



FS Routers Configuration Guide

Release Version: 1.0

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1. Enter the Routing Web Interface

Enter the routing web interface for further setup. The method of entering the web interface is listed as below:

Preface:

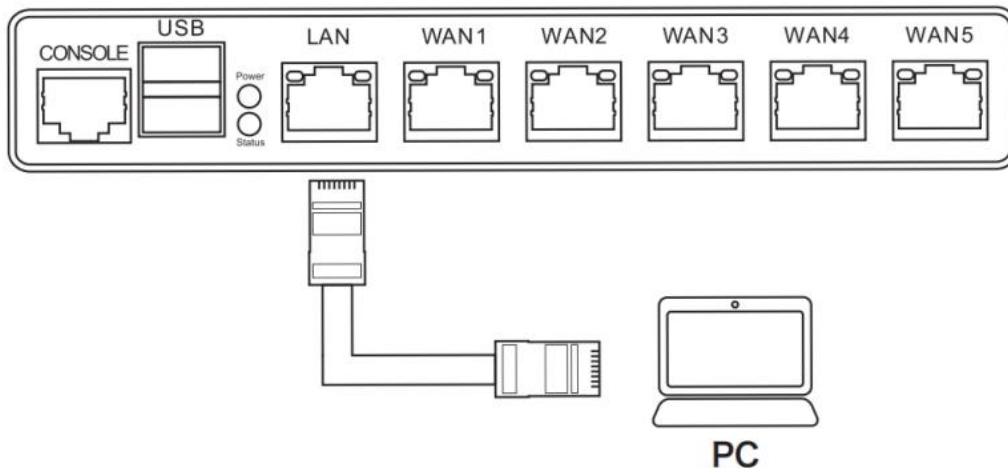
The latest installed router automatically binds the eth0 to the Lan1, web default administrative address is 192.168.1.1.

Which one is the port eth0?

If the hardware is IPC, it is usually the first ethernet port from the left. If it is an ordinary computer installation, it is usually the onboard nic.

Take IPC as an example, we must find the port Lan1 of the router in order to enter the router management interface.

As the below picture shows, connect the computer directly to the port eth0 of the IPC, that is access to the port Lan1.



The routing default DHCP is not started, so you need to manually configure the IP for the computer.

- (a) Right-click on the network icon on the computer and click open the network and sharing center.
- (b) Choose the change adapter settings on the left.
- (c) Right-click the local network and choose the attribute, and double-click to select the Internet protocol version 4 (TCP/IPv4).
- (d) Enter the IP setting interface to set the IP address, mask off code and gateway.
- (e) After setting the IP address, open the browser, fill in the domain name bar with 192.168.1.1, press enter, the default account password is admin.

2. Internal and External Network Setting

2.1 Nouns Explanation

Internal and external network basic setting, including the setting of binding network card, Lan port address and Wan port access method, etc.

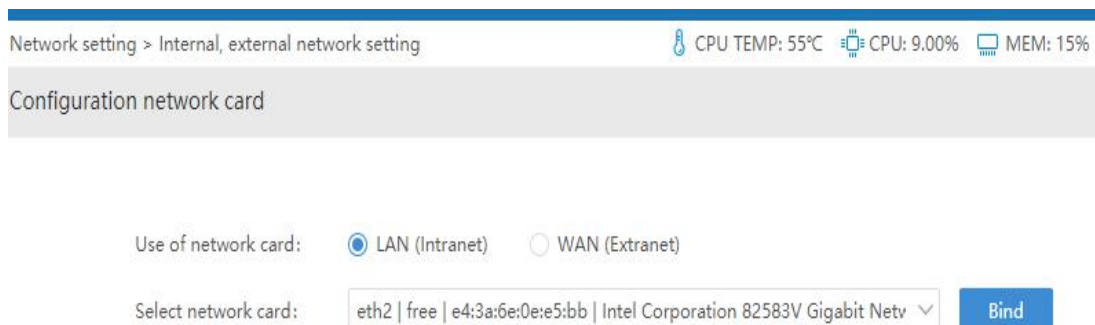
2.2 Application Method

Interface Status (Display the status of port WAN and port LAN)

Add Port LAN

(a) Click the add configuration.

(b) Use of network card selects LAN (internal network).



Network setting > Internal, external network setting CPU TEMP: 55°C CPU: 9.00% MEM: 15%

Configuration network card

Use of network card: LAN (Intranet) WAN (Extranet)

Select network card:

The status after binding shows as below:

Configuration network card - lan2

Select network card: eth1 | lan2 | e4:3a:6e:0e:e5:ba | Intel Corporation 82583V Gigabit Netv Unbind

IP addr: 192.168.22.1 *

Netmask: 255.255.255.0(24)

Advanced setting ^

Work model: Automatic negotiation(Default)

NIC rate: Automatic negotiation(Default)

LAN exchange: Allow other LAN access to this LAN

Clone MAC:

IP extended: Add

IP	Subnet mask	Operation

IP Address /Subnet Mask:

This address is the gateway address of the terminal under the LAN.

Notice:

Binding the network card when the card is idle only. If the card is not idle, it must be unbound to the idle mode. Then bind it to the ideal LAN.

Advanced Setting:

Work Mode

Full duplex, half duplex and automatic negotiation, maintain the default in normal condition.

Network Card Rate

Including three options 10M、100M and 1000M, maintain the default in normal condition.

LAN Exchange Access Control

Allow other Lan access to this lan after opening.

Clone MAC

Enter the MAC address in the "clone MAC address" in the right box, if there is a need of clone MAC address.

IP Extended

A single network card sets up multiple IP segments. If necessary, add the gateway of this extended IP at the IP extended and write the subnet mask. For example, if you want WEB

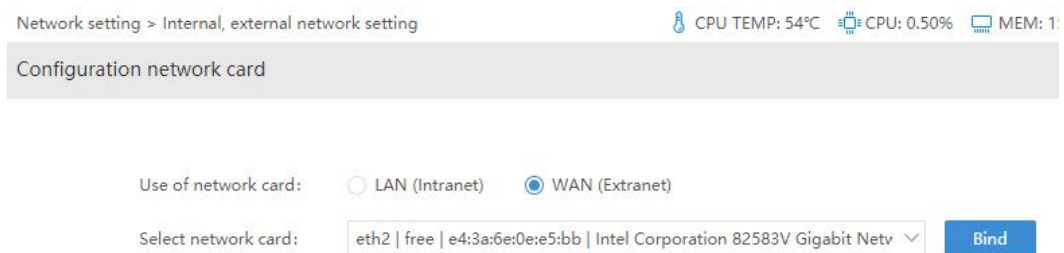
authentication, but do not want to use the IP address of the LAN port, then you can add an IP extended address at the IP extended. This IP segment is ready to be used when setting is completed.

Notice:

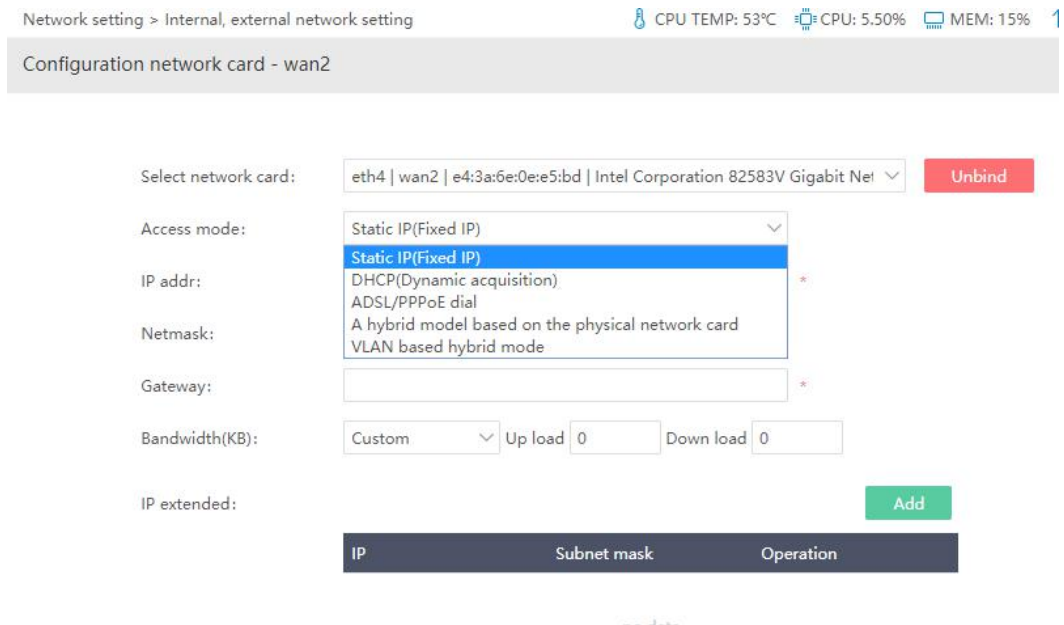
Extended IP segment and Lan port segment address can directly communicate.

Add WAN Port

- (a) Click on the add configuration.
- (b) Use of network card selects WAN (Extranet).



The status after binding shows as follows:



Access Setting

There are five access methods.

Static IP (Fixed IP), DHCP (Dynamic acquisition), ADSL/PPPOE dial, A hybrid model based on the physical network card, VLAN based hybrid mode.

Access mode:	Static IP(Fixed IP) ▼
IP addr:	Static IP(Fixed IP) *
Netmask:	DHCP(Dynamic acquisition)
	ADSL/PPPoE dial
	A hybrid model based on the physical network card
	VLAN based hybrid mode

Static IP (Fixed IP)

Configure the fixed IP, net mask and gateway address to access the internet. Fixed IP optical fiber line selects this access mode.

Select network card:	eth4 wan2 e4:3a:6e:0e:e5:bd Intel Corporation 82583V Gigabit Net ▼		
Access mode:	Static IP(Fixed IP) ▼		
IP addr:	58.16.19.210 *		
Netmask:	255.255.255.0(24) ▼		
Gateway:	58.16.19.209 *		
Bandwidth(KB):	Optical fiber 40 ▼	Up load	5000
		Down load	5000

DHCP/Dynamic Acquisition

Extranet is the access mode which obtains an IP address automatically via DHCP. Options bars of access mode, IP, subnet mask and gateway are the non-editable state. It is automatically displaying when the address data are obtained.

Notice:

When selecting DHCP access, the correct steps must be as below:

Select access mode as DHCP (Dynamic Acquisition).

Click on the save button.

Click on the connect button.

ADSL/PPPOE Dial

Select access mode as ADSL/PPPOE dial, then fill in the account password for the corresponding wide band line. Status is displaying as connection when the dialing is successful. The nether IP, gateway, DNS and so on will display the address information which obtained automatically.

Select network card: Unbind

Access mode:

User name:

Password:

State: disconnected connect

IP addr:

Subnet mask:

Gateway:

Preferred DNS :

Alternative DNS:

Bandwidth(KB): Up load Down load

Server name:

Timed Redial

It can set the time for disconnecting and redialing when the timed redial is open.

Interval Redialing Time

It is used for setting the interval time of redialing. (It can be timed after the dialing is successful and it measured in minute.)

A Hybrid Model Based on the Physical Network Card

Obtain the overlay effect by the multiple dialing on one line and one single network card, and the multiple accounts dialing on a line at the same time (or kinds of different access modes). It includes three access modes“static IP”, “DHCP/dynamic IP” and “ADSL/PPPoE dial”. It can be mixed simultaneous access.

Notice:

The success of multiple dialing and overlaying mainly depends on whether the operator line is limited. Some district can do it and the other can not. Some districts can multiple dial successfully but unable to overlay the bandwidth. This should be tested during actual use.

Select network card: Unbind

Access mode:

Static IP DHCP/ Dynamic IP ADSL/PPPoE dial

Add Import Export Enable Disable Delete

IP	Mask	Gateway	MAC	Upload (KB/s)	Download (KB/s)	ment State	Operation
no data							

It is able to access by multiple methods on a line.

Multiple Dialing Assistants

Concurrent Multiple Dialing Sum

The value of this number is how many dialings you have added below and fill in the corresponding number here.

Notice:

Not that the automatically dial number of times is the value of this added number. It must manually add dialing for several times and then write the number of times of dialings here.

Abnormal IP Detect

Abnormal IP detect: Open

Abnormal IP list: *

(Check for an abnormal IP header,such as "10,172,192.168",The detection of abnormal IP will all redial)

When abnormal IP detect is open and the corresponding IP start address is added. It will disconnect for redialing once the corresponding IP start address, obtained by extranet dialing, has been detected. As the above figure shows if the IP address header obtains as 10.172.192.168 then a redial is required.

Drop Line and Redial

Drop line and redial : Open

No redial is allowed: Open (Dial-up failed or dropped without automatic dialing)

The drop detection cycle All Monday Tuesday Wednesday Thursday Friday Saturday Sunday

The drop detection time : , , * (detect drops within a spe

Interval detection time : minute *

(The number of dropped lines is detected at every N minute interval)

Off line Num: Individual *

No redial is allowed

It means the dial-up failed or dropped without automatic dialing. However, when “off line number” is set, all dialings are automatically disconnected and redialing once the value of “off line number” is matched.

The Drop Detection Cycle

It is used to set the cycles of drop detection.

The Drop Detection Time

It detects drops within a specific time.

Interval Detection Time

The number of dropped lines is detected at every N minutes interval.

Off Line Number

All dialings will automatically disconnect and redial when the multiple dialing is dropping for multiple times.

Name:	<input type="text" value="adsl"/>	*
User name:	<input type="text"/>	*
Password:	<input type="password"/>	
MAC:	<input type="text" value="00:57:97:77:32:41"/>	*
Bandwidth(KB):	Selection of bar <input type="button" value="v"/> Up load <input type="text"/> Down load <input type="text"/>	
Server name:	<input type="text"/>	
	<small>(Note : This option is to force the specified server to dial up, please do not fill in if there is no special request)</small>	
Default gateway:	<input type="checkbox"/> Set this line as the default gateway	<small>(When have multiple ISP lines, select one as the default gatewa)</small>
Timed redial:	<input type="checkbox"/> open	
Interval redial:	<input type="text" value="0"/> minute	*
	<small>(When the dial-up is successful, the timing starts, and 0 means unlimited time)</small>	
Online time control:	<input type="text" value="00:00"/> - <input type="text" value="23:59"/>	*
Line detection:	<input type="text" value="HTTP"/>	<input type="button" value="v"/>
	<input type="text" value="www.baidu.com"/>	
Comment:	<input type="text"/>	

Server Name

This option is to force the specified server to dial. Please do not fill in it If there are no special requirements.

Timed Redial

It can set the time for disconnecting and redialing when the timed redial is open.

Interval Redialing Time

It is used for setting the interval time of redialing. (It can be timed after the dialing is successful and it measured in minute.)

VLAN Based Hybrid Mode

With the cooperation of the vlan switch, some wideband lines are connected to the vlan switch to converge, and then connect to the extranet port of routing. It includes three access modes "static IP", "DHCP/dynamic IP" and "ADSL/PPPoE dial". It can be mixed simultaneous access.

Select network card: eth4 | wan2 | e4:3a:6e:0e:e5:bd | Intel Corporation 82583V Gigabit Net Unbind

Access mode: VLAN based hybrid mode

VLAN_ID	Name	IP	Mask	Gateway	MAC	Upload (KB/s)	Download (KB/s)	Open State	Operation
no data									

Help hint: 1.Up and down refers to the upgoing rate and the descending rate, the unit is KB/s

Advanced Settings

Work model: Automatic negotiation(Default)

NIC rate: Automatic negotiation(Default)

Clone MAC:

VLAN based static IP

Click on the “Add” button, it needs to fill in the data of vlan ID, name, IP, mask, and bandwidth, etc.

VLAN_ID : *

Name: vwan *

IP: *

MAC: 00:31:57:71:46:70 *

Netmask: 255.255.255.0

Gateway: *

Bandwidth(KB): Selection of bar Up load Down load

Default gateway: Set this line as the default gateway (When have multiple ISP lines, select one as the default gatewa)

Auto-switch: Switch off automatically (The multi-line ISP line will automatically switch after the line is dropped and no need to use with o

Online time control: 00:00 - 23:59 *

Line detection: HTTP

Comment:

Bandwidth

Default flow unit is KBytes. It is suggested that each line in the configuration of the external network should be filled in the actual achievable bandwidth.

Default Gateway

There are many ISP lines. Please tick the “set it as default gateway ” in one of the wan configurations as the default gateway for routers extranet. Otherwise do not tick it.

Notice:

In default mode, WAN1 is the default gateway and the flow is routed through the default gateway line.

Auto-switch

After ticking the auto-switch, the multi-line ISP lines will automatically switch after the line is dropped and no need to use with one ISP line.

Online Time Control

This line can access the Internet normally only within the time limit of the former filling when this function is ticked.

Line Detection

It supports user-defined detection of lines. It undertakes the user-defined detection to check the external network is normal or not with the PING/HTTP/PING+HTTP methods.

VLAN Based DHCP (Dynamic Acquisition)

Click on the “Add” button and fill in the data of vlan_ID, name and bandwidth.

VLAN_ID :	<input type="text"/>	*
Name:	<input type="text" value="vwan"/>	*
MAC:	<input type="text" value="00:01:55:68:53:12"/>	*
Bandwidth(KB):	Selection of bar <input type="checkbox"/> Up load <input type="text"/> Down load <input type="text"/>	
Default gateway:	<input type="checkbox"/> Set this line as the default gateway (When have multiple ISP lines, select one as the default gatewa)	
Auto-switch:	<input type="checkbox"/> Switch off automatically (The multi-line ISP line will automatically switch after the line is dropped and no need to use with one ISP)	
Online time control:	<input type="text" value="00:00"/> - <input type="text" value="23:59"/>	*
Line detection:	<input type="text" value="HTTP"/>	▼
	<input type="text" value="www.baidu.com"/>	
Comment:	<input type="text"/>	

VLAN Based ADSL/PPPoE Dial

Click on the “Add” button, and fill in the VLAN-ID which is corresponding to switch setting, and enter the corresponding wideband dial-up account and password.

VLAN_ID :	<input type="text"/>	*
Name:	<input type="text" value="adsl"/>	*
User name:	<input type="text"/>	*
Password:	<input type="password"/>	👁
MAC:	<input type="text" value="00:10:70:74:98:55"/>	*
Bandwidth(KB):	Selection of bar ▾ Up load <input type="text"/> Down load <input type="text"/>	
Server name:	<input type="text"/>	
	(Note : This option is to force the specified server to dial up, please do not fill in if there is no special request)	
Default gateway:	<input type="checkbox"/> Set this line as the default gateway (When have multiple ISP lines, select one as the default gatewa)	
Timed redial:	<input type="checkbox"/> open	
Interval redial:	<input type="text" value="0"/> minute *	
	(When the dial-up is successful, the timing starts, and 0 means unlimited time)	
Online time control:	<input type="text" value="00:00"/> - <input type="text" value="23:59"/> *	
Line detection:	<input type="text" value="HTTP"/>	▾
	<input type="text" value="www.baidu.com"/>	
Comment:	<input type="text"/>	

VLAN based hybrid mode. Adsl/PPPoE dial supports wan port qinq. Fill in the outer vlan before filling in the inner vlan when write the VLAN_ID. There is a symbol in the middle for isolation.

As the following figure shows.

VLAN_ID :	<input type="text" value="10.20"/>	*
Name:	<input type="text" value="adsl"/>	* The name must start with adsl, not longer than 15 bits.
User name:	<input type="text"/>	* The User name is required.
Password:	<input type="password"/>	👁 The Password is required.
MAC:	<input type="text" value="00:10:70:74:98:55"/>	*
Bandwidth(KB):	Selection of bar ▾ Up load <input type="text"/> Down load <input type="text"/>	
Server name:	<input type="text"/>	
	(Note : This option is to force the specified server to dial up, please do not fill in if there is no special request)	
Default gateway:	<input type="checkbox"/> Set this line as the default gateway (When have multiple ISP lines, select one as the default gatewa)	
Timed redial:	<input type="checkbox"/> open	
Interval redial:	<input type="text" value="0"/> minute *	
	(When the dial-up is successful, the timing starts, and 0 means unlimited time)	
Online time control:	<input type="text" value="00:00"/> - <input type="text" value="23:59"/> *	
Line detection:	<input type="text" value="HTTP"/>	▾
	<input type="text" value="www.baidu.com"/>	
Comment:	<input type="text"/>	

Notice:

The VLAN ID must be consistent with the VLAN ID on the VLAN switch. Effective scope is 1-4096.

Dial-up naming rules are starting with adsl, such as adsl 12.

Work Model

Maintain the default automatic negotiation If there are no special requirements.

Nic Rate

Maintain the default automatic negotiation whether the nic rate is gigabyte or a hundred megabyte.

Clone MAC

The MAC setting of this network card can set to the MAC that you need to use. It generally applies to the mode which the line has bound MAC.

3.DHCP Settings

3.1 Nouns Explanation

DHCP (Dynamic Host Configuration Protocol) is a LAN network protocol which is working with the UDP protocol. There are two main purposes that one is automatically allocating the IP addresses to internal network or network service providers and the other is giving users or internal network administrators the means to centralize management of all computers. DHCP server is the IP address range that is controlled by the server. It can automatically obtain an IP address and subnet mask which is allocated by the server when the client log in.

3.2 Application Method

Service Interface

It selects a intranet for allocating IP, such as Lan1, Lan2

Client Address Pool

The range where the IP address is allowed to auto allocate, such as 192.168.22.2-192.168.22.254. The network segment here and the IP of Lan setting should be on the same network segment.

Notice:

The setting of the Lan interface here is not only the IP of the Lan port itself but also the extended IP address of the lan port or the IP address of the Vlan setting.

It should be noticed that the network segments and interfaces correspond with each other well when they are adding.

Subnet Mask

The setting of subnet mask should be accordance with the subnet mask of the corresponding interface.

Gateway

The address pool of DHCP setting is your LAN port address and gateway is the IP address of LAN port. If the address pool is the extended IP address that the extended IP address of VLAN is the gateway of DHCP here.

If the address pool of VLAN is allocated that the IP address of VLAN is the gateway of DHCP here.

Preferred DNS

Preferentially use this DNS to resolve the domain names.

Alternate DNS

Alternate DNS is used to resolve the domain names which the preferred DNS can not resolve.

Lease

This IP address can not use anymore if the client side don't sent the renewal information over the period of lease.

Notice:

The time here measures in minutes. Lease's default is 120 minutes means 2 hours.

DHCP server settings steps are as below:

(a) Click on the add button on the upper right, then enter your address pool, subnet mask, gateway, preferred DNS, alternate DNS and lease default.

(b) Click on the OK button and restarted the service then the DHCP service is opened normally.

Notice:

The address pool of DHCP setting and your corresponding lan port should be in the same segment, and they use the same subnet mask. The gateway points to the IP address of the lan port.

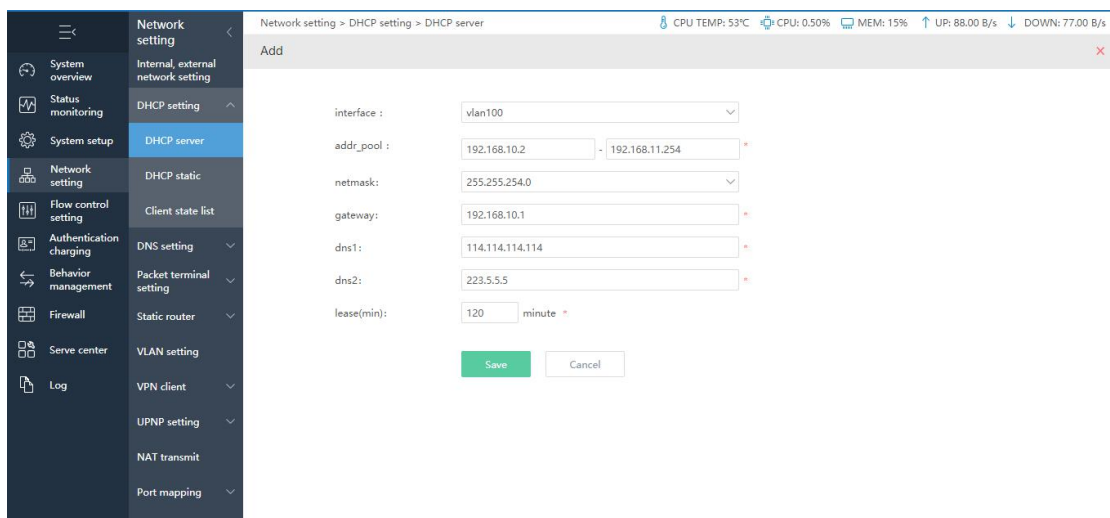
3.3 Examples

Lan2: 192.168.22.1/24

Vlan100:192.168.10.1/23

(a) Click on the configuration interface of the DHCP server, then click on the Add button and add the Lan 2 setting on the DHCP server.

DHCP Setting of Vlan100



The screenshot shows the 'Add' configuration form for a DHCP server. The interface includes a sidebar menu on the left with options like System overview, Status monitoring, System setup, Network setting, Flow control setting, Authentication charging, Behavior management, Firewall, Serve center, and Log. The main content area is titled 'Network setting > DHCP setting > DHCP server' and shows the following fields:

- interface: vlan100
- addr_pool: 192.168.10.2 - 192.168.11.254 *
- netmask: 255.255.254.0
- gateway: 192.168.10.1 *
- dns1: 114.114.114.114 *
- dns2: 223.5.5.5 *
- lease(min): 120 minute *

At the bottom of the form, there are 'Save' and 'Cancel' buttons. The top status bar shows system metrics: CPU TEMP: 53°C, CPU: 0.50%, MEM: 15%, UP: 88.00 B/s, DOWN: 77.00 B/s.

4.VLAN Settings

4.1 Nouns Explanation

VLAN is an emerging data exchange technology which realizes virtual work group by logically dividing the LAN devices into network segments. This technology is widely applied to the switches and routers but the main application is still in switches. Not all switches have this function. Only layer 2 and above switches of the VLAN protocol have this function. This can be knowing from the instructions of the corresponding switch.

4.2 Setting Method

Premises for using this function.

- (a) There is a switch with VLAN functions.
- (b) Match the AP of the router and use the function of AP SSID VLAN. Then set up the link.

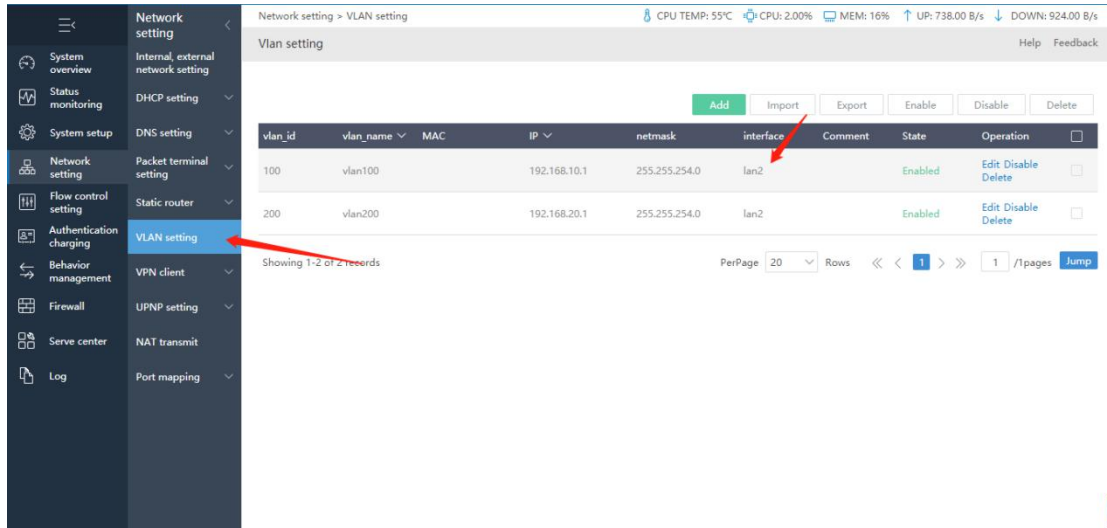
The routing of router is configured as follows:

- (a) Set up the VLAN and virtual IP address.
- (b) IP address: the corresponding address of this IP address is the PC's gateway under this VLAN.
- (c) VLAN name: the name of VLAN should be named in the form of VLAN+ number.

Notice:

If the router is connected to the layer 2 switch, the router only needs a setting for the VLAN setting.

The specific setting is as below.



vlan_id	vlan_name	MAC	IP	netmask	interface	Comment	State	Operation
100	vlan100		192.168.10.1	255.255.254.0	lan2		Enabled	Edit Disable Delete
200	vlan200		192.168.20.1	255.255.254.0	lan2		Enabled	Edit Disable Delete

VLAN ID and the VLAN ID of switch are corresponding to each other. The LAN port of routing is directly connected to the trunk of the VLAN switch.

Configuration of CISCO 2960 layer 2 VLAN switch is provided as below:

```
Switch(config)#vlan 2
```

```
Switch(config-vlan)#exit
```

```
Switch(config)#vlan 3
```

```
Switch(config-vlan)#exit
```

```
Switch(config)#interface fastEthernet 0/2
```

```
Switch(config-if)#switchport mode access
```

```
Switch(config-if)#switchport access vlan2 create vlan2
```

```
Switch(config-if)#exit
```

```
Switch(config)#interace fastEthernet 0/3
```

```
Switch(config-if)#switchport mode access
```

```
Switch(config-if)#switchport access vlan3 create vlan3
```

```
Switch(config-if)#exit
```

```
Switch(config)#interface fastEthernet 0/24 Alter 0/24port and set RUNK. Allow VLAN to pass.
```

```
Switch(config-if)#switchport mode trunk
```

```
Switch(config-if)#switchport trunk allowed vlan 2,3,4
```

Notice:

(a) The setting steps will change if you want to enable three layers of functionality when the router is connected to a three-layer core VLAN switch.

(b) You do not need to set up in VLAN if it is connected to three layers switch. If you want the client below the three layers connect to the Internet by routing, you can make the static routing on the three layers switch and the router does static routing for the following network segments.

The configuration of the layer 3 vlan switch after the routing function is opened that shows as follows:

```
R1#conf t
```

```
R1(config)#vlan 2
```

```
R1(config)#exit
```

```
R1(config)#interface fastEthernet 1/0
```

```
R1(config-if)#switchport mode access
```

```
R1(config-if)#switchport access vlan 2 //port 1/0 creat vlan2
```

The port 1/0 creates vlan 2.

```
R1(config-if)#exit
```

```
R1(config)#int vlan 2
```

```
R1(config-if)#ip add 172.16.100.1 255.255.255.0 //set up vlan 's IP address
```

To configurate the IP address of vlan.

```
R1(config-if)#exit
```

```
R1(config)#interface fastEthernet 0/0
```

```
R1(config)#no switchport Open routing interface.
```

```
R1(config)#no shutdown
```

```
R1(config-if)#ip address 172.16.1.2 255.255.255.0 // To configurate IP addresses for routing interfaces.
```

```
R1(config-if)#exit
```

```
R1(config)#ip route 0.0.0.0 0.0.0.0 fastEthernet 0/0 // To set up a static routing that any IP address can pass the three layers switch routing interface.
```

4.3 Frequently Asked Questions

(a) The switch is layer three switch, but it can not connect to router after the configuration of VLAN.

(b) If the switch uses as the layer two. The VLAN and trunk port are configured in the switch. The trunk port is connected to the router's lan port, and the router's VLAN settings correspond to the configuration VLAN information.

Notice:

The VLAN ID of the router's VLAN settings corresponds to the VLAN ID of the switch. To make sure there is no conflict, if the VLAN of the switch has a management IP address. Do not add the network segment of the vlan to the extended IP of lan port.

If the switch uses as layer three. The router needs to do static routing and point to the network segment under the layer three switch. Pay attention to the line settings of static routing.

The line in the static routing forbids selecting the “auto” and should select the corresponding LAN port.

5.Flow Control And Distribution

5.1 Multi-line Load

5.1.1 The Brief Introduction of Function

There are two functional effects in the multi-line load mode interface.

The multi line load function page contains two functional effects that one is load balancing and the other is multi-line routing.

Load balancing means to realize the load flow and overlay bandwidth of external network lines with the same operators and multiple external network lines.

Multi-line routing means to select the different operators to export transmission data through specific matching rules with different operators and some external network.

It can be sent from the corresponding operator line when the intranet terminal accesses the data of different operators. It will achieve the data transmission in an optimal way and improve the transmission access speed.

5.1.2 Setting Method

Flow control setting > Distribution setting > Operator distribution CPU TEMP: 53°C CPU: 0.00% MEM: 14% UP: 8'

Add

Load_model: source IP+destination IP+destination port

operator: source IP+destination IP+destination port Custom operator

Comment:

Load ratio:

			Operation
1	wan1	Disable	open
2	wan2	Disable	open

Save
Cancel

Load Model

Load model includes real time connection number, new connection number, real time traffic, source IP + destination IP, source IP+destination IP+destination port, source IP and source IP+source port.

Note: To select the real time connection number model if there are no special requirements.

Real Time Connection Number

The system will dynamically adjust and distribute it according to the connection number status of each port and as possible as to keep the load balance of port connection number ratio in the policy group.

New Connection Number

The system does not judge the port status in the policy group, but only allocates the connection number by proportional circulation method.

Real Time Traffic

The system will judge the port traffic of policy group and as possible as to keep this port traffic in proportional load balance.

Source IP + Destination IP Distribution

The system will distribute the connection number according to the ratio in the policy group (based on the new connection number). However, the priority will be given to ensure that the same source IP + destination IP follows the same interface so that network access will be more stable.

Operator

Notice:

- (1) It is suggested to select the operator as all when there is only one operator in the multi-line mode. It means that the added lines do not distinguish the operators and all traffic is allowed.
- (2) It supports the user-defined operator to define it.
 - (a) The format is 192.168.6.1/24 and each one should be on a separate line.
 - (b) No more than 5000 destination addresses is allowed to add for one time in order to ensure the executive efficiency. The large amount of additions (> 5000) should be repeatedly added by the same operator name.

Comment

It has no actual function but giving each policy an annotation.

Load Ratio

Its default is when line setting is load balance and the load ratio is the simplest ratio of bandwidth. If there are two telecommunication lines that one is 10M peer and the other is 30M peer, then the 10M's "load ratio" chooses 1, and the 30M's "load ratio" chooses 3.

Notice:

- (1) It is suggested to set up load balance for the same operator lines. Due to the operators, it may not realize the load stack effect if the different operator set the load balance.
- (2) The small operator takes effect if the setting of multi-line load rules conflict.
- (3) The post-set policy takes effect if the operators conflict.

Comprehensive analysis from the above. Do keep the following points in the minds when the ratio is set.

- (1) All lines within the same multi-line load policy must be the same operator.
- (2) The upload and download should always contrast to the simplest ratio for each other when the load ratio is set.
- (3) If the simplest ratio is completely uniform. It can directly set without consideration
- (4) If the simplest ratio is fuzzy uniform, there will be three kinds of fuzzy setting ratio. The effect can switch ratio test or plus protocol diversion balance flow.
- (5) If the simplest ratio can not be unified seriously, then these divided lines should not be selected as multi-line load. But it will multiply utilize to combine with the configurations of the other line. Such as realizing the multi-line use with the default + distribution, all operators load + distribution and single operator load + distribution, etc.

5.1.3 Frequently Asked Questions

- (1) There may be the virtual vpn line on the physical circuit. The different virtual line of the

same physical circuits and the actual line can select different operator. Although it uses the same physical exit, but it separates multiple line gateways and it can also distinguish the flow direction.

(2) The operator which belongs to the external network line needs the user to confirm himself and manually select the same operator. The router currently can not detect the home operator of each line and select it automatically.

(3) If the data accessed by the intranet user and the operator selected by all lines are not matched, then these data will match other routing policy or go directly along the default gateway.

(4) WEB video (web page, download) is HTTP single point transmission. For the kinds of single-point transport protocol, the maximum speed is an amount of one line bandwidth without the effect of bandwidth stack. It will lead to the HTTP protocol or other larger flows which possibly circulates to a wan port with the larger connection traffic. However it depends, but it can cause partial high and partial low of wan port traffic and it is impossible to fully average at present. Without the effect of bandwidth superposition, this will result in, which may lead to larger connection traffic when circulating to a wan port.

(5) "Load balance" is suggested to set up the same ISP operator line for realizing the effect of multi-line load balance stack. Different ISP operator line may not achieve the load stack effect for the reason of operator.

(6) The small operator takes effect if the setting of multi-line load rules conflict. The post-set policy takes effect if the lines and operators conflict.

(7) It needs to consider the network card performance, line stability and hardware CPU forwarding capability, etc. If the bandwidth is not stack or its speed is not enough after the multi-line load.

5.2. Protocol Distribution

5.2.1 Nouns Explanation

In multi-line mode, some protocols of intranet can run in some specific lines.

Enhance shunt: it increases the success rate of distribution.

Notice:

Unknown protocol, small packet data cannot be distributed. The other protocol user can distribute with their own requirements.

5.2.2 Setting Method

To specify a protocol follows a WAN port line.

Steps of setting:

Click on the add button on the upper right of the interface then select the shunt lines, protocol and fill in the source address of distribution. Click on the confirm button to start the policy.

5.2.3 Examples

(1) There are two lines. To use the WAN2 line If you want to realize the network download and video with intranet 192.168.2-192.168.1.200.

Source address is the distributing address. Do not fill in it and it can fill in ADDF such as 192.168.1.2-192.168.1.200 if there is one.

Functional mechanisms:

After opening, the shunt effect will be enhanced.

Notice:

(a) If you want to shunt, do not use the line that has been added to load balancing. Otherwise it will affect the load and the effect of the shunt.

(b) After protocol shunt, it is generally not suggested using one-key flow control and it is recommended to use the manual flow control to set up flow control policy.

(c) When distributional protocol of the protocol distribution undertakes the manual flow control, then it should be set according to the line bandwidth of shunt. The protocol without shunt should be set according to the line bandwidth of the default gateway.

5.2.4 Problems of Protocol Distribution

The unsuccessful problem of protocol shunt

Router routing are all set as immediately effective after the completion of setting.

However, there will be a very small number of shunt failure which due to the particularity of the protocol shunt function. That is the objective factors such as incorrect identification of the first to the seventh packets under the functional mechanism and so on.

So the router optimizes the success rate of the protocol shunt. The flow types of the shunt failure which caused by the above reasons are cached to reduce the shunt failure of these kinds of data. With the prolongation of service time, the overall success rate of shunt is increased.

Note: The cache of routing users (including route restarts) will be emptied as soon as the upgrade or new installation is completed, and all produces have to be restarted.

Priority of distribution effect

Router flow control routing provides multiple line configuration functions.

For example:

Network setting --distribution setting --port distribution, protocol distribution, domain name shunt and up and down separation.

Network setting --multi-line load

Network setting --static routing

Extranet setting--default gateway, etc.

When the above features are used at the same time, then the priority goes from high to low as follows:

Up and down separation > domain name shunt>port distribution>protocol distribution>multi-line load>static routing>default gateway

5.3 Port Distribution

5.3.1 Nouns Explanation

Specify a port to shunt to a line, and the intranet specifies an IP to access ports of the external network along the certain outlet.

5.3.2 Setting Methods

To select the protocol and the line you want to specify, and write your designated IP address at the source address. Write down your destination port.

Notice:

The destination address and source port can generally not be written. Write your target address only when your intranet address gets a specific address.

For example:

(a) Shunt the 80 of the internal network 192.168.15.100 onto the wan2 line.

(b) After this setting, it will follow the WAN2 line when 192.168.15.100 accesses the destination port 80.

To set all ports of the intranet 192.168.15.200 to along the WN2 lineA.

5.3.3 Frequently Asked Questions

Priority of distribution effect

Router flow control routing provides multiple line configuration functions.

For example:

Network setting -- distribution setting -- port distribution, protocol distribution, and domain name shunt.

Network setting -- multi-line load

Network setting -- static routing

Extranet setting -- default gateway, etc.

When the above features are used at the same time, then the priority goes from high to low as follows:

Domain name shunt > port distribution > protocol distribution > multi-line load > static routing > default gateway

Port distribution, whether the multiple lines can be selected

When the port distribution is set up and the same rule selects multiple lines. It is the load that is made according to the “new connection number mode”.

Port shunt. How to work effectively when the setting conflict

Large rules of ID are effective. In the case of the above, the second entries into force. The 192.168.15.200 will go along with WAN2 and will not go along with WAN3.

Port distribution failure

Because the port distribution matches the IP + port. The success rate of shunt is 100%. Shunt failed reason is there is a policy with a higher priority than port shunt. The user-defined protocol has the highest priority, so when port shunting is undertaken after the user-defined protocol is set and there will limit execute the line configuration policy of user-defined protocol if there are conflicts.

5.4 Domain Name Shunt

5.4.1 Nouns Explanation

Specify a domain name to follow a specific line.

5.4.2 Setting Method

To select the wan2 line when all clients of the intranet access the Google.

5.5 Up and Down Separation

5.5.1 Nouns Explanation

Specify Mode

One line for up and the other line for down. That is, a data flow out and back can be with different line.

Function Analysis

Separate transmission of upload traffic and download traffic. Only after the upload traffic matching the policy rule, then the download traffic to the upload traffic request data will be transmitted back according to the certain download line by the rule. (The proportion among the

multiple lines is 1:1)

Specific requirements of the line environment

Relative principle level. The extranet IP of the down line which is specified in the policy can be accepted and forwarded normally by the upper gateway of the specified up line. This means that not all user environments can support it and it depends on your lines or operators whether support recommended direct configuration test.

Priority Correlation

For other line configurations (default gateways, multi-line load and shunt settings), there is no functional priority correlation. This function belongs to “matching effective policy”. It is effective only when it matches the upload data rules and with the highest priority in terms of effect.

5.5.2 Setting Method

There is one line for up and another line for down. The original address is the internal network address and fill in the data according to the internal network IP address of distribution. The destination address can not be filled and the blank means all.

Protocol

It supports the TCP, UDP, TCP+UDP, ICMP and arbitrary protocol.

Up Line

It is the route for upload.

Down Line

It is the route for download.

Source Address

The address of the intranet client. It is valid for this address after filing in.

Destination Address

It is the address that you want to access. It means all if it is blank.

Source Port

The initiation port for this policy to take effect. It means all if it is blank.

Destination Port

The target port for which this policy takes effect. It means all if it is blank.

6. Terminal Speed Limit

6.1 IP Speed Limit

6.1.1 Nouns Explanation

This is the speed limit on the IP address.

6.1.2 Setting Method

Click on the add button. And enter the intranet IP address, up line, down line, week, comment and then click on the save button.

Note: If any IP or certain range segments is filled in for the IP address of the speed limit internal in the IP speed limit. The setting of up and down speed belongs to these IP address only. It is not the sharing bandwidth. Meanwhile, the up and down speed which filled in the IP speed limit refers to the maximum amount of traffic that can be reached at the IP address.