



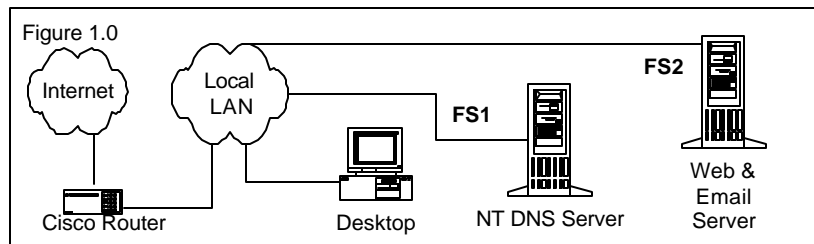
Install and Configure DNS For NetWare 4.11 Server

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Introduction

This document deals with the installation and configuration of the DNS services component of Novell's Internet Access Server (NIAS) running on a NetWare 4.11 Server operating system. After completing this guide, you will be able to install, configure, and use a local DNS name server on a Novell NetWare 4.11 Server. Figure 1.0 displays a simple example of a DNS server on a flat local area network (LAN).



Background

A white paper on DNS services discusses the terms and concepts used in this document. Before continuing please refer to:

<http://www.more.net/technical/netserv/tcpip/dns.pdf>

Note: To register a domain name contact your Internet Service Provider (ISP). MOREnet customers should send a request to

register@more.net

For instructions on how to register a domain name see:

<http://www.more.net/services/managed/dns/index.html>

NetWare 4.11 Server Prerequisites

- NetWare 4.11 Server with the latest support pack installed.
- Network connection to the Internet running the TCP/IP protocol. To install and configure TCP/IP see:

<http://www.more.net/technical/netserv/servers/novell/nw3x4x/nw312-41install-tcpip.html>

- NetWare 4.11 NWUXPS CD-ROM (4 CDs set) or the NIAS4 CD-ROM (2 user demo). Both CD-ROMs contain the NWUXPS directory for installing the DNS server service.
- Minimum disk space available on the SYS volume for this install is 10 MB.

DNS Worksheet

Fill out the following form to record the information about devices and addresses on your local network. You will need this information to complete the installation and configuration of your DNS server.

Network Configuration Form

1. Fill in your registered domain name. We will use this domain name for the configuration of your local IP addresses. This name can be the same name you registered with your ISP.

Domain Name Ex	abc.k12.mo.us
Your Domain Name	

2. Fill in the DNS servers search order for the workstations that you want to use. Enter the IP address of this server as the primary DNS server followed by the secondary and tertiary DNS servers on your LAN. The secondary and tertiary servers may be the primary and secondary DNS servers provided by MOREnet. To locate the DNS Servers for your region.

<http://www.more.net/technical/netserv/tcpip/dnslocate.html>

Primary		← Address of your DNS server
Secondary	150.199.1.10	← MOREnet DNS server
Tertiary	150.199.8.1	← MOREnet DNS server

- Use this table to record the DNS name for your local or internal IP addresses. (These DNS names are not registered on the Internet and can only be seen from your local network.)

Local IP Address		DNS Name	Record	Device Description
<i>Ex</i>	10.0.0.254	FS1.abc.k12.mo.us	A	NIC card of this server
<i>Ex.</i>	10.0.0.253	FS2.abc.k12.mo.us	A	FS2 Internal Web Server
<i>Ex</i>	10.0.0.253	www.abc.k12.mo.us	C	FS2 Alias for FS2.abc.k12.mo.us
<i>Ex</i>	10.0.0.253	Mail.abc.k12.mo.us.	MX	FS2 Mail Exchange abc.k12.mo.us
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
...				

Install Novell's DNS Server Service

From the Novell Server's console, perform the following tasks to install DNS on your existing Novell server. You will need the CD-ROM that contains the NWUXPS directory. If you are using the 2 CD-ROM distribution set, use the NIAS4 CDROM instead of the NWUXPS CDROM. The 4 CD-ROM distribution set users can use the NWUXPS CD-ROM for the following install.

- Insert the NWUXPS CD-ROM into the CD-ROM drive and mount the CD as a volume using the **LOAD CDROM** and **CD MOUNT ALL** commands.
- From the console prompt, enter **LOAD INSTALL**.
- Select **Product Options** screen then the **Install a product not listed**.
- Press F3 and enter **NWUXPS: NWUXPS** then press **ENTER**.
- Press **ESC** to continue installation when prompted for the readme.txt file select **No**, (default) to continue the installation.
- Enter the server name at the Enter local host name prompt, for example, **FS** then press **ENTER**.
- Enter the default drive for booting the server; **C:** then press **ENTER**.

8. Select **No** to install the online documentation then press **ENTER**.
9. Press any key to continue at the warning host.db does not exist.
10. Login to this server at the server login prompt.
11. Select **Local DNS and Local NIS** at the Available Name Service Options menu
12. Select **DNS Domain** at the Setup Name Services menu. Enter your DNS domain if different from the default (for example, `ABC.k12.mo.us`). Press **ENTER** to set this field.
13. Acknowledge the error by pressing **ENTER**, then **ESC** to continue.
14. Select **Yes** to continue installing name services.
15. Select the default **No** for DNS services for specific subnetworks then press **ENTER**.
16. Press **ESC** to continue the install.
17. Press **ESC** after the product initialization is complete. DNS service will start.
18. You're finished. Exit this installation by pressing **ESC** several times.
19. Reapply your latest support pack, then down and restart your server.

Refer to the section *Verify a New DNS Entry Using Nslookup* to check your install.

Verify a DNS Entry Using Nslookup

The following example uses Windows NT command line (DOS prompt) NSLOOKUP utility. Other utilities such as Netlab or WS32Ping are available for Windows 95/98 that can achieve the same functionality.

1. From a Window NT workstation, open a Command prompt window.
2. Select **Start, Programs, Command Prompt**.
3. At the prompt enter **nslookup**, followed by **ENTER**.
4. The default server is displayed followed by the nslookup mode prompt `>`
5. Change the default server to your local DNS server's IP address by entering **server 10.0.0.254**.

Note: If your local DNS server's address is 10.0.0.254, it will look like this:

```
Command Prompt
> SERVER 10.0.0.254
Default Server: [10.0.0.254]
Address: 10.0.0.254
```

6. Verify a DNS name of an IP address by entering `10.0.0.253` and see the results:

```
Command Prompt
> 10.0.0.254
Server: [10.0.0.254]
Address: 10.0.0.254

Name: FS1.ABC.k12.mo.us
Address: 10.0.0.254
```

7. Verify that an IP address resolves to a DNS name by entering `fs5.abc.k12.mo.us`

```
Command Prompt
> fs1.abc.k12.mo.us
Server: [10.0.0.254]
Address: 10.0.0.254

Name: FS1.ABC.k12.mo.us
Address: 10.0.0.254
```

8. If you do not resolve a name correctly, refer the section *Modify a DNS Database* to make changes to your resource records.

Administer the DNS server

The DNS server installation created three resource records for this server's IP address. Administering the DNS server is done through the utility `LOAD UNICON.NLM`. Refer to the section *Modify a DNS Database* to view the DNS database.

Contents of Database		
Domain	Type	Data
ABC.k12.mo.us	NS	FS1.ABC.k12.mo.us
ABC.k12.mo.us	SOA	FS1.ABC.k12.mo.us
FS1.ABC.k12.mo.us	A	10.0.0.254

Start and Stop Your DNS Server Service

Use the UNICON.NLM utility to reinitialize, start or stop your DNS service:

1. At the server prompt, type **LOAD UNICON**.
2. Login with your Admin **user ID** and **password**.
3. At the Main Menu, select **Start/Stop Services**.
4. Highlight **DNS Server** in the Running Services Menu
5. To stop the server press the **DELETE** key. Select **Yes** to stop the server.
6. To start the DNS Server from the **Running Services menu** press **INS**.
7. Select DNS Serve then press **ENTER**.
8. The server will star and appear in the **Running Services Menu**.
9. Press **ESC** to exit this utility.

Change Your Server's DNS Resolver

If you experience a problem with your local DNS server failing to resolve internet addresses outside your domain. Use the UNICON.NLM to change and review the list of DNS for your local server.

1. At the server prompt, type **LOAD UNICON**.
2. Login with your Admin **user ID** and **password**.
3. At the Main Menu, select **Manage Global Objects** then press **ENTER**.
4. Select **Configure Server Profile**. Press **ENTER**.

5. Under the DNS Client Access section of the Server Profile Configuration menu verify your configuration looks like this:

Server Profile Configuration

Synchronization Interval	60 seconds
NIS Client Access:	<not enabled>
Domain:	ABC.k12.mo.us
Server:	<not enabled>
DNS Client Access:	<enabled>
Domain:	FS1.ABC.k12.mo.us
Name Server #1:	10.0.0.254
Name Server #2:	150.199.1.10
Name Server #3:	128.206.2.252

6. Edit the DNS client access fields by selecting and entering the correct information.
7. If changes are made exit back to the Main Menu and stop and start the DNS server service to make changes affective. (Refer to the section on Starting and Stopping your DNS server).
8. Using the NSLOOKUP utility and verify resolution of the Internet address 150.199.1.10.

Modify a DNS Database

Edit, add and remove domain names from your DNS database by using the LOAD UNICON utility. Use these steps to view and edit the contents of your database. From the server prompt perform the following.

1. At the server prompt, type **LOAD UNICON**.
2. Login with your Admin **user ID** and **password**.
3. At the Main Menu, select **Manage Services**.
4. At the Manage Services menu, select **DNS**.
5. From the DNS menu, select Administer **DNS**.
6. At the DNS Server Administration menu, select **Manage Master Database**.
7. Select **Manage Data** to view the database.
8. Modify your data by using the following keys:
 - **INS** = insert a new resource record.
 - **DEL** = delete a resource record from the database.
 - **ENTER** = Edit an existing resource record.
9. Pressing **ESC** several times exits you from this utility.

Create an AName Record (Host name)

Add a new host name for a device using the Unicon utility. Create a new AName record (a unique name) for the device's IP address.

1. From the server *Contents of Database* screen (Step 8 Modify a DNS database), press **INS** to add a new record.
2. Select record type **A** to first create an AName record for this device.
3. Enter **FS2** for the name of this device then press **ENTER**.
4. Press **ENTER** several times till you select the address field.
5. Enter **10.0.0.253**, the IP address of this device then press **ENTER**.
6. Press **ESC**, and accept the changes back to the *Contents of Database* window.
7. Create a canonical name or alias name for this device by pressing **INS**.
8. Enter **WWW** as the record name then press **ENTER**.
9. Press **ENTER** several times till you select the **Canonical Name** field.
10. Enter **FS2** in this field to point all reference to the AName record. Press **ENTER**.
11. Press **ESC** and accept the changes.
12. Exit back to the Main Menu and follow the process to stop and restart the DNS service.
13. Exit this utility and check your AName and CName additions using the NSLOOKUP utility from a workstation. (See section *Verify a New DNS Entry Using Nslookup*).
14. From the NSLOOKUP prompt **>**, enter **10.0.0.253**, the IP address of the Web server.
15. From the NSLOOKUP prompt **>**, enter **www.abc.k12.mo.us** to verify the DNS server resolves an address for the name.

Create a CName Record (WWW)

A canonical name record is an alias name record for an AName record. Use the Unicon utility to create an alias domain name for a local web to make it easier for people to remember `www.abc.k12.mo.us`.

1. From the server **Contents of Database** screen (Step 8 Modify a DNS database), press **INS** to add a new record.
2. Create a canonical name or alias name for this device by pressing **INS**.

3. Enter **WWW** as the record name then press **ENTER**.
4. Press **ENTER** several times till you select the **Canonical Name** field.
5. Enter **FS2** in this field to point all reference to the AName record. Press **ENTER**.
6. Press **ESC** and accept the changes.
7. Exit back to the Main Menu and follow the process to stop and restart the DNS service.
8. Exit this utility and check your AName and CName additions using the NSLOOKUP utility from a workstation. (See section Verify a New DNS Entry Using Nslookup).
9. From the NSLOOKUP prompt >, enter **10.0.0.253**, the IP address of the Web server.
10. From the NSLOOKUP prompt >, enter **www.abc.k12.mo.us** to verify the DNS server resolves an address for the name.

Create an MX Record (Mail)

Create a domain name record for a local mail server by creating a MX record and an AName record.

1. From the server contents of Database screen (Step 8 Modify a DNS database), press **INS** to add an AName record.
2. Select record type **A**.
3. Enter **FS2** for the name of this mail device. Press **ENTER**.
4. Press **ENTER** several times till you select the address field.
5. Enter **10.0.0.252**, the IP address of this device. Press **ENTER**.
6. Press **ESC** and accept the changes.
7. Create a mail exchange record by pressing **INS** at the Contents of Database window.
8. Select record type **MX**.
9. Select the **Record Name field** and enter **MAIL**. Press **ENTER**.
10. Press **ENTER** several times till you select **Preference field**.
11. If this is the primary mail server for this domain leave the preference as **0**.

Note: If this is the second preferred mail server exchanger for this domain then increment the preference setting by 10.
12. Press **ENTER** several times until you select the **Exchange field**.

13. Enter **FS2** in the Exchange field. Press **ENTER**.

Note: This field designates the device for which this device will prefer to exchange mail for, or hold mail for in case the device is down.

14. Press **ESC** and accept the changes.

15. Exit back to the server prompt by pressing **ESC** several times.

16. Check your new domain name using the NSLOOKUP utility with the MX OPTION turned on like the following.

17. At the NSLOOKUP prompt **>**, enter **server 10.0.0.254**.

18. At the **>** prompt, enter **set querytype=mx**.

```
Command Prompt
> SERVER 10.0.0.254
Default Server: [10.0.0.254]
Address: 10.0.0.254

> set querytype=mx

> mail.abc.k12.mo.us
Server: [10.0.0.254]
Address: 10.0.0.254

mail.abc.k12.mo.us      MX preference = 0, mail exchanger = fs3.ABC.k12.mo.us
abc.k12.mo.us          nameserver = FS5.ABC.k12.mo.us
fs3.ABC.k12.mo.us      internet address = 207.160.135.188
FS5.ABC.k12.mo.us      internet address = 207.160.135.186
>
```

Configure a Windows DNS Client

This section describes how to add and remove DNS servers on a workstation. You can also use a workstation to verify a DNS server is resolving IP address to host name, by remove all of the secondary and tertiary DNS server names leaving only the one you wish to test.

Note: If you are using DHCP services on your network, set your workstation for a static IP assignment for verifying a DNS server.

From a Windows 95/98/NT workstation:

1. Click Start, Settings, then Control Panel.

2. Open the Network Icon.
3. Select the **Protocol or Configuration Tab** and highlight **TCP/IP Protocol**.
4. Select the **Properties button**.
5. Select the **DNS tab** to configure your DNS settings.
6. To manipulate your DNS server entries use the Add and Remove buttons in the DNS Service Search Order section.
Note: It is important to remember that the workstation will search from the top down, so your new DNS server you just installed must be on top of the other two DNS servers entries.
7. Add your new local DNS server to the list and make the necessary modifications so your local DNS server is the primary server, and your secondary and tertiary and are the backup DNS servers on your network. (See your ISP for the DNS servers closest to you. For MOREnet customers, use 150.199.1.10 as the secondary and 128.206.2.252 as the tertiary).
8. Exit and save your changes then restart your workstation.
9. Test your local DNS server for the new addresses you added by in the Test Your DNS Server section.

Test Your DNS Server

From a workstation configured with the local DNS server as the primary DNS server, try the following commands to verify from a workstation the DNS server is resolving address to name resolution.

1. From your workstation, open a command line or MS-DOS windows.
2. At the command line enter `PING 10.0.0.254`. Press ENTER.
3. Look for Reply from 10.0.0.254 bytes=32.... To verify you are successful.
4. At the command line enter `PING FS1.ABC.K12.MO.US`. Press ENTER.
5. Look for a reply from 10.0.0.254.
6. This tells you that you can ping the DNS name and the IP address of a host.