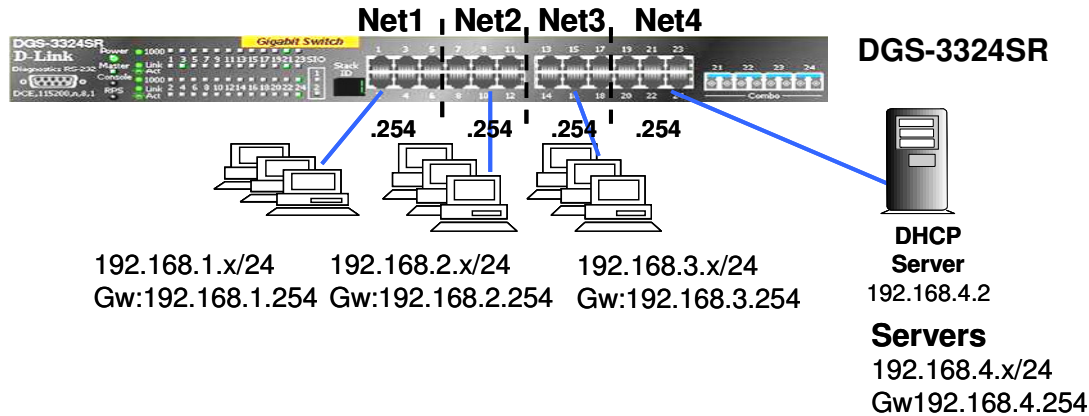


How do I setup a Layer 3 network with DHCP relay on my DGS-3324SR/DGS-3324SRi/DXS-3350SR, and DXS-3326GSR?

Warning:

The example configuration below was created from a factory default configuration on the DGS-3324SR/DGS-3324SRi/DXS-3350SR/DXS-3326GSR switches. We recommend saving your current configuration if necessary.



Scenario:

A large Layer 3 network may consist of quite a few IP subnets. Now, in order to make clients on the network easier to configure, they can be set to use DHCP or 'obtain an IP address automatically' from a DHCP server. For this type of configuration, the DHCP Relay function on the switch can be used. In this setup, there will only be one DHCP server handling the DHCP requests for each of the subnets. The machines in Net1, Net2, or Net3 can obtain their IP addresses automatically from the primary DHCP server (192.168.4.2), which resides in Net4. In this situation, the Layer 3 switch will receive the DHCP discover packet from the client and will relay it to the DHCP Server and vice versa. The DHCP Server will then provide an IP address for the machine in the network using correct DHCP scope. This configuration example is based on firmware version 4.10b15.

Switch CLI Configuration:

Step 1 Connect to the switch using the console connection with your preferred Terminal emulation software.

Step 2 Once connected to the CLI, login at the username and password prompt (The default is username is <blank> and password is <blank>).

Step 3 At the prompt, enter the following command:

```
reset system
```

Enter 'y' when prompted to confirm the factory reset. The switch will now reboot with the factory default settings.

Step 4 Login to the switch again.

Step 5 In the Switch CLI, enter the following commands to create the switch VLANs and related IP interfaces.

```
config vlan default delete 1:1-1:24

create vlan v101 tag 101
config vlan v101 add untagged 1:1-1:6
create ipif net1 192.168.1.254/24 v101 state enabled

create vlan v102 tag 102
config vlan v102 add untagged 1:7-1:12
create ipif net2 192.168.2.254/24 v102 state enabled

create vlan v103 tag 103
config vlan v103 add untagged 1:13-1:18
create ipif net3 192.168.3.254/24 v103 state enabled

create vlan v104 tag 104
config vlan v104 add untagged 1:19-1:24
create ipif net4 192.168.4.254/24 v104 state enabled
save
```

Step 6 Now that the basic Layer 3 configuration has been configured on the switch, we now need to enable BOOTP_RELAY and configure the related settings. Enter the following commands in the CLI to configure and setup BOOTP_RELAY.

```
enable bootp_relay
config bootp_relay add ipif net1 192.168.4.2
config bootp_relay add ipif net2 192.168.4.2
config bootp_relay add ipif net3 192.168.4.2
save
```

Server/PC Configuration:

1. At DHCP Server (eg, Win2000/2003 Advanced Server), Install and enable the DHCP Server Service
2. Create the "Scope" for the different IP subnets and enter the relevant Scope Options (Router, DNS, etc)
3. At Client PC - set it to DHCP (go to Network Properties→ Internet Protocol (TCP/IP), select 'Obtain an IP address automatically')

Testing the Configuration:

1. Connect a PC to Net1 and check if it can automatically obtain a 192.168.1.x IP (and related mask, Gateway, and DNS, etc.) from DHCP server 192.168.4.2
2. Connect a PC to Net2 and check if it can automatically obtain a 192.168.2.x IP from the DHCP server 192.168.4.2.
3. Connect a PC to Net3 and check if it can automatically obtain a 192.168.3.x IP from the DHCP server 192.168.4.2.

Verifying the Configuration:

Below is a list of commands that can be used to verify the configuration and are useful for diagnostics:

```
show bootp_relay
```

Below is the screen output for the above command in this example. For more related CLI commands please refer to the CLI reference manual for your switch model.

```
DGS-3324SR:4#show bootp_relay
Command: show bootp_relay
```

```
Bootp Relay Status      : Enabled
Bootp Hops Count Limit  : 4
bootp Relay Time Threshold : 0
```

Interface	Server 1	Server 2	Server 3	Server 4
net1	192.168.4.2			
net2	192.168.4.2			
net3	192.168.4.2			