

## Lab 7.3.3.b Creating Primary and Secondary Forward Lookup Zones

### Objective

- Create primary and secondary forward lookup zones on Windows DNS servers.

### Background / Preparation

You have been asked to implement a DNS zone for a customer that has registered a second-level domain on the Internet. The customer would like to host the DNS zone on two spare servers. You go on site to configure the zone on each of the two DNS servers. One server will function as the primary DNS server and the other will function as the secondary DNS server.

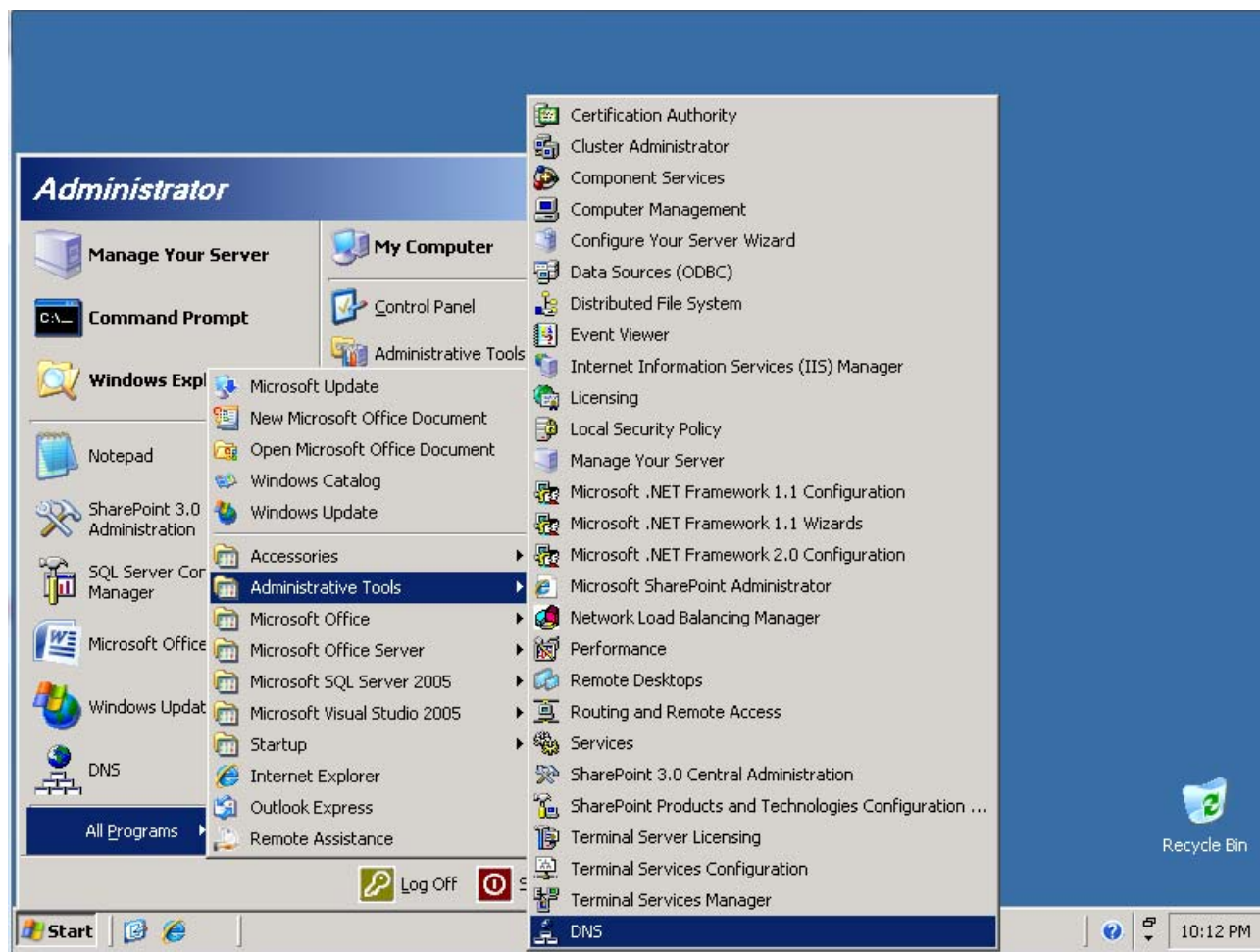
The following resources are required:

- Two Windows 2003 Servers with DNS running
- Administrative access to servers
- Internet connectivity

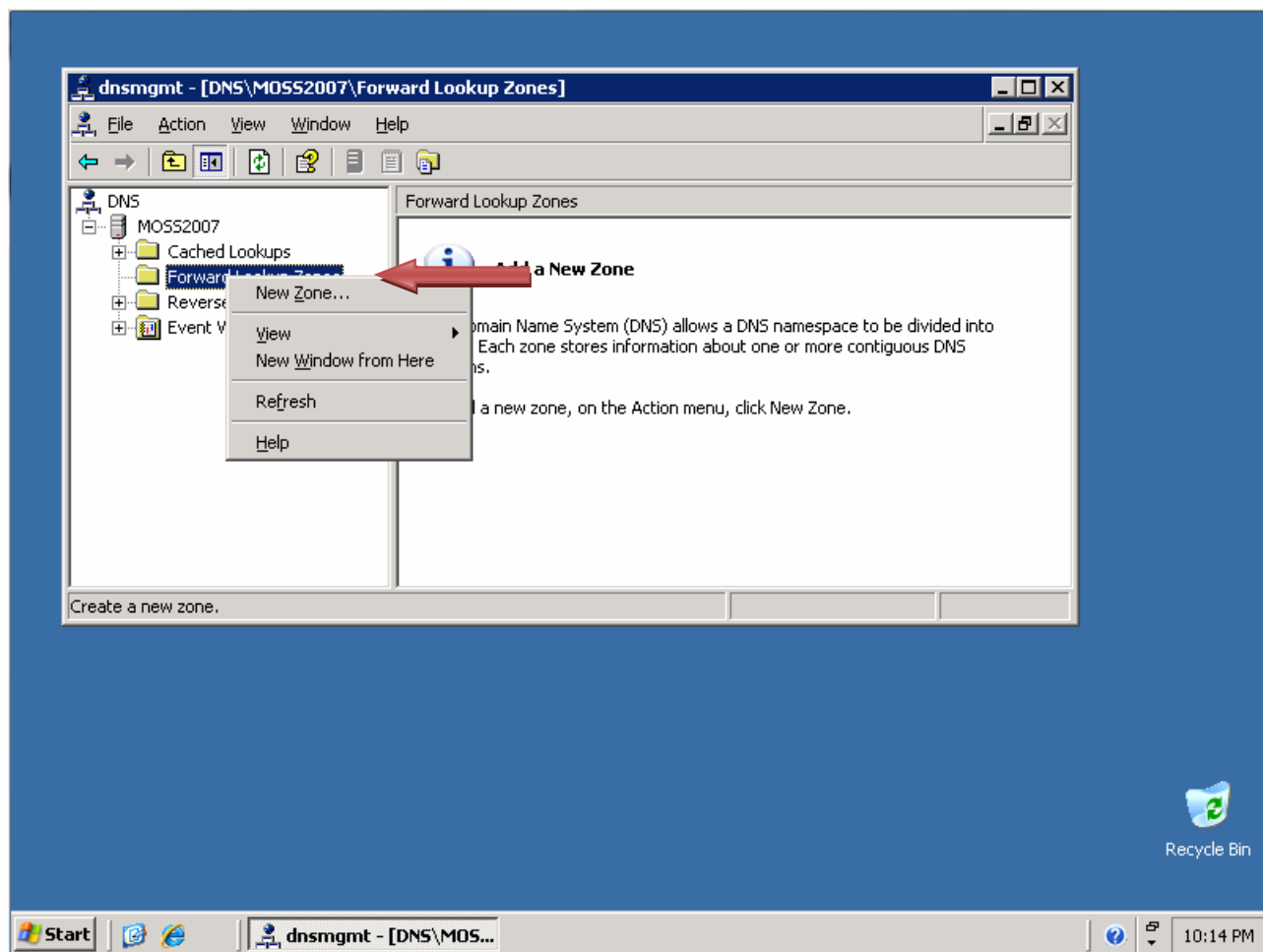
**NOTE:** If you do not have access to the Windows DNS servers, the instructor may demonstrate this lab. If the equipment is not available to perform the lab, or if it cannot be demonstrated, read through the steps of the lab to gain a better understanding of DNS and how DNS servers operate.

### Step 1: Create a primary forward lookup zone on Windows

- a. Click **Start > All Programs > Administrative Tools**, and then click **DNS** to launch the DNS administrative tool.



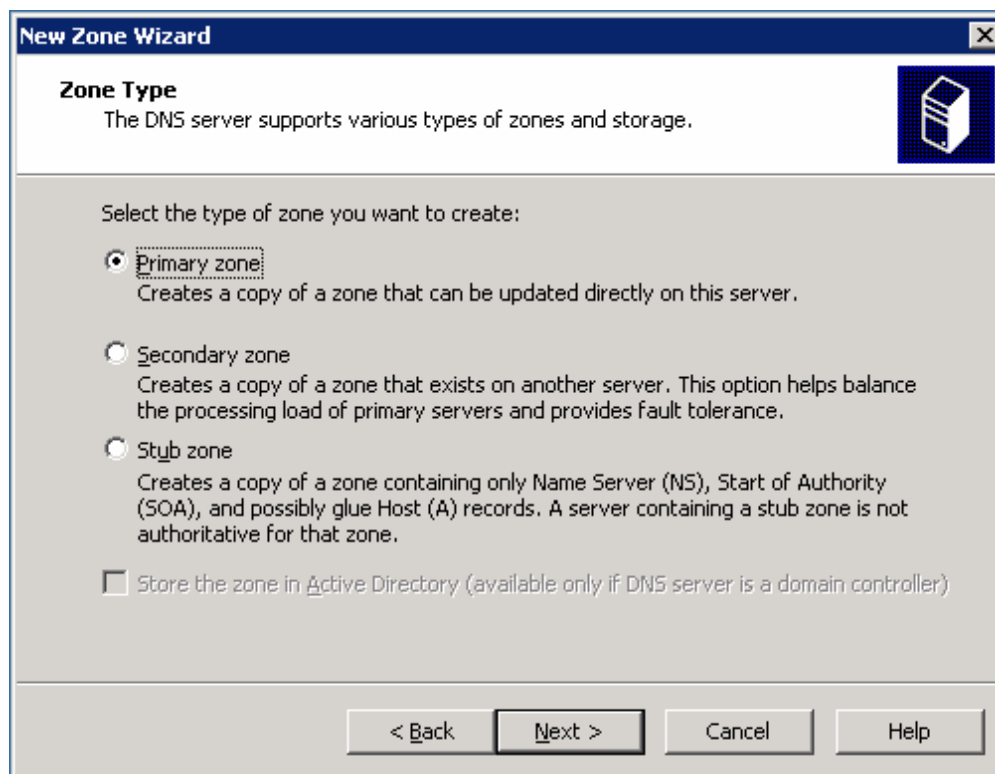
- b. Right-click **Forward Lookup Zones** and then click **New Zone**.



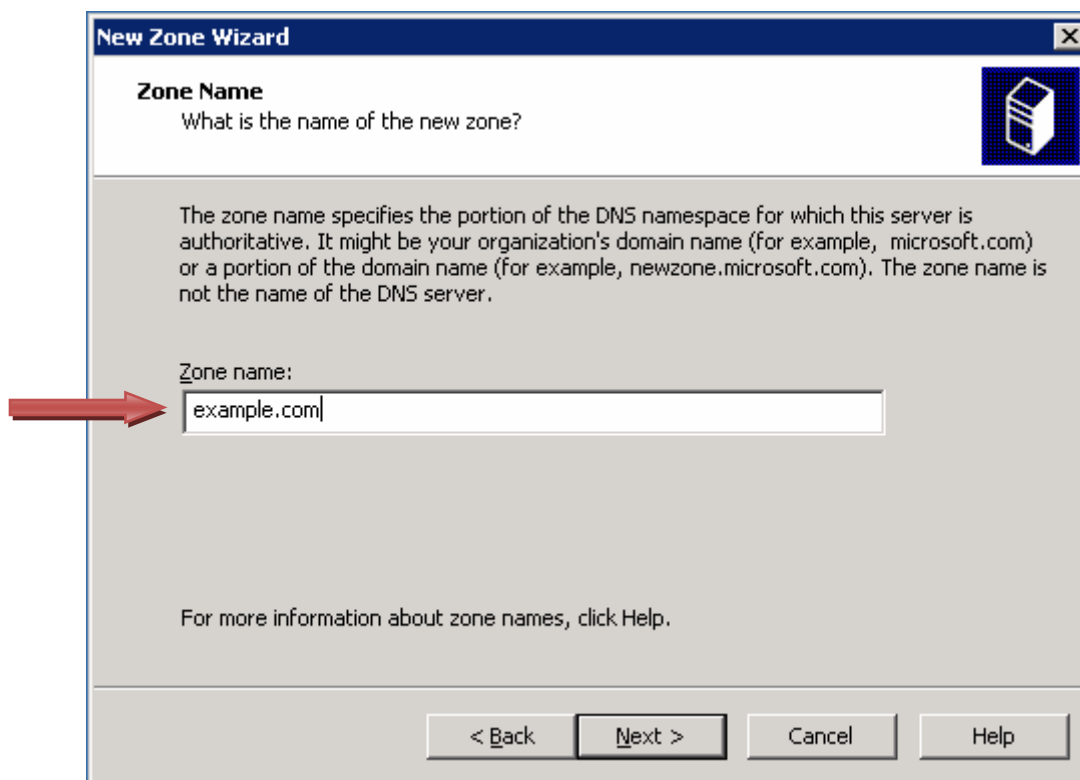
- c. When the **New Zone Wizard** displays, click **Next**.



- d. By default, the **Primary zone** radio button is selected. Click **Next** to create a **Primary zone**.



- e. Enter the domain name, **example.com**, into the Zone name field and click **Next**.



The screenshot shows the 'New Zone Wizard' window with the 'Zone Name' tab selected. The title bar reads 'New Zone Wizard'. Below the title bar, the tab is labeled 'Zone Name' with a server icon. The main text asks 'What is the name of the new zone?'. A paragraph explains that the zone name specifies the portion of the DNS namespace for which this server is authoritative, giving examples like 'microsoft.com' or 'newzone.microsoft.com'. Below this, the 'Zone name:' label is followed by a text box containing 'example.com'. A red arrow points to this text box. At the bottom, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

**Zone Name**  
What is the name of the new zone?

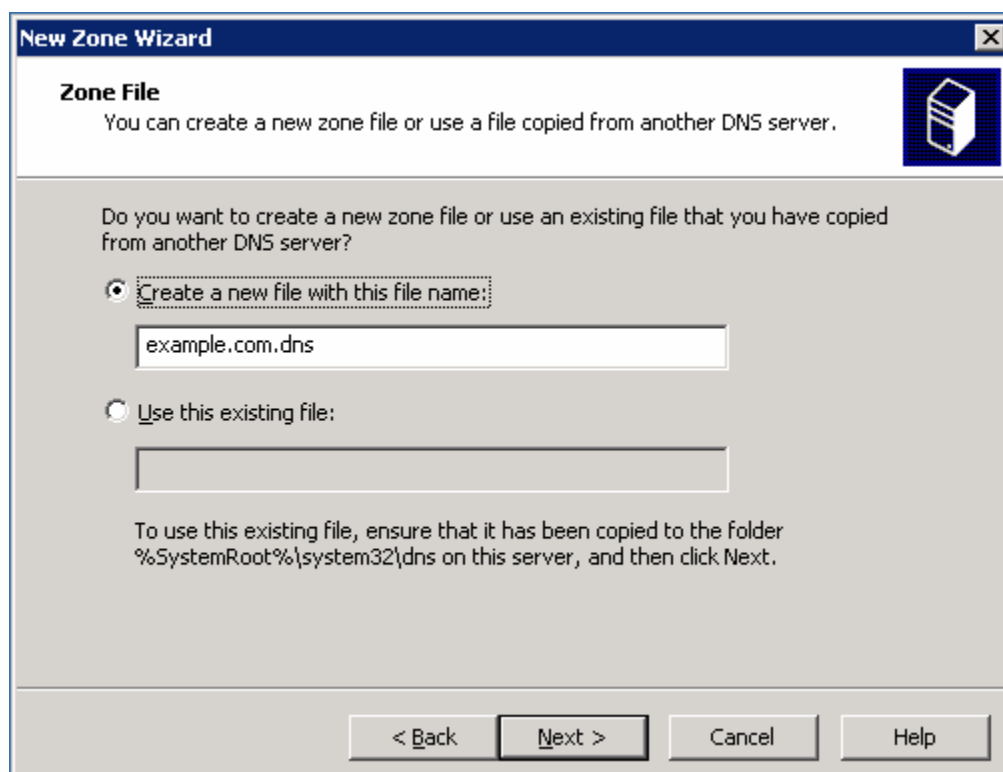
The zone name specifies the portion of the DNS namespace for which this server is authoritative. It might be your organization's domain name (for example, microsoft.com) or a portion of the domain name (for example, newzone.microsoft.com). The zone name is not the name of the DNS server.

Zone name:  
example.com

For more information about zone names, click Help.

< Back   Next >   Cancel   Help

- f. Click **Next** to create a new file with this name.



The screenshot shows the 'New Zone Wizard' window with the 'Zone File' tab selected. The title bar reads 'New Zone Wizard'. Below the title bar, the tab is labeled 'Zone File' with a server icon. The main text says 'You can create a new zone file or use a file copied from another DNS server.' A question asks 'Do you want to create a new zone file or use an existing file that you have copied from another DNS server?'. There are two radio button options. The first option, 'Create a new file with this file name:', is selected, and its text box contains 'example.com.dns'. The second option, 'Use this existing file:', is unselected, and its text box is empty. A paragraph at the bottom explains that to use an existing file, it must be copied to the folder '%SystemRoot%\system32\dns' on the server. At the bottom, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

**Zone File**  
You can create a new zone file or use a file copied from another DNS server.

Do you want to create a new zone file or use an existing file that you have copied from another DNS server?

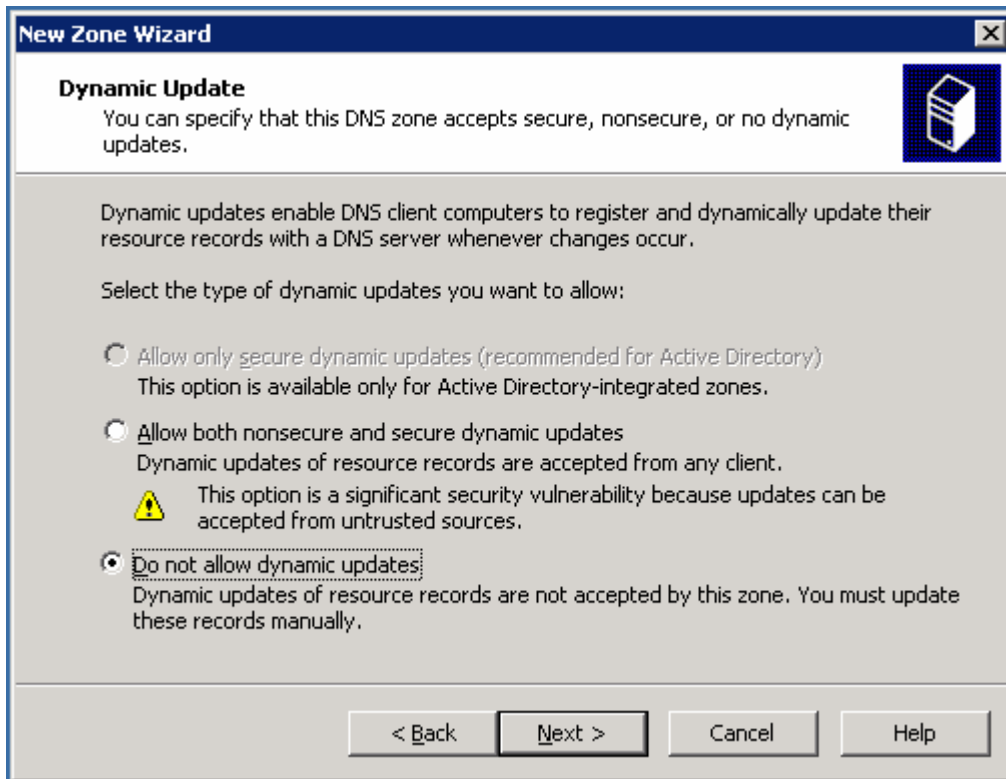
☒ Create a new file with this file name:  
example.com.dns

☐ Use this existing file:

To use this existing file, ensure that it has been copied to the folder %SystemRoot%\system32\dns on this server, and then click Next.

< Back   Next >   Cancel   Help

- g. Notice the option to enable dynamic updates. It is disabled by default for security. You will leave it disabled as well. Click **Next**.

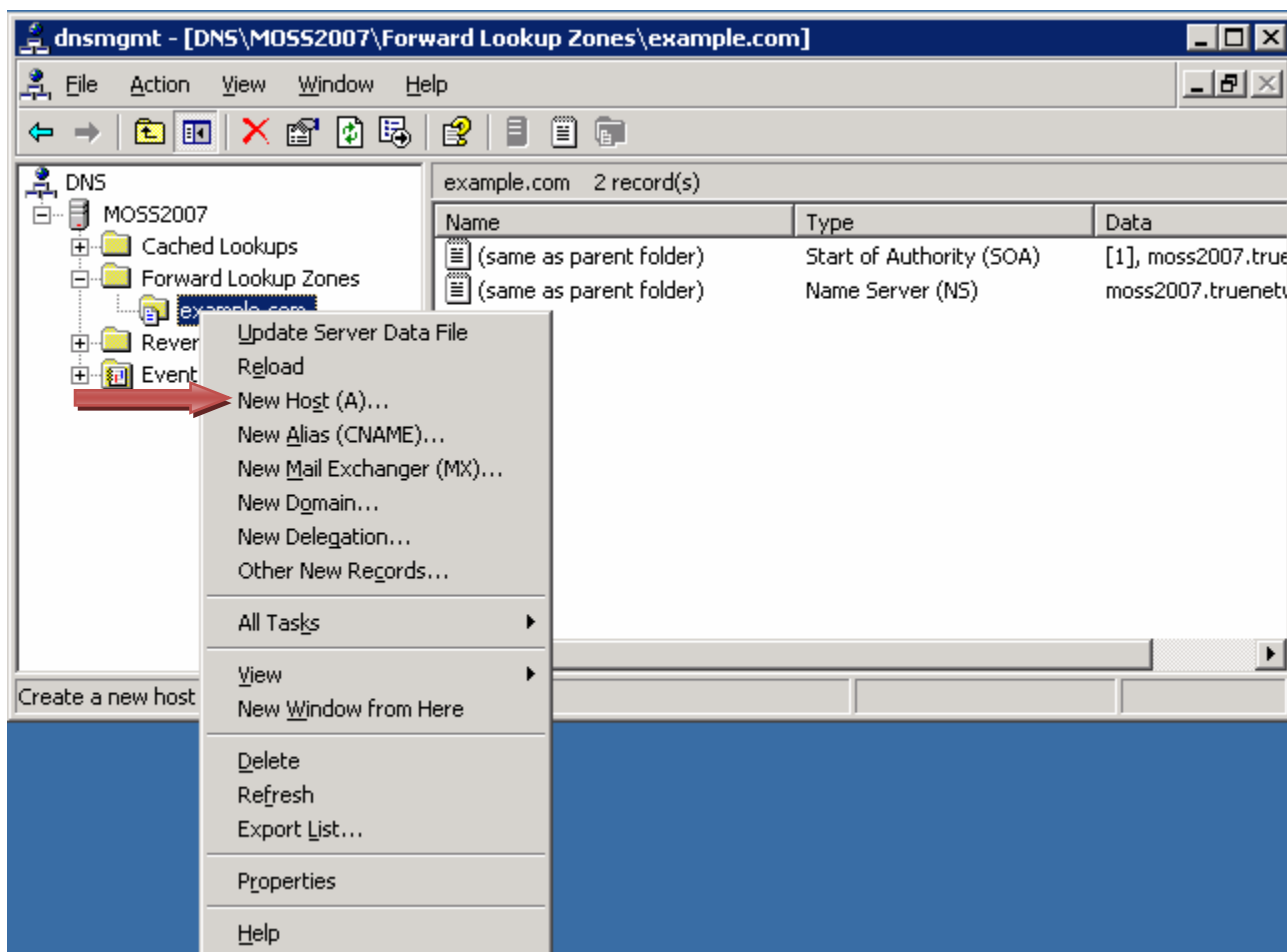


- h. Click **Finish** to create the primary forward lookup zone.

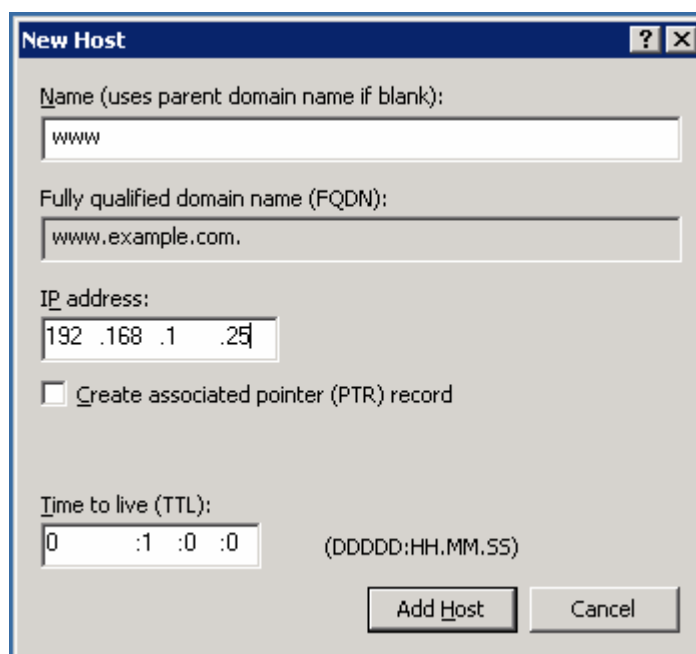


## Step 2: Add a Host record to the Primary forward lookup zone

- a. Right-click the **example.com** forward lookup zone and choose **New Host (A)**.



- b. In the Name field type **www**. In the IP address field, type **192.168.1.25**. Leave the other settings at their default value. This creates a host named **www.example.com**, which will resolve to 192.168.1.25. Click the **Add Host** button at the bottom.



The 'New Host' dialog box is shown with the following fields and values:

- Name (uses parent domain name if blank):** www
- Fully qualified domain name (FQDN):** www.example.com.
- IP address:** 192 .168 .1 .25
- ☐ **Create associated pointer (PTR) record**
- Time to live (TTL):** 0 :1 :0 :0 (DDDD:HH.MM.SS)

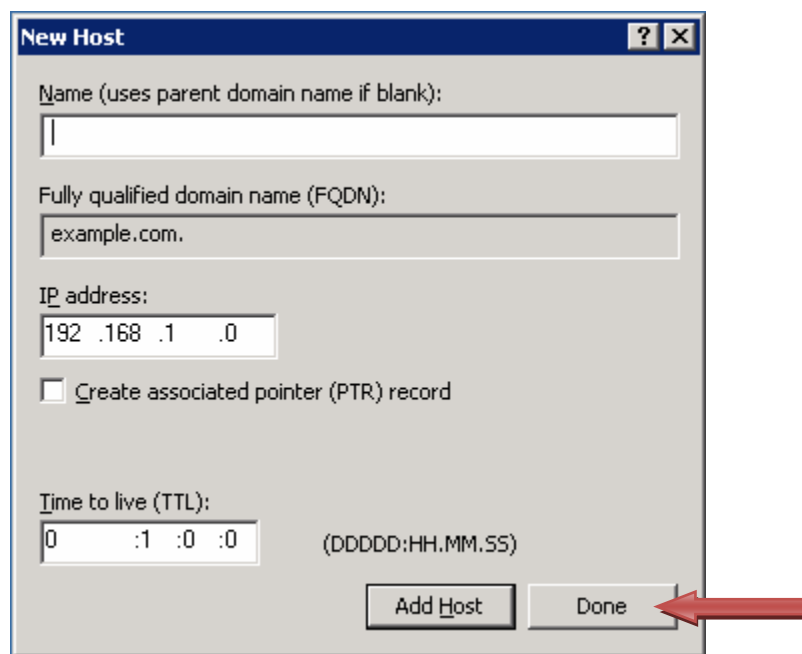
Buttons at the bottom: Add Host, Cancel

- c. Click **OK**.





- d. Click **Done**.

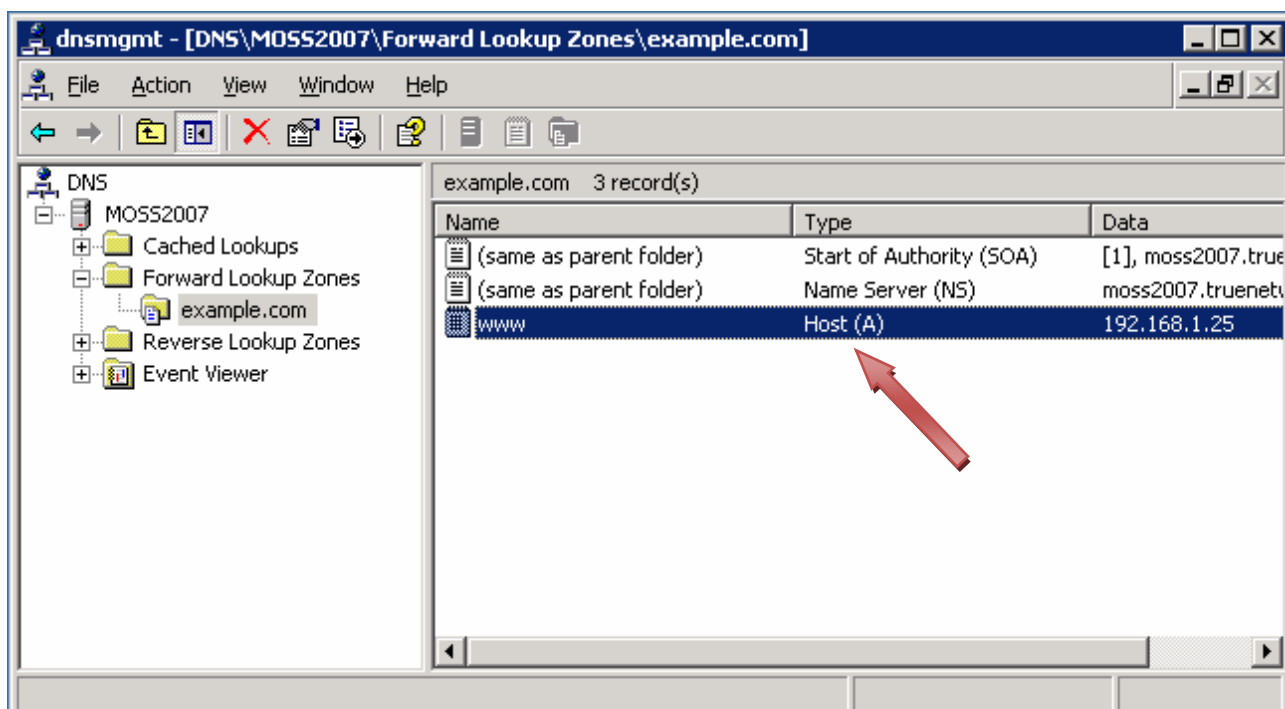


The 'New Host' dialog box is shown with the following fields and values:

- Name (uses parent domain name if blank): [Empty text box]
- Fully qualified domain name (FQDN): example.com.
- IP address: 192 .168 .1 .0
- ☐ Create associated pointer (PTR) record
- Time to live (TTL): 0 :1 :0 :0 (DDDD:HH.MM.SS)

At the bottom right, there are two buttons: 'Add Host' and 'Done'. A red arrow points to the 'Done' button.

The host record is now in your DNS zone.



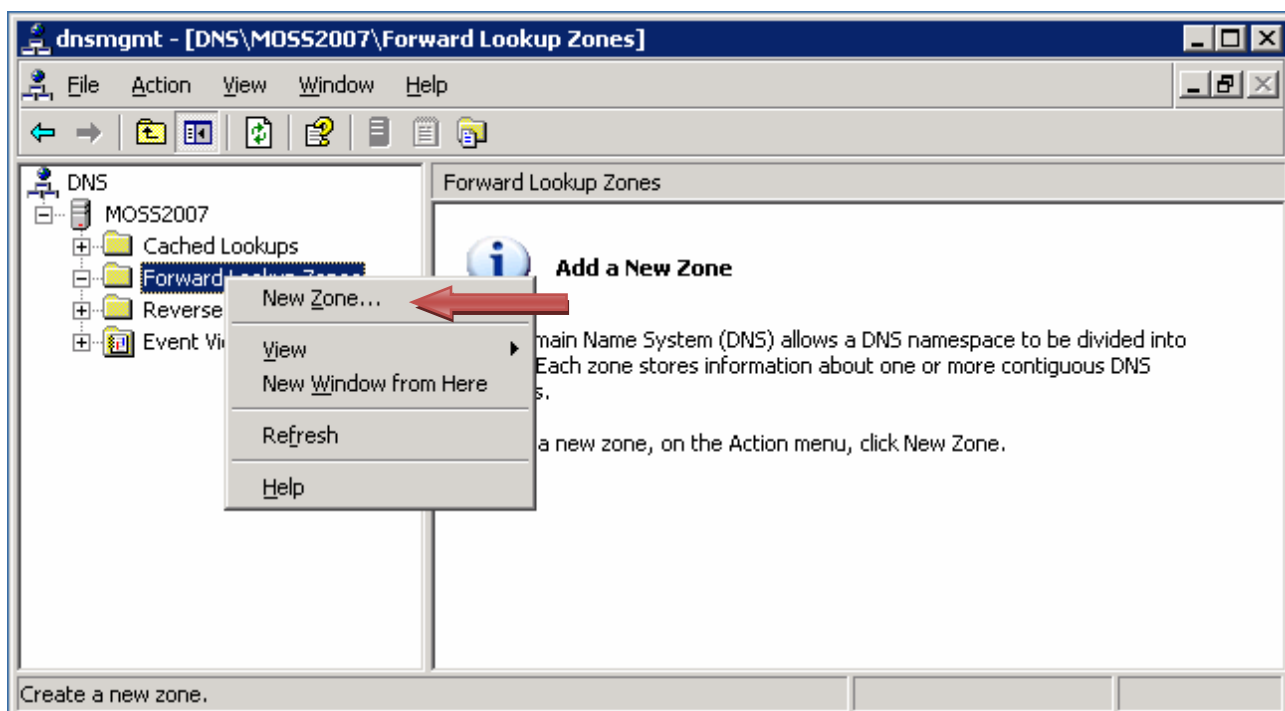
The screenshot shows the 'dnsmgmt - [DNS\MOSS2007\Forward Lookup Zones\example.com]' window. The left pane shows the tree structure with 'example.com' selected under 'Forward Lookup Zones'. The right pane shows a table of records for 'example.com' with 3 record(s).

Name	Type	Data
(same as parent folder)	Start of Authority (SOA)	[1], moss2007.true
(same as parent folder)	Name Server (NS)	moss2007.truenet
www	Host (A)	192.168.1.25

A red arrow points to the 'www' record in the table.

### Step 3: Create a secondary forward lookup zone

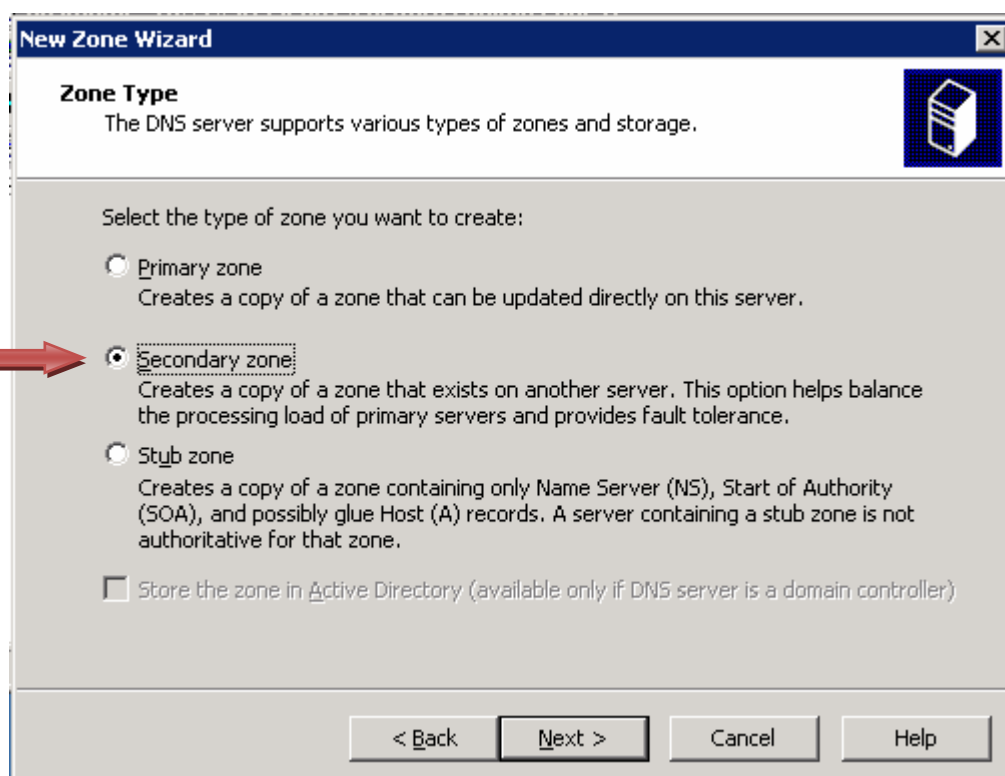
- a. On the second Windows DNS server, launch the DNS administrative tool. Follow the instructions from Step 1.
- b. Right-click **Forward Lookup Zones** and choose **New Zone**.



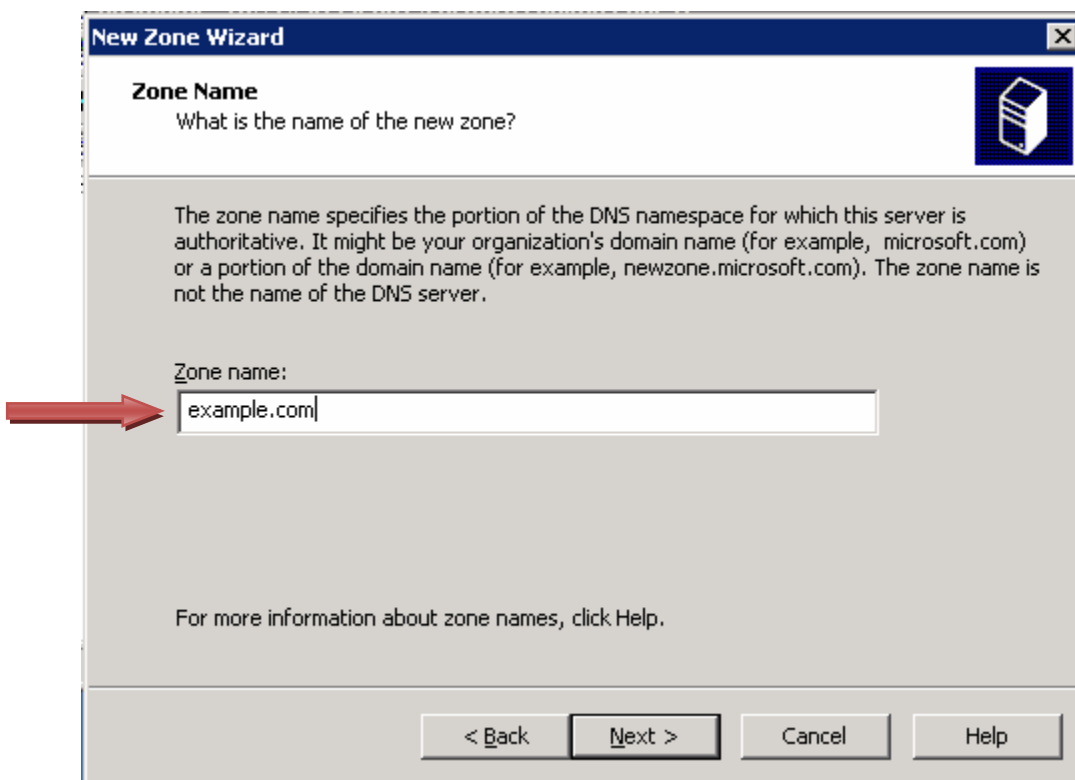
- c. When the **New Zone Wizard** displays, click **Next**.



- d. Click the **Secondary zone** radio button, and then click **Next**.

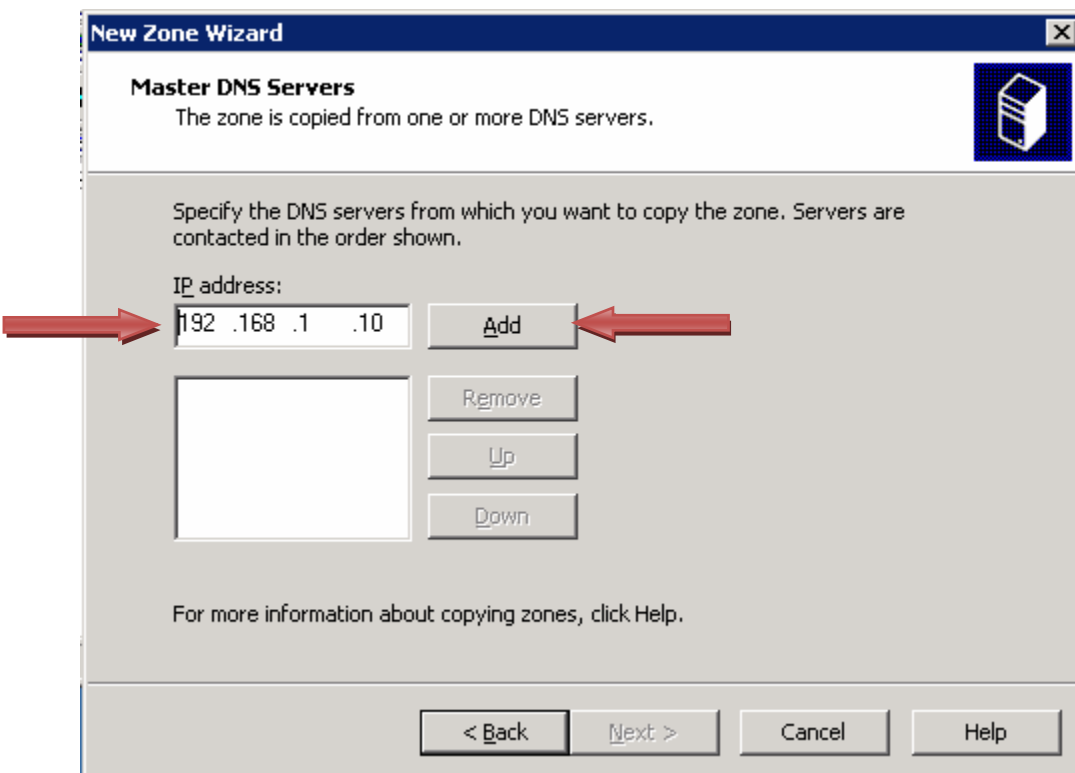


- e. Type **example.com** in the Zone name field, and then click **Next**.



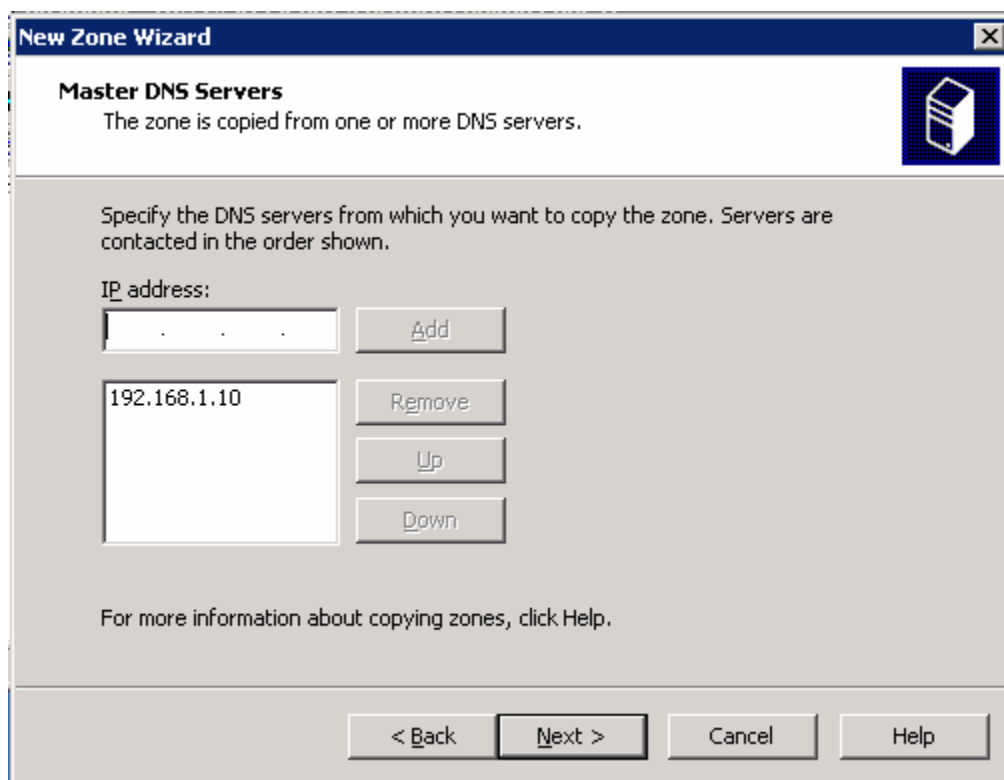
The screenshot shows the 'New Zone Wizard' window with the 'Zone Name' tab selected. The title bar reads 'New Zone Wizard'. Below the title bar, the tab is labeled 'Zone Name'. The main text asks 'What is the name of the new zone?'. A descriptive paragraph explains that the zone name specifies the portion of the DNS namespace for which the server is authoritative, giving examples like 'microsoft.com' or 'newzone.microsoft.com'. Below this, the 'Zone name:' label is followed by a text input field containing 'example.com'. A red arrow points to this input field. At the bottom, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'. The 'Next >' button is highlighted with a red border.

- f. In the IP address field, type **192.168.1.10**, which is the IP address of the primary server. Then click **Add**.



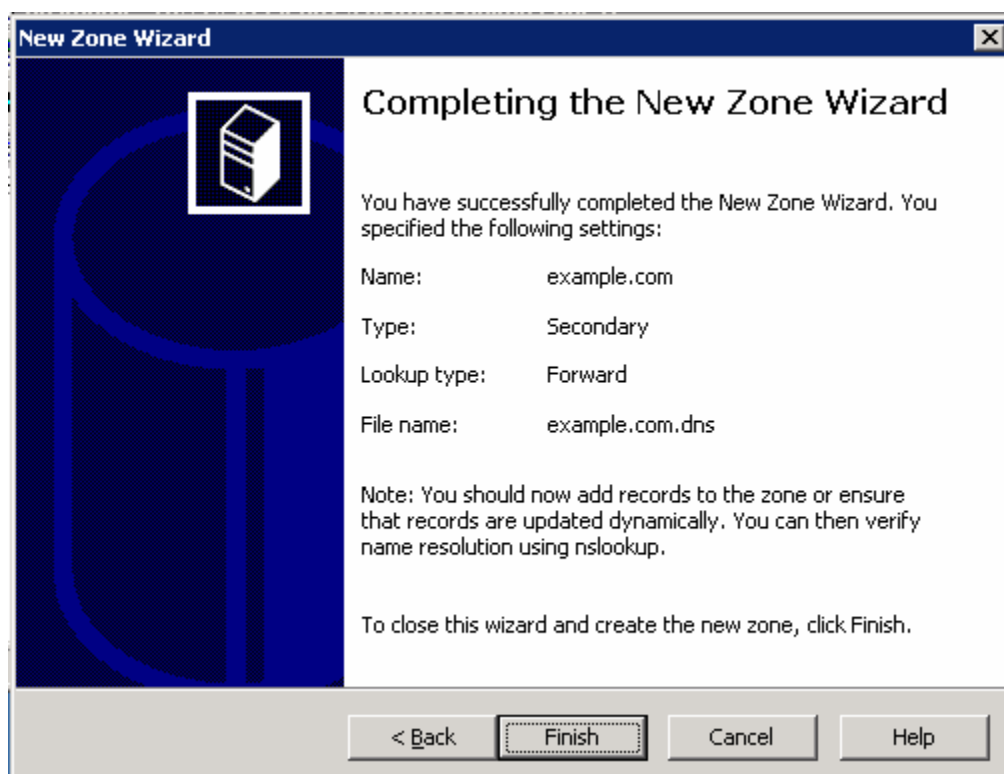
The screenshot shows the 'New Zone Wizard' window with the 'Master DNS Servers' tab selected. The title bar reads 'New Zone Wizard'. Below the title bar, the tab is labeled 'Master DNS Servers'. The main text says 'The zone is copied from one or more DNS servers.' and 'Specify the DNS servers from which you want to copy the zone. Servers are contacted in the order shown.' Below this, the 'IP address:' label is followed by a text input field containing '192 .168 .1 .10'. A red arrow points to this input field. To the right of the input field is an 'Add' button, which is also pointed to by a red arrow. Below the input field is a list box (currently empty) and three buttons: 'Remove', 'Up', and 'Down'. At the bottom, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'. The 'Next >' button is highlighted with a red border.

- g. Click **Next**.



The screenshot shows the 'New Zone Wizard' window with the 'Master DNS Servers' tab selected. The title bar reads 'New Zone Wizard'. Below the title bar, the text 'Master DNS Servers' is followed by 'The zone is copied from one or more DNS servers.' and a server icon. The main area contains the instruction 'Specify the DNS servers from which you want to copy the zone. Servers are contacted in the order shown.' Below this is an 'IP address:' label, a text input field containing '192.168.1.10', and buttons for 'Add', 'Remove', 'Up', and 'Down'. At the bottom, there is a 'For more information about copying zones, click Help.' message and four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

- h. Click **Finish**.

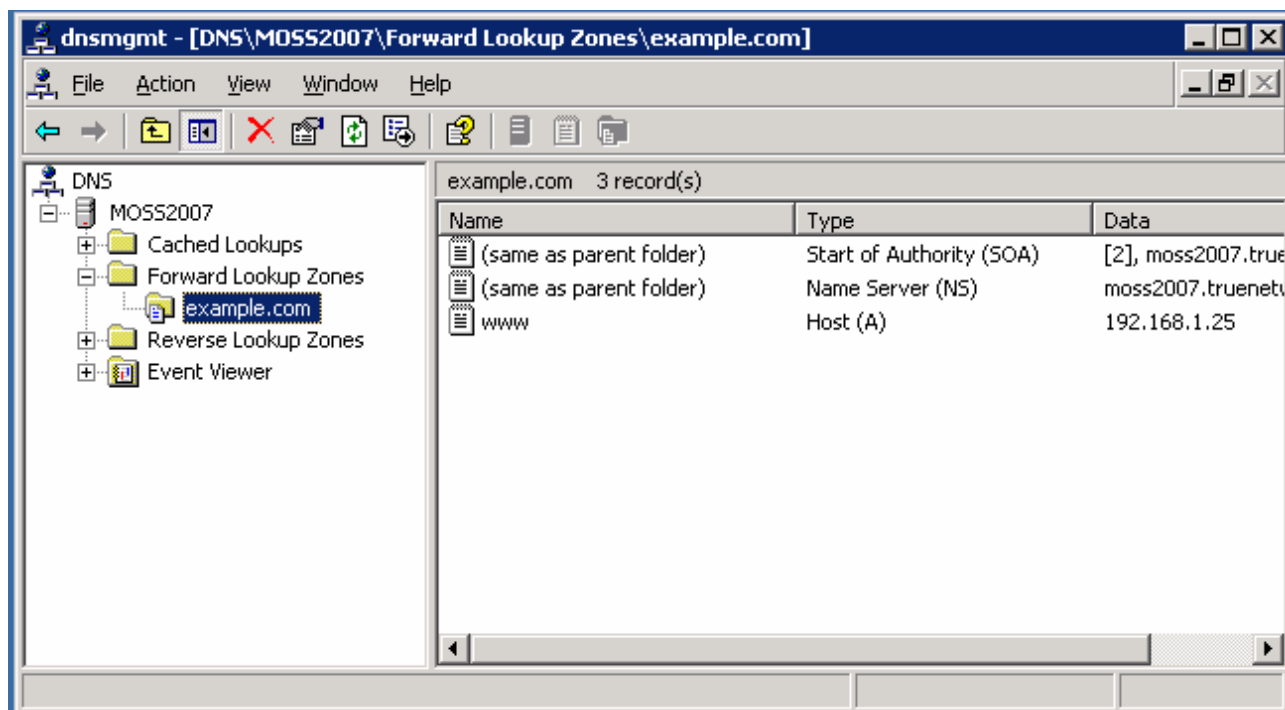


The screenshot shows the 'New Zone Wizard' window at the 'Completing the New Zone Wizard' step. The title bar reads 'New Zone Wizard'. On the left is a large blue graphic with a server icon. The main area has the heading 'Completing the New Zone Wizard' followed by the text 'You have successfully completed the New Zone Wizard. You specified the following settings:'. Below this is a list of settings: 'Name: example.com', 'Type: Secondary', 'Lookup type: Forward', and 'File name: example.com.dns'. A 'Note' section follows, stating 'Note: You should now add records to the zone or ensure that records are updated dynamically. You can then verify name resolution using nslookup.' Below the note is the instruction 'To close this wizard and create the new zone, click Finish.' At the bottom are four buttons: '< Back', 'Finish', 'Cancel', and 'Help'.

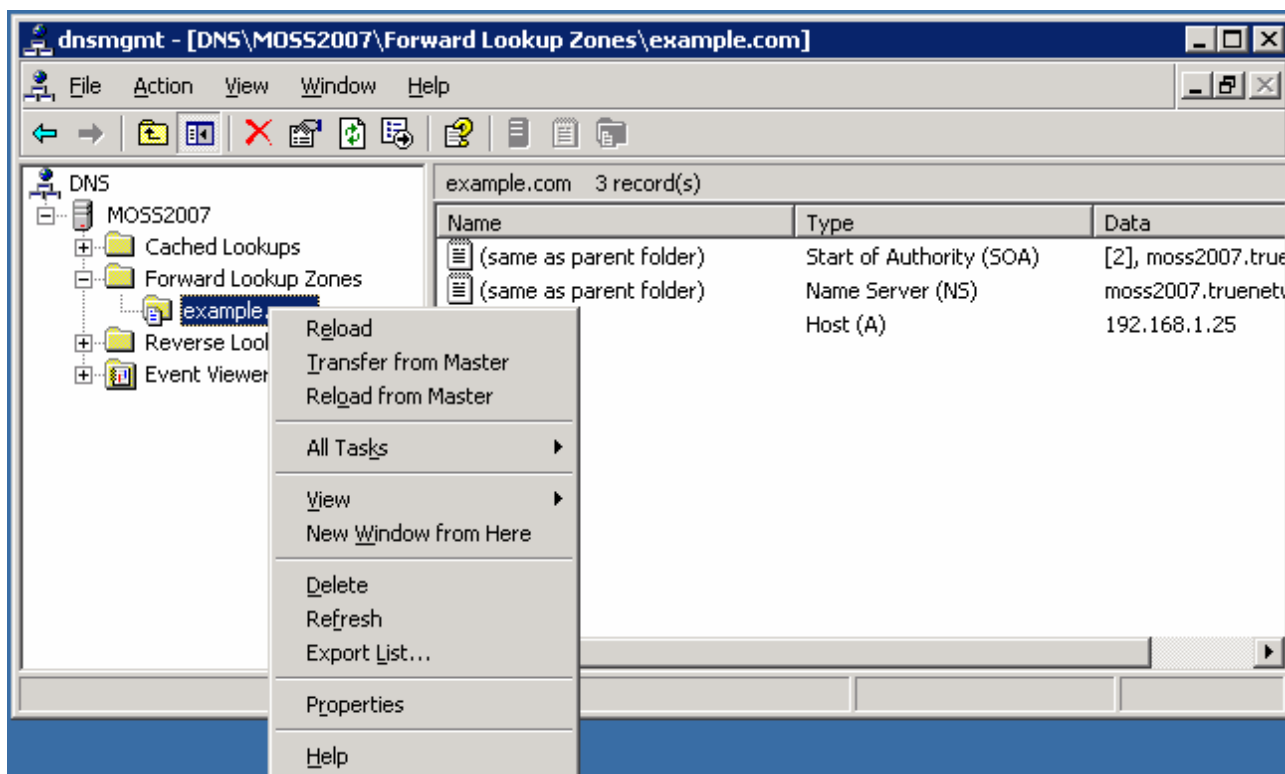
## CCNA Discovery

### Working at a Small-to-Medium Business or ISP

- i. When you view the secondary zone, notice that the www host record created on the primary server has transferred down to the secondary server.



- j. To verify that it is a secondary zone and is read-only, right-click the zone and notice that there is not an option to create any records.



**Step 4: Reflection**

What is the major benefit of having a primary and secondary DNS server in a zone?

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