

# 在RV042、RV042G和RV082 VPN路由器上使用较少公有IP地址的单独两个LAN网络

## 目标

位于一个VLAN ( 端口1-7中的VLAN1 - 192.168.0.x ) 中的主机不应与RV082另一个VLAN ( VLAN8 - 192.168.0.26到端口8 ) 中的设备通信，同时，来自VLAN1的主机应比来自VLAN8的客户端具有更高的互联网流量优先级。此处使用VLAN是为了安全原因，也用于划分RV042、RV042G和RV082 VPN路由器上的LAN。下面列出了此过程中的各个部分：

- 基本LAN和WAN设置
- 如何添加一对一NAT ( 私有到公有地址 )
- VLAN上端口的设置优先级
- 管理特定VLAN的带宽
- 如何选择VLAN的端口状态
- 如何检查VLAN

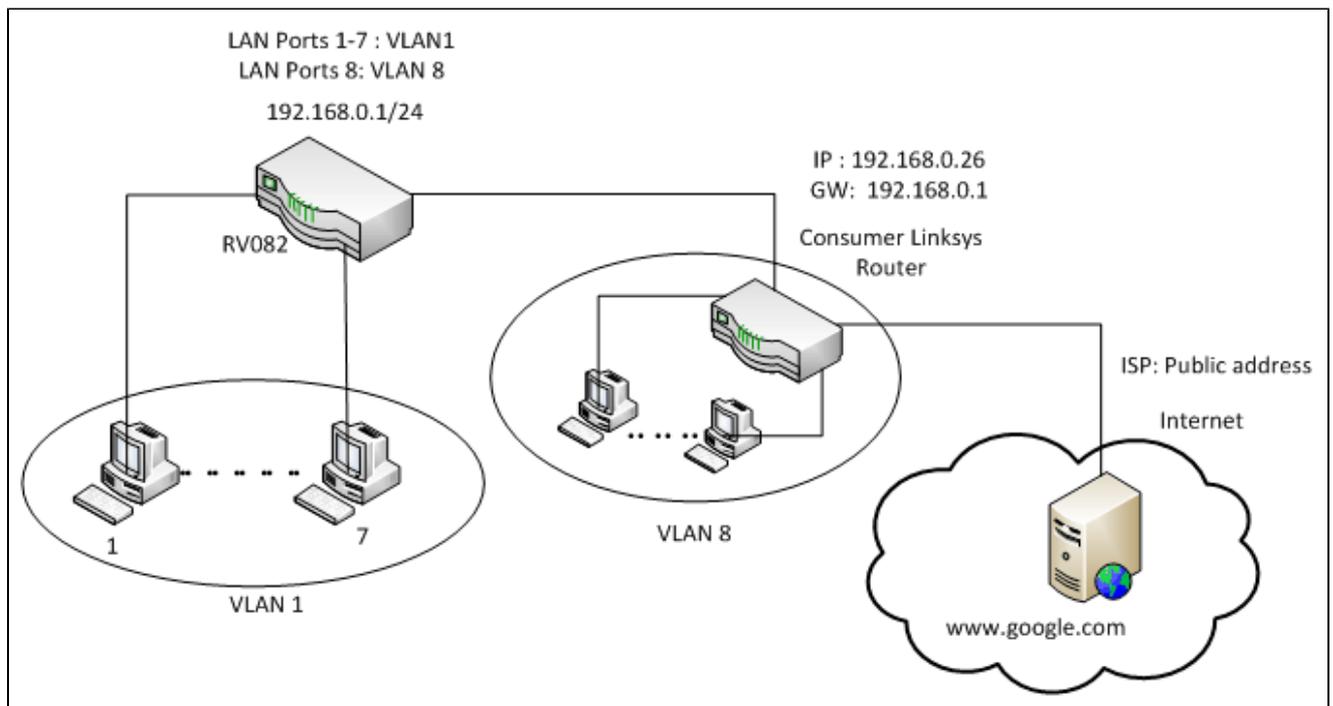
## 适用设备

- RV042
- RV042G
- RV082
- 任何消费者Linksys路由器

## 软件版本

## 拓扑

VPN路由器对WAN1接口使用一个公有IP，使用几个公有IP来使用一对一NAT，并说明如何将  
这些公有IP映射到LAN内的主机。



### 一对一NAT:

- 公有地址1 -> 192.168.0.1(RV082)
- 公有地址2 -> 192.168.0.26 ( 消费者路由器 )
- 公有地址3 -> 192.168.0.100
- 公有地址4 -> 192.168.0.101
- 公有地址5-> 192.168.0.102

### 在消费者Linksys路由器中：

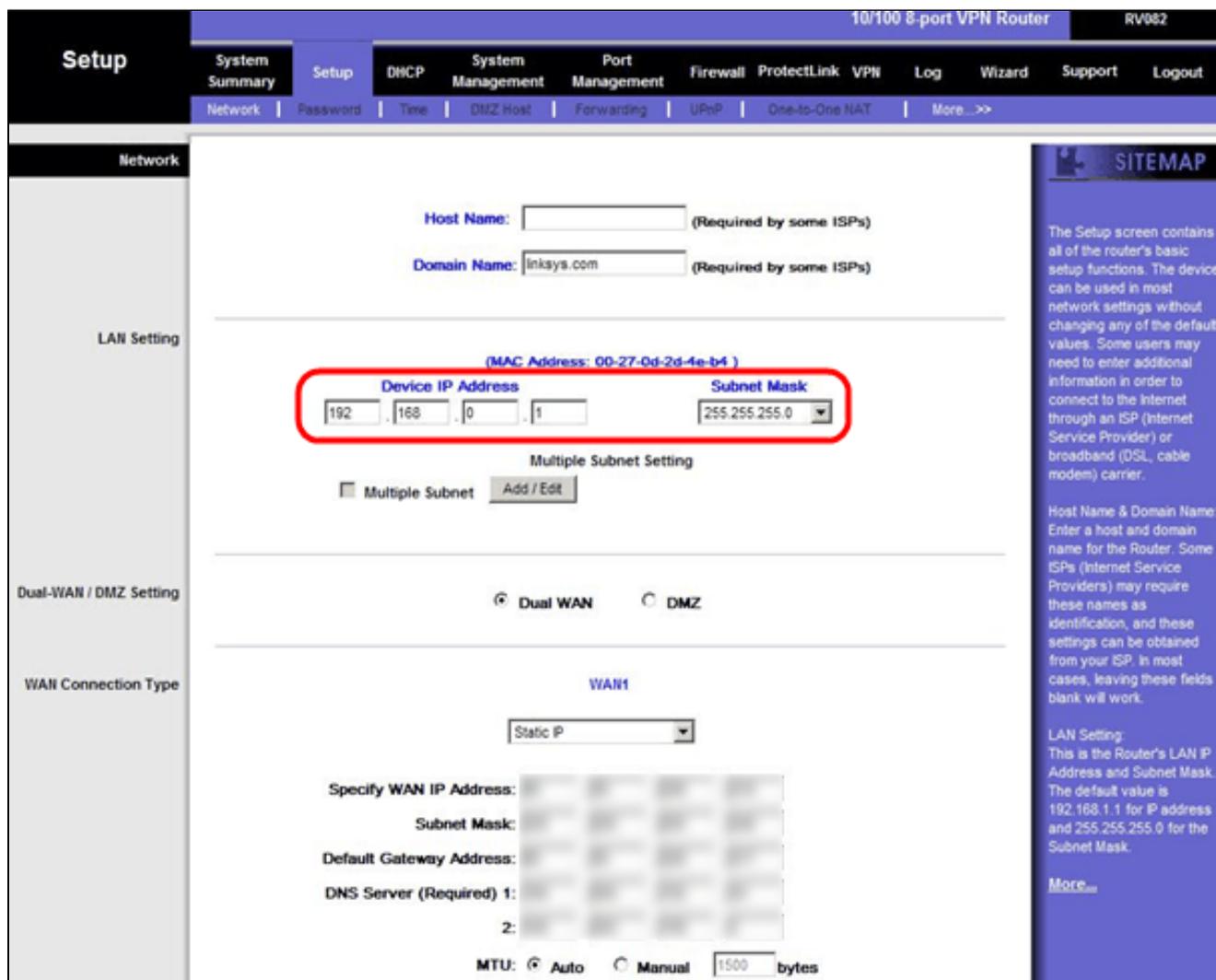
- 端口1至7 - VLAN 1
- 端口8 - VLAN 8

在RV082上使用很少的公有IP来分隔两个LAN网络

# 基本LAN和WAN设置

本文是针对上述拓扑撰写的。

步骤1:使用Web配置实用程序选择Setup > Network。将打开Setup页面：



第二步：在LAN Settings ( LAN设置 ) 字段中，输入Device IP Address ( 设备IP地址 ) 为 192.168.0.1，输入子网掩码为255.255.255.0。默认情况下，IP地址为192.168.1.1。

10/100 8-port VPN Router RV082

Setup

System Summary Setup DHCP System Management Port Management Firewall ProtectLink VPN Log Wizard Support Logout

Network Password Time DMZ Host Forwarding UPnP One-to-One NAT More...>>

Network

Host Name:  (Required by some ISPs)

Domain Name:  (Required by some ISPs)

LAN Setting

(MAC Address: 00-27-0d-2d-4e-b4)

Device IP Address Subnet Mask

Multiple Subnet Setting

Multiple Subnet

Dual-WAN / DMZ Setting

Dual WAN  DMZ

WAN Connection Type

WAN1

Specify WAN IP Address:

Subnet Mask:

Default Gateway Address:

DNS Server (Required) 1:

2:

MTU:  Auto  Manual  bytes

SITEMAP

The Setup screen contains all of the router's basic setup functions. The device can be used in most network settings without changing any of the default values. Some users may need to enter additional information in order to connect to the Internet through an ISP (Internet Service Provider) or broadband (DSL, cable modem) carrier.

Host Name & Domain Name: Enter a host and domain name for the Router. Some ISPs (Internet Service Providers) may require these names as identification, and these settings can be obtained from your ISP. In most cases, leaving these fields blank will work.

LAN Setting: This is the Router's LAN IP Address and Subnet Mask. The default value is 192.168.1.1 for IP address and 255.255.255.0 for the Subnet Mask.

More...

第三步：在WAN Connection Type ( WAN连接类型 ) 中，对于WAN1，选择Static IP。

The screenshot shows the 'Setup' page for a 10/100 8-port VPN Router (RV082). The 'WAN' section is active, showing the following configuration:

- Host Name: (Required by some ISPs)
- Domain Name: linkays.com (Required by some ISPs)
- (MAC Address: 00-27-0d-2d-4e-b4)
- Device IP Address: 192.168.0.1
- Subnet Mask: 255.255.255.0
- Multiple Subnet Setting:  Multiple Subnet
- WAN Connection Type: Static IP
- Specify WAN IP Address: (Red box highlights this section)
- Subnet Mask: (Red box highlights this field)
- Default Gateway Address: (Red box highlights this field)
- DNS Server (Required) 1: (Red box highlights this field)
- DNS Server (Required) 2: (Red box highlights this field)
- MTU:  Auto  Manual 1500 bytes

The right sidebar contains a 'SITEMAP' section with the following text:

The Setup screen contains all of the router's basic setup functions. The device can be used in most network settings without changing any of the default values. Some users may need to enter additional information in order to connect to the Internet through an ISP (Internet Service Provider) or broadband (DSL, cable modem) carrier.

Host Name & Domain Name: Enter a host and domain name for the Router. Some ISPs (Internet Service Providers) may require these names as identification, and these settings can be obtained from your ISP. In most cases, leaving these fields blank will work.

LAN Setting: This is the Router's LAN IP Address and Subnet Mask. The default value is 192.168.1.1 for IP address and 255.255.255.0 for the Subnet Mask.

[More...](#)

第四步：在Specify WAN IP Address字段中，输入Public Address 1。

第五步：在子网掩码字段中输入公有地址1的相关子网掩码。

第六步：在Default Gateway Address字段中，输入公有地址1的默认网关。

步骤 7.在DNS服务器（必填）中输入第一个DNS IP地址。

步骤 8在2字段中输入第二个DNS IP地址。

步骤 9单击Save Settings保存更改。

10/100 8-port VPN Router RV082

**System Summary**

System Summary | Setup | DHCP | System Management | Port Management | Firewall | ProtectLink | VPN | Log | Wizard | Support | Logout

**System Information**

Serial Number : AEZ28J900806      Firmware version : 2.0.0.19-tm (Feb 20 2009 15:15:20)  
 CPU : Intel DP425-533      DRAM : 32M      Flash : 16M  
 System up time : 0 Days 23 Hours 44 Minutes 49 Seconds (Now: Fri Mar 5 2010 07:20:16)

**Configuration**

If you need guideline to re-configure the router, you may launch wizard. [Setup Wizard](#)

**Port Statistics**

**Network Setting Status**

LAN IP :	192.168.0.1
WAN IP :	192.168.0.1
DMZ IP :	---
Mode :	Gateway
DNS :	192.168.0.1    192.168.0.1
DDNS :	Off
DMZ Host :	Disabled

**SITEMAP**

The System Summary screen displays the router's current status and settings. This information is read only. If you click the button with underline, it will hyperlink to related setup pages. On the right side of the screen and all other screens in the Utility will be a link to the Site Map, which has links to all of the Utility's tabs.

Serial Number: The serial number of the RV082 unit.

System up time: The length of time in Days, Hours, and Minutes that the RV082 is active.

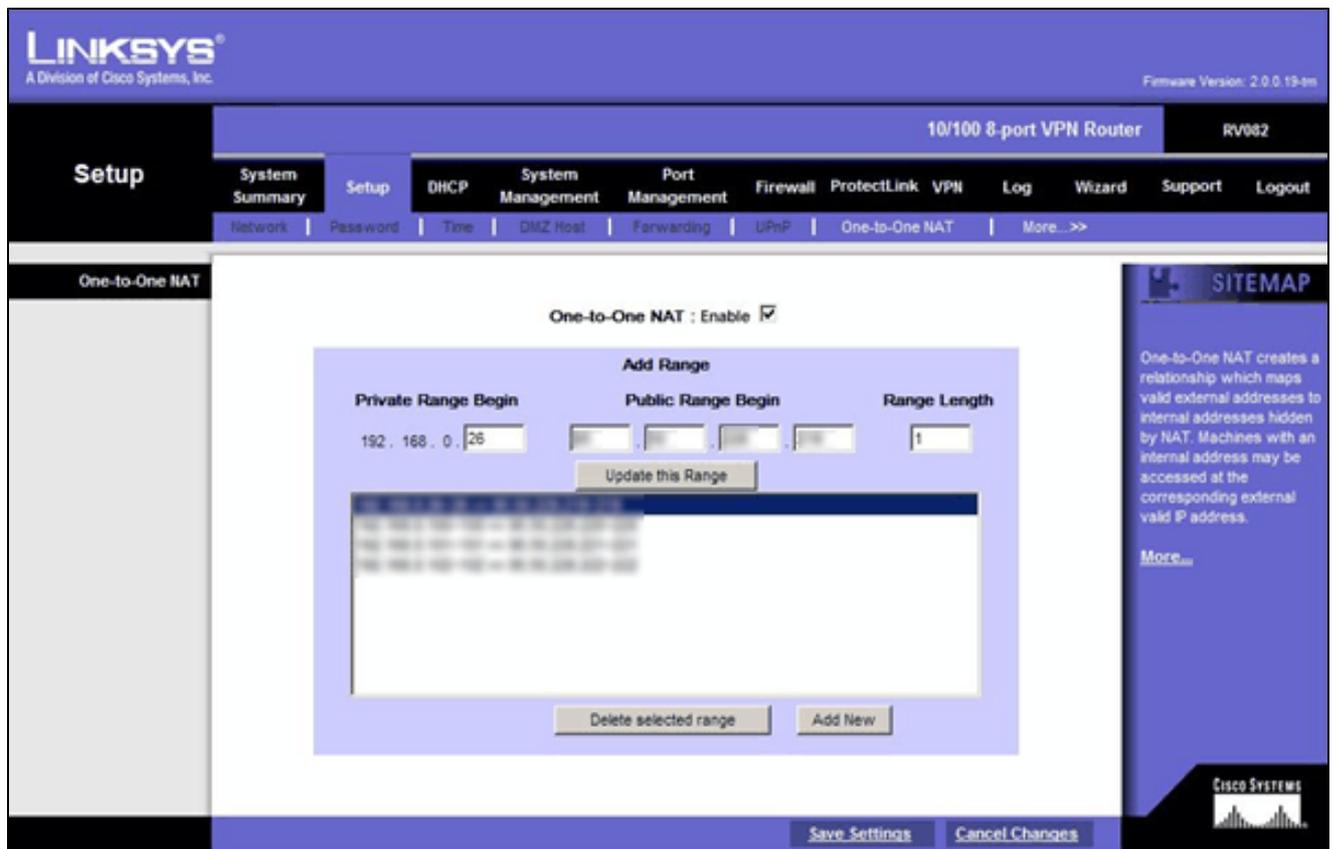
Firmware version: The current version number of the firmware installed on this unit.

CPU: The type of the RV082 processor. It is Intel DP425.

DRAM: The size of DRAM on the board. It is 32MB.

步骤 10要查看所做的更改，请单击主选项卡中的System Summary，并查看在Network Setting Status中进行的更改。

## 从专用IP到公共IP添加一对一NAT



步骤 11在网络配置实用程序中，选择Setup > One-to-One NAT。将打开一对一-NAT页面。

步骤 12在一对一-NAT字段中，选中Enable。

步骤 13在Private Address Begin字段中，输入192.168.0.100。

步骤 14在Public Begin Range中，输入Public Address 1。

步骤 15输入范围长度1。

步骤 16单击Update this Range。

步骤 17在Private Address Begin中，输入192.168.0.101。

步骤 18.在Public Begin Range中，输入Public Address 2。

步骤 19.输入范围长度1。

步骤 20.单击Update this Range。

步骤 21.在Private Address Begin中，输入192.168.0.102。

步骤 22.在Public Begin Range中，输入Public Address 3。

步骤 23.输入范围长度1。

步骤 24单击Update this Range。

步骤 25在Private Address Begin中，输入192.168.0.26。

步骤 26在Public Begin Range中，输入Public Address 4。

步骤 27输入范围长度1。

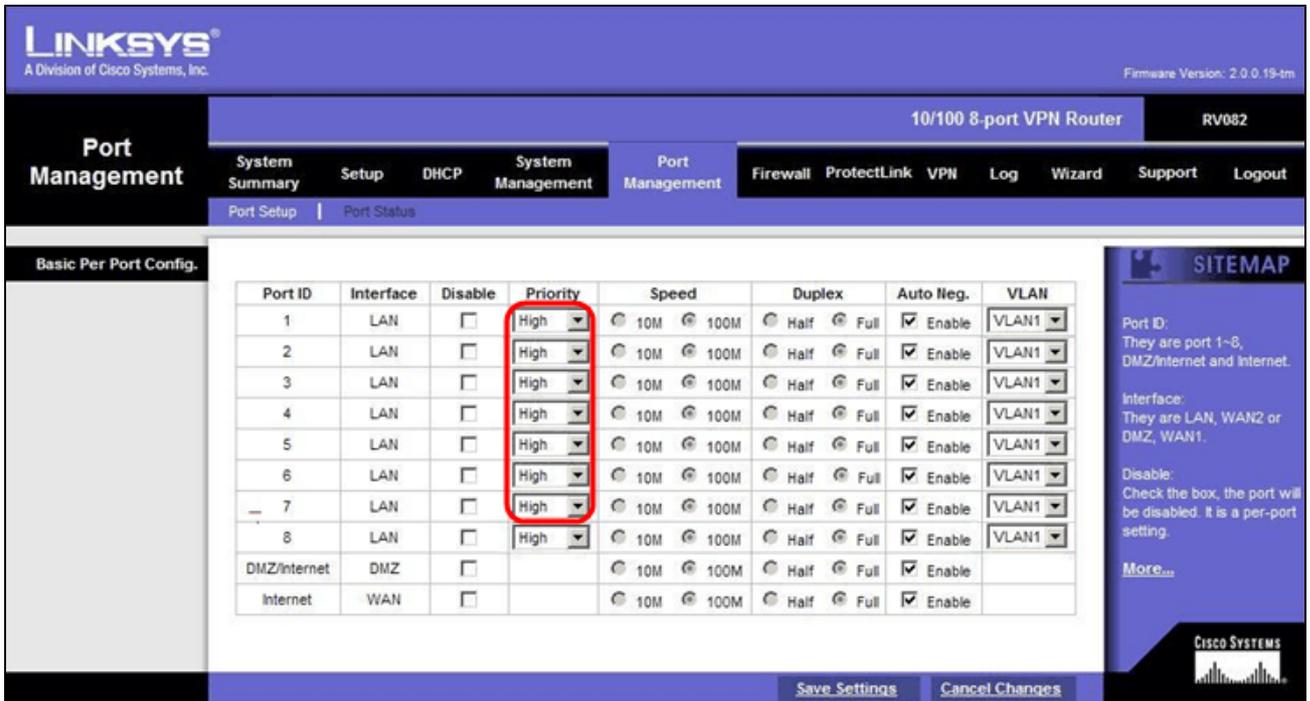
步骤 28单击Update this Range。

步骤 29单击Save Settings保存更改。

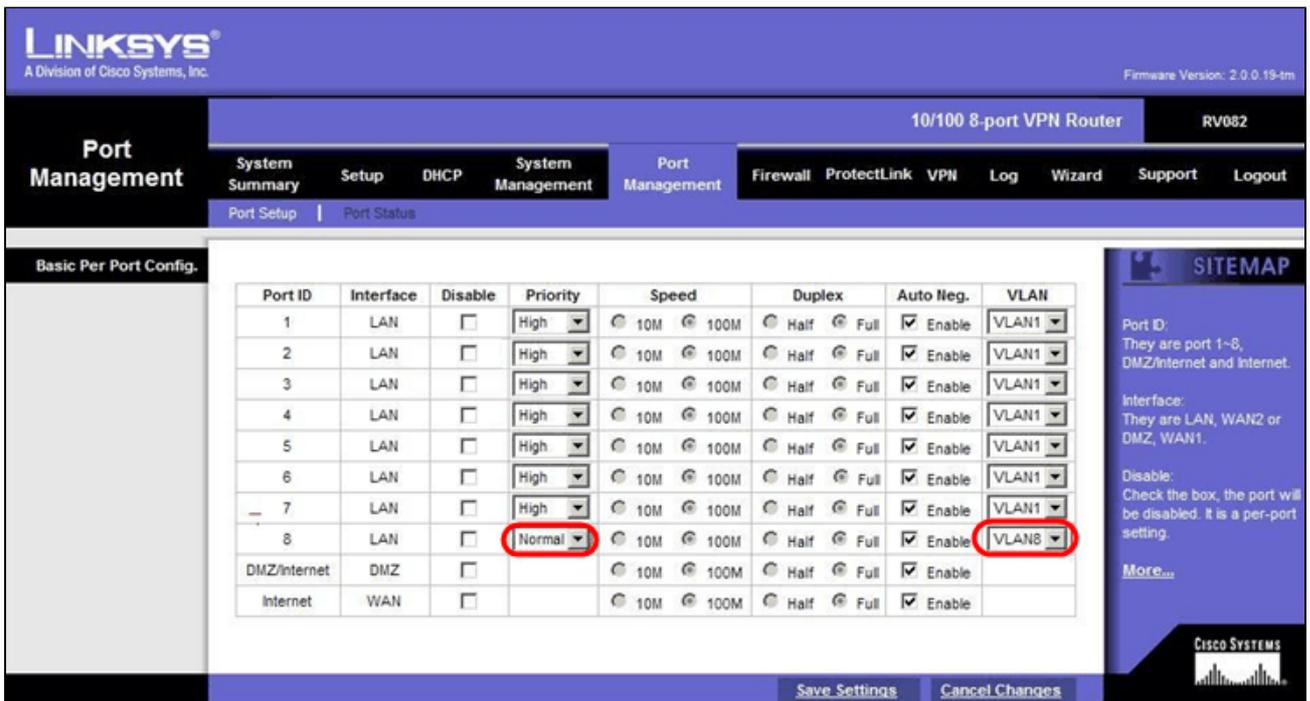
## 设置VLAN上端口的优先级

Port ID	Interface	Disable	Priority	Speed	Duplex	Auto Neg.	VLAN
1	LAN	<input type="checkbox"/>	High	10M 100M	Half Full	<input checked="" type="checkbox"/> Enable	VLAN1
2	LAN	<input type="checkbox"/>	High	10M 100M	Half Full	<input checked="" type="checkbox"/> Enable	VLAN1
3	LAN	<input type="checkbox"/>	High	10M 100M	Half Full	<input checked="" type="checkbox"/> Enable	VLAN1
4	LAN	<input type="checkbox"/>	High	10M 100M	Half Full	<input checked="" type="checkbox"/> Enable	VLAN1
5	LAN	<input type="checkbox"/>	High	10M 100M	Half Full	<input checked="" type="checkbox"/> Enable	VLAN1
6	LAN	<input type="checkbox"/>	High	10M 100M	Half Full	<input checked="" type="checkbox"/> Enable	VLAN1
7	LAN	<input type="checkbox"/>	High	10M 100M	Half Full	<input checked="" type="checkbox"/> Enable	VLAN1
8	LAN	<input type="checkbox"/>	High	10M 100M	Half Full	<input checked="" type="checkbox"/> Enable	VLAN1
DMZ/Internet	DMZ	<input type="checkbox"/>		10M 100M	Half Full	<input checked="" type="checkbox"/> Enable	
Internet	WAN	<input type="checkbox"/>		10M 100M	Half Full	<input checked="" type="checkbox"/> Enable	

步骤 30在Web配置实用程序中，选择端口管理>端口设置。Basic Per Port Config.页打开：



·端口ID(1-7) — 从下拉列表中选择Priority作为High。



·端口ID 8 — 选择优先级为Normal，并在VLAN字段中选择VLAN8。

步骤 31单击Save Settings保存更改。

## VLAN8的带宽管理

# 上游设置

The screenshot displays the Cisco RV062 web interface for Bandwidth Management. The top navigation bar includes 'System Management', 'Port Management', 'Firewall', 'ProtectLink', 'VPN', 'Log', 'Wizard', 'Support', and 'Logout'. The main content area is titled 'Bandwidth Management' and shows the 'Maximum Bandwidth provided by ISP' for WAN1.

Interface	Upstream (Kbit/Sec)	Downstream (Kbit/Sec)
WAN1	1024	15360

Below the table, the 'Type' is set to 'Rate Control' (selected) and 'Priority'.

The configuration details for WAN1 are as follows:

- Interface:  WAN1
- Service: All Traffic [TCP&UDP/1~65535]
- IP: 192 . 168 . 0 . 26 to 26
- Direction: Downstream
- Mini. Rate: [ ] Kbit/sec
- Max. Rate: 4096 Kbit/sec
- Enable:

The configuration summary at the bottom shows:

```
All Traffic [TCP&UDP/1~65535]->192.168.0.26-26(Downstream)=>~4096Kbit/sec->WAN1
All Traffic [TCP&UDP/1~65535]->192.168.0.26-26(Upstream)=>~200Kbit/sec->WAN1
```

步骤 32在网络配置实用程序中，选择System Management > Bandwidth Management。将打开Bandwidth Management页面：

A Division of Cisco Systems, Inc. Firmware Version: 2.0.0.19-tm

**10/100 8-port VPN Router** RV082

**System Management** | System Summary | Setup | DHCP | System Management | Port Management | Firewall | ProtectLink | VPN | Log | Wizard | Support | Logout

Dual-WAN | Bandwidth Management | SNMP | Diagnostic | Factory Default | Firmware Upgrade | More... >>

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**Bandwidth Management**

**The Maximum Bandwidth provided by ISP**

Interface	Upstream (Kbit/Sec)	Downstream (Kbit/Sec)
WAN1	1024	15360

---

Type:  **Rate Control**  Priority

---

Interface:  WAN1

Service: All Traffic [TCP&UDP/1-65535] Service Management

IP: 192 . 168 . 0 . 26 to 26

Direction: Downstream

Mini. Rate:  Kbit/sec Max. Rate: 4096 Kbit/sec

Enable:

Update this Application

```

All Traffic [TCP&UDP/1-65535]->192.168.0.26-26(Downstream)->~4096Kbit/sec->WAN1
All Traffic [TCP&UDP/1-65535]->192.168.0.26-26(Upstream)->~200Kbit/sec->WAN1

```

**SITMAP**

Bandwidth Management refers to the capability of a network to provide better service to selected network traffic. One is Rate Control for minimum bandwidth (guarantee bandwidth) and maximum bandwidth (limit bandwidth) by Service and/or IP Address. The other is Priority for services. Both functionalities can control inbound or Outbound traffic.

[More...](#)

步骤 33在Bandwidth Management字段中，点击Rate Control。

A Division of Cisco Systems, Inc. Firmware Version: 2.0.0.19-tm

**10/100 8-port VPN Router** RV082

**System Management** | System Summary | Setup | DHCP | System Management | Port Management | Firewall | ProtectLink | VPN | Log | Wizard | Support | Logout

Dual-WAN | Bandwidth Management | SNMP | Diagnostic | Factory Default | Firmware Upgrade | More... >>

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**Bandwidth Management**

Bandwidth

**The Maximum Bandwidth provided by ISP**

Interface	Upstream (Kbit/Sec)	Downstream (Kbit/Sec)
WAN1	1024	15360

---

Bandwidth Management Type

Type:  Rate Control  Priority

---

Rate Control

Interface:  WAN1

Service: All Traffic [TCP&UDP/1~65535] Service Management

IP: 192 . 168 . 0 . 26 to 26

Direction: Upstream

Mini. Rate:  Kbit/sec Max. Rate:  Kbit/sec

Enable:

Update this Application

All Traffic [TCP&UDP/1~65535]->192.168.0.26(Upstream)->~200Kbit/sec->WAN1

**SITMAP**

Bandwidth Management refers to the capability of a network to provide better service to selected network traffic. One is Rate Control for minimum bandwidth (guarantee bandwidth) and maximum bandwidth (limit bandwidth) by Service and/or IP Address. The other is Priority for services. Both functionalities can control inbound or Outbound traffic.

[More...](#)

步骤 34在Interface字段中，选中interface字段中的WAN1。

步骤 35在Service下拉列表中，选择All Traffic[TCP&UDP/1~65535]。

步骤 36在IP字段中，在第一个字段中输入26，在下一个字段中输入26。

步骤 37在Direction下拉列表中，选择Upstream。

步骤 38输入Max. 速率是200 kbit/sec。

步骤 39在Enable字段中，选中Enable。

步骤 40单击Update this application。

## 下游设置

A Division of Cisco Systems, Inc. Firmware Version: 2.0.0.19-tm

**10/100 8-port VPN Router** RV082

**System Management** | System Summary | Setup | DHCP | System Management | Port Management | Firewall | ProtectLink | VPN | Log | Wizard | Support | Logout

Dual-WAN | Bandwidth Management | SNMP | Diagnostic | Factory Default | Firmware Upgrade | More... >>

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**Bandwidth Management**

Bandwidth

**The Maximum Bandwidth provided by ISP**

Interface	Upstream (Kbit/Sec)	Downstream (Kbit/Sec)
WAN1	1024	15360

---

Bandwidth Management Type

Type:  Rate Control  Priority

---

Rate Control

Interface:  WAN1

Service: All Traffic [TCP&UDP/1~65535] Service Management

IP: 192 . 168 . 0 . 26 to 26

Direction: Downstream

Mini. Rate:  Kbit/sec Max. Rate: 4096 Kbit/sec

Enable:

Update this Application

```
All Traffic [TCP&UDP/1~65535]->192.168.0.26-26(Downstream)->~4096Kbit/sec->WAN1
All Traffic [TCP&UDP/1~65535]->192.168.0.26-26(Upstream)->~200Kbit/sec->WAN1
```

**SITMAP**

Bandwidth Management refers to the capability of a network to provide better service to selected network traffic. One is Rate Control for minimum bandwidth (guarantee bandwidth) and maximum bandwidth (limit bandwidth) by Service and/or IP Address. The other is Priority for services. Both functionalities can control inbound or Outbound traffic.

[More...](#)

步骤 41在Interface字段中，选中interface字段中的WAN1。

步骤 42在Service下拉列表中，选择All Traffic[TCP&UDP/1~65535]。

步骤 43在IP字段中，在第一个框中输入26，在下一个框中输入26。

步骤 44在“方向”下拉列表中，选择下游。

步骤 45输入Max。速率是4096 Kbit/sec。

步骤 46在Enable字段中，选中Enable。

步骤 47单击Update this application。

步骤 48单击Save Settings保存更改。

# 如何检查2个VLAN和端口的端口状态

## VLAN 1-7的端口状态

步骤 49从下拉列表中选择任意端口ID(1-7)。此处，选择端口ID 2。

The screenshot shows the Linksys web interface for a 10/100 8-port VPN Router (RV082). The 'Port Management' section is active, and 'Port 2 Status' is selected. A dropdown menu for 'Port ID' is set to 2. The 'Summary' table displays the following information:

Type	10Base-T / 100Base-TX
Interface	LAN
Link Status	Up
Port Activity	Port Enabled
Priority	High
Speed Status	100 Mbps
Duplex Status	Full
Auto negotiation	Enabled
VLAN	VLAN1

The 'Statistics' table shows the following data:

Port Receive Packet Count	88593
Port Receive Packet Byte Count	18060400
Port Transmit Packet Count	181193
Port Transmit Packet Byte Count	93381880
Port Packet Error Count	0

A sidebar on the right contains a 'SITMAP' and a note: 'Users can choose the Port ID from pull down menu to see the status of the selected port. In summary table, it will show the setting for the port selected by users, such as Type, Interface, Link Status (up or down), Port Activity (on or off), Priority (High or Normal), Speed Status (10Mbps or 100Mbps), Duplex Status (half or full), Auto negotiation (on or off), and VLAN (VLAN group). More...'

注意：在摘要和统计信息下，验证以下内容。

·验证优先级是高。

·检验VLAN是VLAN1。

·在statistics字段中，验证接收的数据包和字节计数、传输的数据包和字节计数以及错误计数。

## VLAN 8的状态

Port Management

10/100 8-port VPN Router RV082

System Summary Setup DHCP System Management Port Management Firewall ProtectLink VPN Log Wizard Support Logout

Port Setup | Port Status

Port ID : 8

Port8 Status

Summary

Type	10Base-T / 100Base-TX
Interface	LAN
Link Status	Up
Port Activity	Port Enabled
Priority	Normal
Speed Status	100 Mbps
Duplex Status	Full
Auto negotiation	Enabled
VLAN	VLAN8

Statistics

Port Receive Packet Count	313666
Port Receive Packet Byte Count	215362135
Port Transmit Packet Count	271066
Port Transmit Packet Byte Count	133548752
Port Packet Error Count	0

SITEMAP

Users can choose the Port ID from pull down menu to see the status of the selected port.

In summary table, it will show the setting for the port selected by users, such as Type, interface, Link Status (up or down), Port Activity (on or off), Priority (High or Normal), Speed Status (10Mbps or 100Mbps), Duplex Status (half or full), Auto negotiation (on or off), and VLAN (VLAN group).

More...

CISCO SYSTEMS

步骤 50从下拉列表中选择Port ID: 8。

注：特别是选择端口8以查看其设置是否正确。

在summary和statistics下，验证以下内容。完成以下验证以查看端口是否已正确设置：

- 验证优先级是Normal。
- 检验VLAN是VLAN8。
- 在statistics字段中，验证接收的数据包和字节计数、传输的数据包和字节计数以及错误计数。

## 如何检查VLAN之间的连通性

步骤 51在Web配置实用程序中，选择System Management > Diagnostic。将打开Diagnostic页面：

## Diagnostic

DNS Name Lookup       Ping

Ping host or IP address :

Status : **Test Failed**

Packets : 4/4 transmitted,0/4 received,100 % loss

Round Trip Time :  
Minimun = 0.0 ms  
Maximun = 0.0 ms  
Average = 0.0 ms

步骤 52单击 Ping。

## Diagnostic

DNS Name Lookup       Ping

Ping host or IP address :

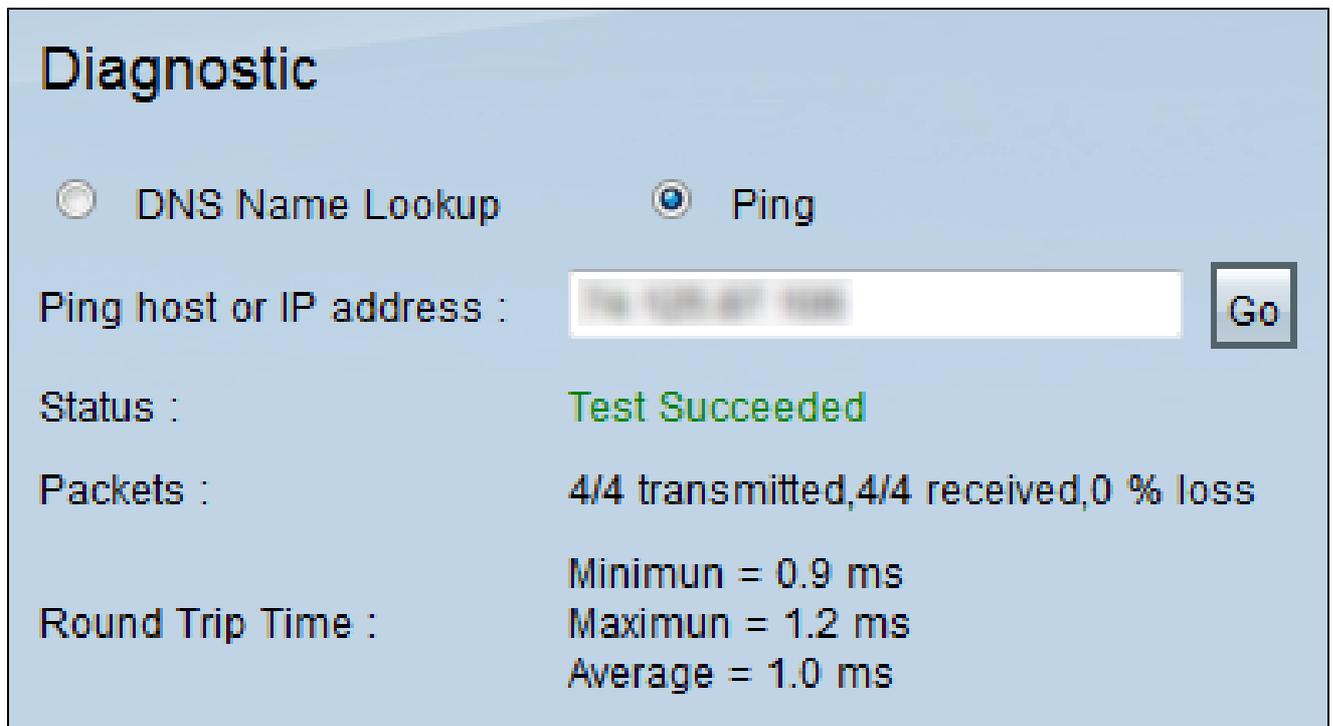
Status : **Test Failed**

Packets : 4/4 transmitted,0/4 received,100 % loss

Round Trip Time :  
Minimun = 0.0 ms  
Maximun = 0.0 ms  
Average = 0.0 ms

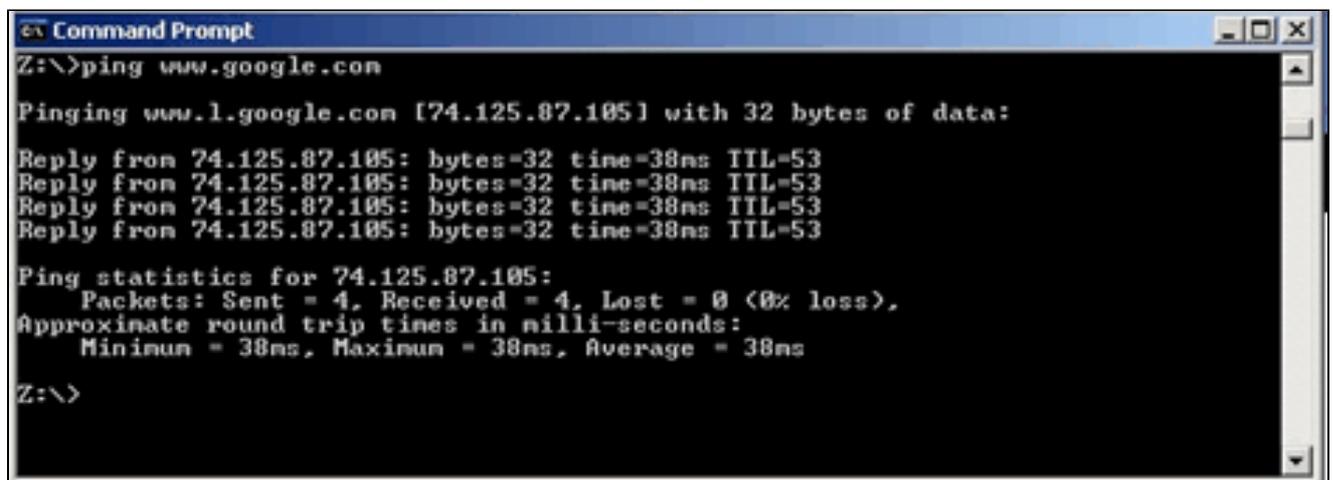
步骤 53在Ping主机或IP地址字段中，输入192.168.0.26，然后单击Go。

注意：状态显示测试失败，数据包丢失率将为100%。这意味着连接到VLAN1端口（端口1-7）的所有主机都无法ping通RV082端口8上VLAN 8中的IP 192.168.0.26。



步骤 54再次在Ping主机或IP地址字段中输入ISP地址，然后点击Go。

注意：状态显示测试成功，数据包丢失率为0%。这意味着192.168.0.1(RV082)可以到达ISP。



上图显示RV082上的客户端可以访问www.google.com。连接到消费者路由器的LAN并从该路由器的DHCP获取IP的主机可以ping并访问Internet。

## Diagnostic

DNS Name Lookup

Ping

Ping host or IP address :

Go

Status :

**Test Failed**

Packets :

4/4 transmitted,0/4 received,100 % loss

Round Trip Time :

Minimun = 0.0 ms

Maximun = 0.0 ms

Average = 0.0 ms

消费类路由器的LAN中的主机无法ping通VLAN1中的RV082的专用IP。

## 关于此翻译

思科采用人工翻译与机器翻译相结合的方式将此文档翻译成不同语言，希望全球的用户都能通过各自的语言得到支持性的内容。

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