Setting Up a DHCP Server

April 29, 2010

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What Does a DHCP Server Do?

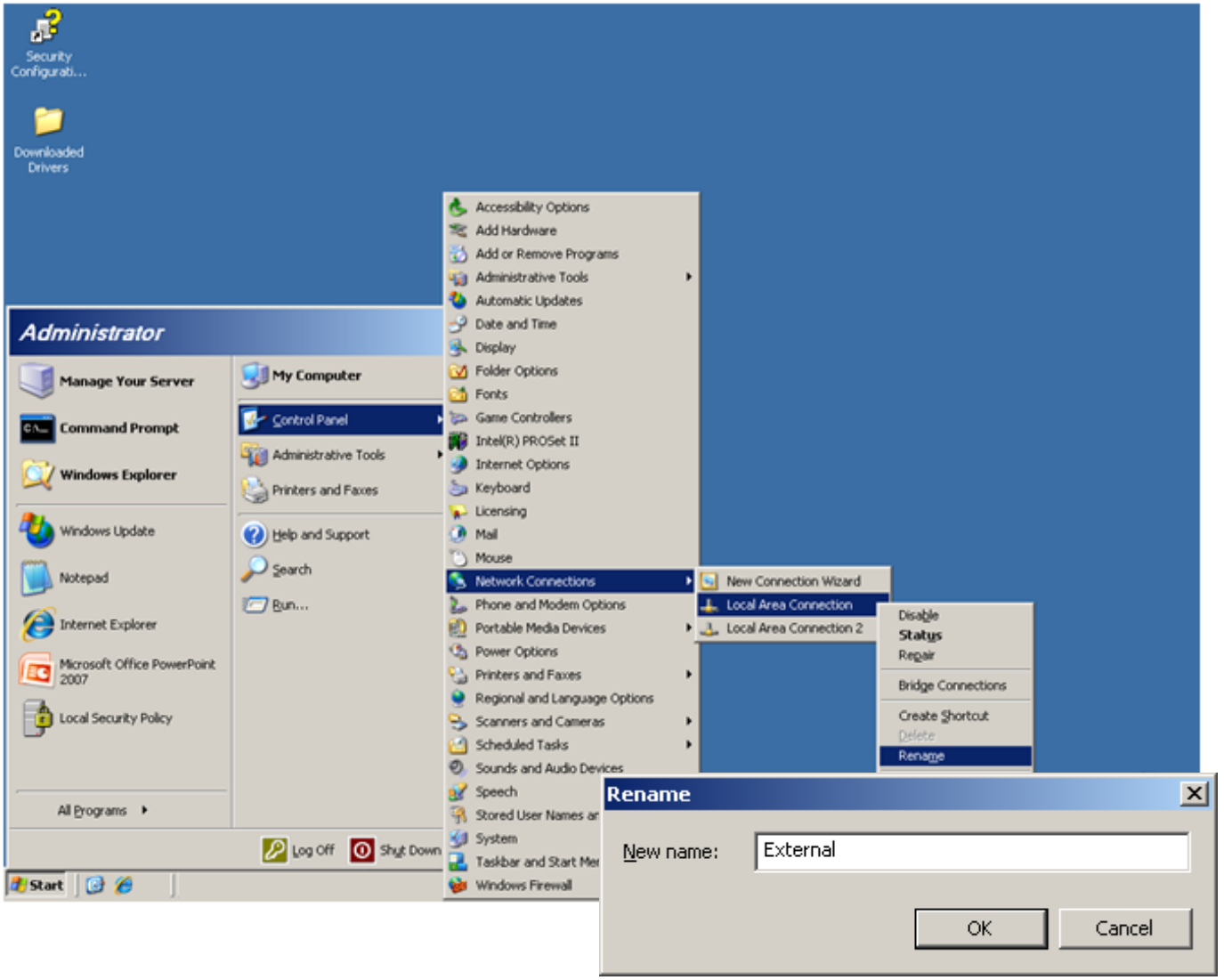
A Dynamic Host Configuration Protocol (DHCP) Server provides any client that connects to this network with an IP address, gateway and DNS resolution.

The client's Network Interface Card (NIC) is set to dynamically accept the TCP/IP address given to it by the DHCP Server.

Naming the External NIC

On the server, we should give the NICs identifiers that will allow us to quickly determine what they control just by reading. The card that connects the server to the outside networks can be called such names as external, Internet or outside.

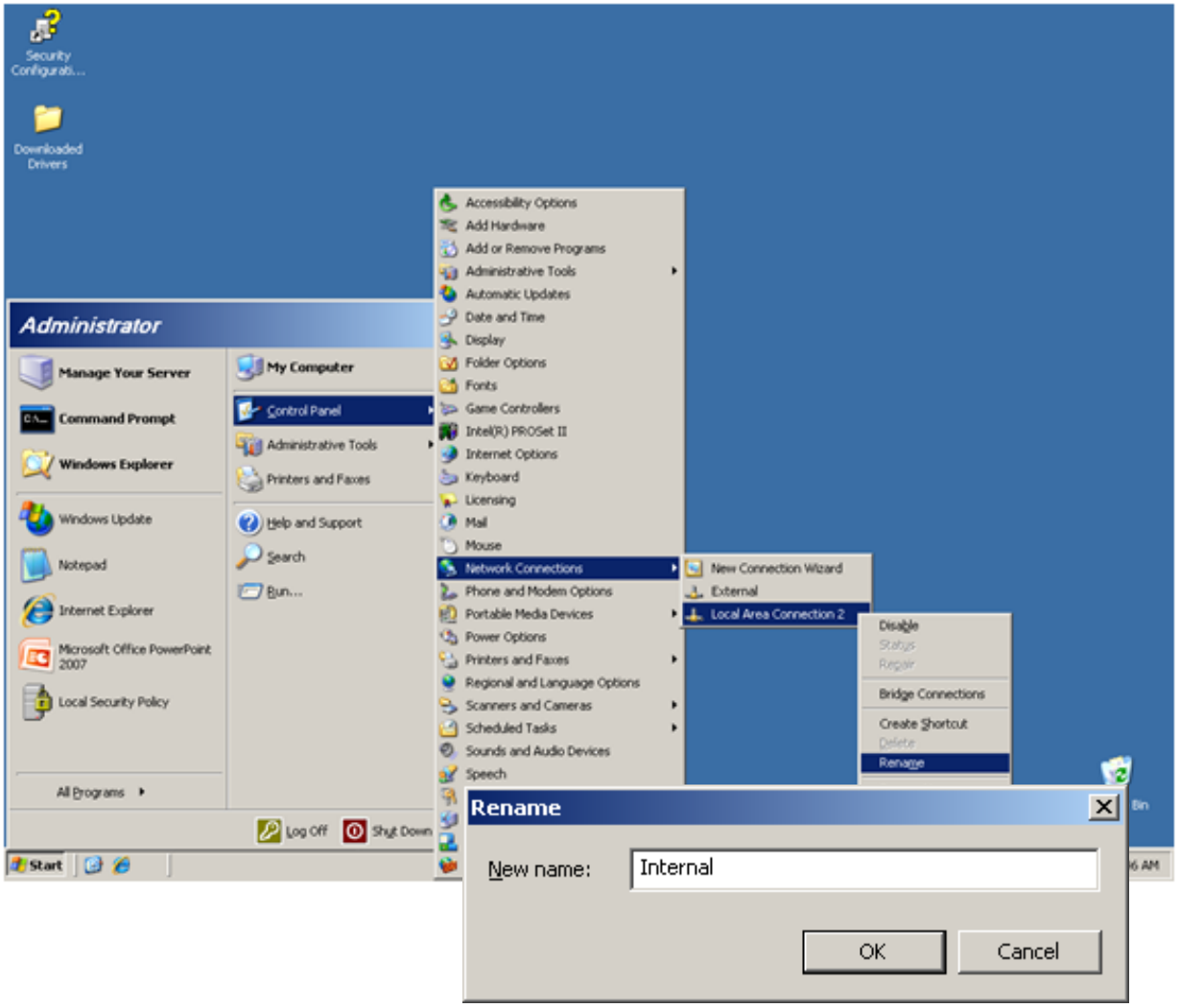
To make the name alteration, we enter the Control Panel and then Network Connections. Select the Local Area Connection that joins to the Internet and right click on the name. When the submenu pops up, we select rename and type External in the new name textbox. We press the OK button to accept the change.



Naming the Internal NIC

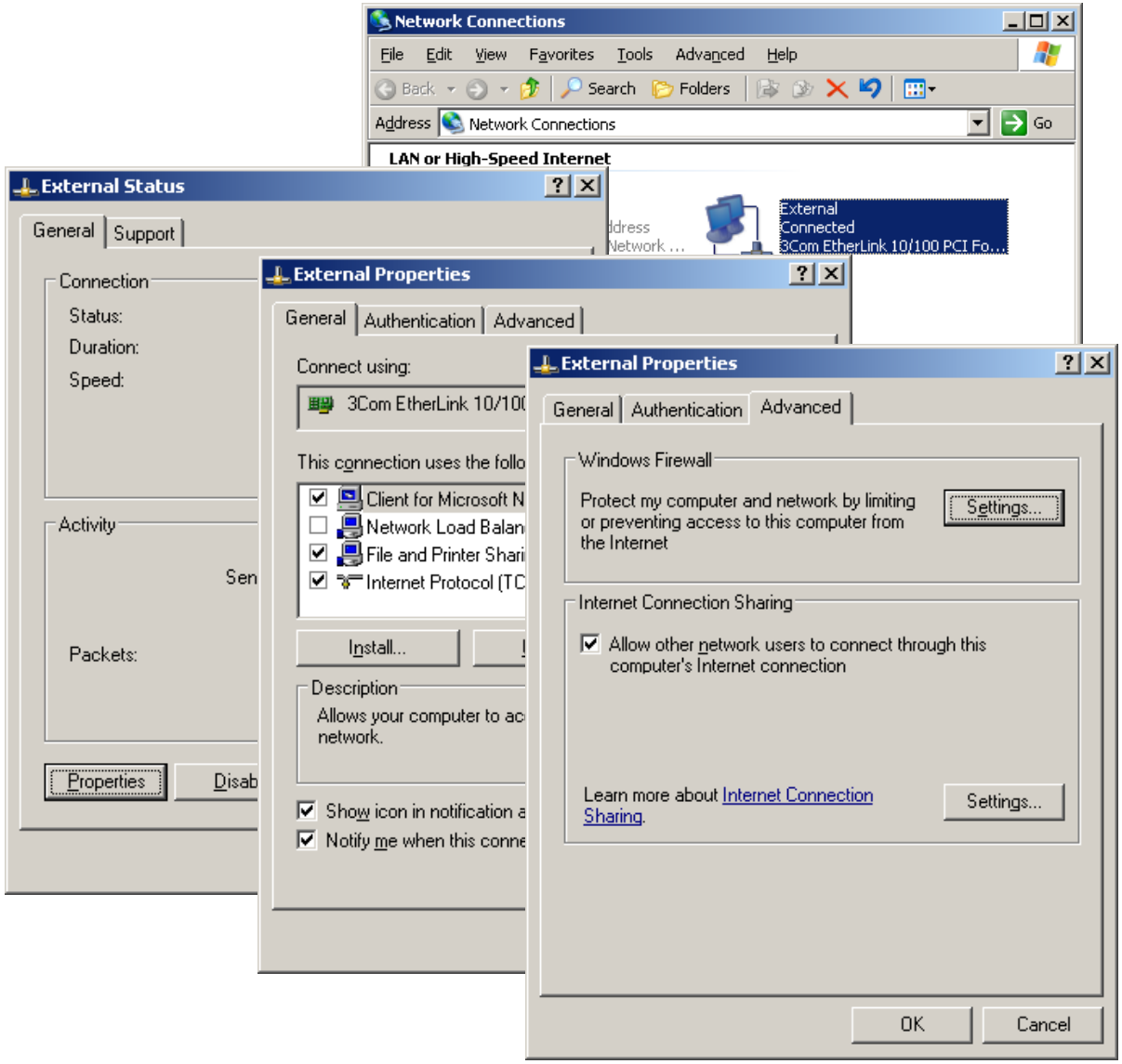
The card that connects the server to the inside networks can be called such names as internal, Intranet or inside.

To make the name alteration, we enter the Control Panel and then Network Connections Select the Local Area Connection 2 that joins to the Local Area Network (LAN) and right click on the name. When the submenu pops up, we select rename and type Internal in the new name textbox. We press the OK button to accept the change.



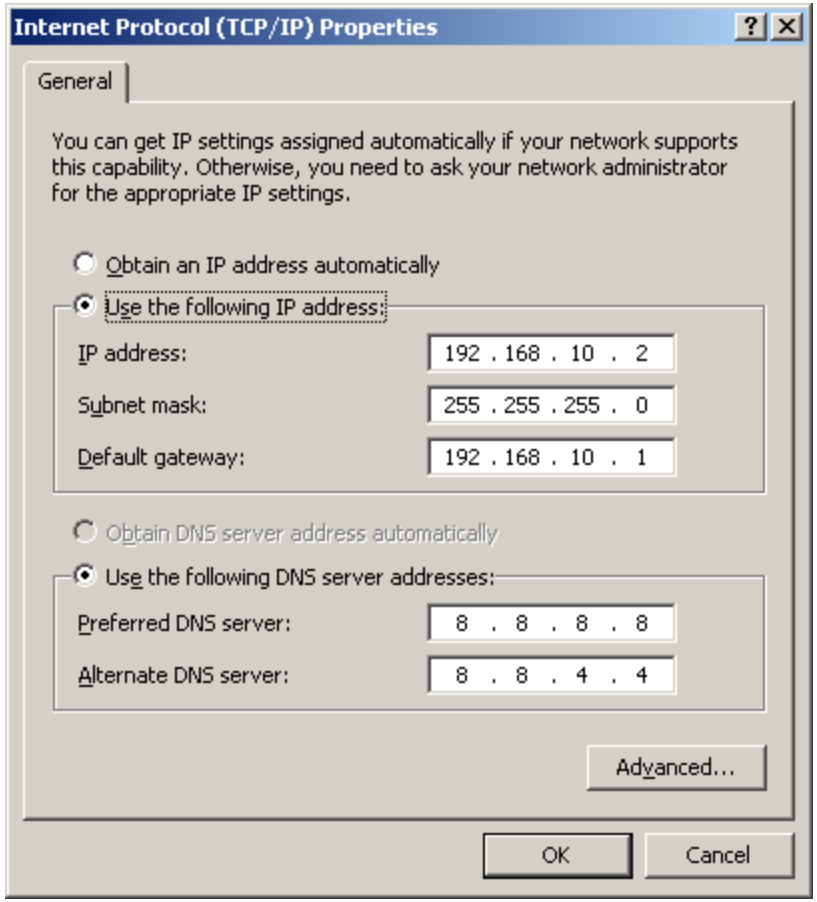
The External NIC

Now, we go to the Network Connection window and select the External NIC. The External NIC Status window will open and we will select the Properties button. At the External Properties window, we choose the Advanced tab on the top right of the dialogue box. At this time, we can see the Internet Connection Sharing checkbox. We will place a check in the box.



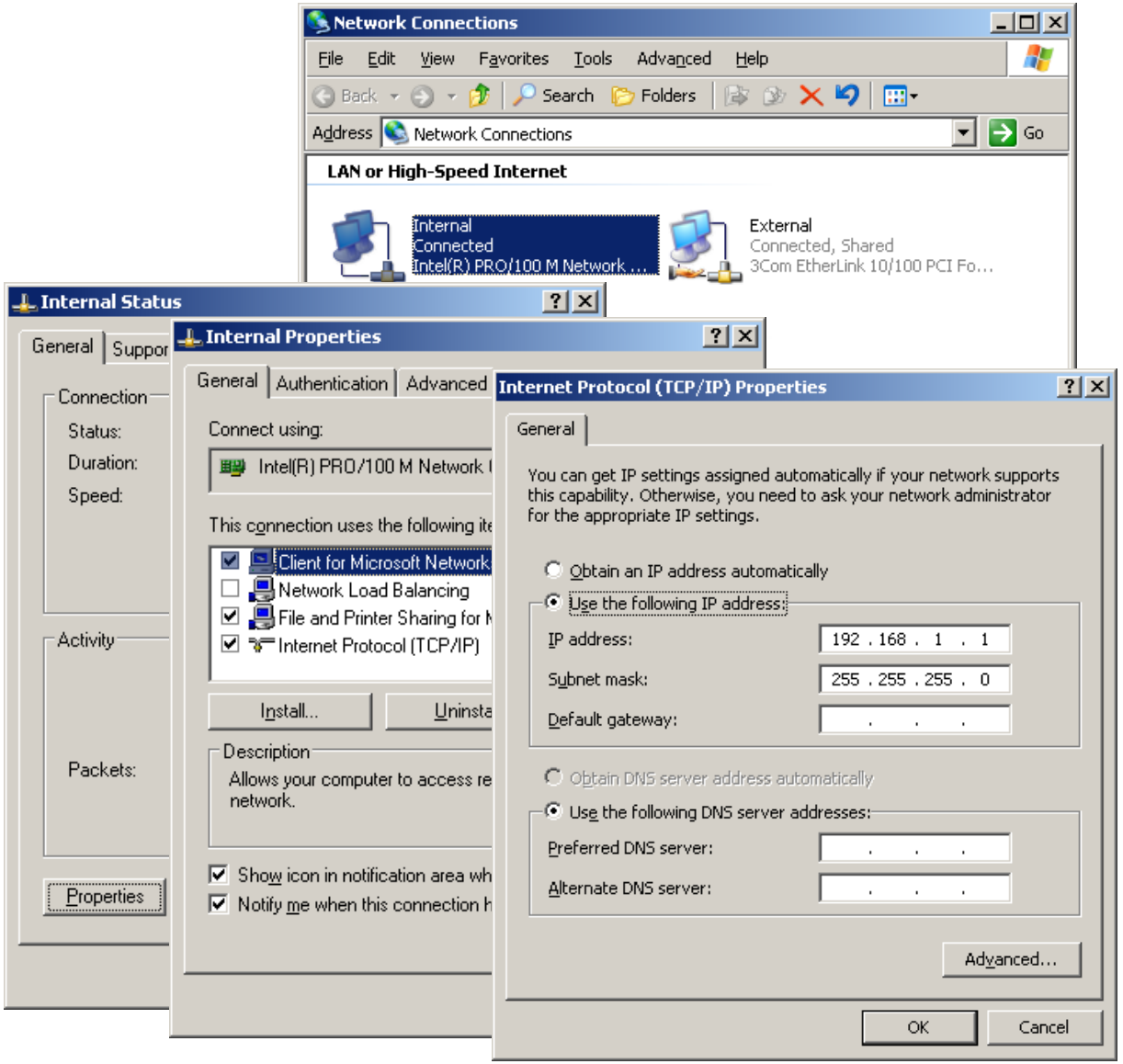
The External NIC TCP/IP Settings

The computer will tell us that the IP address 192.168.0.1 will be used for our system. We will continue to utilize the external IP address scheme, gateway IP and DNS IP addresses that we previously had installed on the External network interface card.



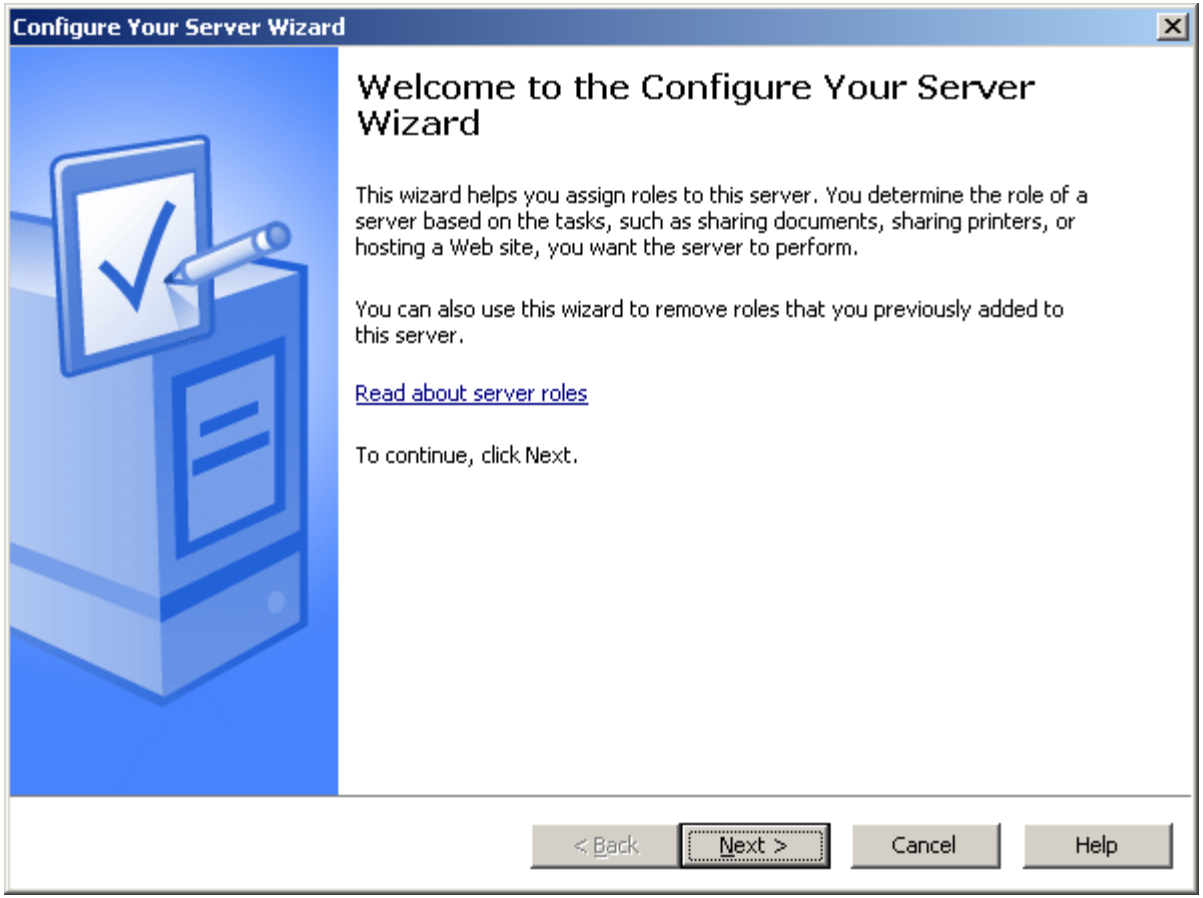
The Internal NIC

Now, we will setup the Internal network interface card. We double click on the Internal card and the Internal NIC Status window will open and we will select the Properties button. At the Internal Properties window, we double click on the TCP/IP Internet Protocol. We can type our own IP address scheme in for the Intranet IP of 192.168.1.1. The subnet mask will be 255.255.255.0. We leave the gateway and DNS IP addresses blank.



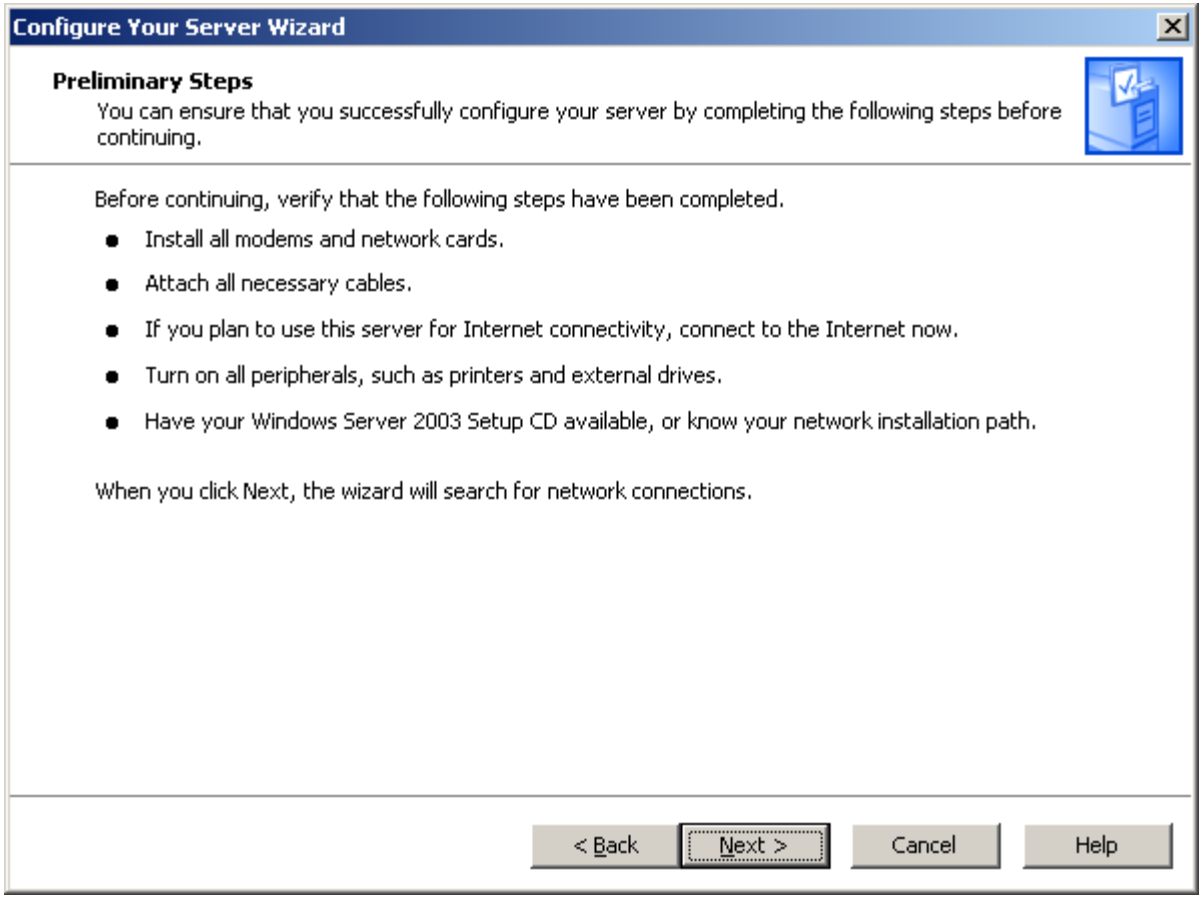
Configure the Server Wizard

Now to setup the DHCP server, we choose the Configure Your Server Wizard . The first window in the procedure will appear on the graphical display and we select the Next command button to continue.



Preliminary Steps

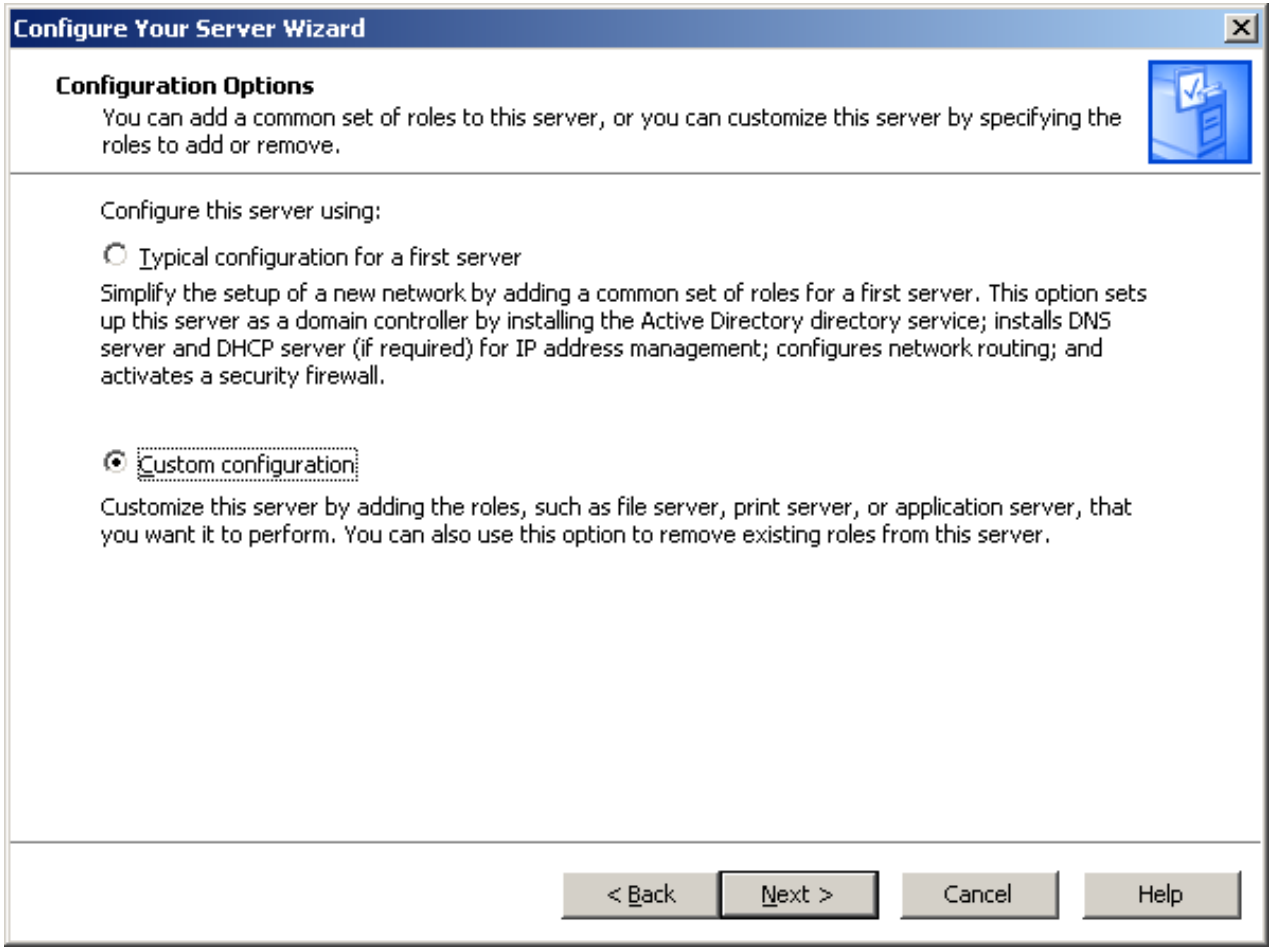
We are prompted to have the Windows Server CD available to load extra files and to have the necessary Network Interface Cards, cables and Internet connections to complete the task. When we are ready, we should press the Next command button.



Configure your Server Wizard

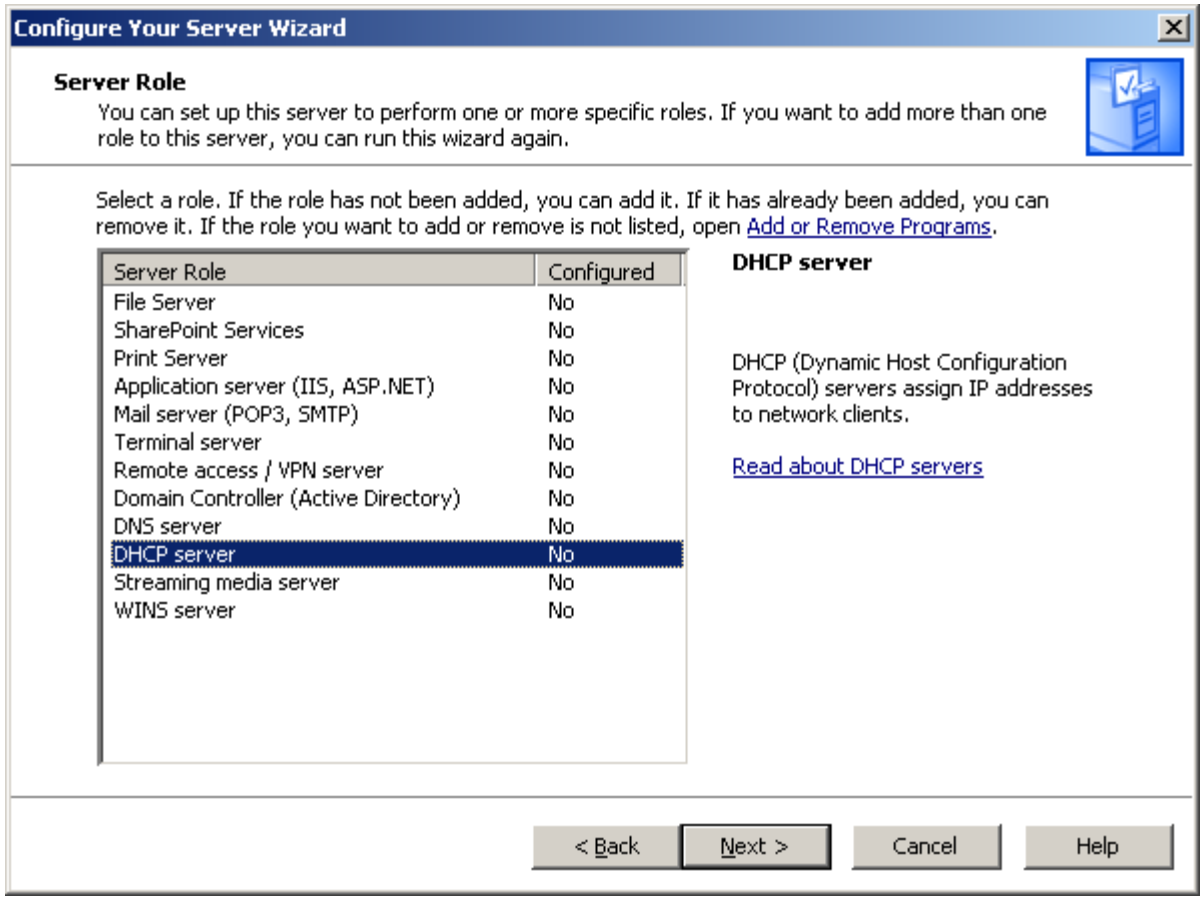
In most cases, we will choose a custom configuration. A typical configuration will have us install Active Directory (domain controller), DNS role, DHCP role and activate a security firewall.

We will opt for custom configuration and select the Next button.



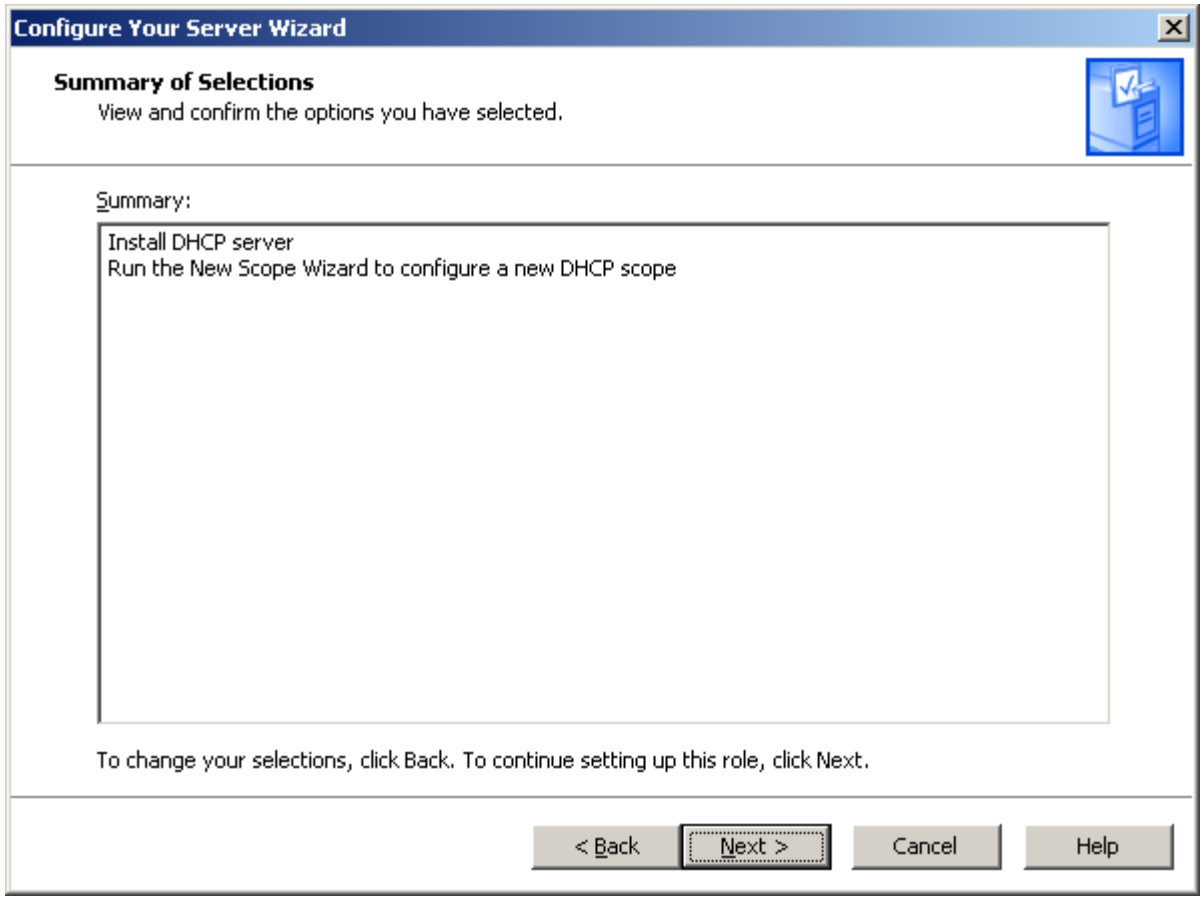
Select DHCP Server

We will pick the DHCP Server function and we then push the Next button.



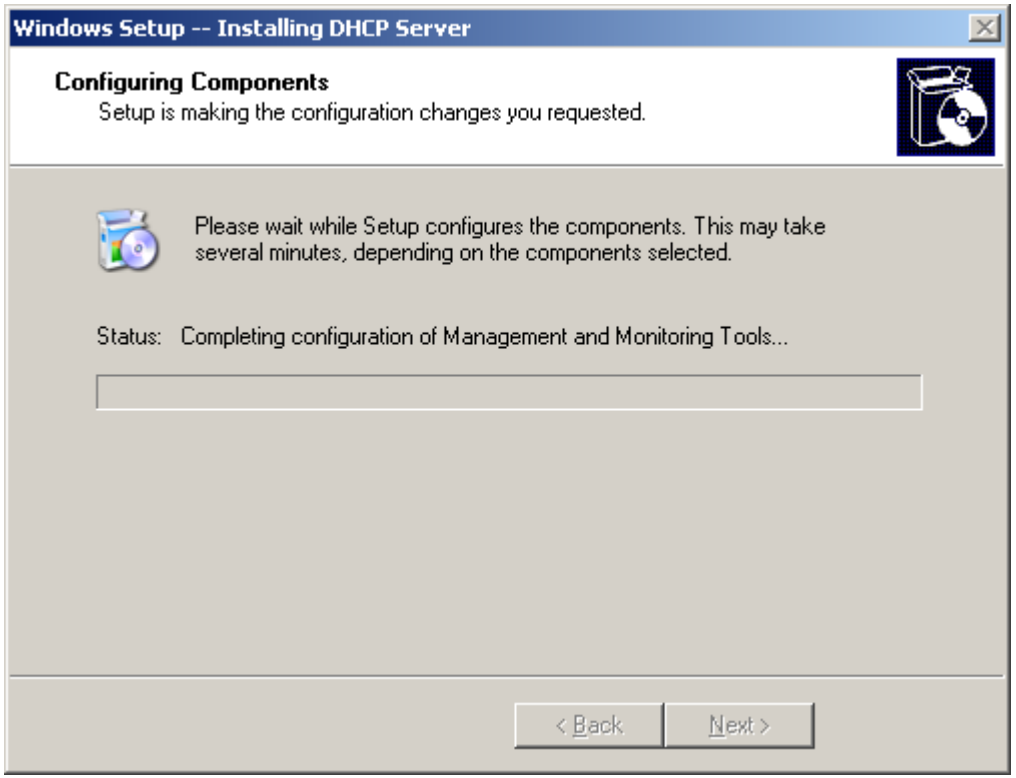
Install DHCP Server and New Scope

Next, a window shows the summary of selections. We go for the Next button to continue.



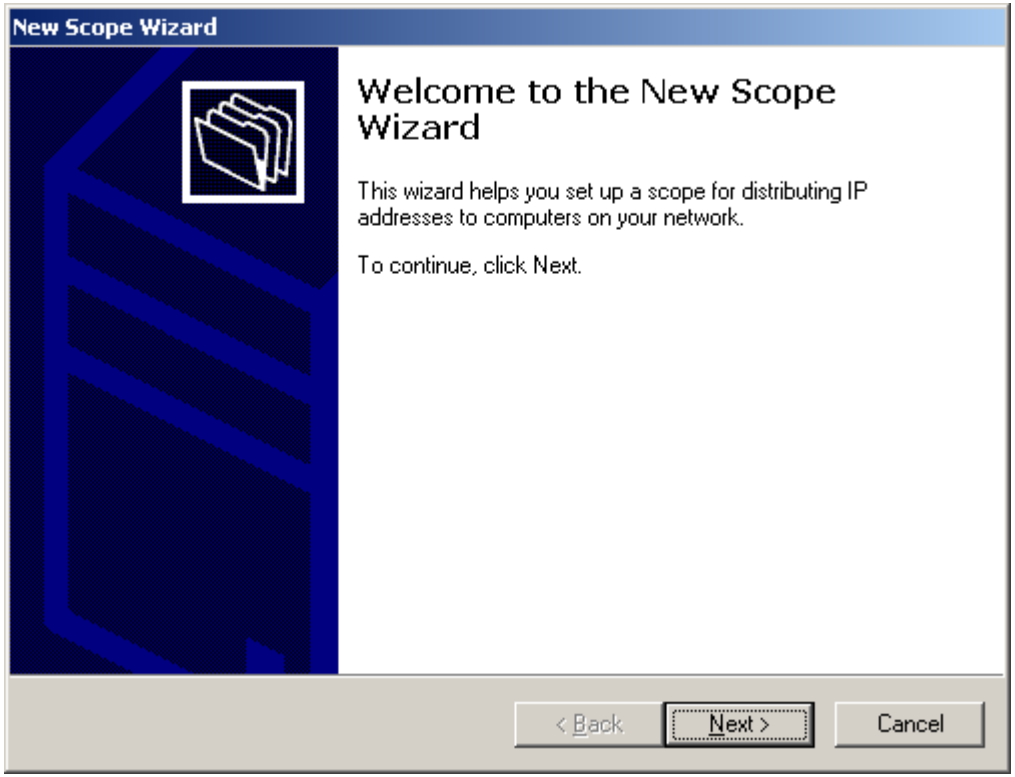
Configuring Components

Now, the wizard will configure components.



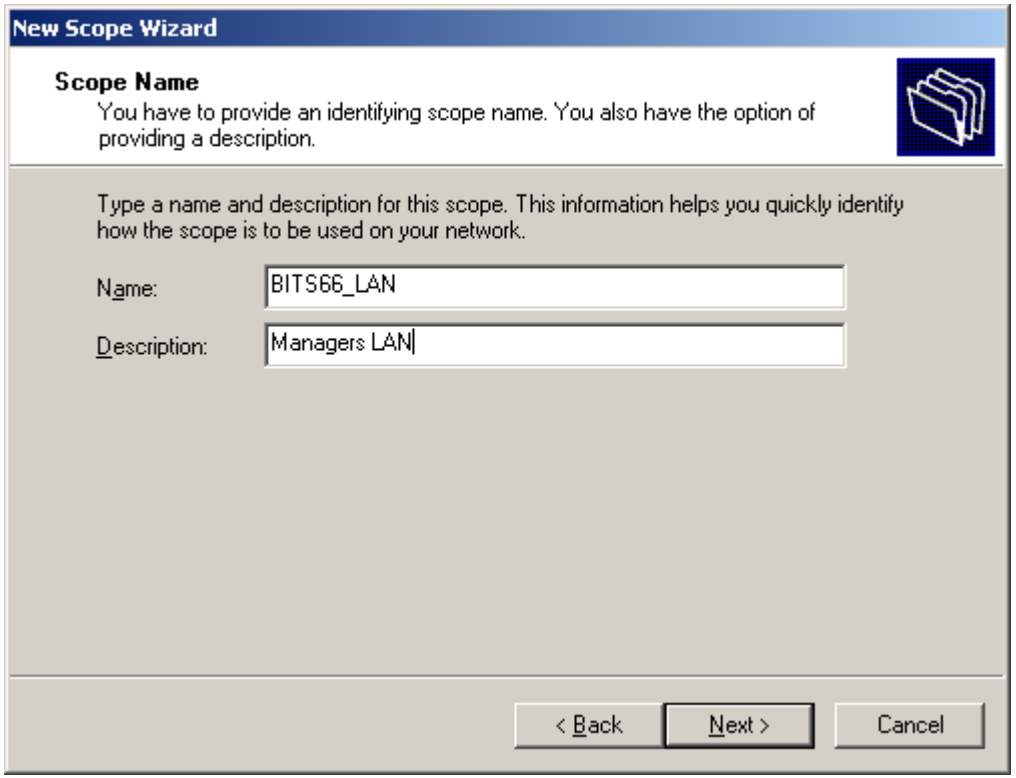
The New Scope Wizard

The next step is to create a scope. We pick the Next button to go on.



Scope Name

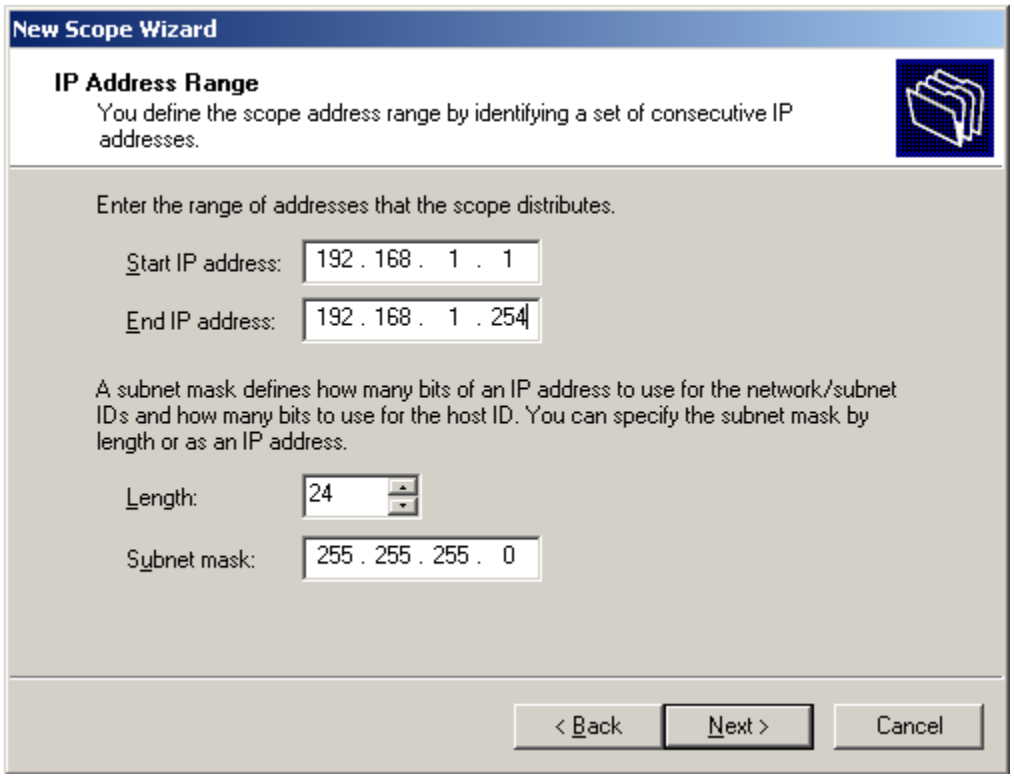
We made the Scope name BITS66_LAN and the description is Managers LAN. Then we press Next to carry on.



IP Address Range

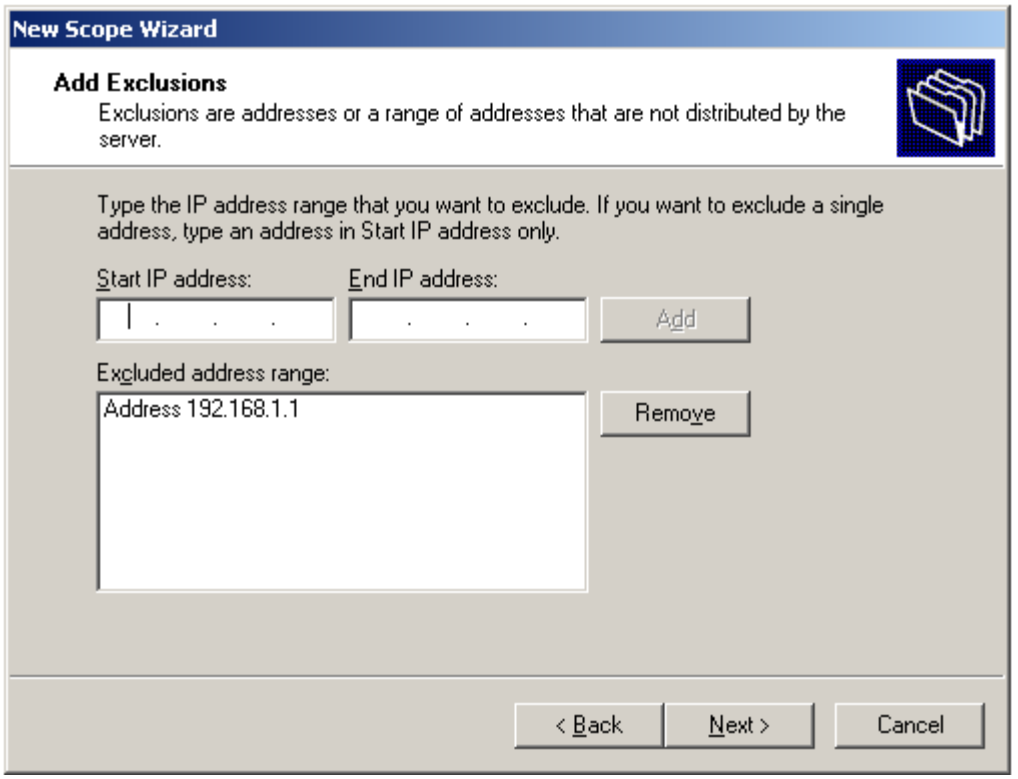
We will make the IP address range 192.168.0.1 to 192.162.0.254. The length of the subnet mask is 24 bits and the mask is 255.255.255.0.

We press Next to advance.



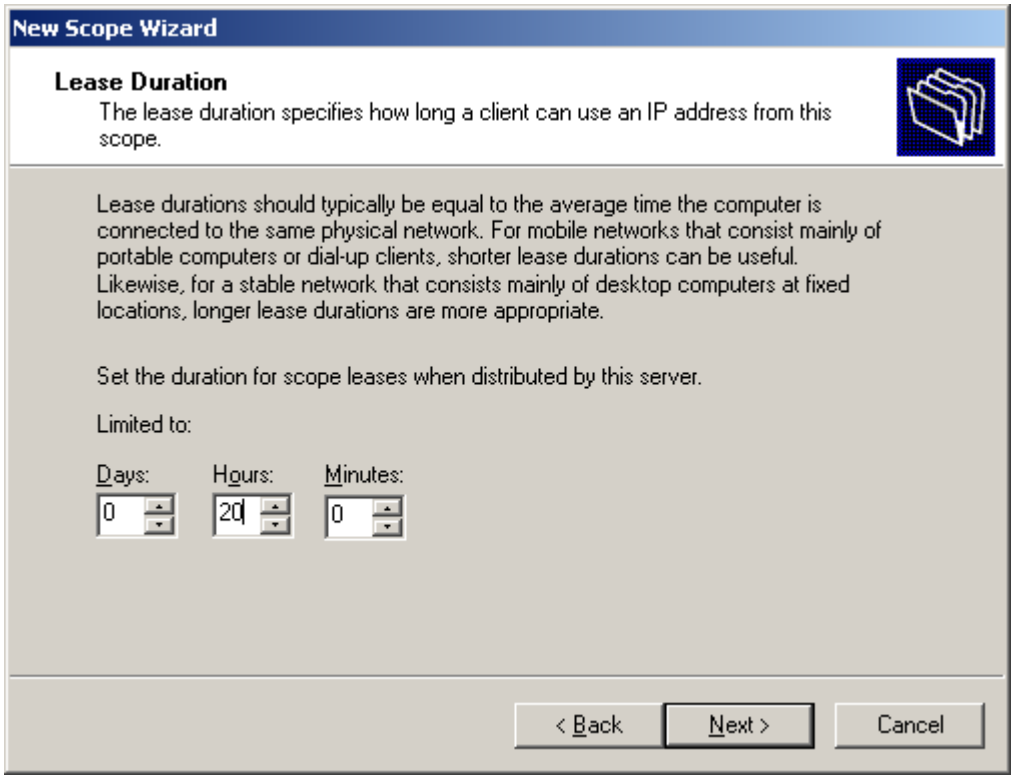
Exclusions

We will exclude the server's IP address and any other static IP devices. In this example, we excluded the server Internal Network Interface Card. Other devices that can be excluded are network printers, scanners and routers.



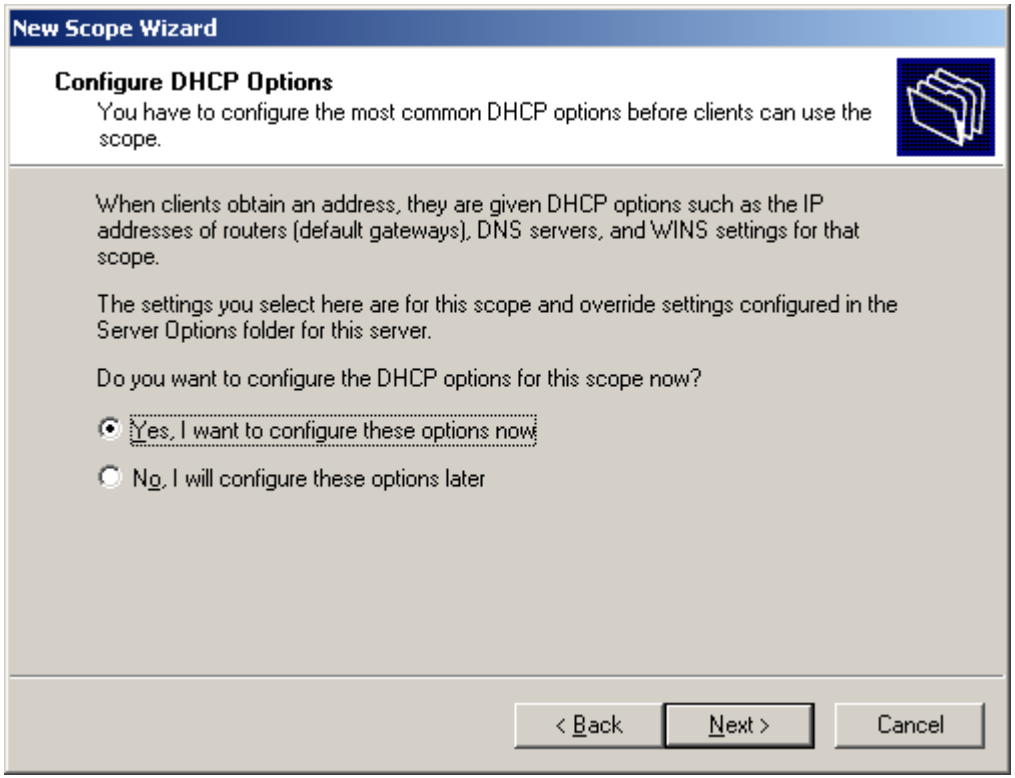
Lease Duration

The default duration is 8 days, but we will change the time for a computer to be continuously on the network to 20 hours. We then will choose the Next button and continue.



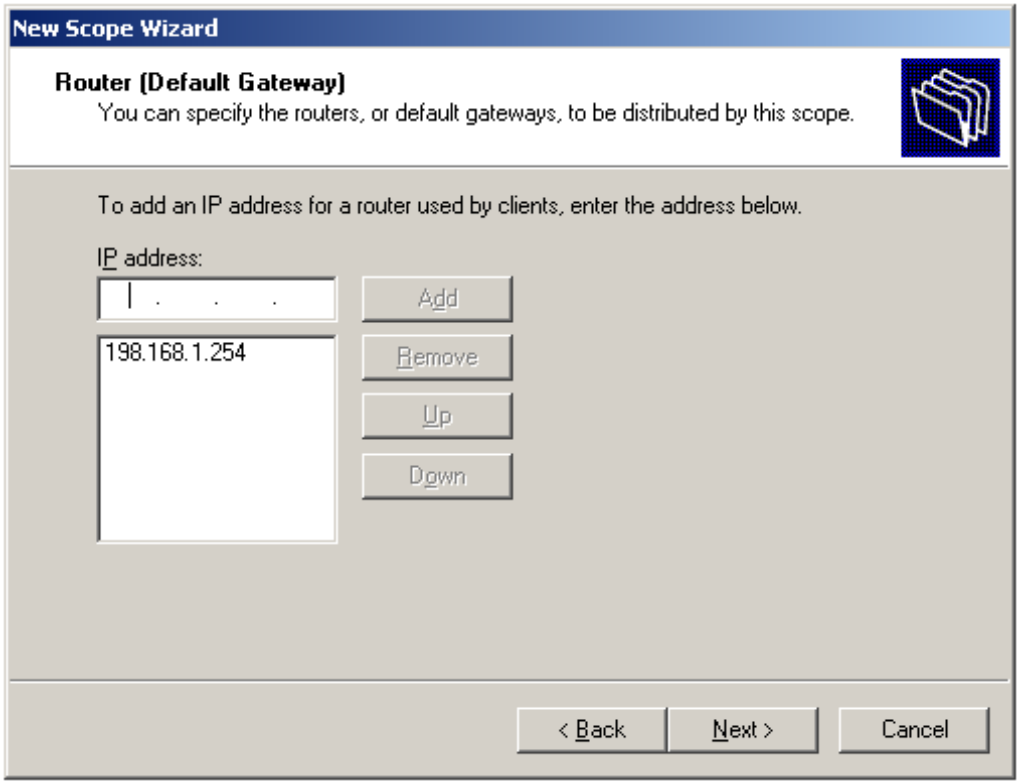
DHCP Options

Yes, we will want to set DHCP options and after that we will opt for the Next button to go onward.



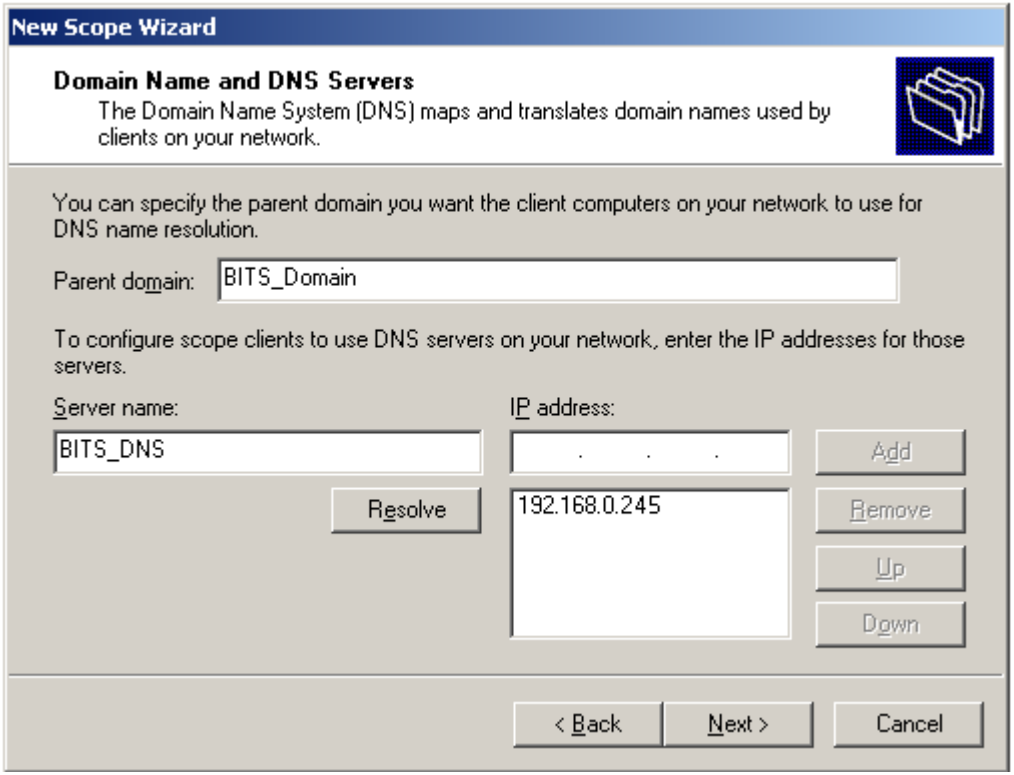
Identify the Router

We can identify routers on the LAN by typing in their IP address and then we hit the Add button. We press the Next button to advance to another window.



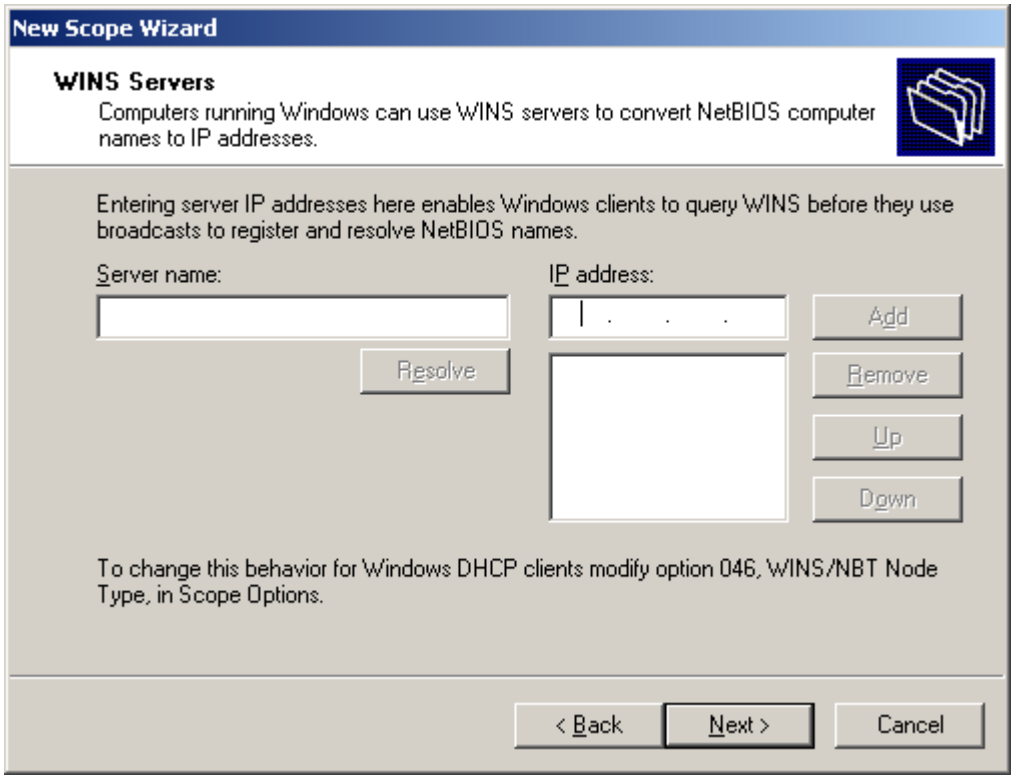
DNS Server

We can identify the Domain Name and DNS server for the scope. When we type in the server name, we can resolve the IP address by choosing the Resolve button. After placing the parent domain and DNS server in this window, we choose the Next button.



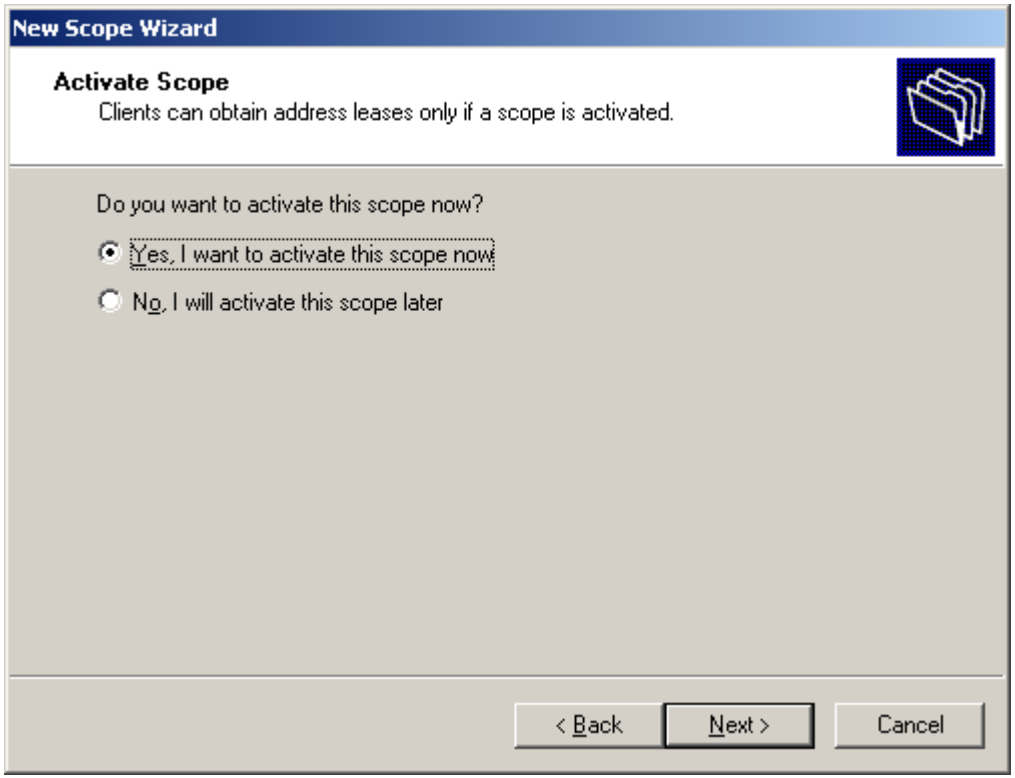
WINS Server

We can also determine the WINS server on the LAN by typing the WINS server NetBIOS name and picking the Resolve button. Then, we can choose the Next button to continue.



Finish the New Scope Wizard

We can activate the new scope by opting the yes radial button. We press the Next button to go on.

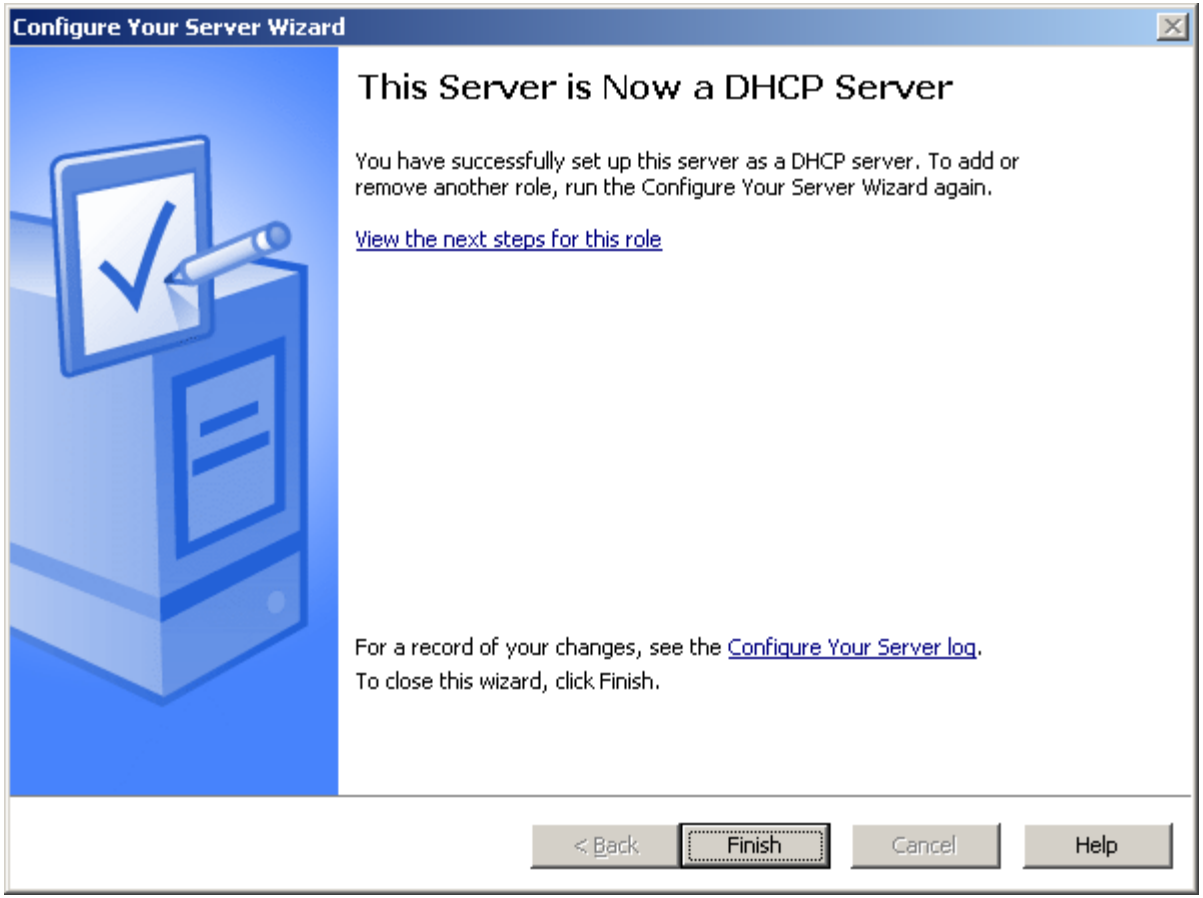


New Scope Wizard is Complete

The wizard is now complete and we pick the Finish button.

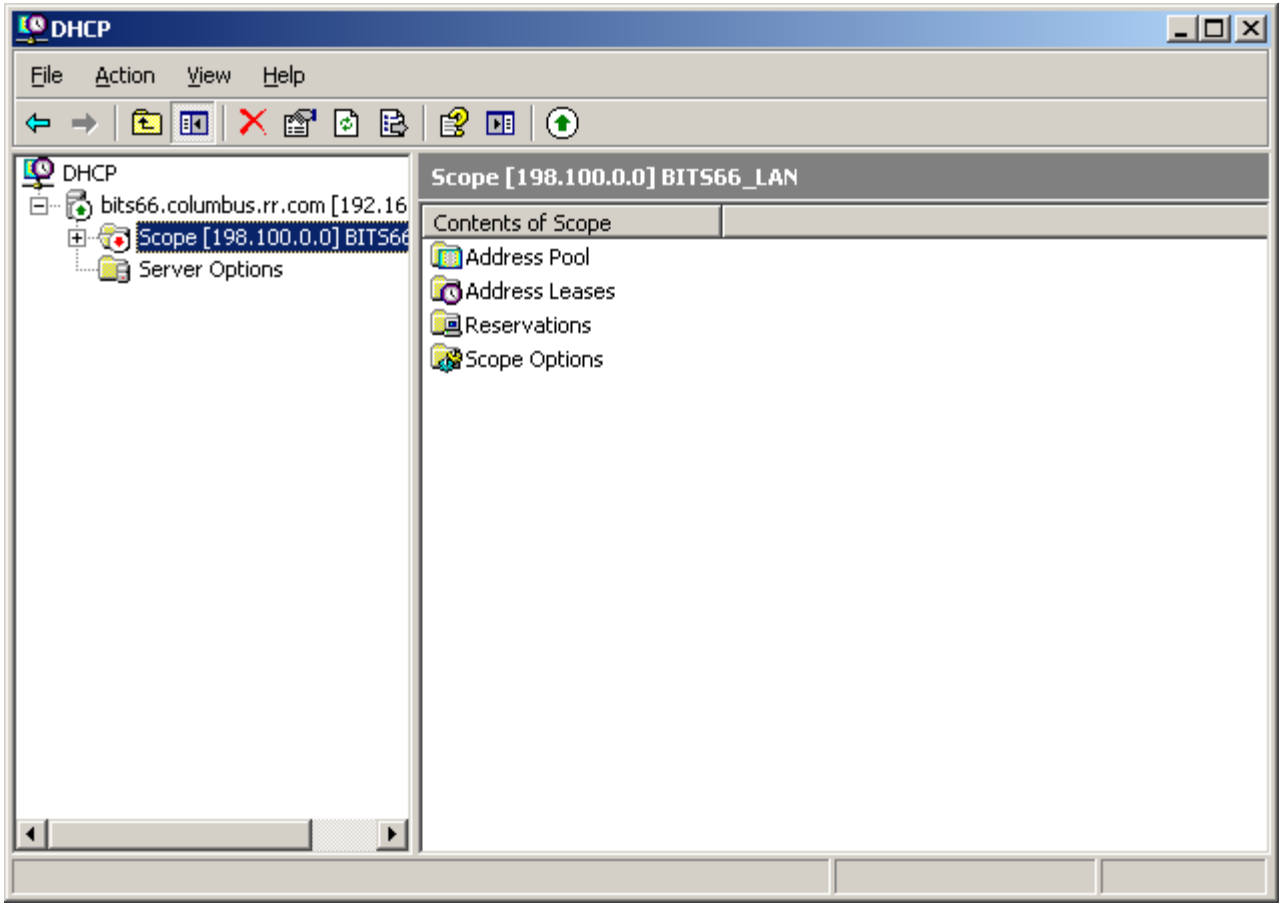
DHCP Server is Complete

Our server has DHCP capabilities. We press the Finish button.



DHCP Server Inactive

We see the DHCP is not active, so we double click on the new scope to activate it.



Activate the DHCP Server

We can use the DHCP console to make changes to the address pool, to check the lease, and to make alterations to the scope. We can also add new scopes in this console.