

CHAPTER 2

LAN TCP/IP and DHCP Setup

2.1 Introduction

In this chapter, we will explain in more detail the **LAN TCP/IP and DHCP Setup**.



2.2 LAN IP Network Configuration

In the Vigor 2900 router, there are two sets of IP address settings for the LAN interface, as shown below. The 1st IP address/subnet mask is for private users or NAT users, and the 2nd IP address/subnet mask is for public users. To allow public users, you need to have subscribed to a globally reachable subnet from your ISP. For example, for some DSL accounts, the ISP will assign a few public IP addresses for your local network. You could use one IP address for your router, and the 2nd IP address/subnet mask should be configured with the public IP address. Other local PCs should set the router IP address as the default gateway. When the DSL connection to the ISP has been established, each local PC will directly route to the Internet. Also, you could use the 1st IP address/subnet mask to connect to other private users (PCs). These IP addresses of the users will be translated to the 2nd IP

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address by the router and sent out via the DSL connection.

> Basic Setup > Ethernet TCP/IP and DHCP Setup

LAN IP Network Configuration	DHCP Server Configuration
For NAT Usage 1st IP Address : 192.168.1.1 1st Subnet Mask : 255.255.255.0	<input checked="" type="radio"/> Enable Server <input type="radio"/> Disable Server <input type="radio"/> Relay Agent Start IP Address : 192.168.1.10 IP Pool Counts : 50
For IP Routing Usage : <input type="radio"/> Enable <input checked="" type="radio"/> Disable 2nd IP Address : 192.168.2.1 2nd Subnet Mask : 255.255.255.0 2nd Subnet DHCP Server	Gateway IP Address : 192.168.1.1 DHCP Server IP Address for Relay Agent : DNS Server IP Address Primary IP Address : Secondary IP Address :
RIP Protocol Control : Disable	

OK

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For NAT Usage: (Default: Always Enable)

1st IP Address: Private IP address for connecting to a local private network (Default: 192.168.1.1).

1st Subnet Mask: Netmask for the local private network (Default: 255.255.255.0/ 24).

For IP Routing Usage: (Default: Disable)

Enable: Enable the 2nd IP address settings.

Disable: Disable the 2nd IP address settings.

2nd IP Address: Set a public IP address.

2nd Subnet Mask: Set a netmask for the public IP address.

RIP Protocol Control:

Disable: Disable the exchange of RIP packets on LAN interface.

1st Subnet: Set the 1st subnet to exchange RIP packets with neighbor routers

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connected to LAN interface.

2nd Subnet: Set the 2nd subnet to exchange RIP packets with neighbor routers connected to LAN interface.

2nd Subnet DHCP Server: The following picture is for 2nd subnet DHCP Server of the Vigor 2900 Router.

The screenshot shows a web browser window titled "Router Web Configurator - Microsoft Internet Explorer". The main content area is titled "2nd DHCP Server". It contains the following fields and controls:

- Start IP Address :** A text input field.
- IP Pool Counts :** A text input field with the value "0" and "(max. 10)" next to it.
- A horizontal line separator.
- A table with three columns: **Index**, **Matched MAC Address**, and **given IP Address**. The table is currently empty.
- MAC Address :** A label followed by five text input fields separated by colons, and a sixth text input field below the second one.
- Four buttons: **Add**, **Remove**, **Edit**, and **Cancel**.
- At the bottom, three buttons: **Close**, **Clear All**, and **OK**.

Start IP Address: Set the starting IP address of the IP address pool.

IP Pool Counts: Set the number of IP addresses in the pool.

MAC Address: Type the specific MAC Address which could be added, removed or edited from the access listed above.

ADD: To add a MAC address on the list.

Remove: To delete the selected MAC address on the list.

Edit: To edit the selected MAC address on the list.

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Cancel: Give up the MAC address access control setup.

Close: Close this window.

Clear All: Clean all entries of MAC addresses on the list.

OK: Save the access control list.

2.3 DHCP Server Configuration

DHCP stands for Dynamic Host Configuration Protocol. It can automatically dispatch related IP settings to any local user configured as a DHCP client. Please refer to the following picture for DHCP Server Configuration.

The screenshot shows a web-based configuration interface for a network device. The breadcrumb navigation at the top reads: Home > Basic Setup > Ethernet TCP/IP and DHCP Setup. The main configuration area is divided into two panels. The left panel, titled 'LAN IP Network Configuration', contains settings for NAT Usage (1st IP Address: 192.168.1.1, 1st Subnet Mask: 255.255.255.0) and IP Routing Usage (radio buttons for Enable and Disable, with Disable selected). It also shows a 2nd IP Address (192.168.2.1) and 2nd Subnet Mask (255.255.255.0), with a button labeled '2nd Subnet DHCP Server' below. At the bottom of this panel is the 'RIP Protocol Control' dropdown menu, currently set to 'Disable'. The right panel, titled 'DHCP Server Configuration', has three radio buttons: 'Enable Server' (selected), 'Disable Server', and 'Relay Agent'. Below these are fields for 'Start IP Address' (192.168.1.10), 'IP Pool Counts' (50), 'Gateway IP Address' (192.168.1.1), 'DHCP Server IP Address for Relay Agent' (empty), and 'DNS Server IP Address' (Primary and Secondary fields, both empty). An 'OK' button is centered at the bottom of the configuration area. A footer bar at the very bottom contains the text: 'Copyright (c) 2004, DrayTek Corp. All Rights Reserved.'

Enable Server: Assign IP address to LAN PC automatically.

Disable Server: Assign IP address to LAN PC manually.

Relay Agent: Allows PCs on LAN to request IP address from other DHCP server.

Start IP Address: Set the start IP address of the IP address pool.

IP Pool Counts: Set the number of IP address pool.

Gateway IP Address: Sets the gateway IP address for the DHCP server. Usually, it

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should be the same as 1st IP address when the router works as a default gateway.

DNS Server IP Address: (Default: None).

DNS stands for Domain Name System. Every Internet host must have a unique IP address, also they may have a human friendly, easy to remember name such as www.yahoo.com. The DNS server converts the user friendly name into its equivalent IP address.

Primary IP Address: Sets the IP address of the primary DNS server.

Secondary IP Address: Sets the IP address of the secondary DNS server.

Note: If both the Primary IP and Secondary IP Address fields are left empty, the router will assign its own IP address to local users as a DNS proxy server and maintain a DNS cache. If the IP address of a domain name is already in the DNS cache, the router will resolve the domain name immediately. Otherwise, the router forwards the DNS query packet to the external DNS server by establishing a WAN (e.g. DSL/Cable) connection.