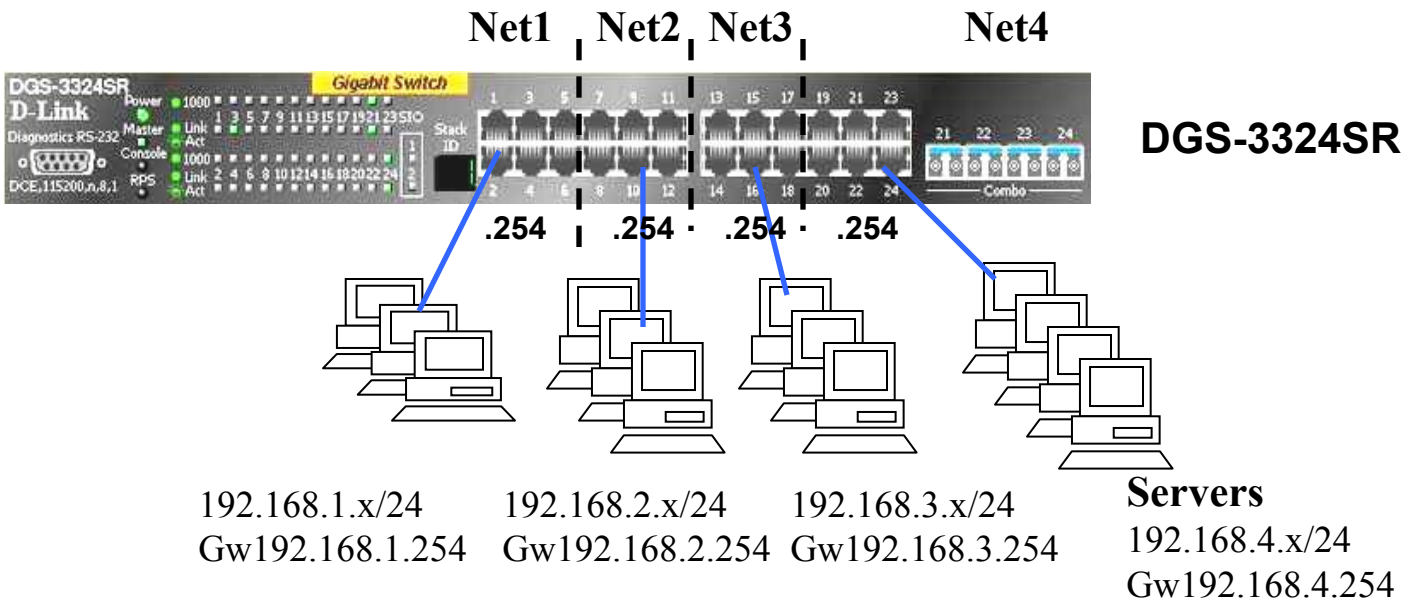
D-Link
Building Networks for People

IP Routing Example

Objective:

Configure 4 IP subnets and IP packets can be routed (L3) between Subnets.

IP Routing 1/3



IP Routing 2/3

At DGS-3324SR

1. Delete ports from default vlan for other vlan use.

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

2. Create VLAN, add ports into it, and then create IP interface for the VLAN.

```
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
```

3. Check if IP interfaces are correctly configured.

```
show vlan
show ipif
```

At Client PC

1. **Manually configure IP address, mask, for the associated IP Network.**
2. **Gateway = DGS-3324SR's Interface IP**

IP Routing 3/3

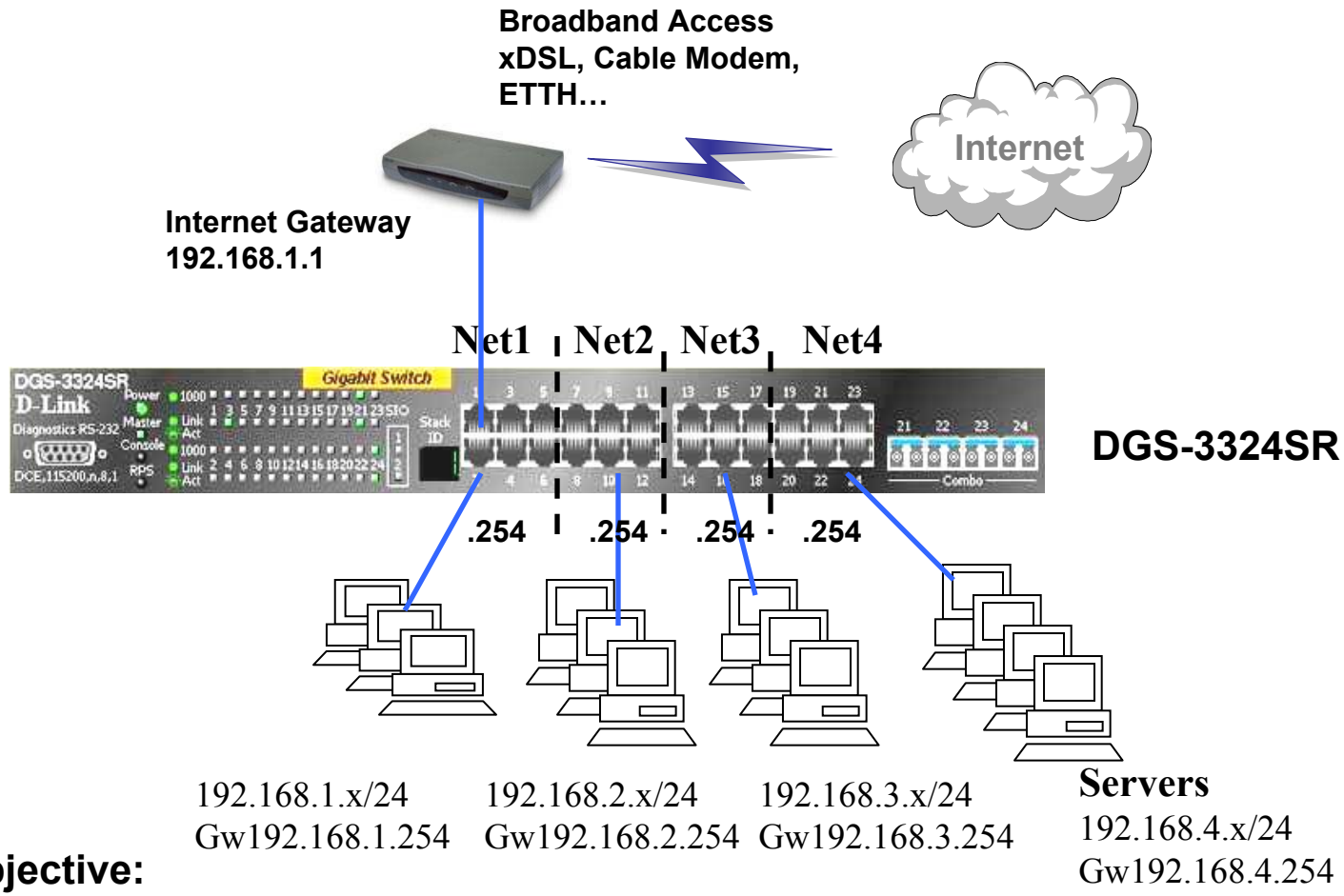
TEST:

1. Net1 PC can ping gateway (192.168.1.254), other DGS-3324SR interfaces (192.168.2.254, 192.168.3.254, etc) and other network's PC.

2. Net2 PC can ping gateway (192.168.2.254), other DGS-3324SR Interfaces (192.168.1.254, 192.168.3.254, etc) and other network's PC IP.

3. Same testing for Net3 PC, Net4 PC.

Internet Access with NAT device 1/2



Objective:

Every PC at all subnets (or "allowed" subnets) can access the Internet via one Internet Gateway (NAT device) with ADSL/CableModem line or via one Proxy Server.

Internet Access with NAT device 2/2

At DGS-3324SR:

1. **Create IP Networks referring to previous "BasicIPRoute" setup example.**
2. **Create the default route so that Internet IP will be routed to Internet Gateway**
   create iproute default 192.168.1.1
3. **If Internet Gateway supports RIP, enable the RIP at DGS-3324SR at same interface**
   config rip ipif all tx_mode v2_only rx_mode v2_only state enable
   enable rip

At Internet Gateway (NAT Device) or Proxy Server:

1. **If supporting RIP, enable the RIP at LAN interface.**
2. **If not supporting RIP, add the Static Route for the networks (eg, Net2 and Net3, but not Net4) allowed to the Internet.**
   192.168.2.0 mask 255.255.255.0 192.168.1.254
   192.168.3.0 mask 255.255.255.0 192.168.1.254
   (net4 is not allowed, therefore, not adding static route entry for net4)

At Client PC

1. DNS = ISP's DNS address

TEST:

Net2 PC can access the Internet via Internet Gateway.

Net3 PC can access the Internet via Internet Gateway. Etc.