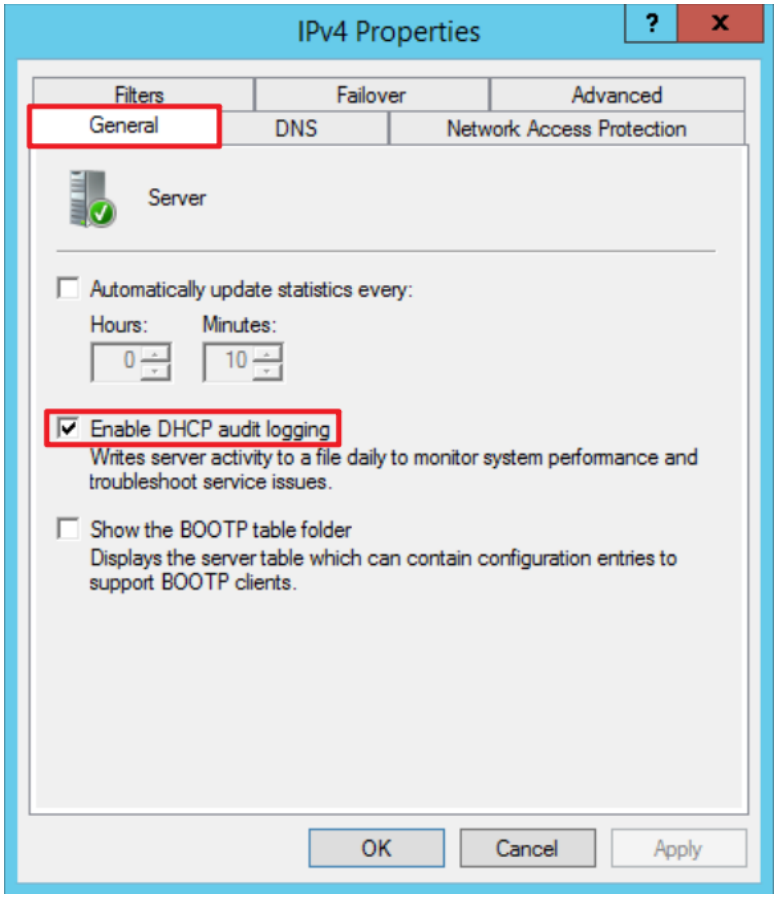
(1) Open DHCP.



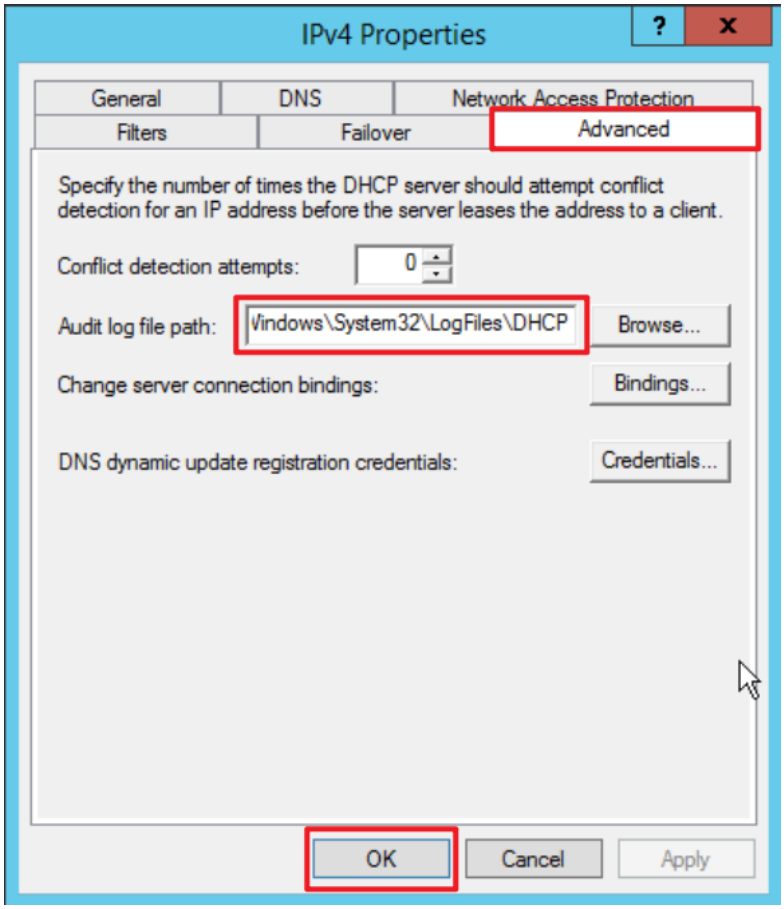
(2) Right-click “IPv4” → select “Properties.”



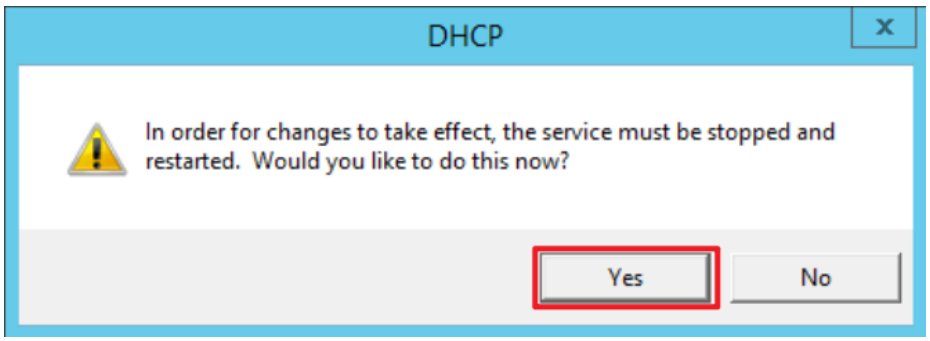
(3) On the General tab, verify that Enable “DHCP audit logging” is selected.



(4) On the Advanced tab, enter the audit log file path: **C:\Windows\System32\LogFiles\DHCP** and click “OK.”

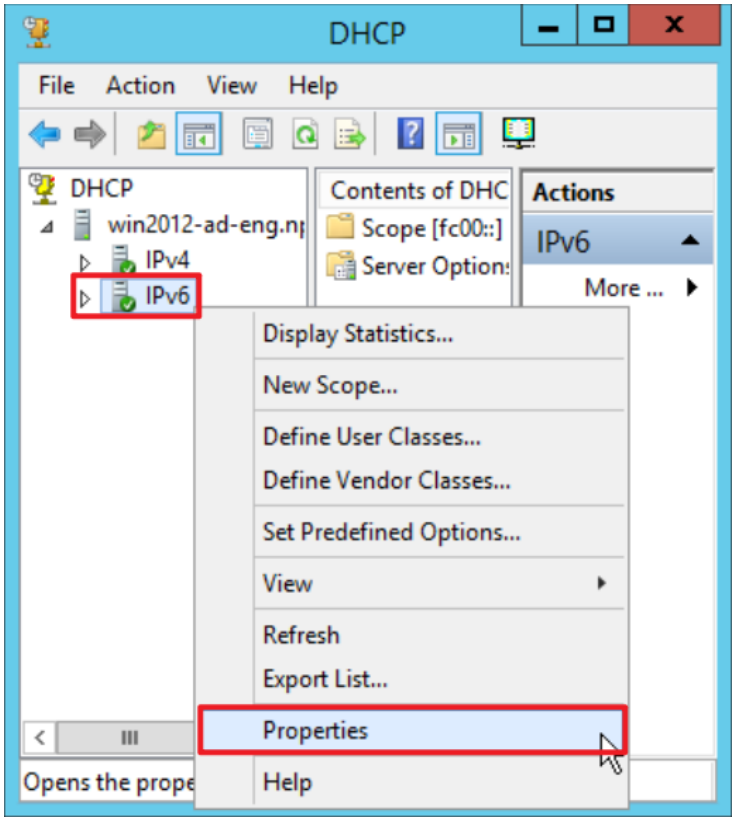


(5) Click Yes to restart the DHCP Server service.

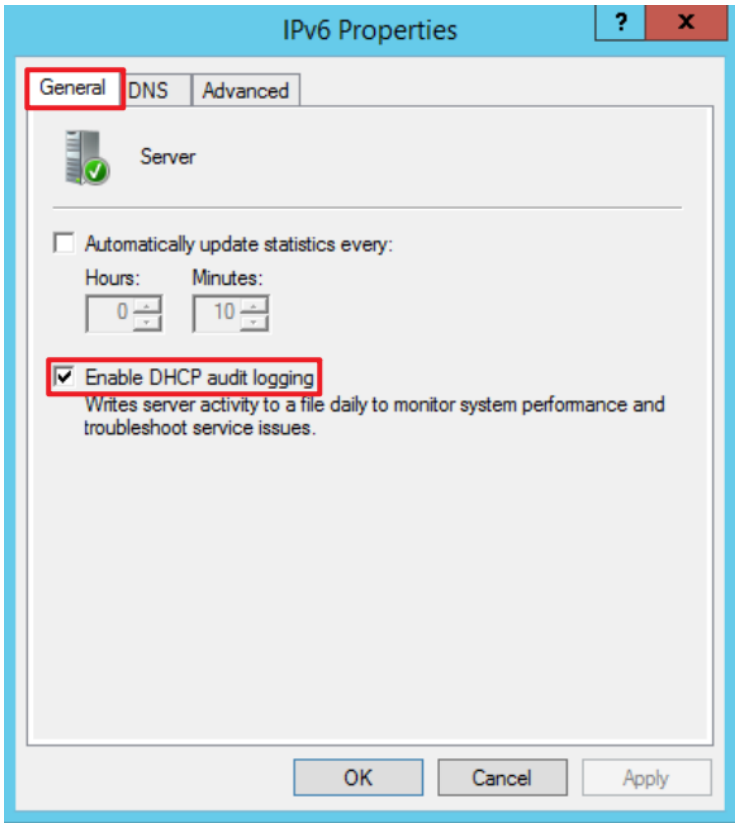


4.2 DHCP IPv6

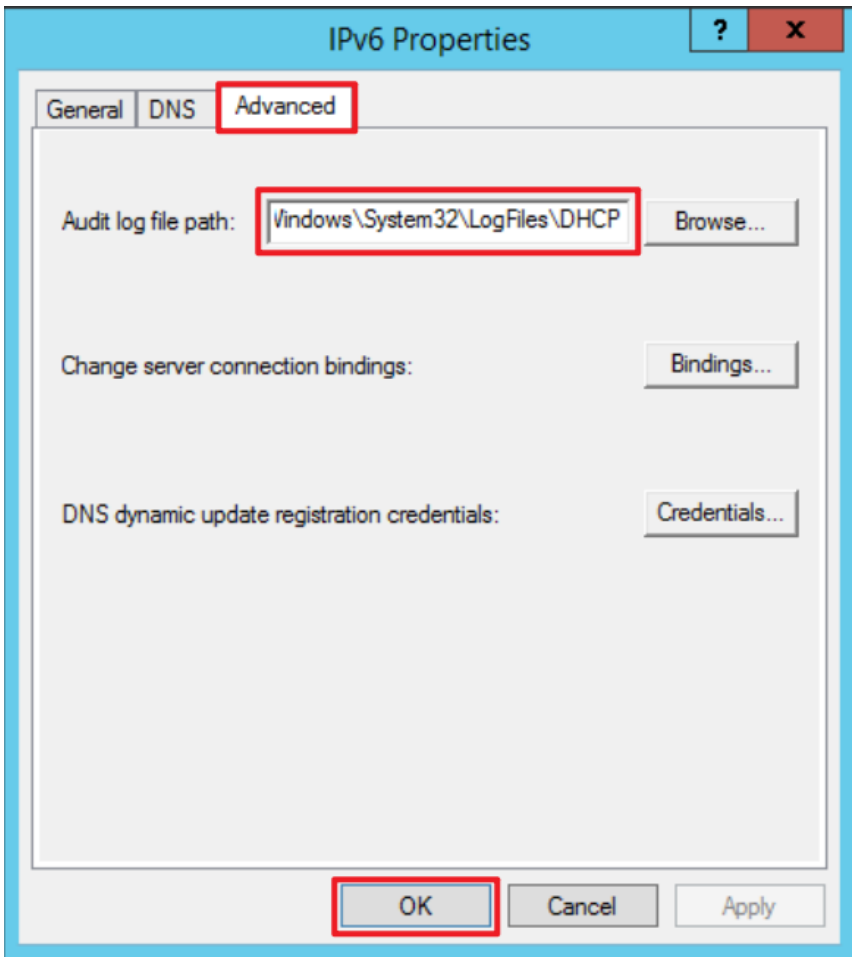
(1) Right-click “IPv6” → select “Properties.”



(2) On the General tab, verify that “Enable DHCP audit logging” is selected.



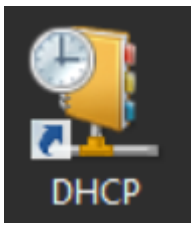
(3) On the Advanced tab, enter the audit log file path: **C:\Windows\System32\LogFiles\DHCP** and click "OK."



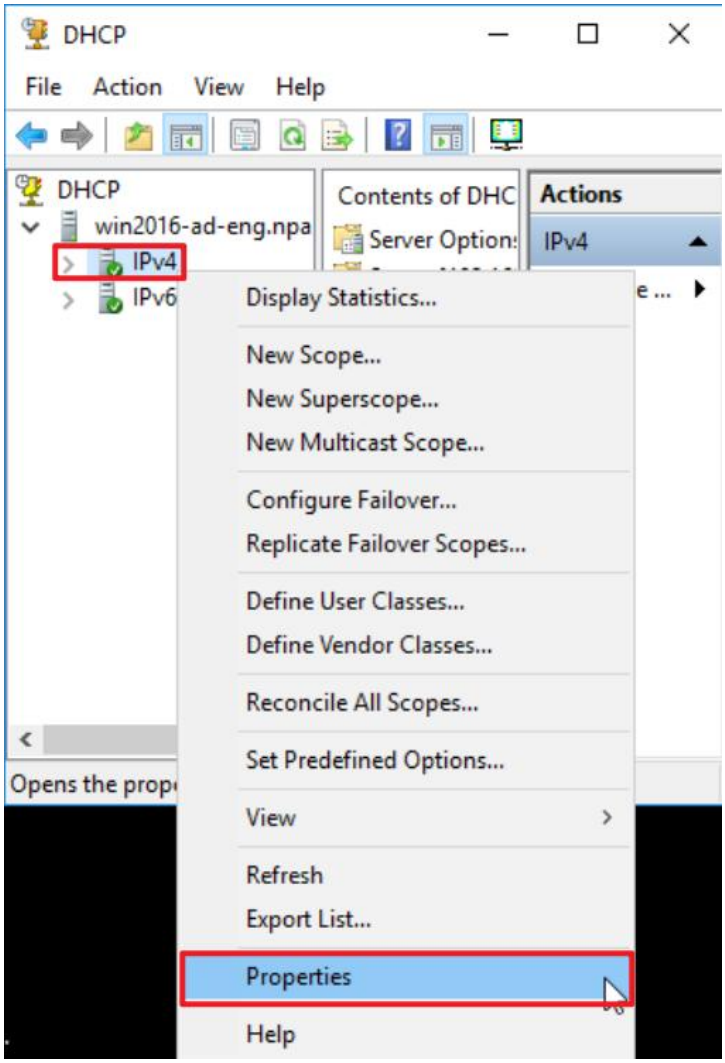
5. Windows Server 2016

5.1 DHCP IPv4

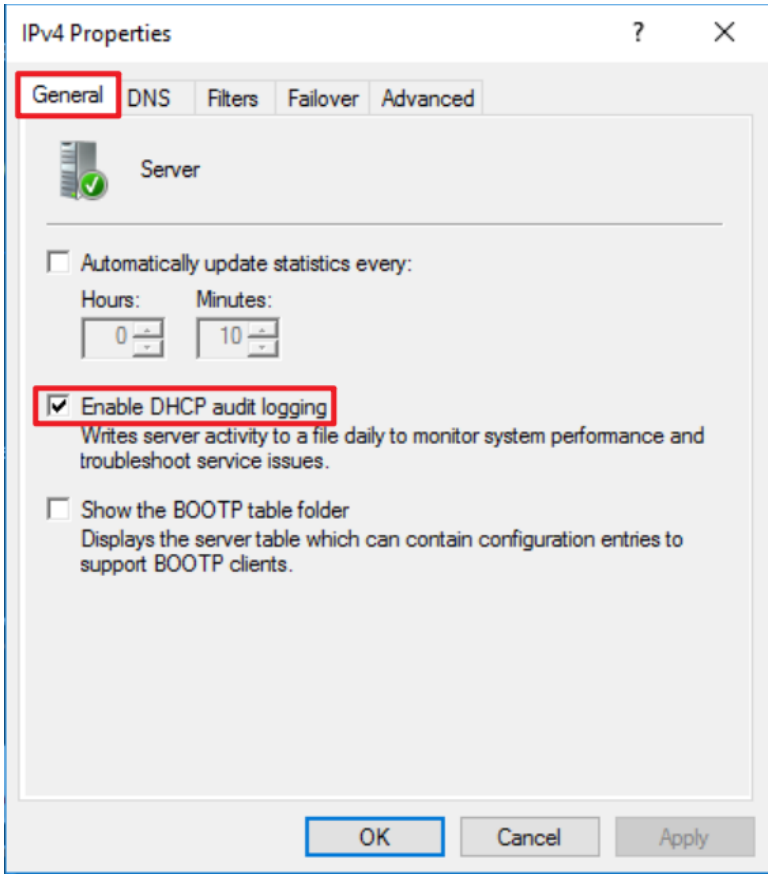
(1) Open DHCP.



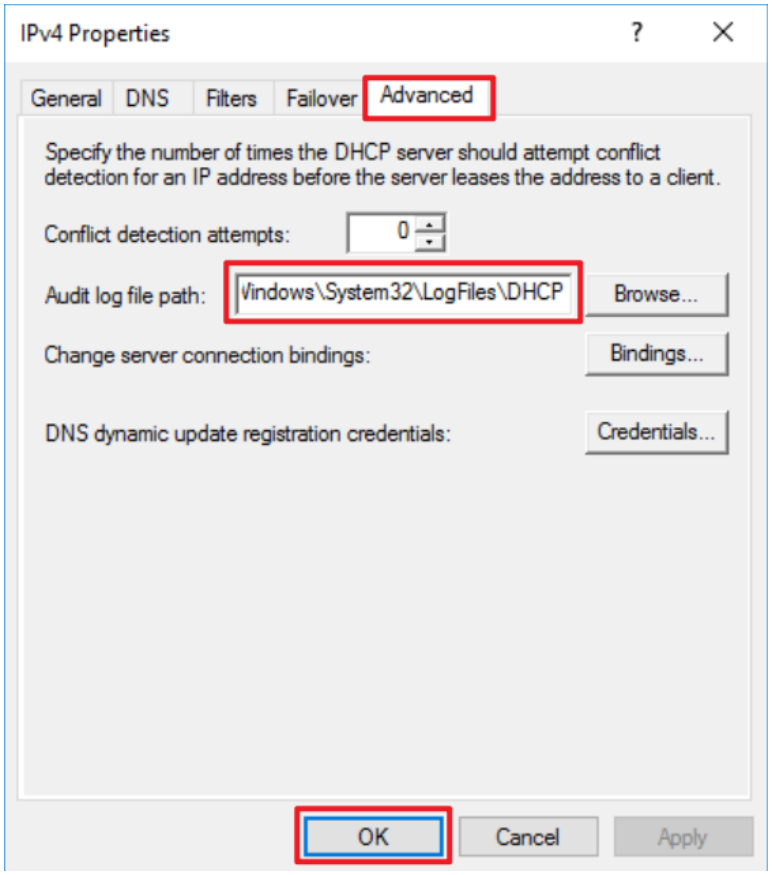
(2) Right-click “IPv4” → select “Properties.”



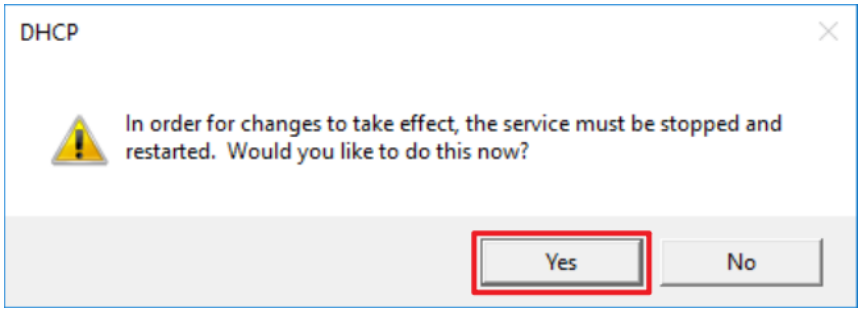
(3) On the General tab, verify that Enable “DHCP audit logging” is selected.



(4) On the Advanced tab, enter the audit log file path: **C:\Windows\System32\LogFiles\DHCP** and click “OK.”

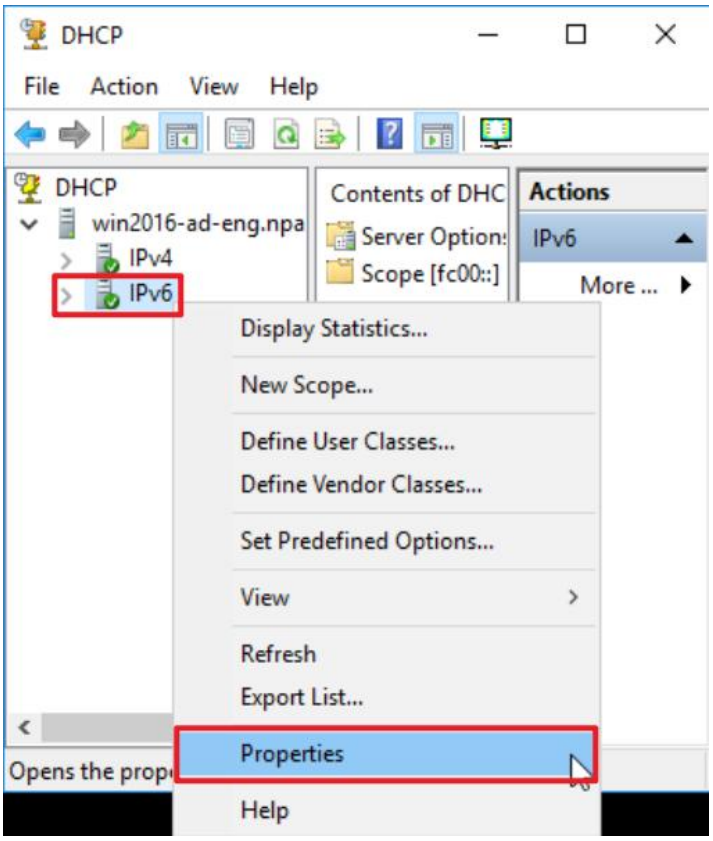


(5) Click Yes to restart the DHCP Server service.

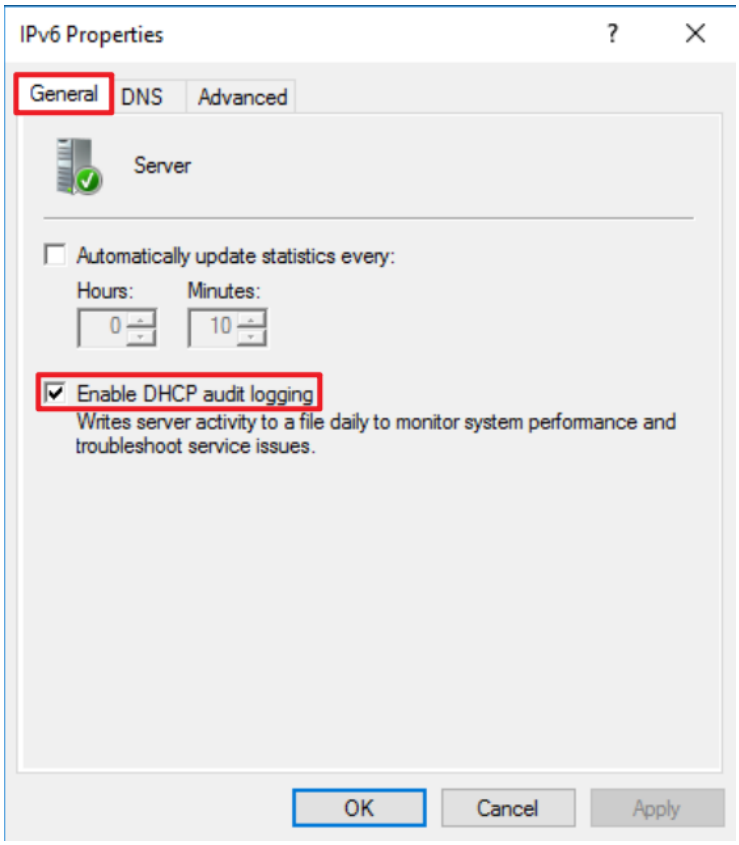


5.2 DHCP IPv6

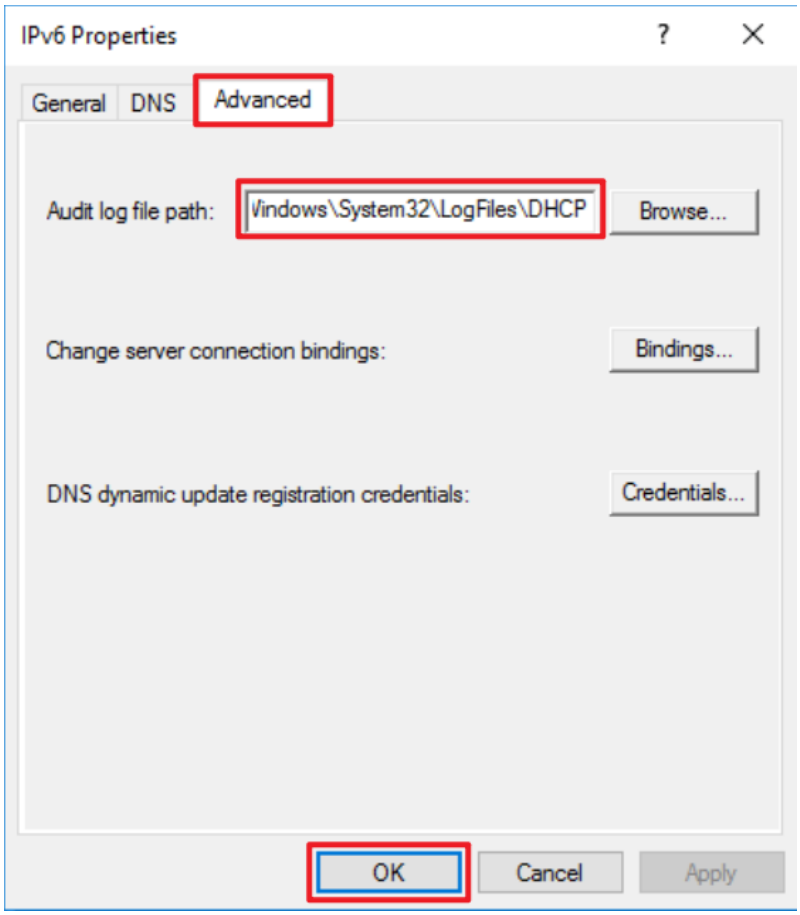
(1) Right-click “IPv6” → select “Properties.”



(2) On the General tab, verify that “Enable DHCP audit logging” is selected.



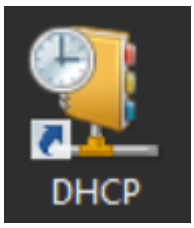
(3) On the Advanced tab, enter the audit log file path: **C:\Windows\System32\LogFiles\DHCP** and click "OK."



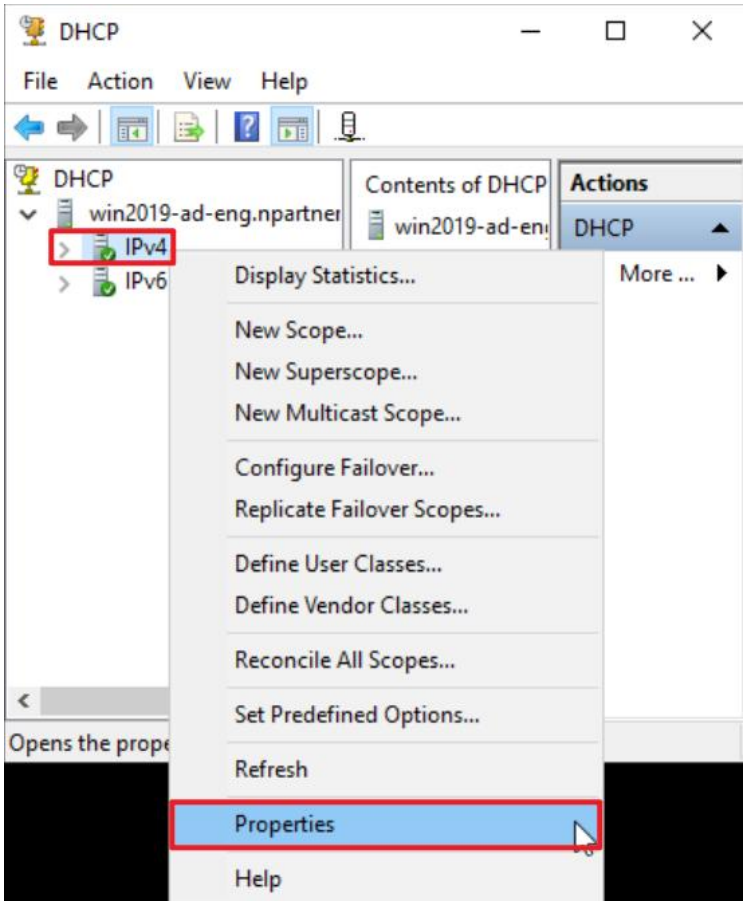
6. Windows Server 2019

6.1 DHCP IPv4

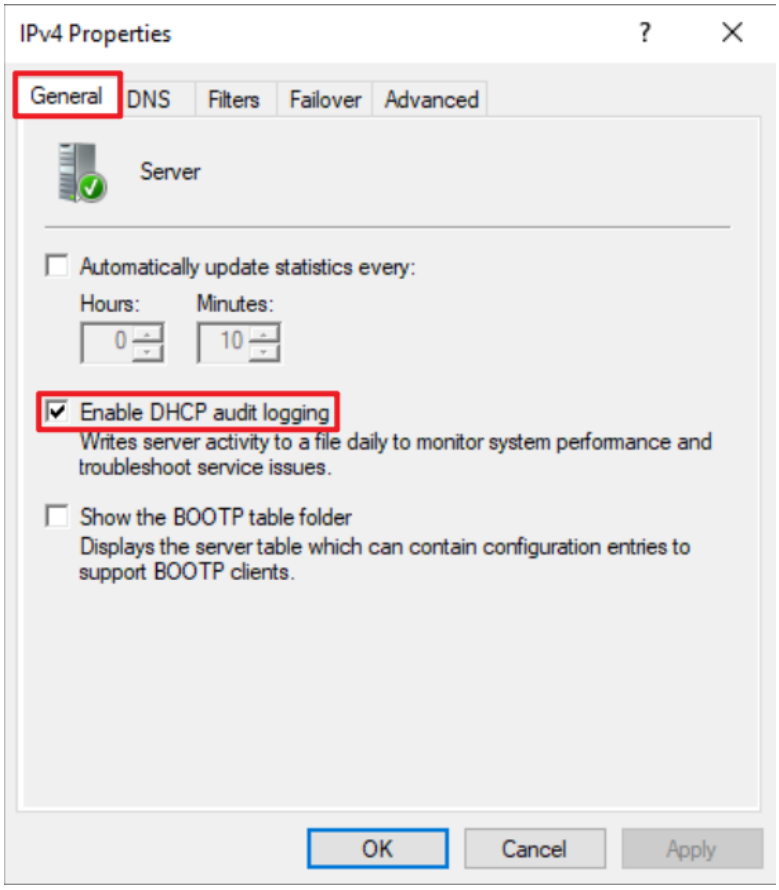
(1) Open DHCP.



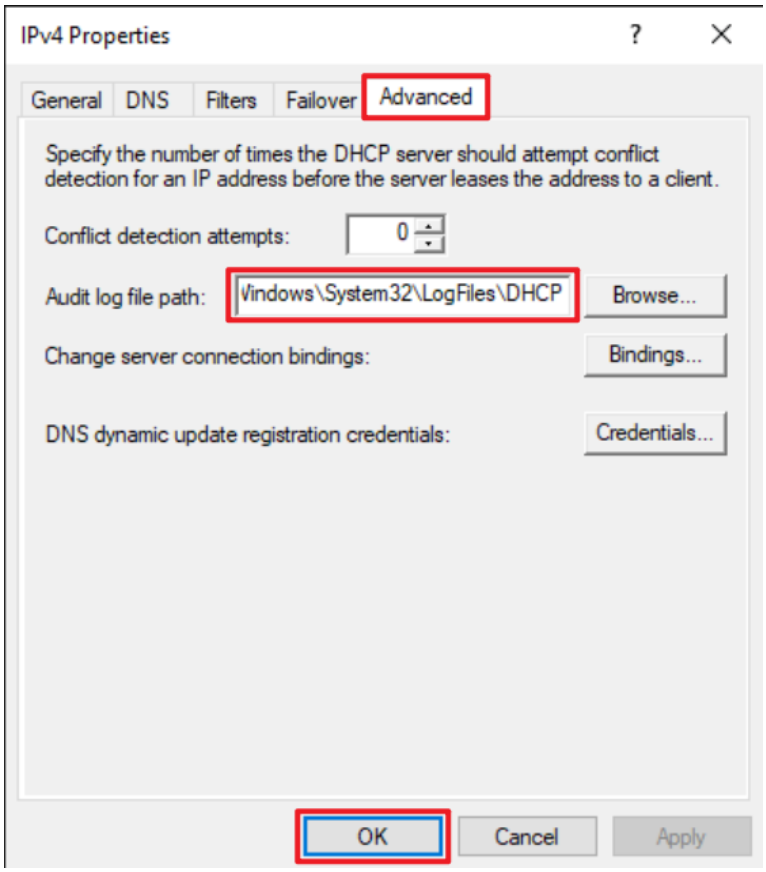
(2) Right-click “IPv4” → select “Properties.”



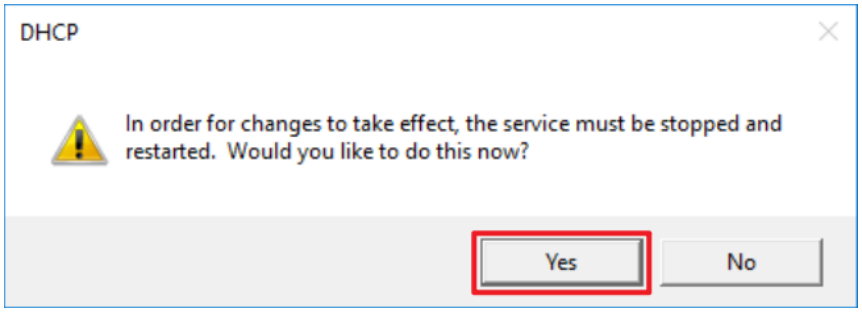
(3) On the General tab, verify that Enable “DHCP audit logging” is selected.



(4) On the Advanced tab, enter the audit log file path: **C:\Windows\System32\LogFiles\DHCP** and click “OK.”

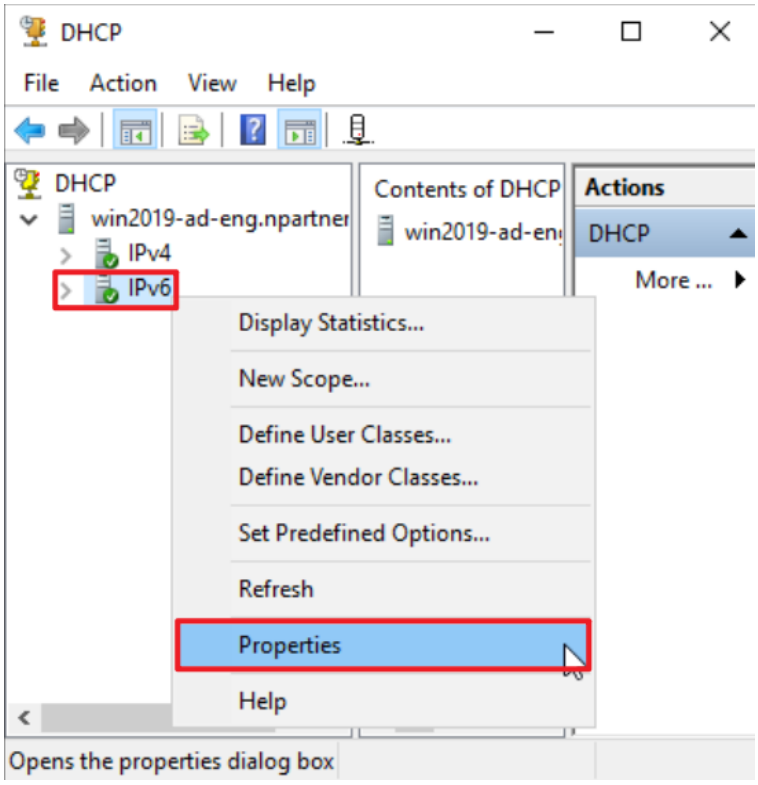


(5) Click Yes to restart the DHCP Server service.

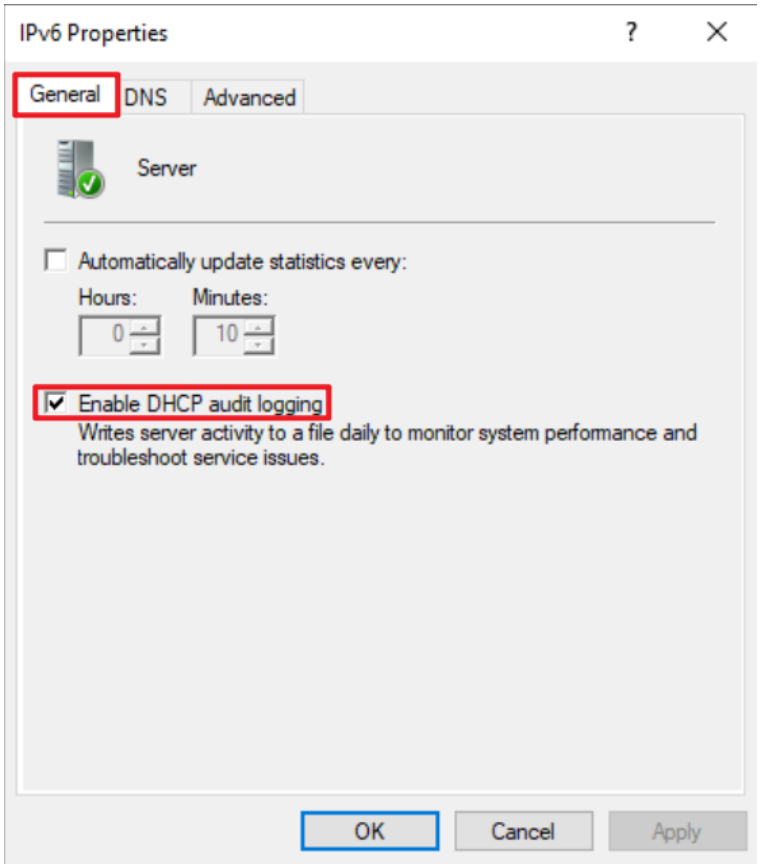


6.2 DHCP IPv6

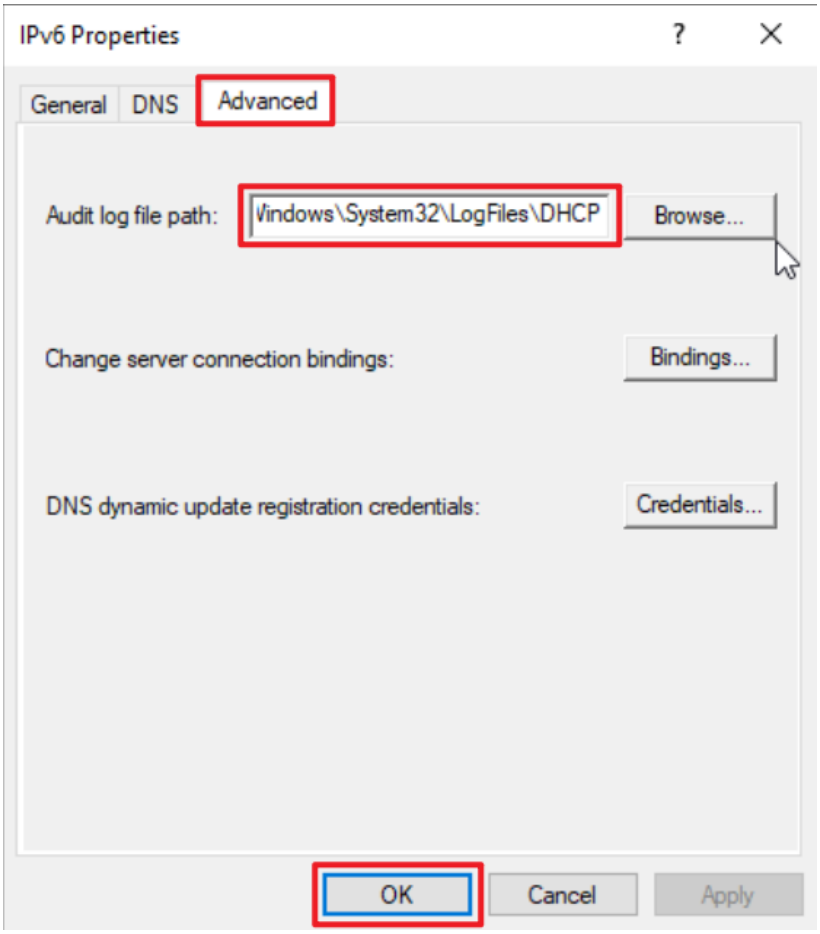
(1) Right-click “IPv6” → select “Properties.”



(2) On the General tab, verify that “Enable DHCP audit logging” is selected.



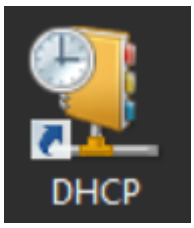
(3) On the Advanced tab, enter the audit log file path: **C:\Windows\System32\LogFiles\DHCP** and click "OK."



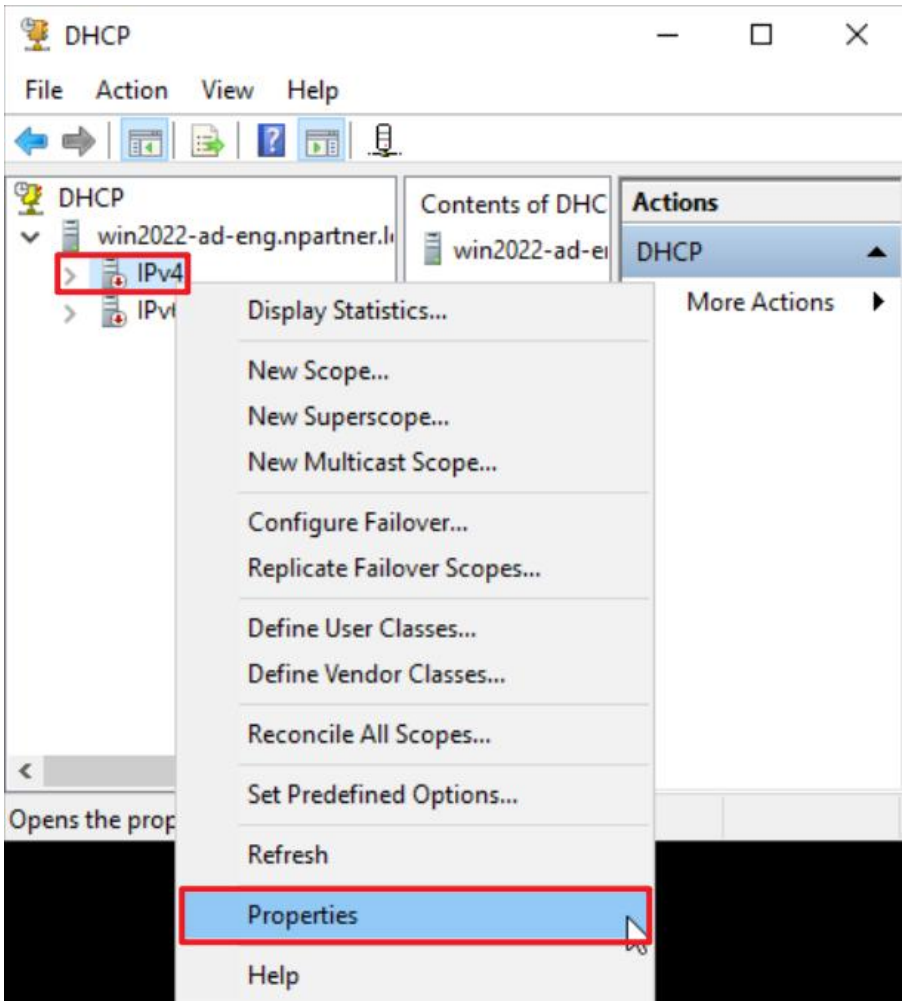
7. Windows Server 2022

7.1 DHCP IPv4

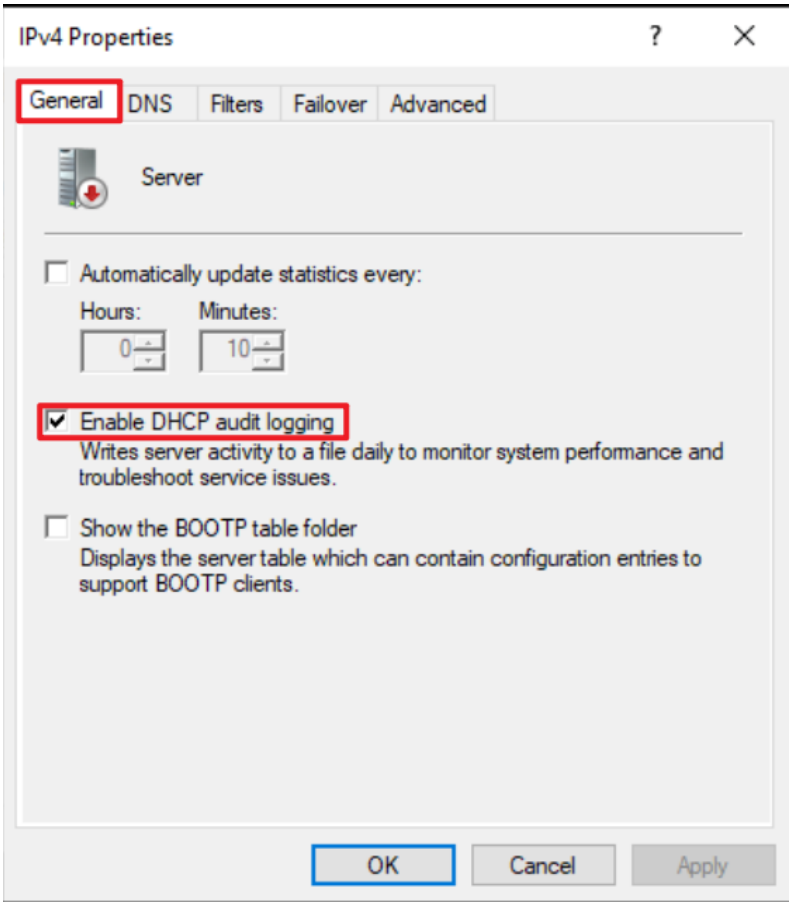
(1) Open DHCP.



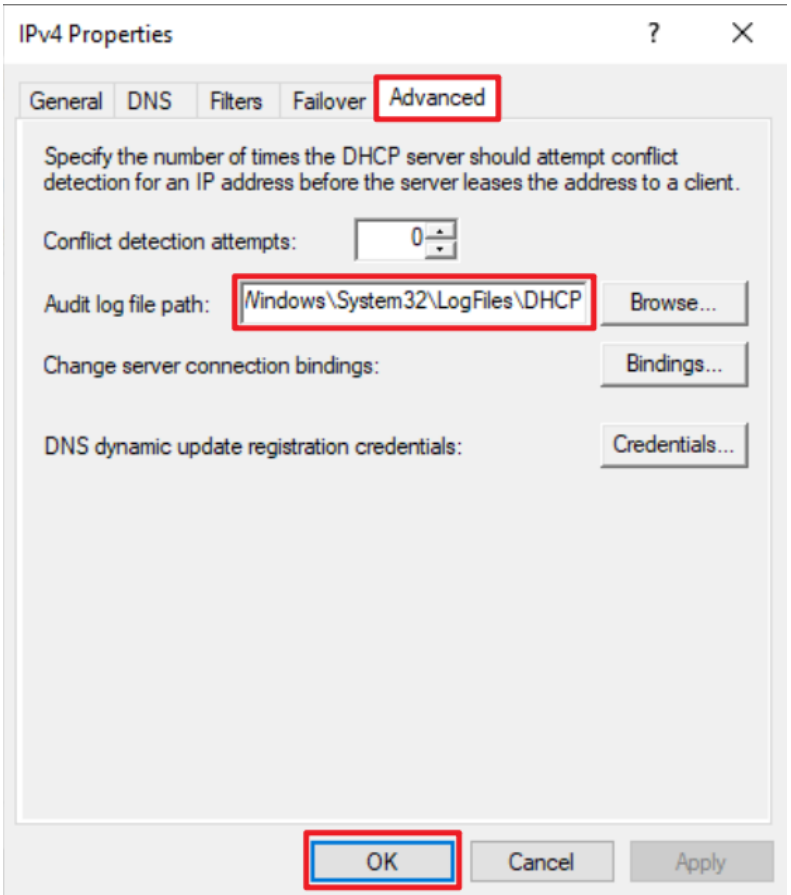
(2) Right-click “IPv4” → select “Properties.”



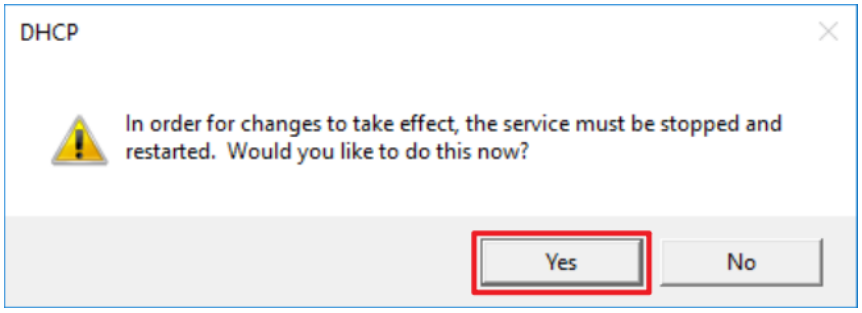
(3) On the General tab, verify that Enable “DHCP audit logging” is selected.



(4) On the Advanced tab, enter the audit log file path: **C:\Windows\System32\LogFiles\DHCP** and click “OK.”

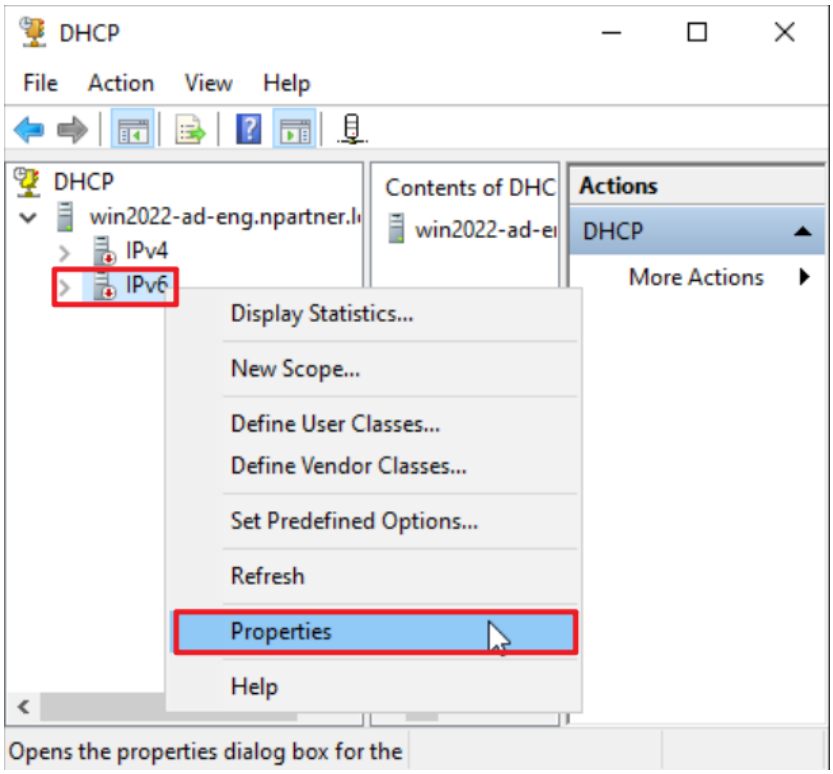


(5) Click Yes to restart the DHCP Server service.

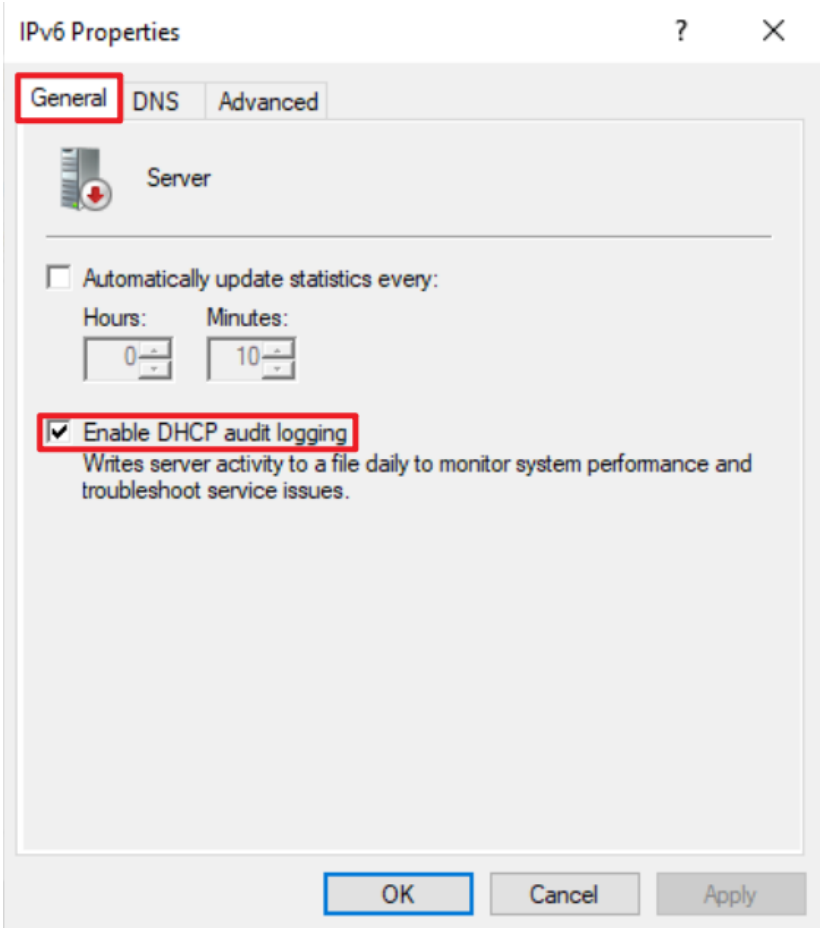


7.2 DHCP IPv6

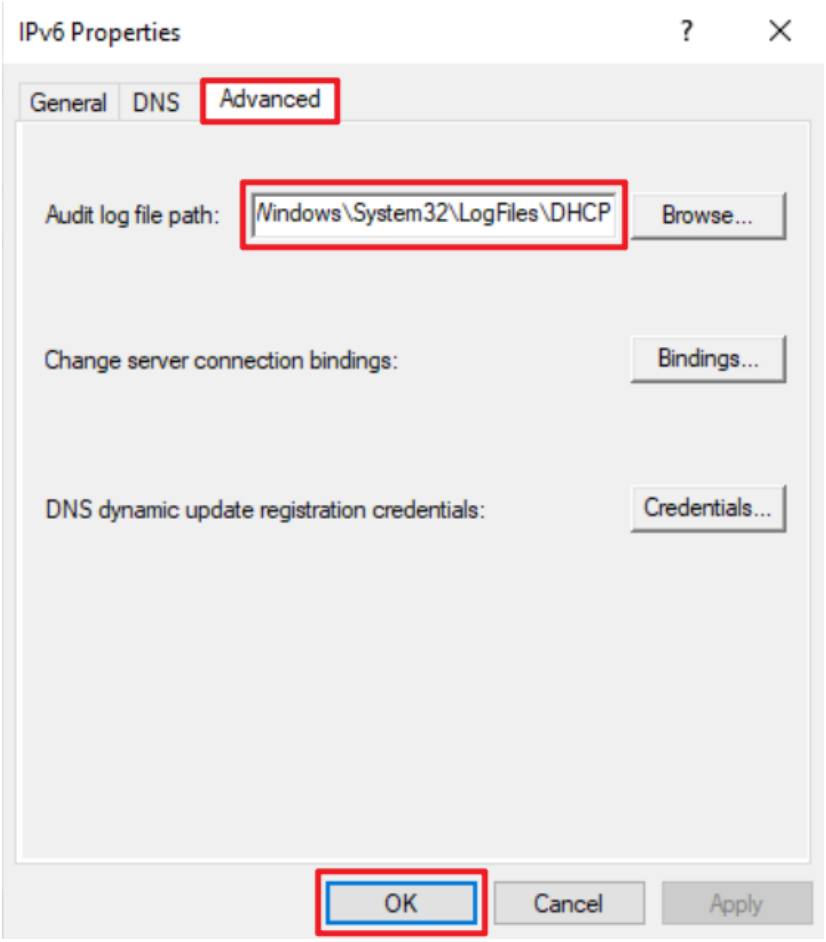
(1) Right-click “IPv6” → select “Properties.”



(2) On the General tab, verify that “Enable DHCP audit logging” is selected.



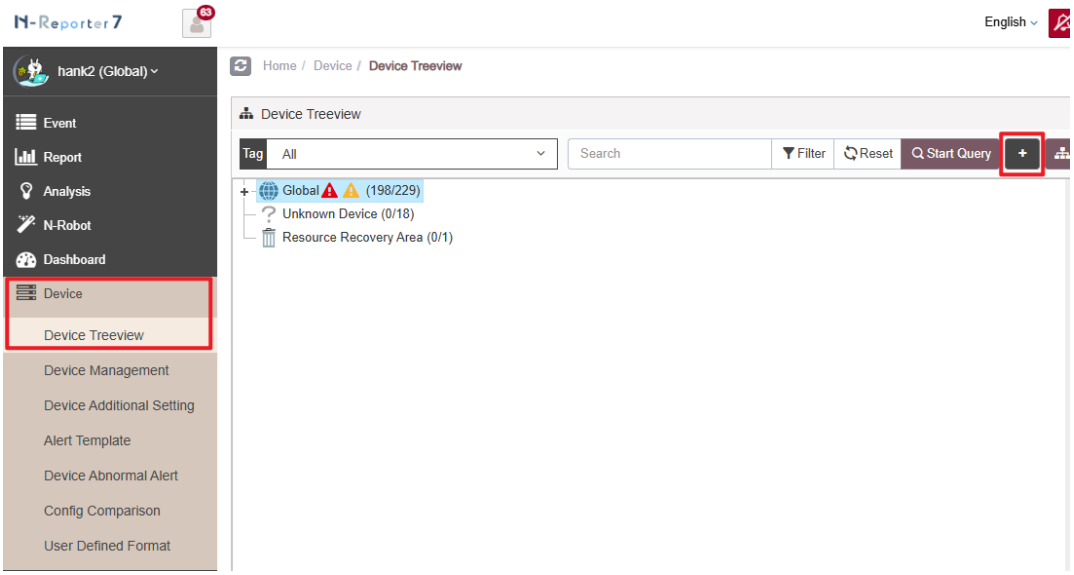
(3) On the Advanced tab, enter the audit log file path: **C:\Windows\System32\LogFiles\DHCP** and click "OK."



8. N-Reporter

(1) Add a Windows DHCP device:

Go to “Device Management” → “Device Treeview” → click “Add.”



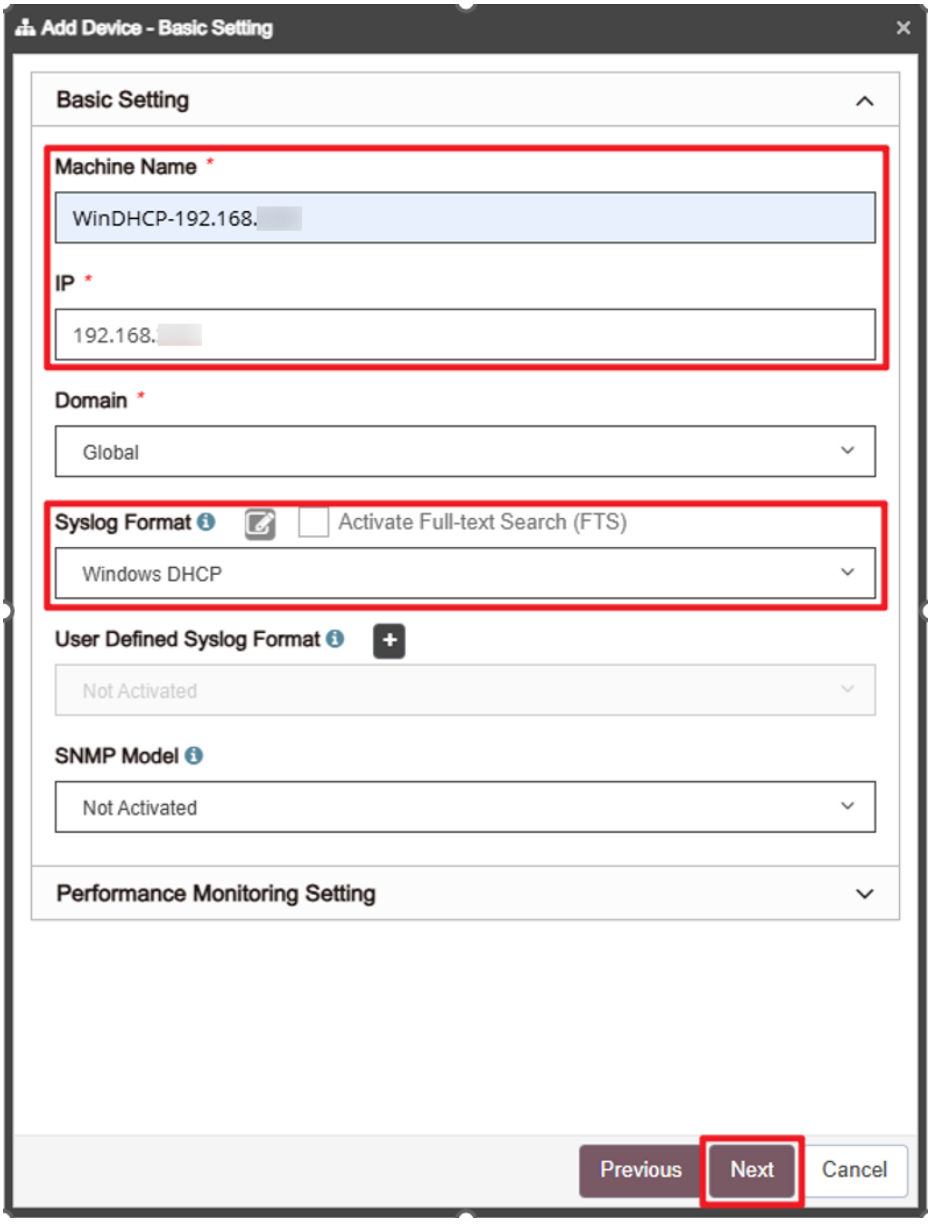
(2) Select the device type:

Choose “Application/DB/OS/Server” → click “Guided Mode.”

8.1 For Windows Server 2003 or earlier

(1) Basic Device Settings:

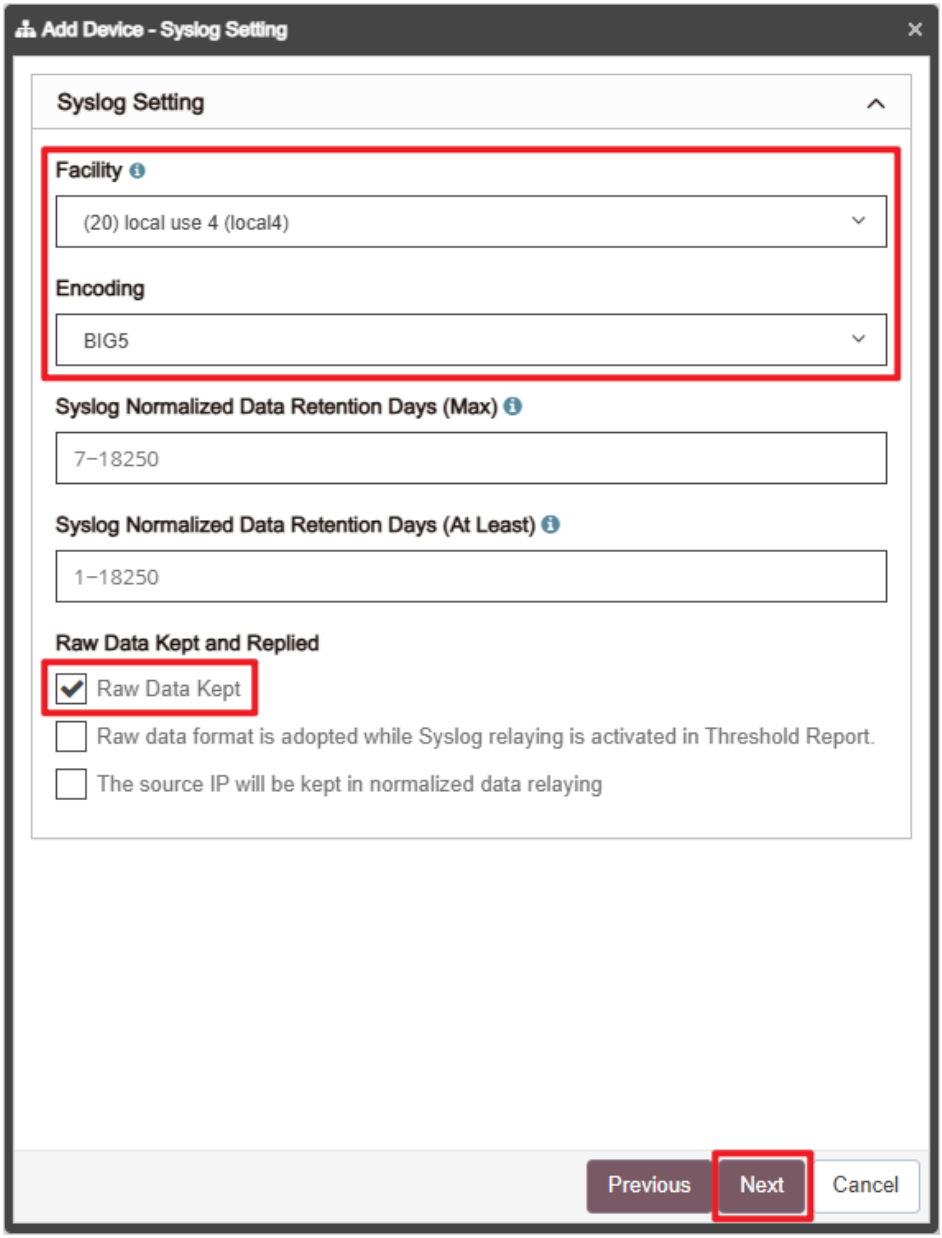
Enter the device name and IP address → For Syslog Data Format, select “Windows DHCP” → click “Next.”



(2) Syslog Settings

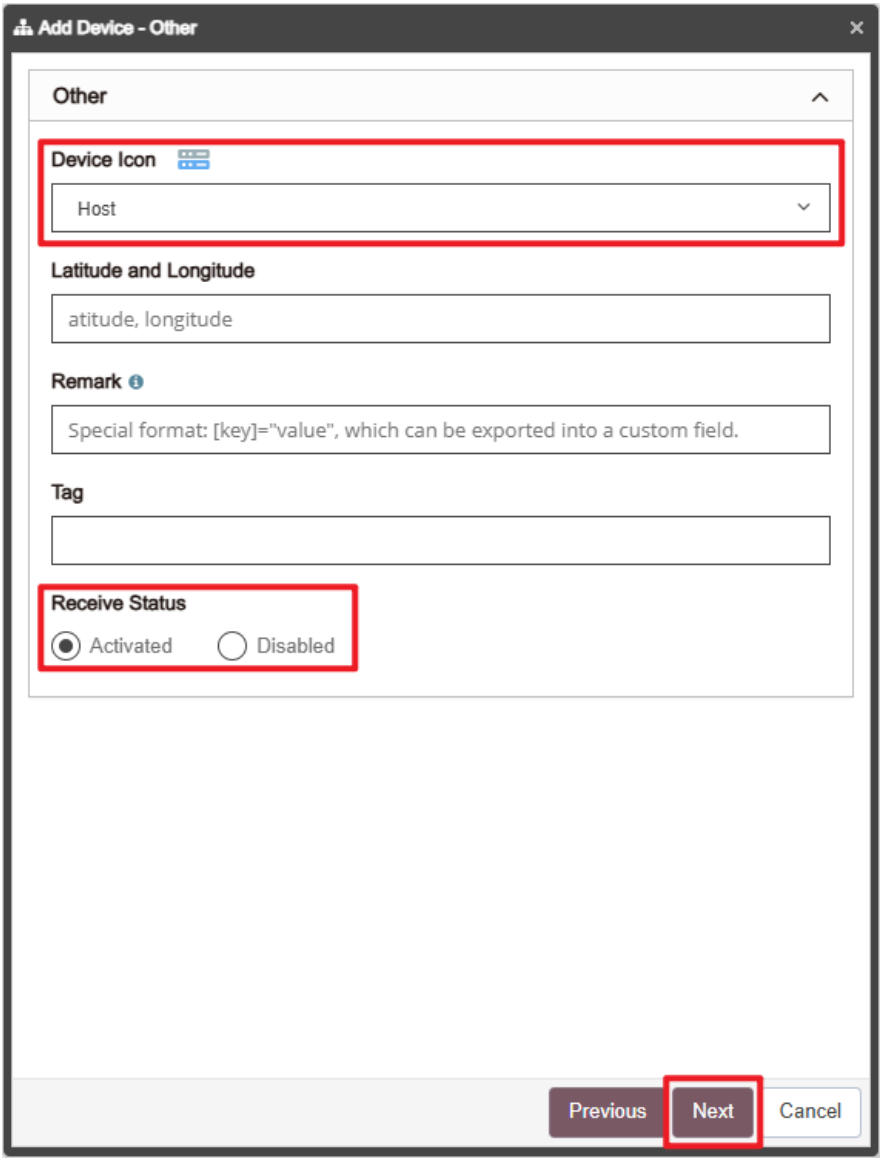
Set “Facility” to “(20) local use 4 (local4)” and “Encoding” to “BIG5” → click “Next.”

If “Raw Data Kept” is checked, the “Event Query” page will display raw data information.

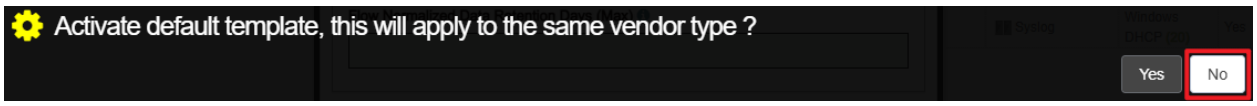


(3) Others

Set “Device Icon” to “Host” → Set “Receiving Status” to Activated” → click “Next” → Confirm.



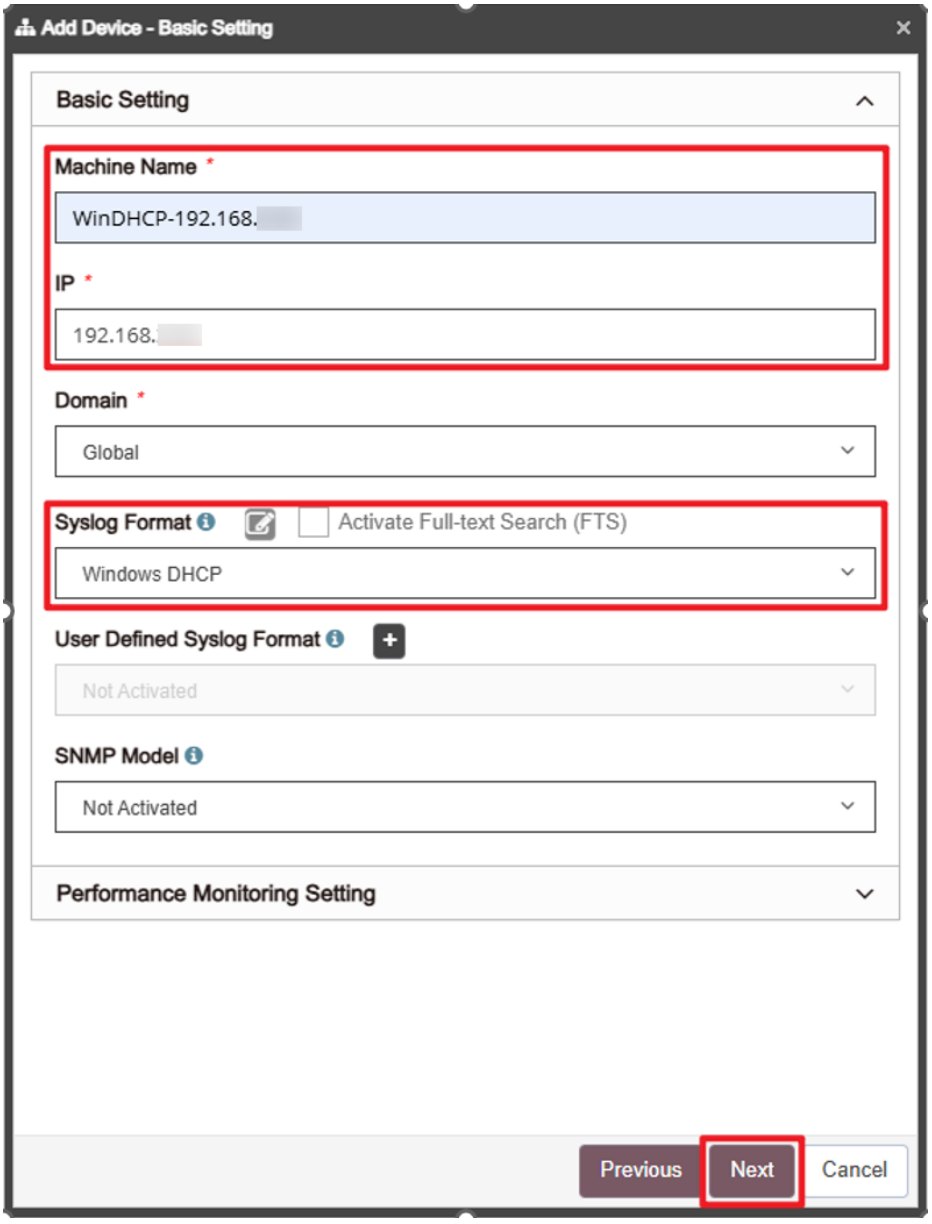
Activate default templates for devices of the same vendor type, click “No.”



8.2 For Windows Server 2008 or later

(1) Basic Device Settings:

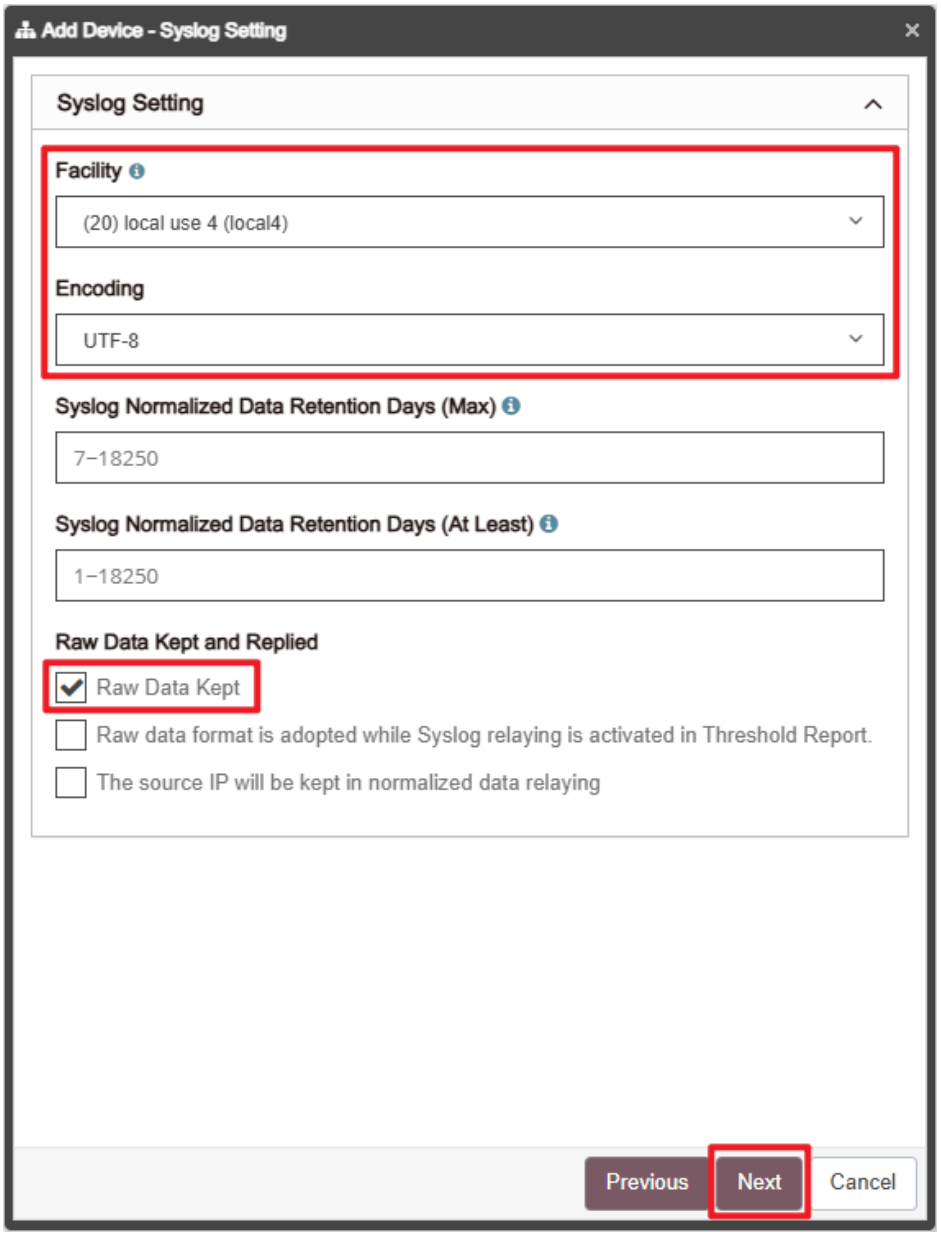
Enter the device name and IP address → For Syslog Data Format, select “Windows DHCP” → click “Next.”



(2) Syslog Settings

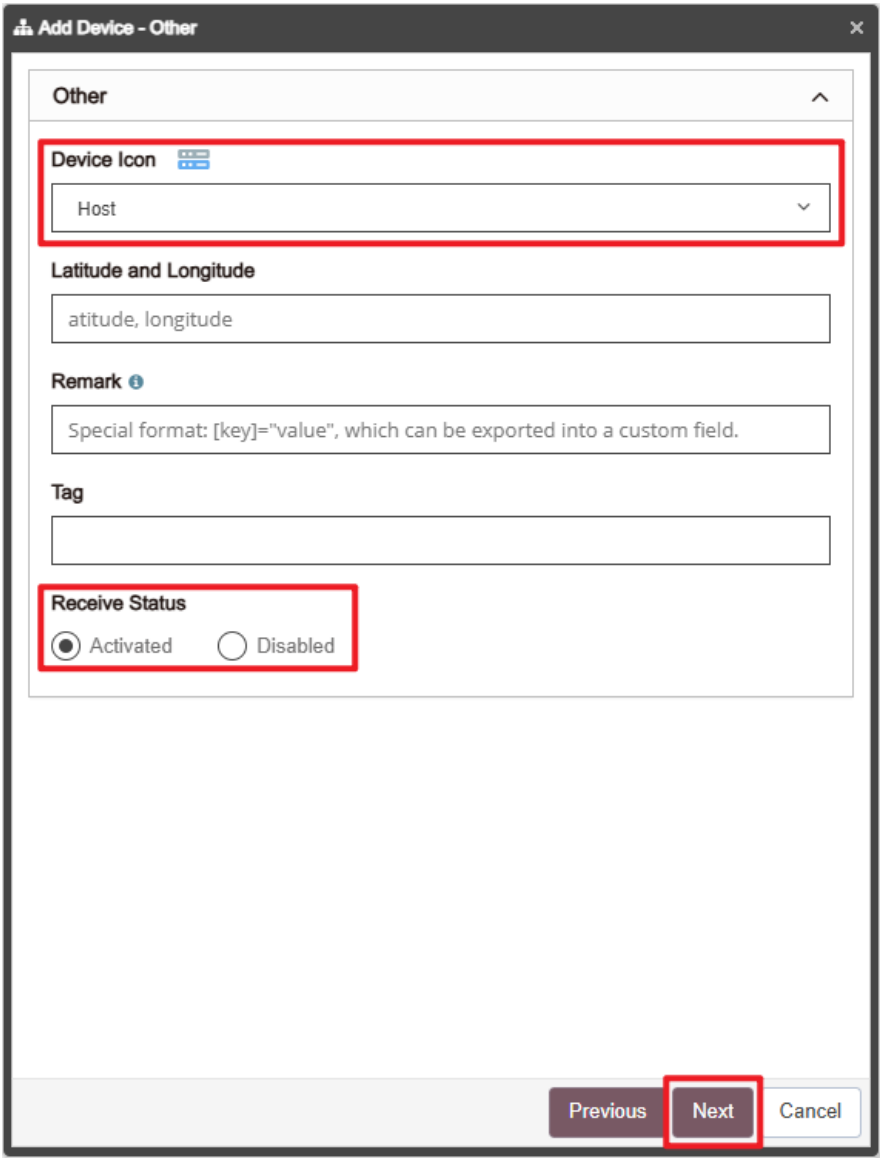
Set “Facility” to “(20) local use 4 (local4)” and “Encoding” to “UTF-8” → click “Next.”

If “Raw Data Kept” is checked, the “Event Query” page will display raw data information.

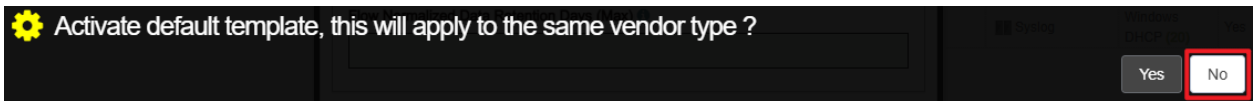


(3) Others

Set “Device Icon” to “Host” → Set “Receiving Status” to Activated” → click “Next” → Confirm.



Activate default templates for devices of the same vendor type, click “No.”



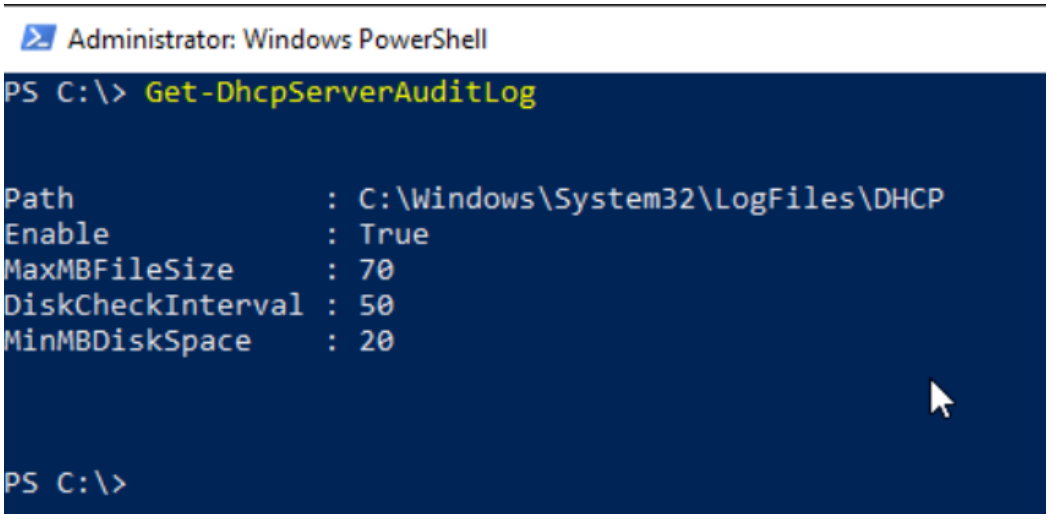
9. Troubleshooting

9.1 Adjusting the DHCP Log File Size

(1) Open “Windows PowerShell.”

(2) Enter the command below to view the DHCP Server audit log settings:

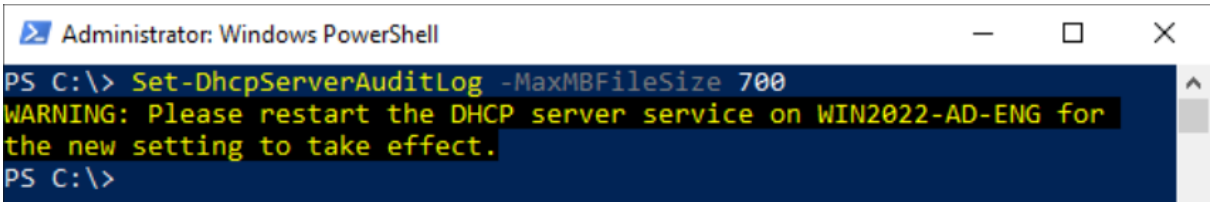
```
PS C:\> Get-DhcpServerAuditLog
```



(3) Enter the command below to set the DHCP log file size:

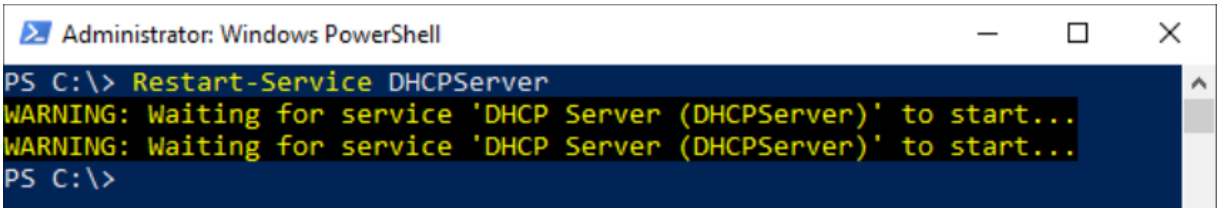
Parameter: -MaxMBFileSize 700

700 MB ÷ 7 days = maximum 100 MB per file



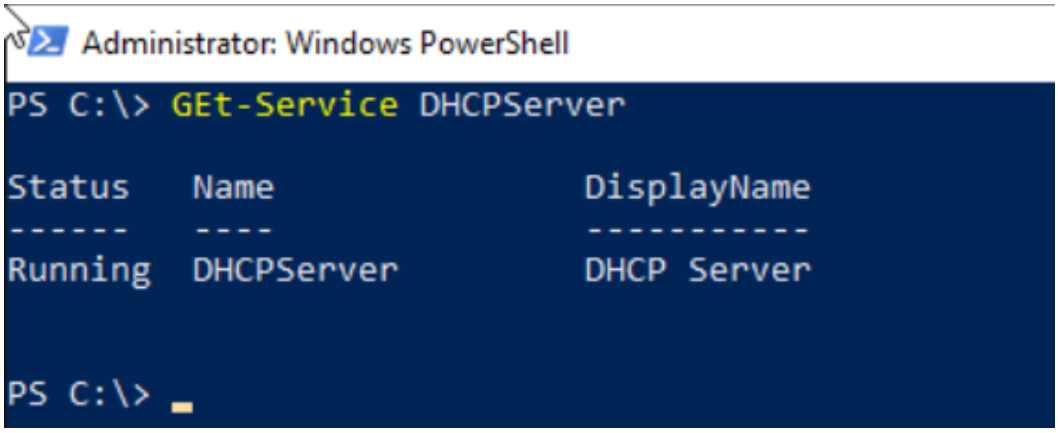
(4) Enter the command below to restart the DHCP Server service:

```
PS C:\> Restart-Service DHCPServer
```



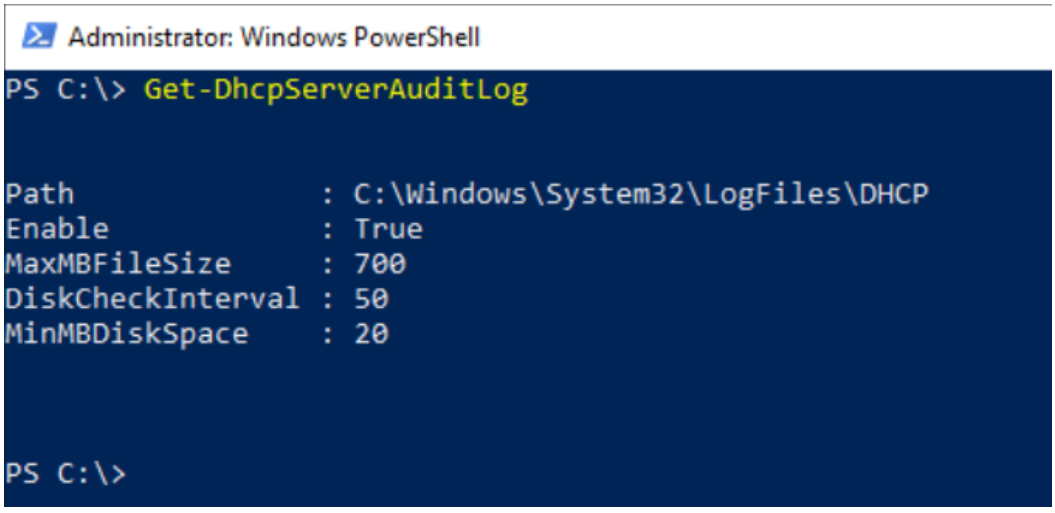
(5) Enter the command below to check the DHCP Server service:

```
PS C:\> Get-Service DHCPServer
```



(6) Enter the command below to view the DHCP Server audit log settings again:

```
PS C:\> Get-DhcpServerAuditLog
```



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