



Chapter 3.

Xây dựng DNS Server

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3.1 Tổng quan về dịch vụ DNS

- ❖ **DNS** – Domain Name System
- ❖ Là dịch vụ có chức năng phân giải tên máy tính thành địa chỉ IP và ngược lại.
- ❖ Ở DNS lưu trữ một CSDL gồm các bản ghi DNS ánh xạ giữa tên máy tính (tên miền) với địa chỉ IP.

Ví dụ: **google.com <-> 74.125.128.139**

3.1 Tổng quan về dịch vụ DNS

DNS Server địa phương

IP: 101.99.48.29



2. google.com ở đâu ?

3. Hỏi DNS 8.8.8.8



Root Domain DNS Server

IP: 10.35.83.77

4. google.com ở đâu ?

5. IP: 74.125.128.139



DNS Server

IP: 8.8.8.8



Name: Google.com

IP: 74.125.128.139

Cần truy cập đến
google.com

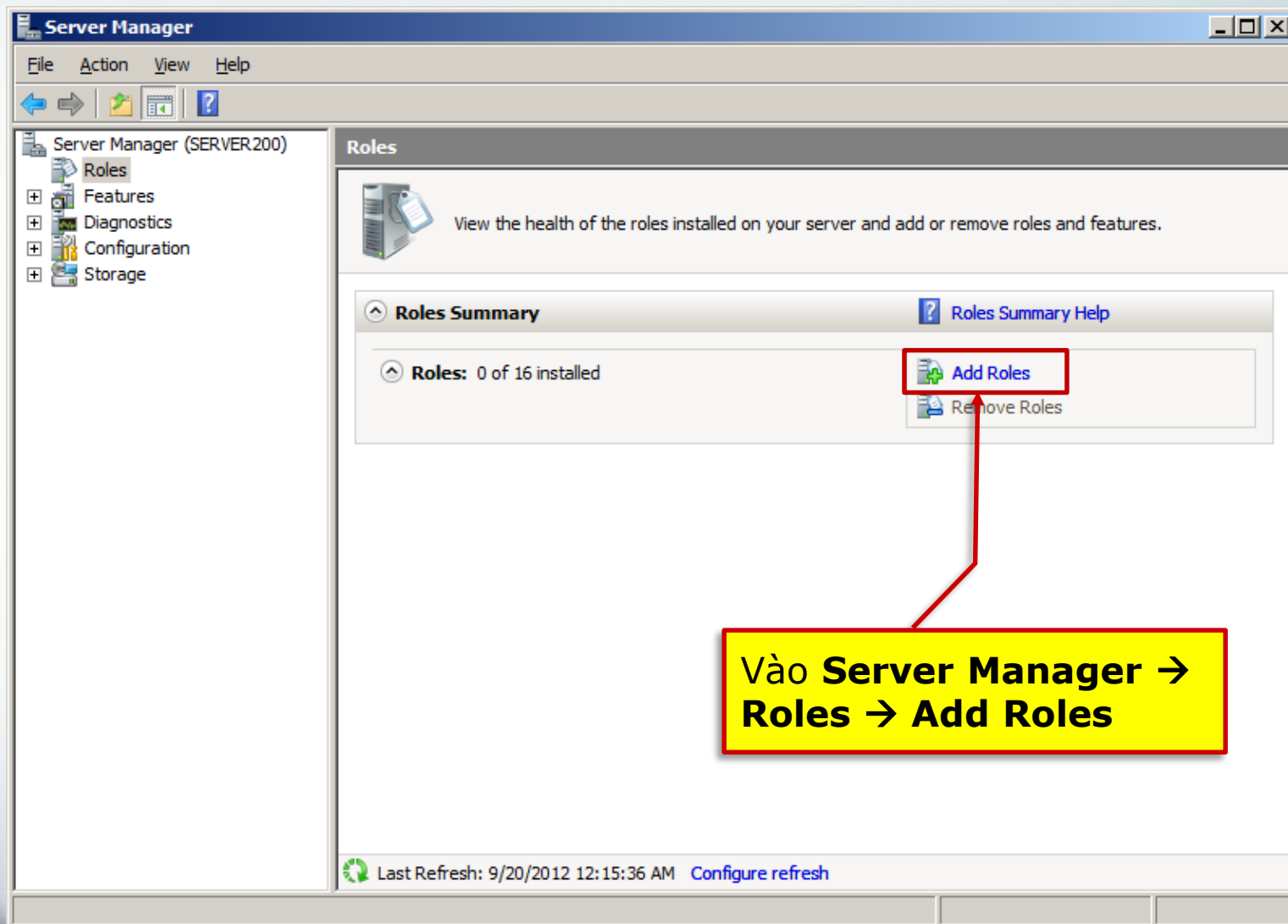
3.2 Cài đặt DNS Server

❖ Chuẩn bị cài đặt:

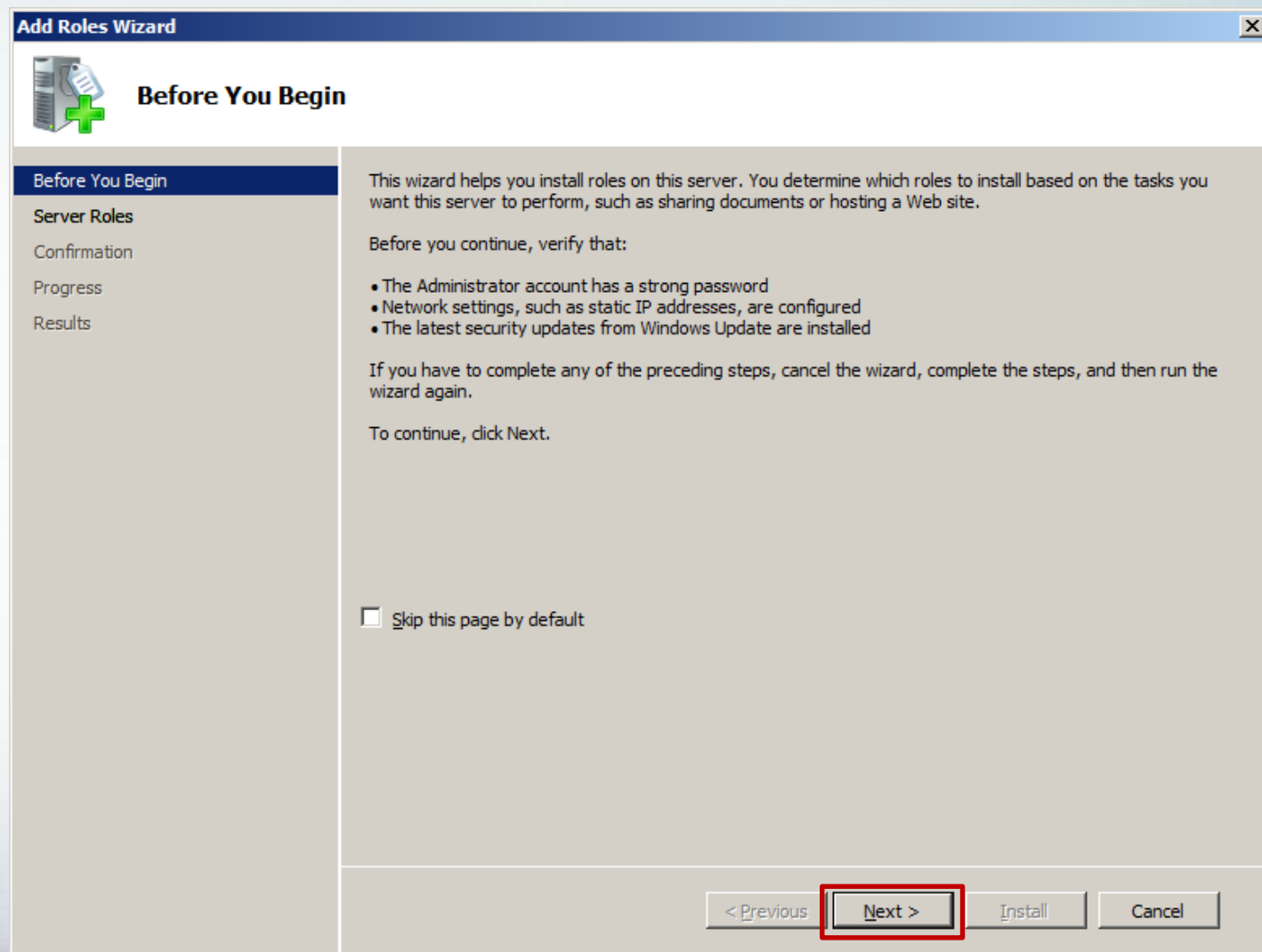
- Cấu hình IP tĩnh cho Server
- Đặt tên cho Server

❖ Các bước cài đặt

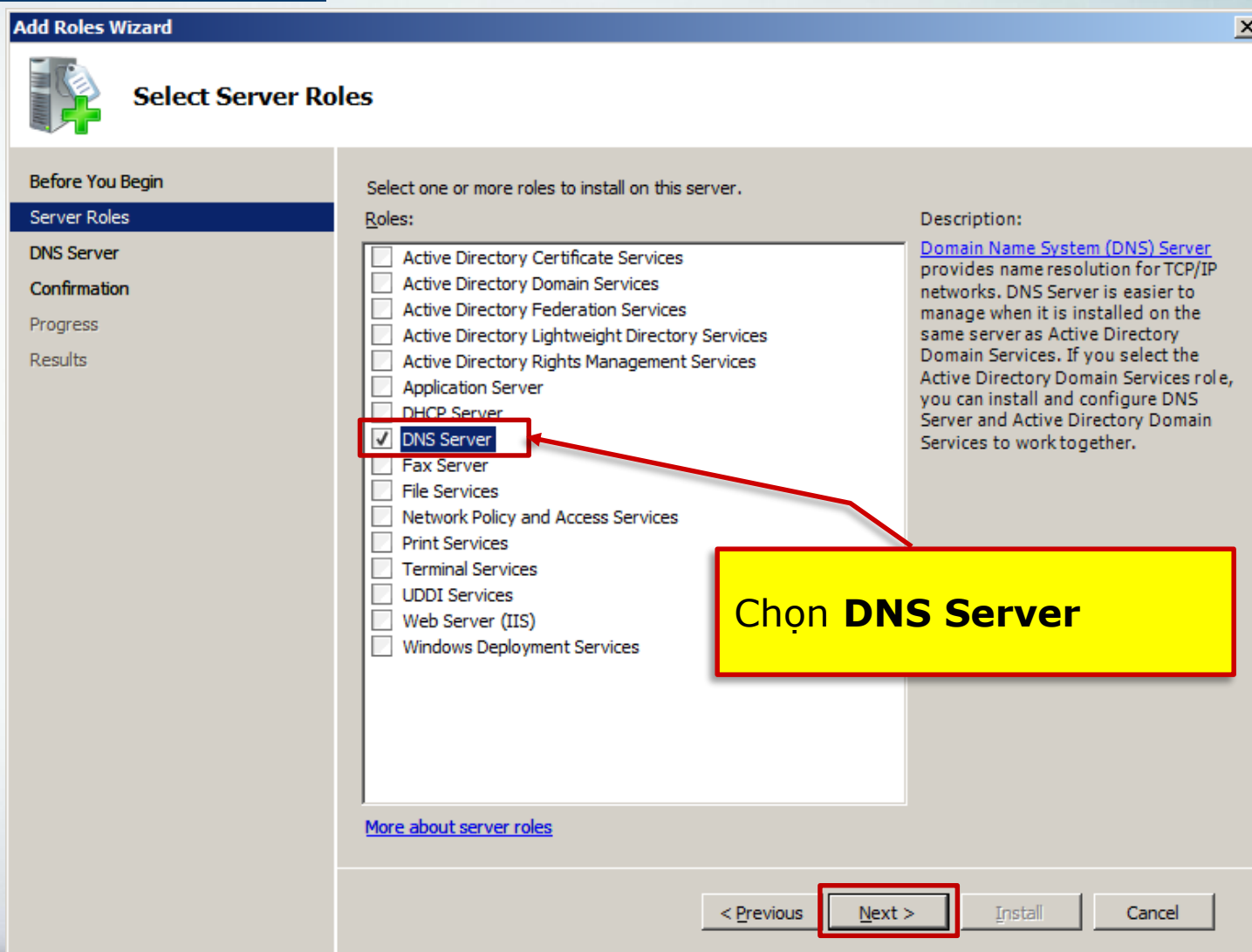
3.2 Cài đặt DNS Server



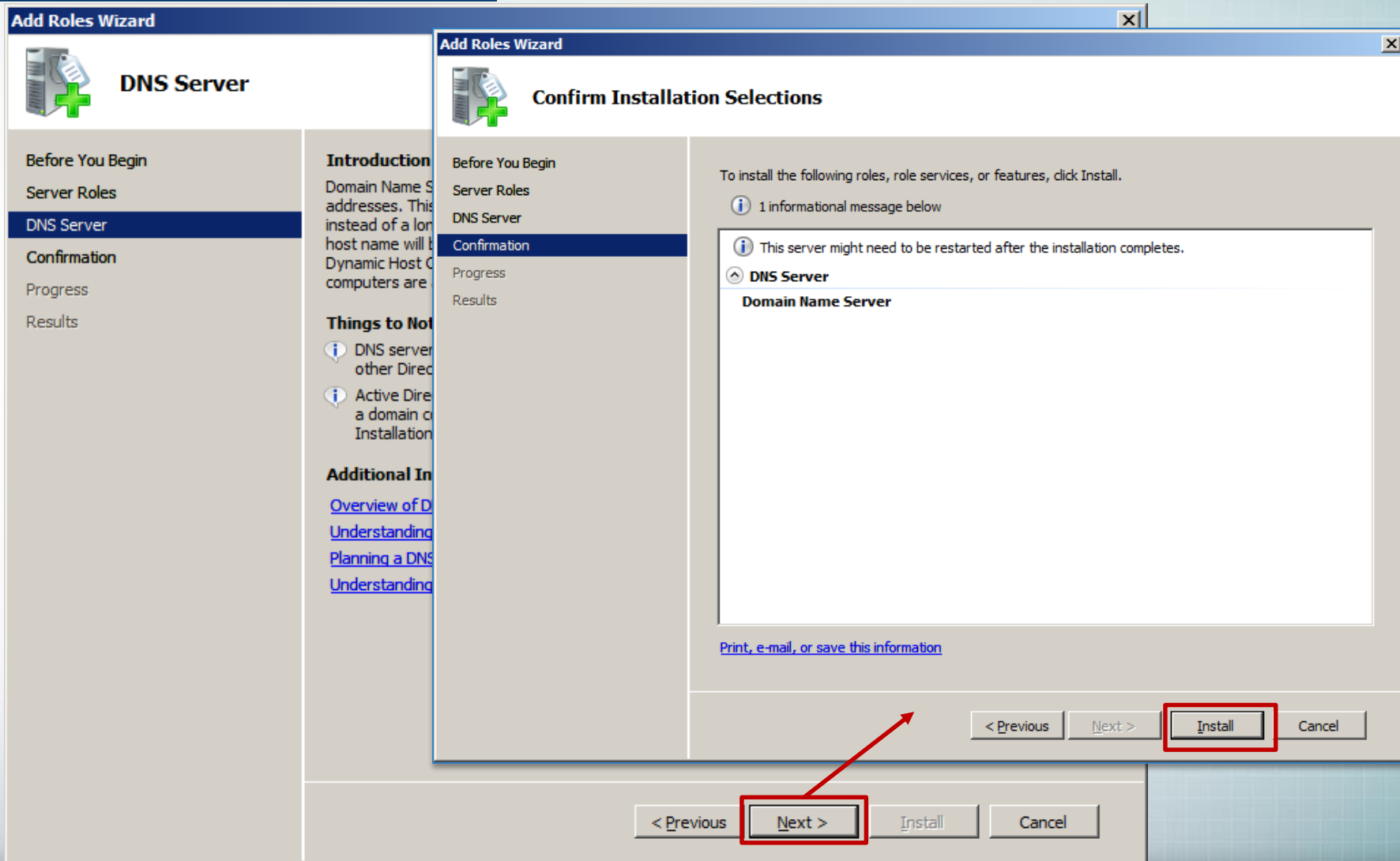
3.2 Cài đặt DNS Server



3.2 Cài đặt DNS Server



3.2 Cài đặt DNS Server



3.2 Cài đặt DNS Server

Add Roles Wizard

Installation Progress

Before You Begin
Server Roles
DNS Server
Confirmation
Progress
Results

The following roles, role services,

DNS Server

Initializing installation...

Add Roles Wizard

Installation Results

Before You Begin
Server Roles
DNS Server
Confirmation
Progress
Results

The following roles, role services, or features were installed successfully:

⚠ 1 warning, 1 informational messages below

⚠ Windows automatic updating is not enabled. To install the latest updates, use Windows Update in Control Panel to check for updates.

⬆ **DNS Server** **✓ Installation succeeded**

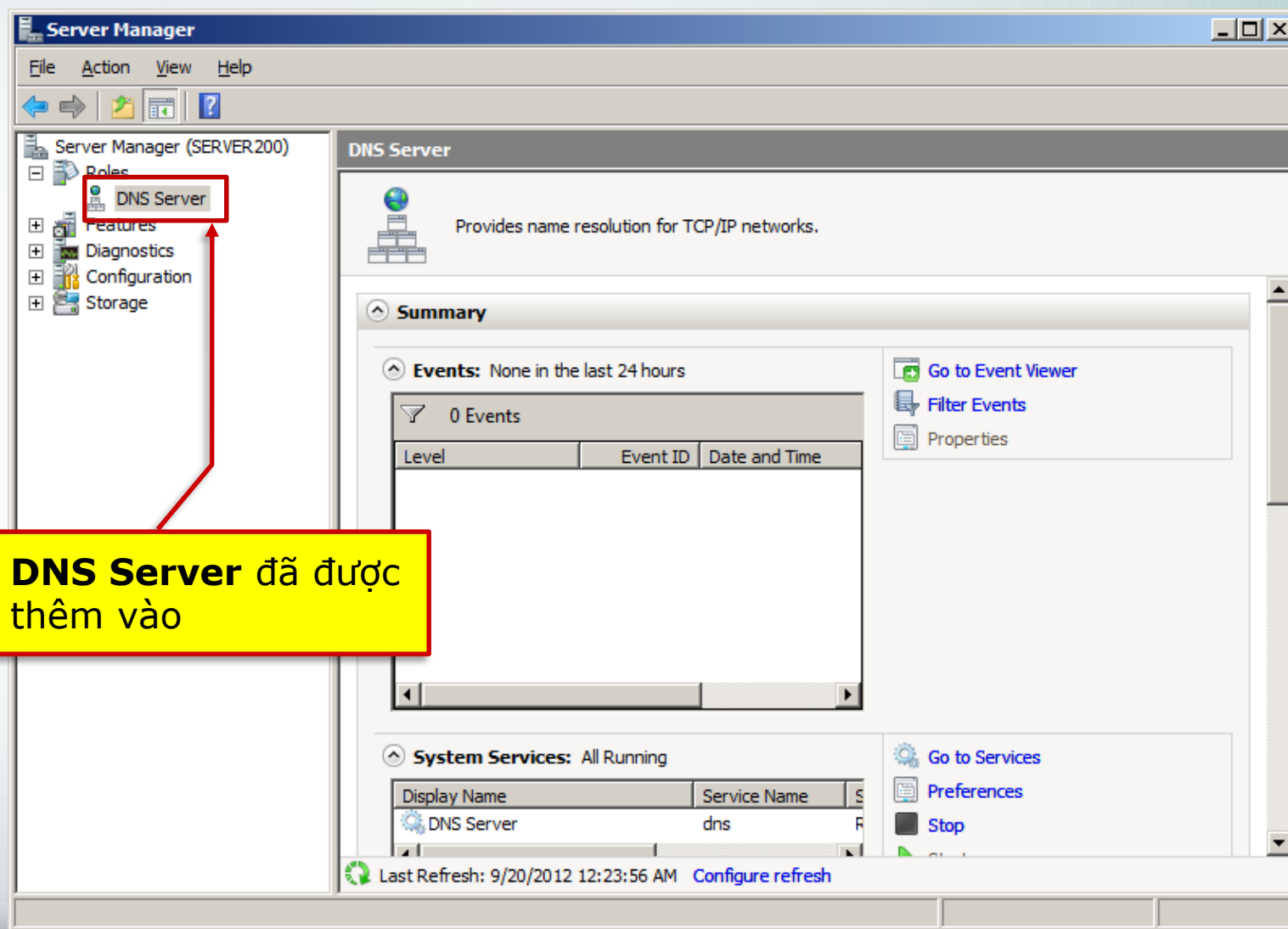
ℹ You can configure DNS by using the Configure a DNS Server Wizard in DNS Manager.

[Print, e-mail, or save the installation report](#)

< Previous Next > **Close** Cancel

< Previous Next > Install Cancel

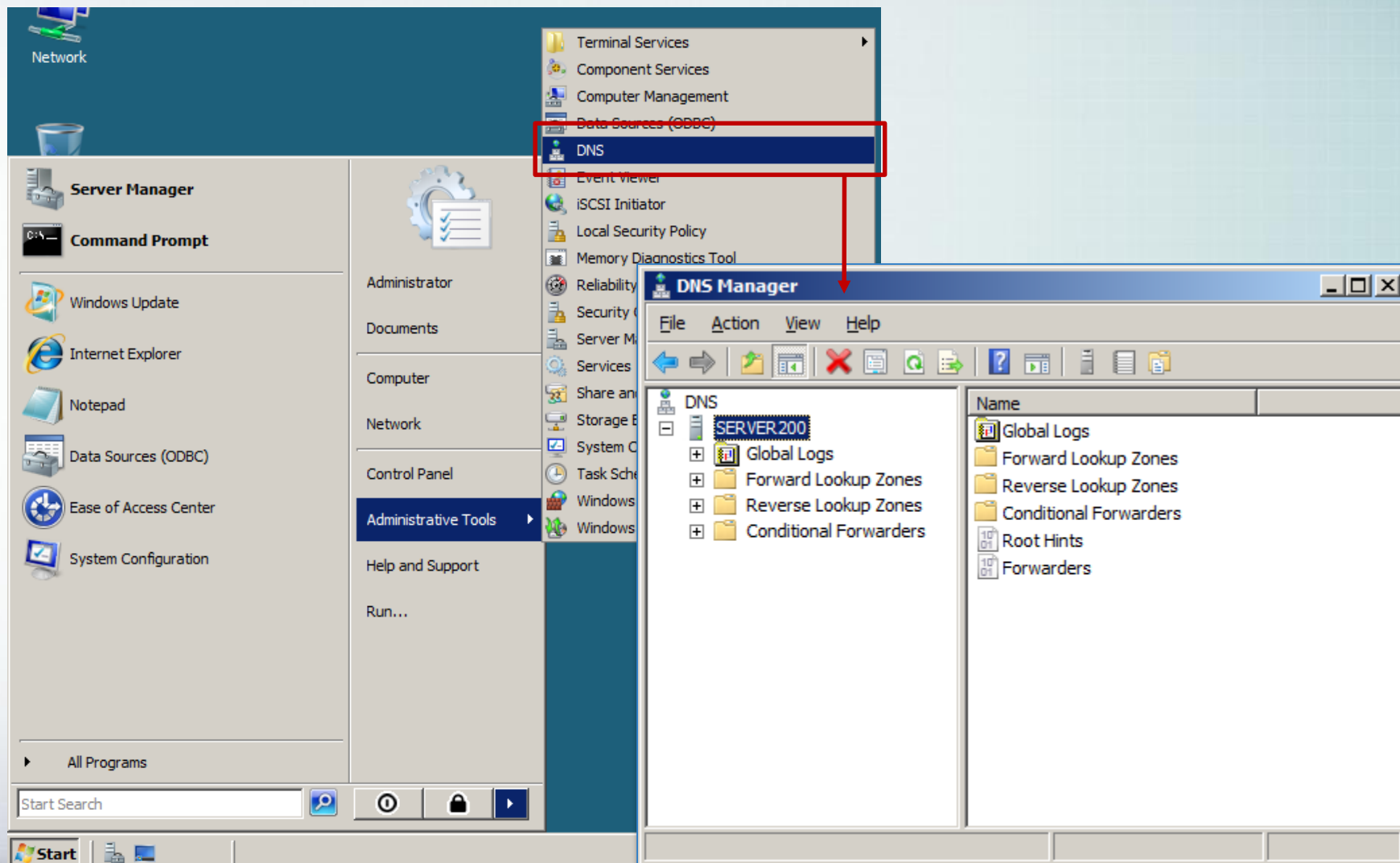
3.2 Cài đặt DNS Server



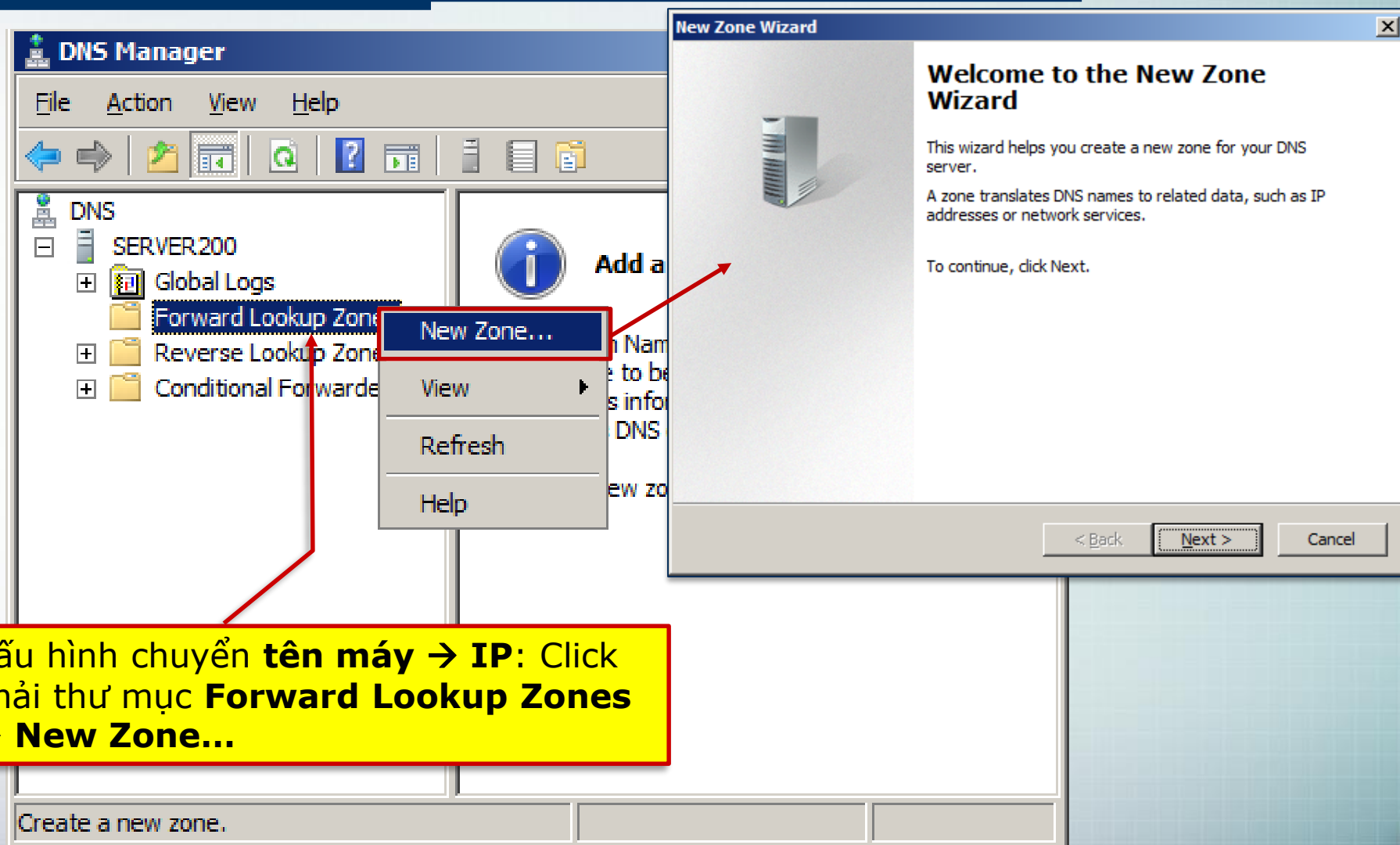
3.3 Cấu hình DNS Server

- ❖ Thông thường có 2 hệ thống DNS Server một chính một dự phòng hoạt động song song nhằm hạn chế rủi ro.
- ❖ **Các bước cấu hình DNS Server chính:**
 - Mở cửa sổ **DNS Server** vào → **Start** → **Programs** → **Administrative Tools** → **DNS**

Cấu hình DNS Server chính



Cấu hình DNS Server chính



The image shows a screenshot of the Windows DNS Manager console and the New Zone Wizard dialog box. In the DNS Manager, the 'Forward Lookup Zones' folder is selected, and a context menu is open with 'New Zone...' highlighted. A red arrow points from this menu item to the 'New Zone Wizard' dialog box. The wizard is titled 'Welcome to the New Zone Wizard' and contains instructions on how to create a new zone. At the bottom of the wizard, the 'Next >' button is highlighted with a dashed border. A yellow callout box with a red border is positioned at the bottom left, containing text in Vietnamese that explains the steps to create a new zone by clicking on 'Forward Lookup Zones' and then 'New Zone...'.

DNS Manager

File Action View Help

DNS

- SERVER.200
 - Global Logs
 - Forward Lookup Zones**
 - Reverse Lookup Zones
 - Conditional Forwarders

New Zone...

View

Refresh

Help

New Zone Wizard

Welcome to the New Zone Wizard

This wizard helps you create a new zone for your DNS server.

A zone translates DNS names to related data, such as IP addresses or network services.

To continue, click Next.

< Back **Next >** Cancel

Create a new zone.

Cấu hình chuyển **tên máy → IP**: Click phải thư mục **Forward Lookup Zones** → **New Zone...**

Cấu hình DNS Server chính

The image displays two screenshots of the 'New Zone Wizard' in Windows Server. The left screenshot shows the 'Zone Type' step, where 'Primary zone' is selected. The right screenshot shows the 'Zone Name' step, where 'MISDUE.COM' is entered. Red boxes and arrows highlight the 'Primary zone' option and the 'Next >' button in both screenshots, as well as the 'Zone name' text box in the right screenshot. Yellow callout boxes at the bottom provide Vietnamese instructions for these steps.

Zone Type
The DNS server supports various types of zones and storage.

Select the type of zone you want to create:

- ☒ **Primary zone**
Creates a copy of a zone that can be updated directly on this server.
- ☐ **Secondary zone**
Creates a copy of a zone that exists on another server. This option helps balance the processing load of primary servers and provides fault tolerance.
- ☐ **Stub zone**
Creates a copy of a zone containing only Name Server (NS), Start of Authority (SOA), and possibly glue Host (A) records. A server containing a stub zone is not authoritative for that zone.

☐ Store the zone in Active Directory (available only if DNS server is a writable domain controller)

< Back **Next >** Cancel

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:
MISDUE.COM

< Back **Next >** Cancel

Chọn **Primary zone** để tạo **DNS Server chính**

Nhập **tên zone** cần tạo

Cấu hình DNS Server chính

New Zone Wizard

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:

MISDUE.COM.dns

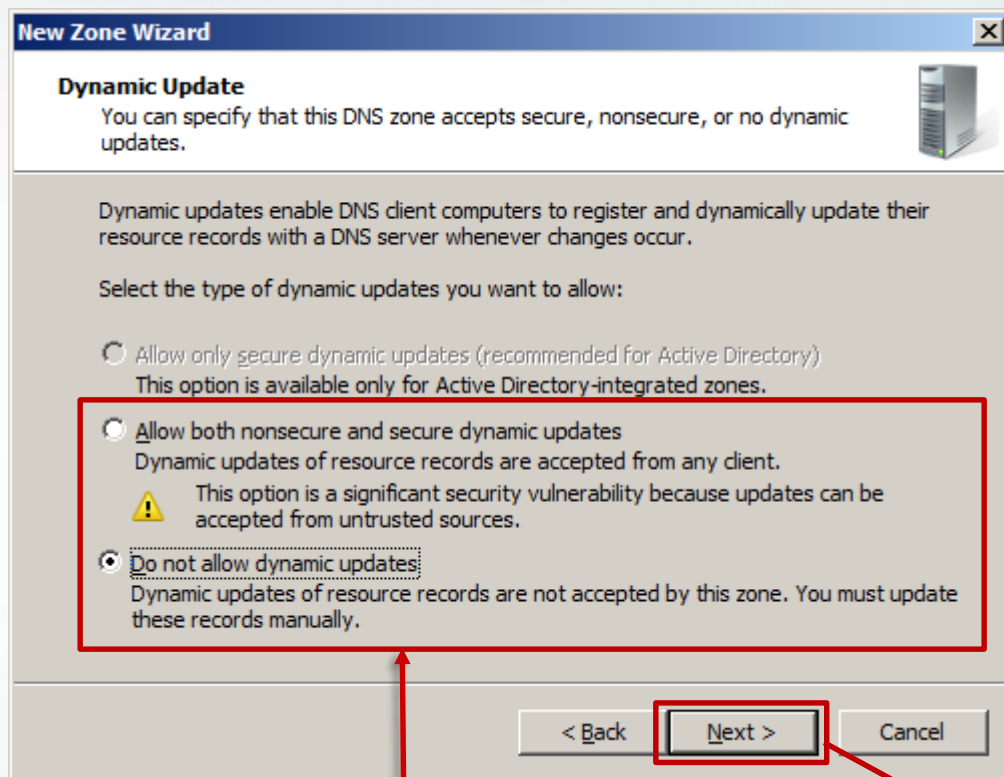
☐ Use this existing file:

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

Để giá trị mặc định

Cấu hình DNS Server chính




New Zone Wizard

Dynamic Update
You can specify that this DNS zone accepts secure, nonsecure, or no dynamic updates.

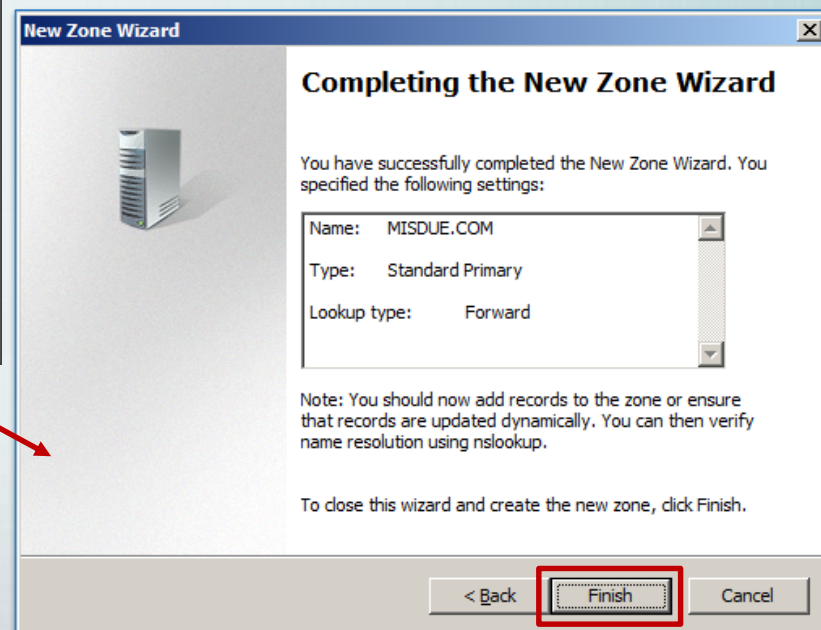
Dynamic updates enable DNS client computers to register and dynamically update their resource records with a DNS server whenever changes occur.

Select the type of dynamic updates you want to allow:

- ☐ Allow only secure dynamic updates (recommended for Active Directory)
This option is available only for Active Directory-integrated zones.
- ☐ Allow both nonsecure and secure dynamic updates
Dynamic updates of resource records are accepted from any client.
 This option is a significant security vulnerability because updates can be accepted from untrusted sources.
- ☒ Do not allow dynamic updates
Dynamic updates of resource records are not accepted by this zone. You must update these records manually.

< Back **Next >** Cancel

Chọn **Allow** để cho phép máy trạm tự động cập nhật thông tin, chọn **Do not allow** để cấm. Nên chọn **Do not allow**.



New Zone Wizard

Completing the New Zone Wizard

You have successfully completed the New Zone Wizard. You specified the following settings:

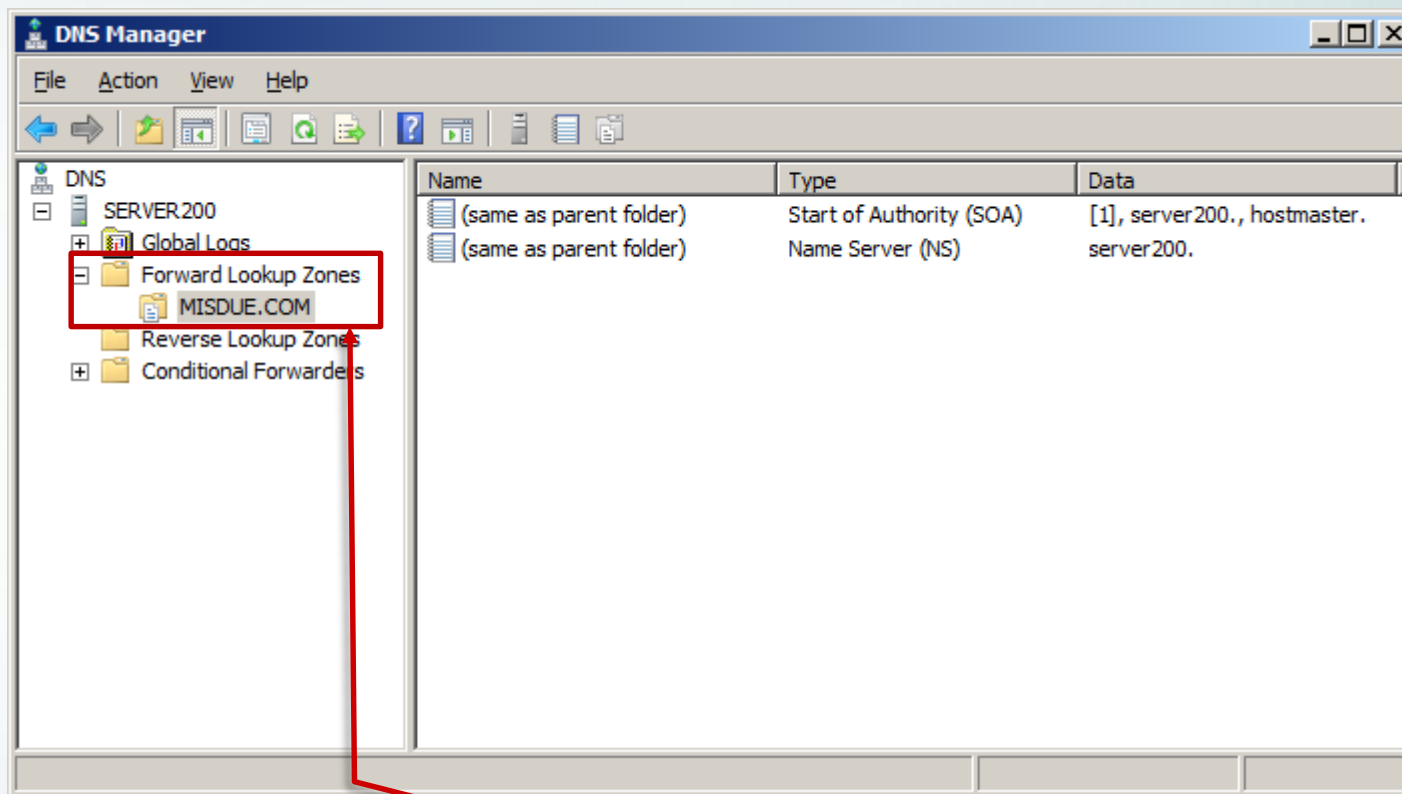
Name:	MISDUE.COM
Type:	Standard Primary
Lookup type:	Forward

Note: You should now add records to the zone or ensure that records are updated dynamically. You can then verify name resolution using nslookup.

To close this wizard and create the new zone, click Finish.

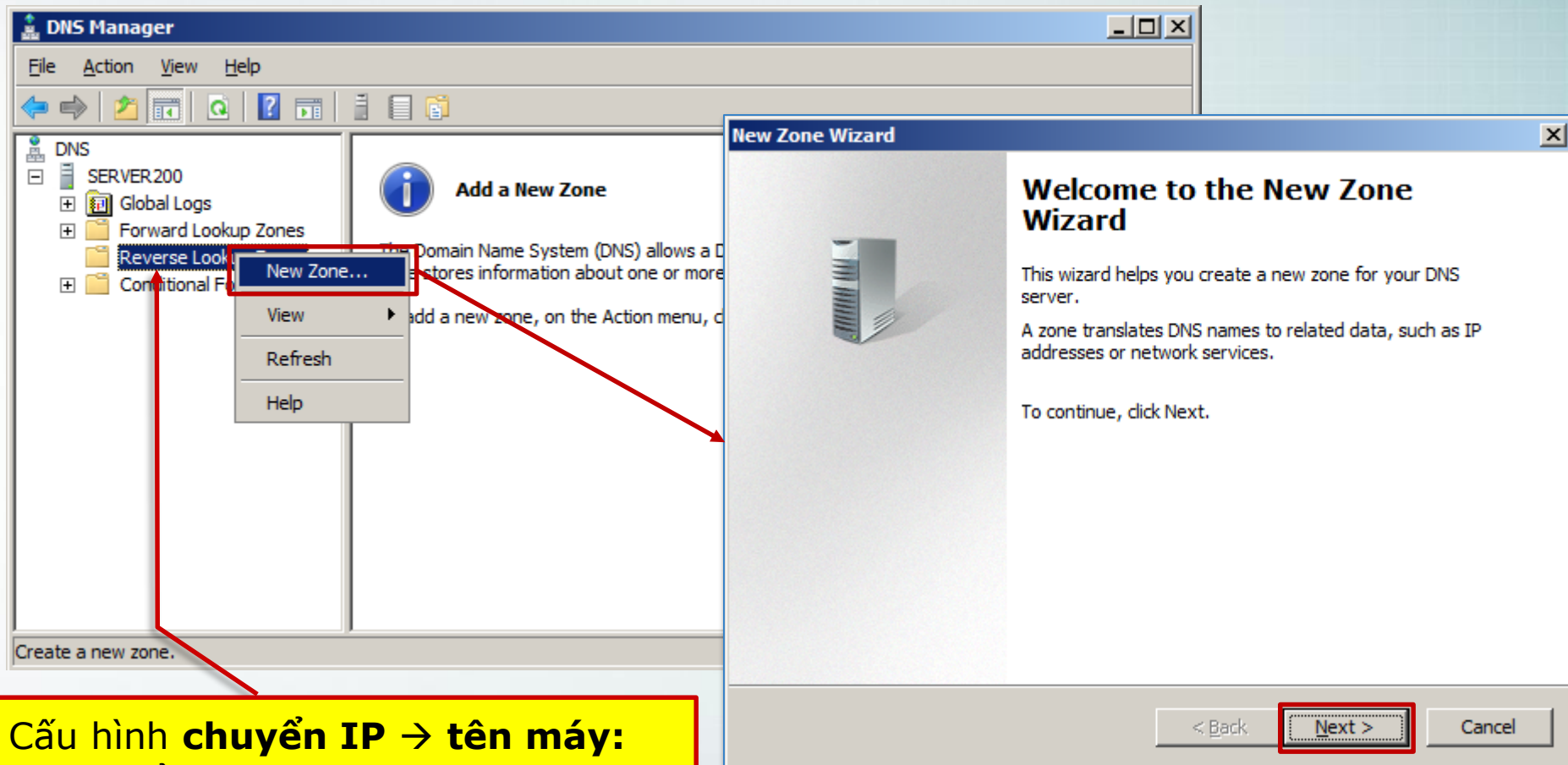
< Back **Finish** Cancel

Cấu hình DNS Server chính



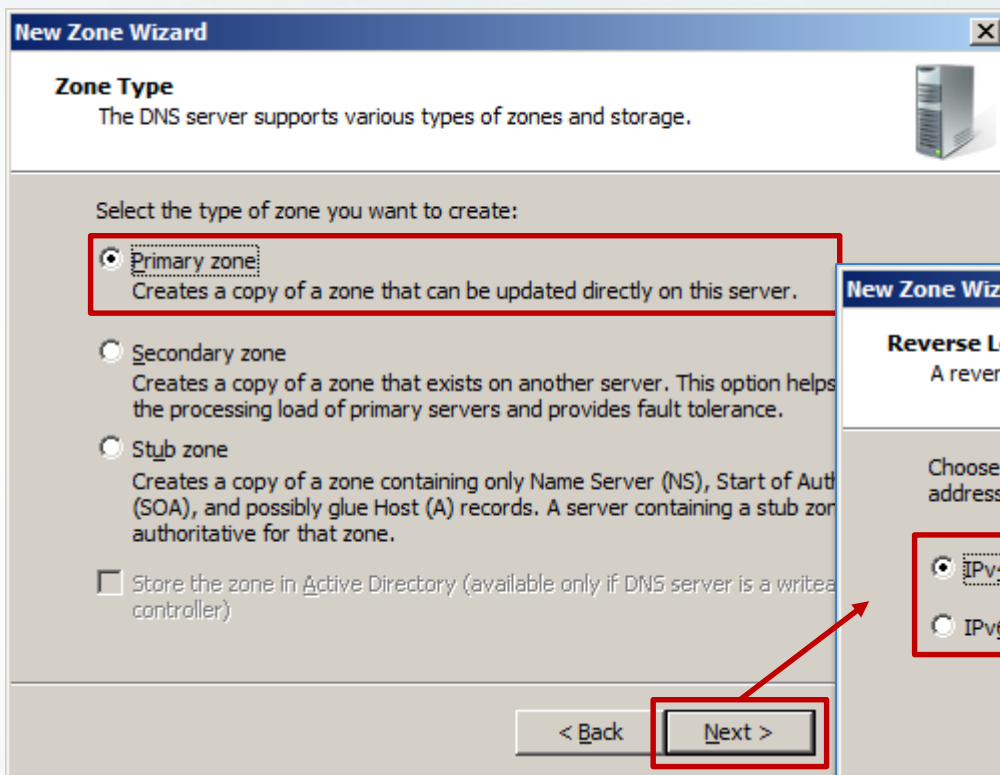
Zone MISDUE.COM đã được tạo ra

Cấu hình DNS Server chính

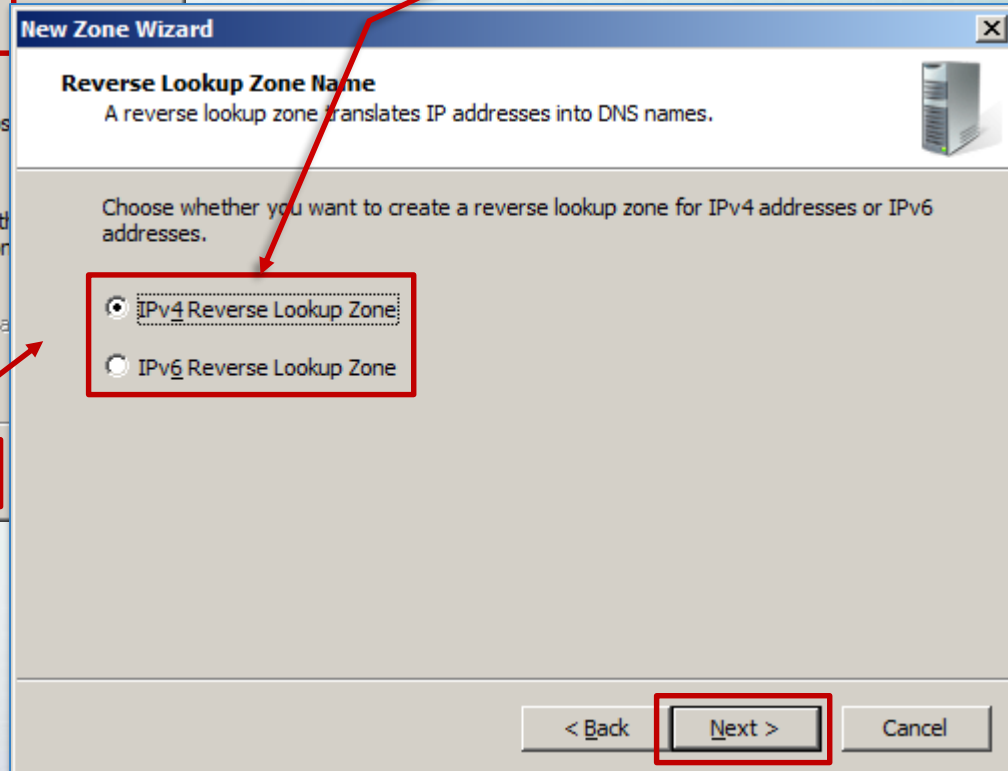


Cấu hình **chuyển IP → tên máy**:
Click phải thư mục **Reverse
Lookup Zones → New Zone...**

Cấu hình DNS Server chính



Chọn thể loại **IPv4** hoặc **IPv6**



Cấu hình DNS Server chính

New Zone Wizard

Reverse Lookup Zone Name
A reverse lookup zone translates IP addresses into DNS names.

To identify the reverse lookup zone, type the network ID or the name of the zone.

☒ **Network ID:**
192 .168 .0

The network ID is the portion of the IP addresses that belongs to this zone. Enter the network ID in its normal (not reversed) order.

If you use a zero in the network ID, it will appear in the zone name. For example, network ID 10 would create zone 10.in-addr.arpa, and network ID 10.0 would create zone 0.10.in-addr.arpa.

☐ **Reverse lookup zone name:**
0.168.192.in-addr.arpa

< Back **Next >**

Nhập địa chỉ mạng

Để giá trị mặc định

New Zone Wizard

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?

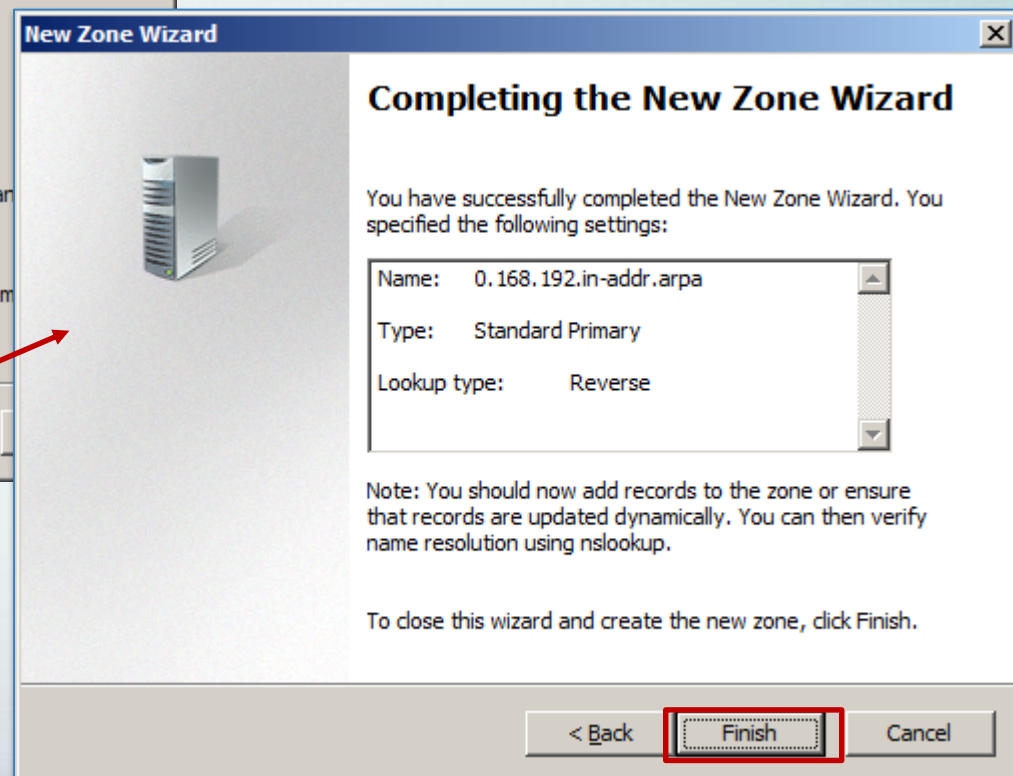
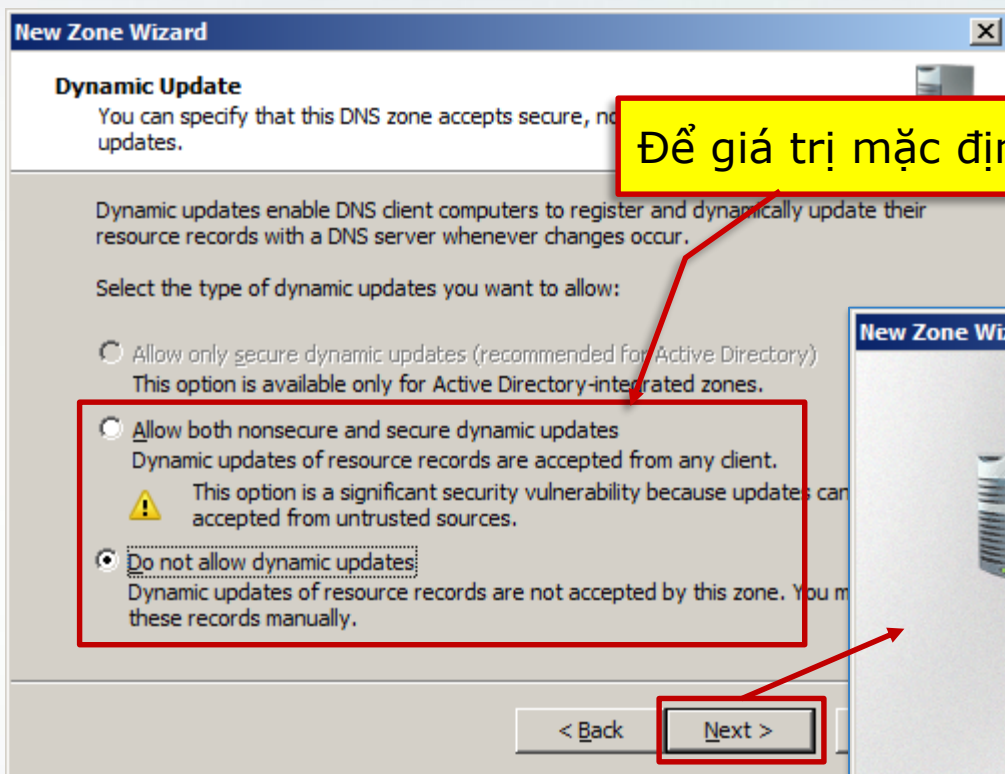
☒ **Create a new file with this file name:**
0.168.192.in-addr.arpa.dns

☐ **Use this existing file:**

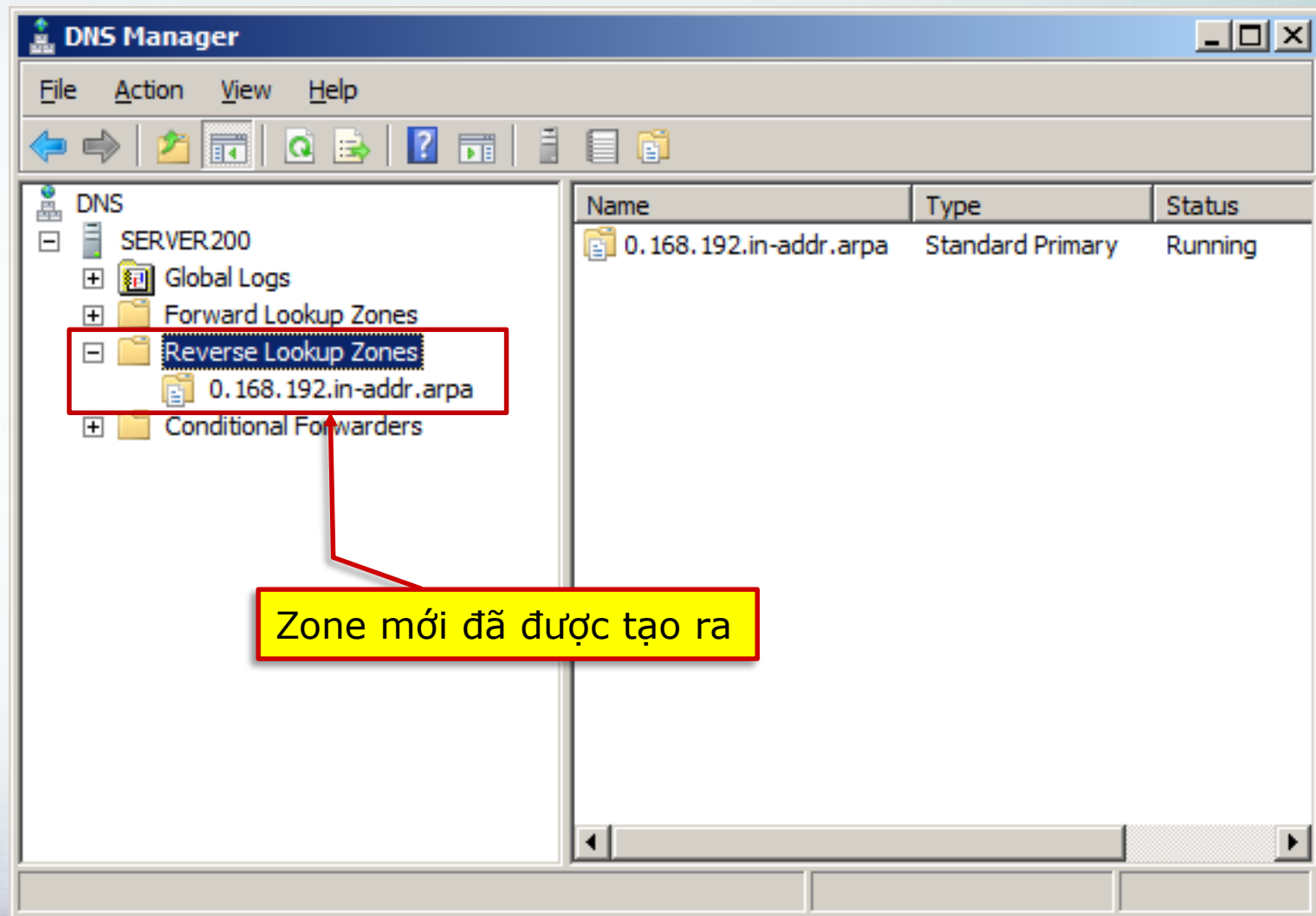
To use this existing file, ensure that it has been copied to the folder %SystemRoot%\system32\dns on this server, and then click Next.

< Back **Next >** Cancel

Cấu hình DNS Server chính



Cấu hình DNS Server chính



3.4 Bổ sung các bản ghi DNS vào DNS Server

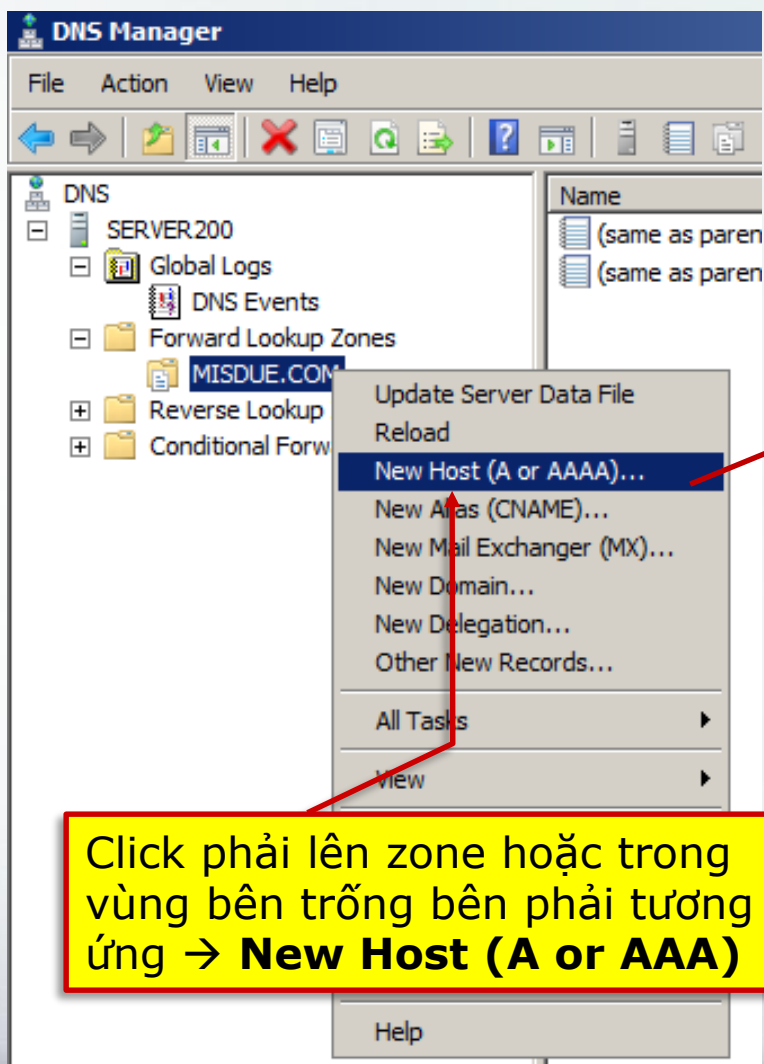
- ❖ Để tạo CSDL cho DNS Server, người quản trị cần bổ sung các bản ghi DNS.
- ❖ **Các loại bản ghi DNS phổ biến:**
 - **Host (A):** là bản ghi ánh xạ giữa tên máy và địa chỉ IP
 - Ví dụ: `google.com <--> 74.125.128.139`
 - **Alias (CNAME):** là bản ghi dạng bí danh, cho phép nhiều tên cùng ánh xạ qua một địa chỉ IP
 - Ví dụ: `google.com → webserver.google.com → 74.125.128.139`

3.4 Bổ sung các bản ghi DNS vào DNS Server

❖ Các loại bản ghi DNS phổ biến:

- **Mail Exchanger (MX):** là bản ghi dành cho Mail Server tương ứng với domain.
 - Ví dụ: `mail.google.com` → `mailserver.google.com` → `74.125.128.18`

a. Tạo bản ghi Host cho DNS Server



Click phải lên zone hoặc trong vùng bên trống bên phải tương ứng → **New Host (A or AAAA)**

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

- Name (uses parent domain name if blank):** TRAINING
- Fully qualified domain name (FQDN):** TRAINING.MISDUE.COM.
- IP address:** 192.168.0.210
- ☒ **Create associated pointer (PTR) record:**

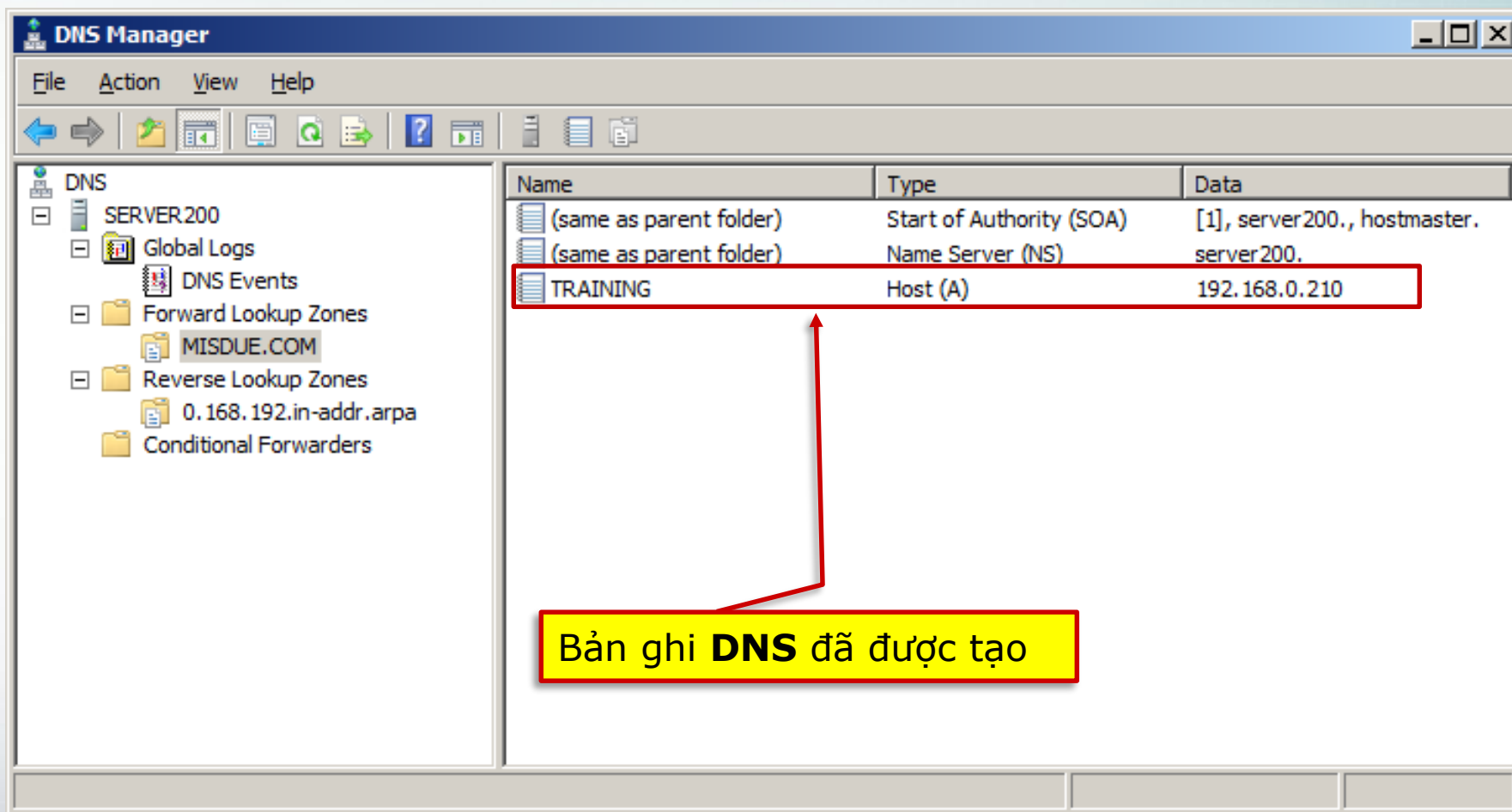
Buttons at the bottom: Add Host, Cancel.

Nhập **tên máy tính**

Nhập **địa chỉ IP** của máy tính

Đánh dấu chọn nếu muốn **tạo bản ghi Reverse để phân giải ngược từ IP → Tên máy**

a. Tạo bản ghi Host cho DNS Server



a. Tạo bản ghi Host cho DNS Server

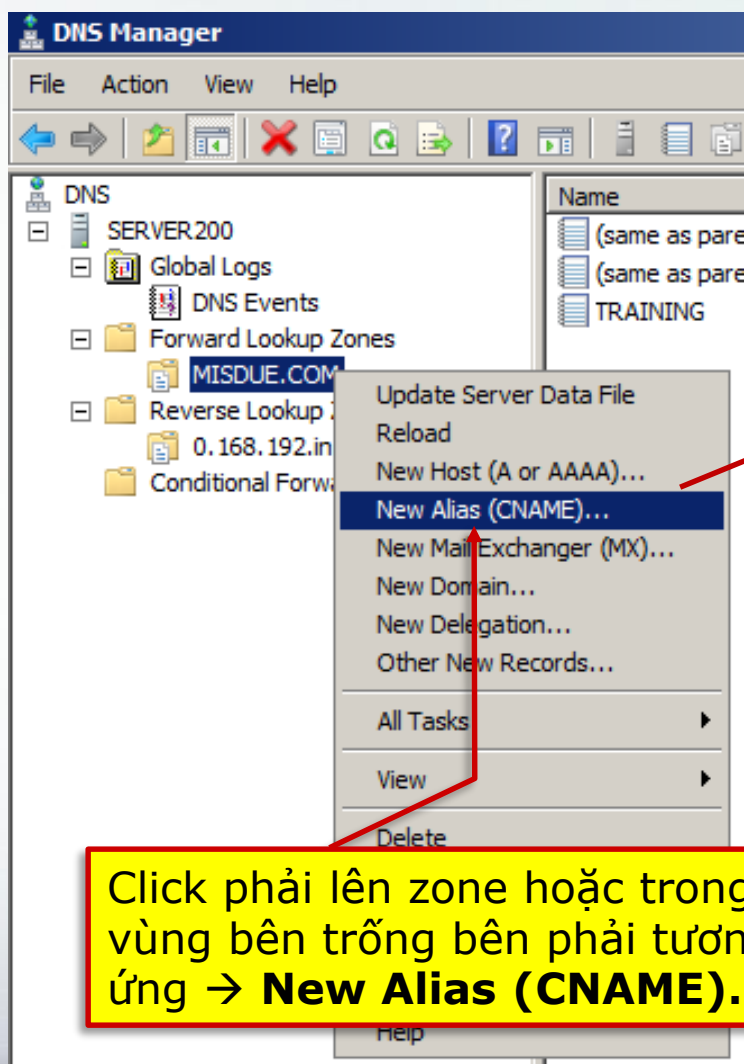
The screenshot shows the Windows DNS Manager application. The left pane displays the tree structure under 'DNS', with 'Reverse Lookup Zones' expanded to show '0.168.192.in-addr.arpa'. The right pane shows a table of records in this zone:

Name	Type	Data
(same as parent folder)	Start of Authority (SOA)	[4], server200., hostmaster.
(same as parent folder)	Name Server (NS)	server200.
192.168.0.210	Pointer (PTR)	training.misdue.com.

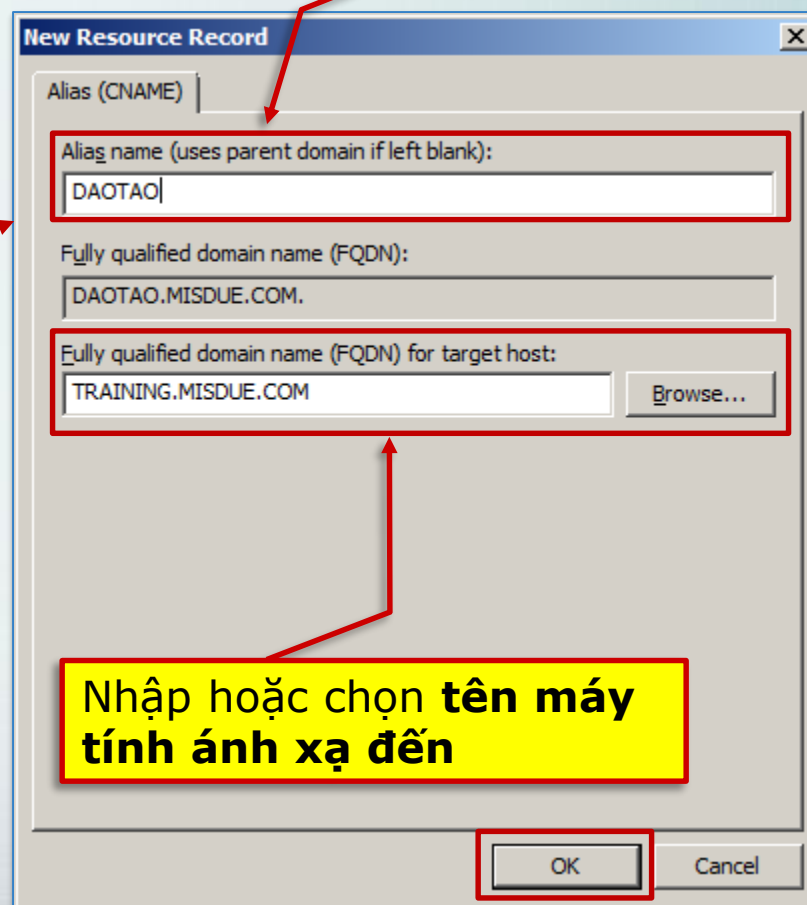
A red box highlights the PTR record for 192.168.0.210. A red arrow points from a yellow text box below to this record.

Bản ghi **Reverse DNS** tương ứng cũng đã được tạo

b. Tạo bản ghi Alias cho DNS Server



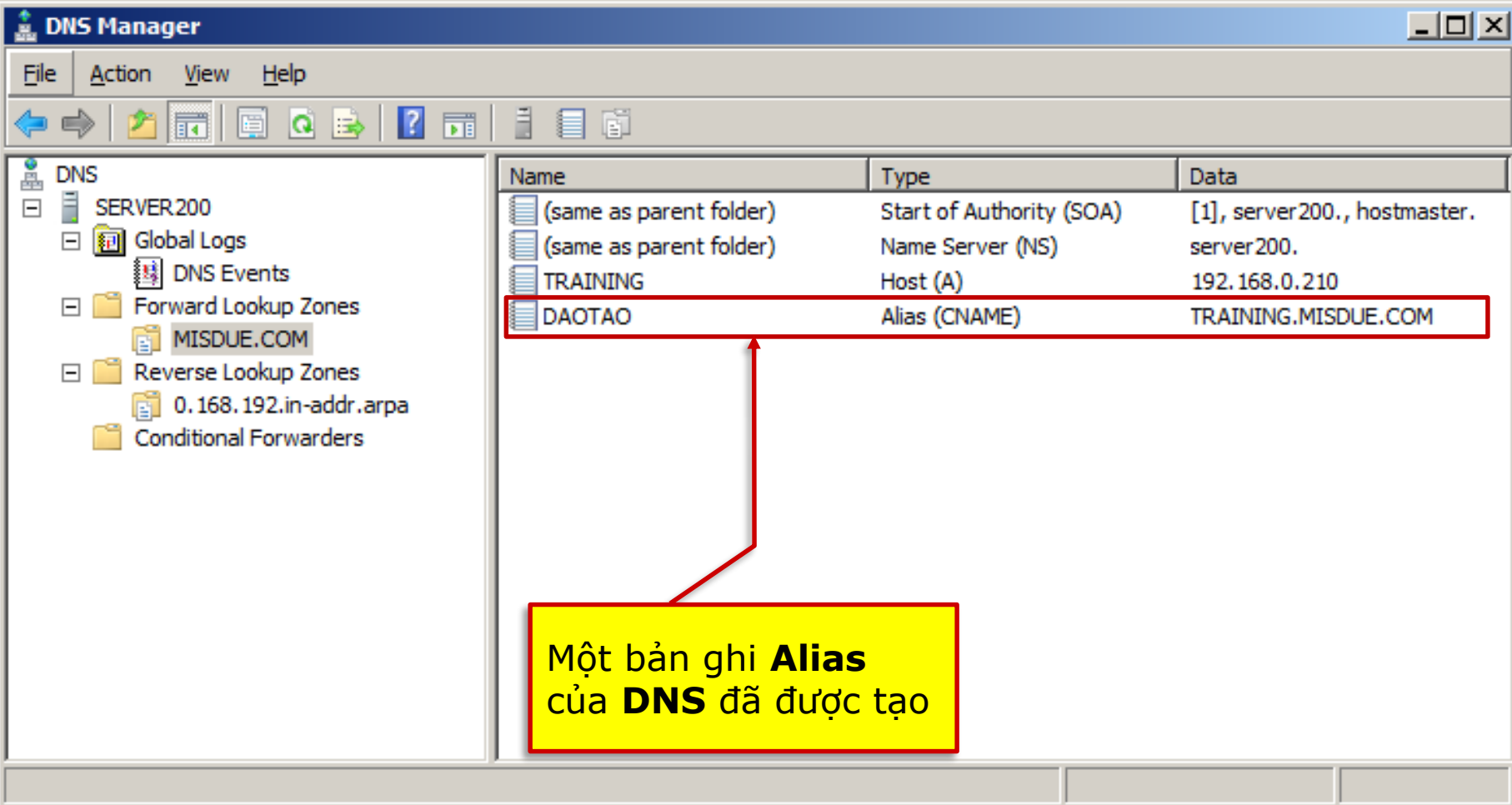
Click phải lên zone hoặc trong vùng bên trống bên phải tương ứng → **New Alias (CNAME)...**



Nhập **tên bí danh**

Nhập hoặc chọn **tên máy tính ánh xạ đến**

b. Tạo bản ghi Alias cho DNS Server

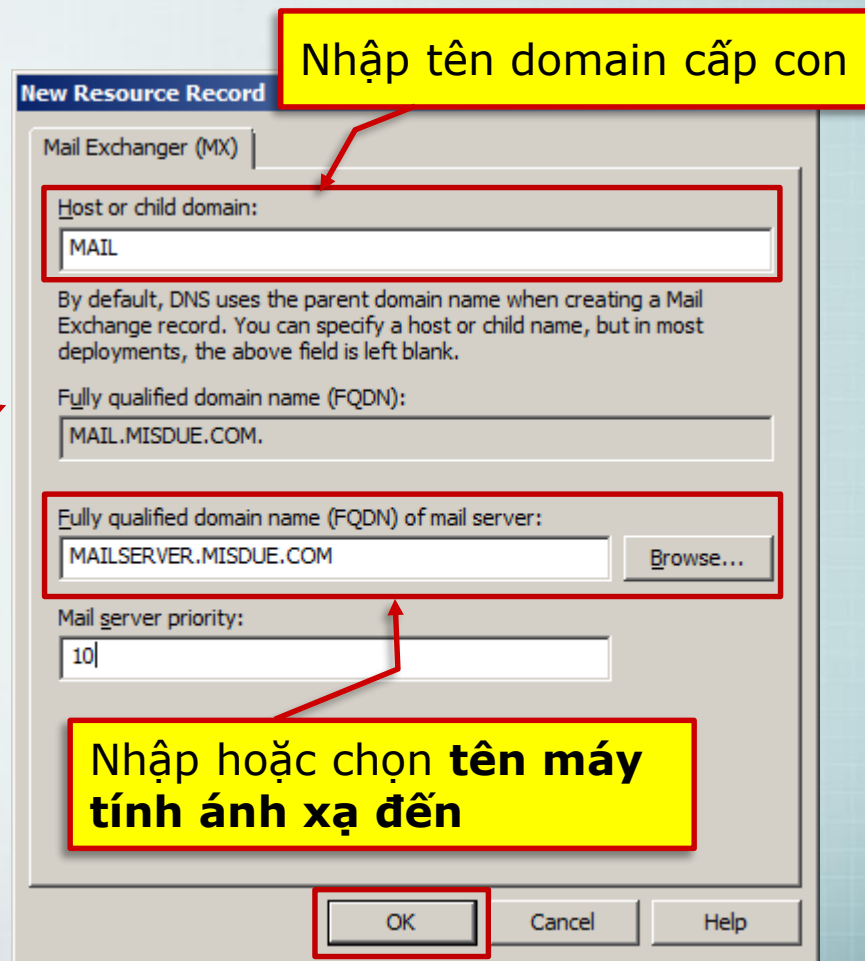
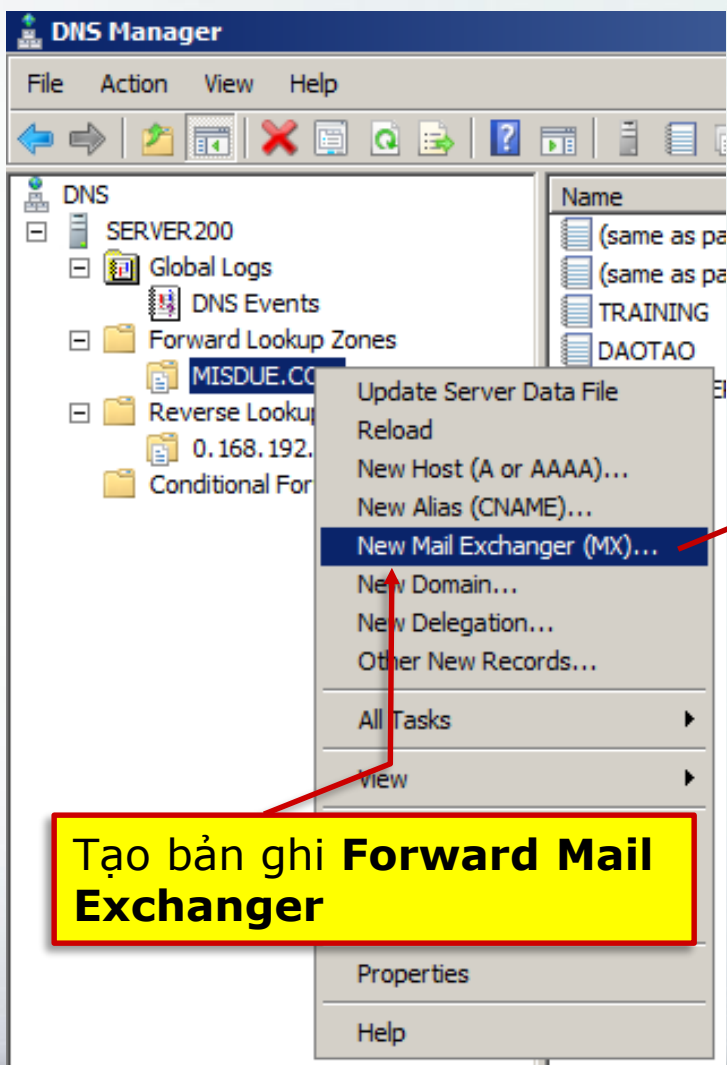


The screenshot shows the DNS Manager console for a server named SERVER200. The left pane displays the hierarchy: DNS > SERVER200 > Forward Lookup Zones > MISDUE.COM. The right pane shows a list of DNS records with columns Name, Type, and Data. A red box highlights the record for 'DAOTAO', which is of type 'Alias (CNAME)' and points to 'TRAINING.MISDUE.COM'. A red arrow points from a yellow text box below to this record.

Name	Type	Data
(same as parent folder)	Start of Authority (SOA)	[1], server200., hostmaster.
(same as parent folder)	Name Server (NS)	server200.
TRAINING	Host (A)	192.168.0.210
DAOTAO	Alias (CNAME)	TRAINING.MISDUE.COM

Một bản ghi **Alias**
của **DNS** đã được tạo

c. Tạo bản ghi Mail Exchanger cho DNS Server



c. Tạo bản ghi Mail Exchanger cho DNS Server

The screenshot shows the DNS Manager console with the following structure in the left pane:

- DNS
 - SERVER200
 - Global Logs
 - DNS Events
 - Forward Lookup Zones
 - MISDUE.COM
 - Reverse Lookup Zones
 - 0.168.192.in-addr.arpa
 - Conditional Forwarders

The main pane displays a table of DNS records for the MISDUE.COM zone:

Name	Type	Data
(same as parent folder)	Start of Authority (SOA)	[1], server200., hostmaster.
(same as parent folder)	Name Server (NS)	server200.
TRAINING	Host (A)	192.168.0.210
DAOTAO	Alias (CNAME)	TRAINING.MISDUE.COM
MAILSERVER	Host (A)	192.168.0.220
MAIL	Mail Exchanger (MX)	[10] MAILSERVER.MISDUE.COM

A red box highlights the newly created MAIL record, and a red arrow points from a yellow callout box to it.

Bản ghi Mail Exchanger được tạo

3.4 Cấu hình địa chỉ DNS Server trên máy trạm

The screenshot shows the 'Internet Protocol (TCP/IP) Properties' dialog box. The 'General' tab is selected. Under the 'Use the following IP address' section, the IP address is 192.168.0.250 and the subnet mask is 255.255.255.0. Under the 'Use the following DNS server addresses' section, the 'Preferred DNS server' is 192.168.0.200 and the 'Alternate DNS server' is 192.168.0.201. Red boxes highlight these two DNS server addresses, with red arrows pointing to them from external labels. The 'Advanced...' button is visible at the bottom right of the dialog box.

Internet Protocol (TCP/IP) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically

☒ Use the following IP address:

IP address: 192 . 168 . 0 . 250

Subnet mask: 255 . 255 . 255 . 0

Default gateway: . . .

☐ Obtain DNS server address automatically

☒ Use the following DNS server addresses:

Preferred DNS server: 192 . 168 . 0 . 200

Alternate DNS server: 192 . 168 . 0 . 201

Advanced...

OK Cancel

IP DNS Server chính

IP DNS Server phụ

BÀI TẬP KẾT THÚC CHƯƠNG

- **LAB 3.1.** Cài đặt DNS Server chính
- **LAB 3.2.** Khai báo địa chỉ DNS Server trên máy trạm
- **LAB 3.3.** Cài đặt DNS Server dự phòng
- **LAB 3.4.** Đồng bộ dữ liệu giữa DNS Server chính và DNS Server dự phòng