

Policy routing on WAN ports for DSR

[Request]

For DSR series, how can we achieve following requests separately?

- 1) Dual wan running in load balance mode, having both WAN ports live at the same time with the router auto load balancing the traffic.
- 2) Policy route all HTTP, DNS, HTTPS, traffic through WAN 1 and failover to WAN 2.
- 3) Send all source 2nd VLAN 172.16.15.10 / 24 through WAN 2.

Note: Please make sure both wan port has connected.

[Solution]

1. >> Dual wan running in load balance mode, having both WAN ports live at the same time with the router auto load balancing the traffic.

Please go to "Network" -> "Internet" -> "WAN mode" page to choose "Load Balancing" in "WAN Mode" field.

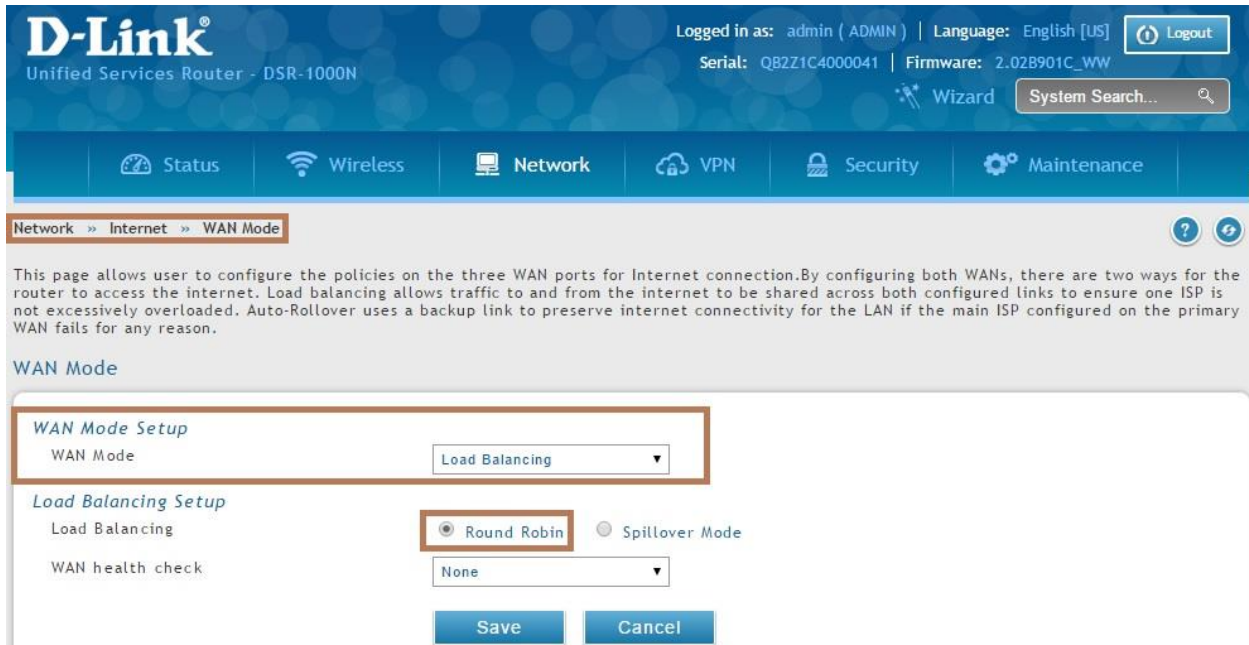
The screenshot shows the 'WAN Mode' configuration page. At the top, the breadcrumb navigation is 'Network >> Internet >> WAN Mode'. Below this is a descriptive paragraph: 'This page allows user to configure the policies on the three WAN ports for Internet connection. By configuring both WANs, there are two ways for the router to access the internet. Load balancing allows traffic to and from the internet to be shared across both configured links to ensure one ISP is not excessively overloaded. Auto-Rollover uses a backup link to preserve internet connectivity for the LAN if the main ISP configured on the primary WAN fails for any reason.'

The 'WAN Mode Setup' section is highlighted with a red box. It contains a dropdown menu for 'WAN Mode' set to 'Load Balancing'. Below this is the 'Load Balancing Setup' section, which includes radio buttons for 'Round Robin' (selected) and 'Spillover Mode', and a dropdown menu for 'WAN health check' set to 'None'. At the bottom of this section are 'Save' and 'Cancel' buttons.

2. >> Policy route all HTTP, DNS, HTTPS, traffic through WAN 1 and failover to WAN 2.

To achieve this requirement, you just need to add "HTTP, HTTPS and DNS" in protocol binding page

a. Configure wan type to "Round-Robin" mode.

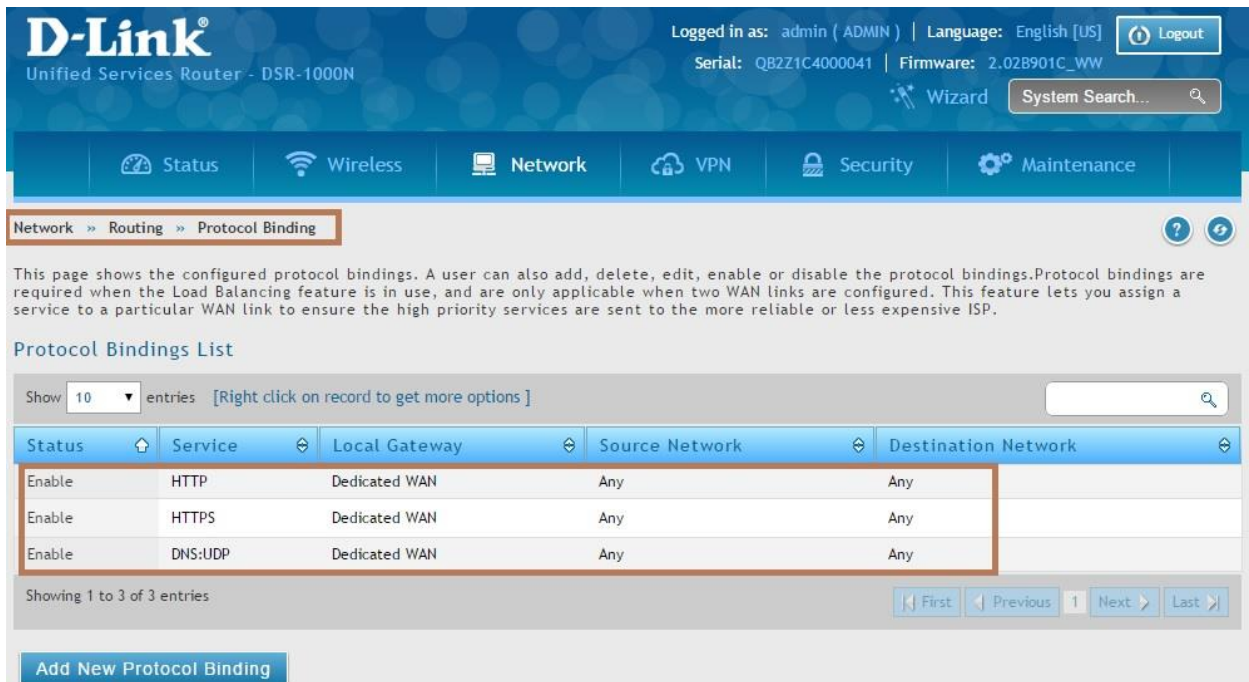


The screenshot shows the D-Link Unified Services Router (DSR-1000N) configuration interface. The user is logged in as 'admin (ADMIN)' and the language is set to 'English [US]'. The page title is 'WAN Mode' under the 'Network > Internet > WAN Mode' breadcrumb. The main content area is titled 'WAN Mode Setup' and contains the following configuration options:

- WAN Mode:** A dropdown menu set to 'Load Balancing'.
- Load Balancing Setup:**
 - Load Balancing:** Radio buttons for 'Round Robin' (selected) and 'Spillover Mode'.
 - WAN health check:** A dropdown menu set to 'None'.

At the bottom of the configuration area are 'Save' and 'Cancel' buttons.

b. Add HTTP, HTTPS and DNS in protocol binding page which default gateway is wan1.



The screenshot shows the D-Link Unified Services Router (DSR-1000N) configuration interface. The user is logged in as 'admin (ADMIN)' and the language is set to 'English [US]'. The page title is 'Protocol Binding' under the 'Network > Routing > Protocol Binding' breadcrumb. The main content area is titled 'Protocol Bindings List' and contains the following information:

Show 10 entries [Right click on record to get more options]

Status	Service	Local Gateway	Source Network	Destination Network
Enable	HTTP	Dedicated WAN	Any	Any
Enable	HTTPS	Dedicated WAN	Any	Any
Enable	DNS:UDP	Dedicated WAN	Any	Any

Showing 1 to 3 of 3 entries

Buttons: First, Previous, 1, Next, Last

Add New Protocol Binding

Protocol Bindings Configuration

Service: HTTP

Local Gateway: WAN1 WAN2 WAN3

Source Network: Any Single Address Address range

Destination Network: Any Single Address Address range

Please notice that when we run traffic (FTP,SSH,telnet etc.) which are not configured in protocol binding page, then traffic can go through WAN1 or WAN2 as wan mode is in load balancing round robin. When services such as (HTTP/DNS/HTTPS) is requested, the traffic is sent through WAN1.

The test result you can refer "attachment2".

3.>>Send all source 2nd VLAN 172.16.15.10 / 24 through WAN 2.

We can use protocol binding to achieve this. Configure service as 'ANY' through WAN2 only for source IP range (say 172.16.15.100 - 172.16.15.200). With this traffic sent by VLAN host will go through WAN2.

a. Configure wan type to "Round-Robin" mode.

D-Link Unified Services Router - DSR-1000N

Logged in as: admin (ADMIN) | Language: English [US] | Logout

Serial: QB2Z1C4000041 | Firmware: 2.02B901C_WW

Wizard System Search...

Status Wireless Network VPN Security Maintenance

Network » Internet » WAN Mode

This page allows user to configure the policies on the three WAN ports for Internet connection. By configuring both WANs, there are two ways for the router to access the internet. Load balancing allows traffic to and from the internet to be shared across both configured links to ensure one ISP is not excessively overloaded. Auto-Rollover uses a backup link to preserve internet connectivity for the LAN if the main ISP configured on the primary WAN fails for any reason.

WAN Mode

WAN Mode Setup

WAN Mode: Load Balancing

Load Balancing Setup

Load Balancing: Round Robin Spillover Mode

WAN health check: None

Save Cancel

b. Add vlan2 and configure port 3 to vlan2.

VLAN Configuration



VLAN ID [Range : 2 - 4093]
Name

Captive Portal

Captive Portal OFF
Activate InterVLAN Routing OFF

Multi VLAN Subnet

IP Address
Subnet Mask

DHCP

DHCP Mode None DHCP Server DHCP Relay
Domain Name
Starting IP Address

VLAN Configuration



DHCP

DHCP Mode None DHCP Server DHCP Relay
Domain Name
Starting IP Address
Ending IP Address
Default Gateway
Primary DNS Server
Secondary DNS Server
Lease Time [Range : 0 - 262800] Hours

LAN Proxy

Enable DNS Proxy ON

Save

D-Link
Unified Services Router - DSR-1000N

Logged in as: admin (ADMIN) | Language: English [US] | Logout
Serial: QB2Z1C4000041 | Firmware: 2.02B901C_WW
Wizard | System Search...

Status | Wireless | **Network** | VPN | Security | Maintenance

Network » VLAN » **Port VLAN**

This page allows user to configure the port VLANs. A user can choose ports and can add them into a VLAN. In order to tag all traffic through a specific LAN port with a VLAN ID, you can associate a VLAN to a physical port. The VLAN Port table displays the port identifier, the mode setting for that port and VLAN membership information. Go to the Available VLAN page to configure a VLAN membership that can then be associated with a port

Port VLANs List

Port Name	Mode	PVID	VLAN Membership
Port1	Access	1	1
Port2	Access	1	1
Port3	Access	2	2
Port4	Access	1	1

Showing 1 to 4 of 4 entries

c. Add protocol binding page which address range is for vlan2 and default gateway is wan2.

D-Link
Unified Services Router - DSR-1000N

Logged in as: admin (ADMIN) | Language: English [US] | Logout
Serial: QB2Z1C4000041 | Firmware: 2.02B901C_WW
Wizard | System Search...

Status | Wireless | **Network** | VPN | Security | Maintenance

Network » Routing » **Protocol Binding**

This page shows the configured protocol bindings. A user can also add, delete, edit, enable or disable the protocol bindings. Protocol bindings are required when the Load Balancing feature is in use, and are only applicable when two WAN links are configured. This feature lets you assign a service to a particular WAN link to ensure the high priority services are sent to the more reliable or less expensive ISP.

Protocol Bindings List

Show 10 entries [Right click on record to get more options]

Status	Service	Local Gateway	Source Network	Destination Network
Enable	ANY	Configurable WAN	172.16.15.11-172.16.15.254	Any

Showing 1 to 1 of 1 entries

Protocol Bindings Configuration

Service: ANY

Local Gateway: WAN1 **WAN2** WAN3

Source Network: Any Single Address **Address range**

Start Address: 172.16.15.11

End Address: 172.16.15.254

Destination Network: Any Single Address Address range

<- Vlan2 IP range

Result: We can see client belongs vlan2 will go through wan2 only.

The screenshot displays a web browser window at the top with the address bar showing `myip.easylife.tw`. Below the browser, a large green box highlights the IP address `111.250.35.150`. Below this, there are two windows: a Command Prompt and a network configuration window.

Command Prompt Output:

```
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . : 
Ethernet adapter Ethernet:

Connection-specific DNS Suffix . . : vlan2
IPv6 Address . . . . . : Fe::4
Link-local IPv6 Address . . . . . : fe80::914a-2062-364f-a30f%2
IPv4 Address . . . . . : 172.16.15.11
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 172.16.15.10

Tunnel adapter Teredo Tunneling Pseudo-Interface:

Connection-specific DNS Suffix . . : 
IPv6 Address . . . . . : 2001:0:9d38:90d7:3068:260e:53ef:f0f4
Link-local IPv6 Address . . . . . : fe80::3068:260e:53ef:f0f4%10
Default Gateway . . . . . : 

Tunnel adapter isatap.vlan2:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . : vlan2
```

Network Configuration Window (DSR - Se):

IPV6 Connection Type: IPv6 is disabled
IPV4 Connection State: Not Yet Connected
IPV6 Connection State: IPv6 is disabled
Link State: LINK DOWN
WAN Mode: Load Balancing - Round Robin
Gateway: 0.0.0.0
Primary DNS: 0.0.0.0
Secondary DNS: 0.0.0.0

WAN2 Information

MAC Address: CC-B2-55-85-36-97
IPV4 Address: 111.250.35.150 / 255.255.255.255
IPV6 Address:
WAN State: UP
NAT (IPV4 only): Enabled
IPV4 Connection Type: PPPOE
IPV6 Connection Type: IPv6 is disabled
IPV4 Connection State: Connected
IPV6 Connection State: IPv6 is disabled
Link State: LINK UP
WAN Mode: Load Balancing - Round Robin
Gateway: 168.95.98.254
Primary DNS: 168.95.192.1
Secondary DNS: 168.95.1.1

Environment Variables:

- `getenv('HTTP_CLIENT_IP')`
- `getenv('REMOTE_ADDR')`: 110.166.128.35
- `$_SERVER['REMOTE_ADDR']`: 110.166.128.35
- `getenv('HTTP_X_FORWARDED_FOR')`: 110.166.128.35