Install and Configure Guide NetWare 4.11 DHCP

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Introduction

This guide offers a hands on approach to installing and configuring DHCP services on a Novell NetWare 4.11 server. After you finish this guide you should be able to:

- ✓ Install DHCP on a NetWare 4.11 server.
- ✓ Apply two software patches.
- ✓ Configure server and workstation components for DHCP services.
- ✓ Test, monitor and troubleshoot DHCP services.
- ✓ Configure multiple address assignments on one physical network.
- ✓ Configure DHCP to work across a wide area network.
- ✓ Configure static address assignments.
- ✓ Configure addresses to exclude for DHCP requests.

Hardware Requirements

Server running Novell 4.1x
No additional hardware upgrades are needed to run DHCP.

Note: *Novell technical document (TID) # 2944438 lists recommended server hardware components. This is may be useful for future references.*

Software Requirements

1. Novell 4.1x Server Operating System, base install.
2. Novell NetWare system installation disk.
3. Download two patches: NetWare Support Pack 6.0 and DHCP Server 2.10P Update.

   - `Iwsp6a.exe - http://www.snw.info.hu/INTERNET/DOWNLOAD/iwsp6a.exe`
   - `Dhcp21p.exe - http://www.lss.ksu.edu/download/novell/dhcp21p.exe`

Requirements for Novell 4.11 DHCP

1. Novell 4.1x Server must be attached to the network.
2. Server must be running TCPIP. See:
   http://www.more.net/technical/netserv/servers/novell/nw3x4x/nw312-41install-tcpip.html

Network Configuration Form

1. Fill in the IP subnet, subnetwork mask and gateway you want DHCP to use.

Network Subnet		Subnet Mask	Range	Gateway
e.g.	204.184.5.0	255.255.255.192	1-60	204.184.5.62
1				
2				
…				

2. Fill in your registered domain name.

Domain Name	
e.g.	myschool.k12.mo.us
1	

3. Use these MOREnet DNS server(s):

DNS - Domain Names Servers	
1	150.199.1.10
2	128.206.2.252
3	131.151.254.243

4. Fill in how long you want a workstation to hold or lease an IP address. (Short on addresses? Try 3 hours or adjust accordingly).

Network Subnet		Lease Time
e.g.	204.184.5.0	1 day
1		
2		
…		

5. Fill in the devices you want to always get the same addresses. The Media Access Control (MAC) address is the unique hardware address of your Ethernet card. The following commands can help you find a machine's MAC Address:

Operating System	Command
NetWare 4	nlist user /a
NetWare 3.12	userlist /a
windows 95/98	winipcfg
Windows NT workstation/server	ipconfig /all
Unix	ifconf -a

Name		IP Address of Device	MAC Address
e.g.	File server #1 FS1	204.184.5.61	00 : A0: C9: 87 : 88 : A2
1			
2			
3			
…			

Install DHCP Server

Use the LOAD INSTALL utility to install the DHCP.NLM module onto the Netware 4.11 server.

Prerequisite

✓ Netware 4.11 Operating system installed.
✓ Server running TCP/IP.

From the servers console prompt:

1. Place the Netware system CD in the server CD-ROM and mount it.
   - To mount a CDROM, at the server prompt, enter **`LOAD CDROM.`**
   - At the server prompt, enter **`CD MOUNT ALL`**.
   - The CDROM should now be mounted for the server only to see it.

2. To get a server console prompt press CTL+ESC and select 1 System console.

3. At the server prompt, enter **`LOAD INSTALL`**.

4. Select Product Options.

5. Select Install Netware DHCP.

6. At the path dialog box, select the default by hitting the RETURN key.

7. At the Installation Options Menu, Select Install Product.

8. Select the server you wish to install DHCP on.

9. At the Start Installation dialog box, select Yes.

10. After the files have completed the copy process, exit the Install utility saving changes.

11. Before configuring DHCP, install the latest support pack and the DHCP 2.01P patch.

Install Support Pack 6

Download and install Support Pack 6.0 using the `LOAD INSTALL` utility.

Iwsp6a.exe – NetWare Support Pack v6.0a

Use a workstation and the server console to complete the following:

1. From a Windows workstation, map a drive to `SYS:.`

2. Open My Computer and use the map drive path to locate the `SYS:` volume.

3. Copy `iwsp6.exe` to the root of your `SYS` volume.
   Note: *Do not create a directory for this file, it will create its own when you extract it.*

4. Double click `iwsp6.exe` from the mapped drive you just created to extract it.

5. At Continue Extraction? enter Y to continue.
   Note: *It will take time to extract. Watch for a valid security envelope near the end of extraction*.

6. You must see confirmation of a valid security envelope or you cannot continue. Make sure you have extracted the file using the mapped drive you created through My Computer, not explorer.

7. Switch to the Server's console prompt.

8. At the server prompt, type **`LOAD INSTALL`**.

9. Select Product Options.

10. Select Install a product not listed.

11. Select F3 to specify path, then enter `sys:iwsp6`.

12. Accept defaults and select F10 to continue.

13. When finished, exit install.

14. Down and restart the server.

Install DHCP Patch 2.10P

Use the `LOAD INSTALL` utility to download and install the DHCP Service Patch.

Dhcp21p.exe – DHCP Server 2.10P for Novell Netware

Prerequisite

- ✓ DHCP and TCP/IP installed and configured.
- ✓ Support Pack 6 or later installed.

Use a workstation and the server console to complete the following:

1. From a Windows workstation, map a drive to `SYS:.` (previously done).

2. Open My Computer and use the map drive path to locate the `SYS:` volume.

3. Create a directory off the root of the `SYS` volume called `SYS:\dhcpsrvr`

4. Copy `dhcp21p.exe` to the new directory `SYS:\dhcpsrvr`

5. From this mapped drive path extract **`dhcp21p.exe`** by double clicking it.
   Note: *Watch for a valid security envelope near the end of extraction.*

6. You must see confirmation of a Valid Security Envelope or you cannot continue. Make sure you have extracted the file using the mapped drive you created through My Computer, not explorer.

7. Switch to the Server console prompt.

8. At the server prompt, enter **`LOAD INSTALL`**.

9. Select Product Options.

10. Select Install a Product Not Listed.

11. Select F3 to specify path, enter `sys:dhcpsrvr`

12. Select the server you wish to install DHCP on.

13. At the Start Installation dialog box select Yes.

14. Wait for the installation to complete, then exit Installation Options.

15. Down and restart the server.

Configure DHCP

Use the `LOAD DHCPCFG` utility to configure DHCP. During the initial install of DHCP, if IP was configured on an interface card, DHCP should have added a Subnetwork entry for each interface card. These entries will be incomplete, so you must edit them to complete the configuration.

From the server console prompt use your Network Configuration to complete the following:

1. At the server prompt, enter **`LOAD DHCPCFG`**.
2. Select Subnetwork Profile.
3. Select the Subnetwork Name you wish to edit.
4. Select Subnetwork Mask; enter your subnet mask (e.g. **`255.255.255.0`**).
5. Select Frame Type; and press <Insert> and select Ethernet_II as a frame type.
6. Press <Esc> to escape back to the Subnetwork Profile Menu.
7. Select Default Router; enter the default gateway for this network (e.g. **`204.184.5.126`**).
8. Select Domain Name System Used; enter Yes, and <Enter> to accept.

At the Domain Name System Configuration Menu, complete the following:

- At Domain Name, enter your domain name; (e.g. **`my school.k12.mo.us`**)
- At Primary Name Server, Enter your 1st DNS server: **`150.199.1.10`**
- At Secondary Name Server**,** Enter your 2nd DNS server **`128.206.2.252`**
- At Tertiary Name Server, Enter your 3rd DNS server **`131.151.254.243`**
- Return to the previous screen by pressing the <Esc> key.

9. Select Lease Time, enter 3 Hours. ***Note:*** *You can make this time longer if you choose*.
10. Select Automatic IP Address Assignment**;** Select Yes.

11. Select Assign All Subnet IP Addresses, Enter No.

12. At Start Address, enter your starting range IP address e.g. **204.184.1.1**

13. At End Address, enter your ending range IP address e.g. **204.184.1.250**

14. Exit this utility saving your changes when asked.

15. At the server prompt, enter **UNLOAD DHCPSRVR**.

16. Now restart the service by entering **LOAD DHCPSRVR**.

DHCPSRVR Syntax

LOAD DHCPSRVR [OPTIONS]

Options to use the LOAD DHCPSRVR command. This command is usually executed from the AUTOEXEC.NCF file, but it can be run from a server prompt.

LOAD DHCPSRVR [-t x] [-a y] [-h]

-t x	Default, 60 seconds. Time between checks to see if the DHCPTAB file has changed.
-a y	Default, 10 minutes. Time between checks to see if a lease time for an address has expired.
-h	Display help information.

Example

load dhcpsrvr -t 120 -a 20
load dhcpsrvr -h

Configure a Windows 95/98 Workstation to Use DHCP

From a Windows 95/98 workstation, complete the following:

1. Right click on Network Neighborhood, on the Windows 95/98 Desktop.
2. Select Properties.
3. For Windows 95/98 workstation select Configuration tab.
4. Select protocol TCP/IP-> *adapter* Ethernet or Token Ring.
5. Select Properties.
6. Enable DHCP by Selecting Obtain an IP address automatically.
7. Reboot the workstation.
8. Left click on Windows Start Button and select Run.
9. Enter **`winipcfg`**
10. Select your adapter type to view your new IP address, mask and gateway.
11. Select More Info to view additional configuration options like renew and release and DNS servers.

Configure a Windows NT 4.0 workstation (or server) to use DHCP

From a Windows NT workstation or server, complete the following:

1. On the Windows NT Desktop Right click on Network.
2. Select Properties
3. From Windows NT workstation select Protocols tab.
4. Select TCP/IP Protocol.
5. Select Properties.
6. Enable DHCP by selecting Obtain an IP address automatically.
7. Reboot the workstation.

Verify DHCP Services on a Workstation

The following instructions require you to use a Windows 95/98 workstation to verify the operability of your DHCP service. You can check that your service is working and evaluate the options delivered by your server like DNS and IP address Gateway.

From a Windows 95/98 workstation, complete the following:

1. Left click on Windows Start Button and select Run.

2. Enter **`winipcfg`**.

3. Select your network adapter type to view your new IP address, mask and gateway.

4. Select More Info to view additional configuration options.

5. You should see these options:
   - DNS Servers
   - Adapter Address
   - IP Address
   - Default Gateway

6. Select RELEASE button. Did your information go away?

7. Select RENEW button. Did you obtain a lease? How about the gateway address, network mask, and DNS servers?

Verify DHCP Services Using a Windows NT Workstation/Server

The following instructions require you to use a Windows NT Workstation or Server to verify the operability of your DHCP service. Check that your service is working and evaluate the options delivered by your server, like DNS and IP address Gateway.

From a Windows NT workstation (or server), use the `IPCONFG` utility from a command prompt to complete the following:

1. Left click on Windows Start Button and selects Run.

2. Enter **`cmd.`** This will start a command prompt.

3. Enter **`IPCONFIG /?`** This displays a DHCP help screen.

4. Enter **`IPCONFIG /release`** to release the DHCP lease information.

5. Enter **IPCONFIG /renew** to renew the DHCP lease information.

6. Enter **IPCONFIG /all** to view extended DHCP information.

8. Verify you have all the information you need like gateway address, network mask, and DNS servers.

Monitor the DHCP Server

In this exercise you will:

- ✓ Monitor the DHCP activity using the LOAD DHCPSRVR utility.
- ✓ View connected workstations using the LOAD DHCPCFG utility.

From a Server console, complete the following:

1. To monitor DHCP activities switch to the DHCP Server Screen.

2. Press <Ctrl> <Esc> keys to select DHCP Server Screen.
   This screen is activated when you LOAD DHCPSRVR.NLM on startup.

3. Do the requests from the workstation show up?

   View connected workstation using the LOAD DHCPCFG utility.

4. Select <Ctrl> <Esc> keys to select System Console screen.

5. From the server prompt enter **LOAD DHCPCFG**.

6. Select IP Address Assignment to see the connected workstations.

7. Select an entry to view the lease time, Hardware address or Media Access (MAC) address.