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:

	10/100 8-port VPN Rou	RV082		
Setup	System Setup DHCP System Port Firewall ProtectLink VPN Log Wizard	Support Logout		
	Network Password Time DI/Z Host Forwarding UPbP One-to-One NAT More >>>			
Network	Host Name: (Required by some ISPs) Domain Name: Inksys.com (Required by some ISPs)	The Setup screen contains all of the router's basic setup functions. The device can be used in most network settings without		
LAN Setting	(MAC Address: 00-27-0d-2d-4e-b4) Device IP Address Subnet Mask 192 168 0 1 255.255.255.0 Image: Comparison of the setting Multiple Subnet Add / Edit Add / Edit Add / Edit Add / Edit Image: Comparison of the setting	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 (IDSL, cable modem) carrier. Host Name & Domain Name: Enter a host and domain name for the Router. Some		
Dual-WAN / DMZ Setting	Outline WAN C DMZ	ISPs (Internet Service Providers) may require these names as identification, and these settings can be obtained		
WAN Connection Type	WANS	from your ISP. In most cases, leaving these fields		
	Static P Specify WAN IP Address: Subnet Mask: Default Gateway Address: DNS Server (Required) 1: 2: MTU: C Auto C Manual ISOO bytes	LAN Setting: This is the Router's LAN IP Address and Subnet Mask. The default value is 192.183.11 for IP address and 255.255.255.0 for the Subnet Mask. Moream		

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。



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

	10/100 8-port VPN Ro	uter RV082			
Setup	System Summary Setup OHCP System Port Firewall ProtectLink VPN Log Wizar Network Pessword Time DNZ Host Firewall ProtectLink VPN Log Wizar	d Support Logout			
Network	Host Name: (Required by some ISPs) Domain Name: Inksys.com (Required by some ISPs)	The Setup screen contains all of the router's basic setup functions. The device can be used in most network settings without			
LAN Setting	(MAC Address: 00-27-0d-2d-4e-b4) Device IP Address Subnet Mask 192 168 0 1 255.255.255.0 Multiple Subnet Setting Multiple Subnet Add / Edt	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 (USL, cable modem) carrier. Host Name & Domain Name: Enter a host and domain come for the Davier. Some			
Dual-WAN / DMZ Setting	© Dual WAN C DMZ	name for the Router. Some ISPs (Internet Service Providers) may require these names as identification, and these			
WAN Connection Type	WAIH Static P Specify WAN IP Address: Subnet Mask: Default Gateway Address: DNS Server (Required) 1: 2: MTU: © Auto © Manual 1500 bytes	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.			

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。



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

LINKSYS A Division of Cisco Systems, Inc	e Fe	mware Version: 2.0.0.19-m
	10/100 8-port VPN Router	RV082
Setup	System Setup DHCP System Port Firewall ProtectLink VPN Log Wizard	Support Logout
	Network Password Time DMZ Host Farwarding UPnP One-to-One NAT More>>	
One-to-One NAT	One-to-One NAT : Enable	SITEMAP
	Add Range	e-to-One NAT creates a ationship which maps
	Private Range Begin Public Range Begin Range Length	id external addresses to ernal addresses hidden
	192.168.0.26	NAT. Machines with an ernal address may be
	Update this Range acc	cessed at the rresponding external
	Val	id Pladdress.
		X.C
	Delete selected range Add New	
		Cisco Systems
	Save Settings Cancel Changes	all the still be

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

							10/100 8	port VPN Rou	iter RV082
Port Management	System Summary	Setup	DHCP	System Management	Port Management	Firewall Protect	Link VPN	Log Wizard	g Support Logout
	Port Setup	Port Status							
Basic Per Port Config.									SITEMAP
	Port ID	Interface	Disable	Priority	Speed	Duplex	Auto Neg.	VLAN	
	1	LAN		High 💌	@ 10M @ 100M	C Half C Ful	Enable	VLAN1 ·	Port ID:
	2	LAN		High 💌	@ 10M @ 100M	G Half G Full	Enable	VLAN1 -	They are port 1~8, DMZ/Interpet and Interpet
	3	LAN		High 💌	@ 10M @ 100M	C Half C Full	Enable	VLAN1 -	
	4	LAN		High 💌	C 10M @ 100M	C Half C Ful	Enable	VLAN1 -	Interface: They are LAN, WAN2 or
	5	LAN		High 💌	@ 10M @ 100M	C Half C Ful	Enable	VLAN1 V	DMZ, WAN1.
	6	LAN		High 💌	© 10M @ 100M	C Half G Ful	Enable	VLAN1 -	Disable:
	_ 7	LAN		High 💌	@ 10M @ 100M	C Half C Ful	Enable	VLAN1 -	Check the box, the port will be disabled. It is a per-port
	8	LAN		High 💌	@ 10M @ 100M	C Half C Ful	Enable	VLAN1	setting.
	DMZ/Internet	DMZ		R and all	@ 10M @ 100M	C Half C Ful	Enable		More
	Internet	WAN	Г		@ 10M @ 100M	C Half C Ful	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:

100								10/100 8	port VPN Rou	ter RV082
Port Management	System Summary	Setup	DHCP	System Management	Port Management	Firewall	Protectl	ink VPN	Log Wizard	Support Logout
	Port Setup	Port Status								
Basic Per Port Config.										5 SITEMAP
	Port ID	Interface	Disable	Priority	Speed	Dupl	ex	Auto Neg.	VLAN	
	1	LAN		High 💌	@ 10M @ 100M	C Half	@ Full	Enable	VLAN1 -	Port ID:
	2	LAN		High 💌	@ 10M @ 100M	C Half	@ Full	Enable	VLAN1 -	They are port 1~8, DMZ/Internet and Internet.
	3	LAN		High 💌	C 10M @ 100M	C Half	G Full	Enable	VLAN1 V	
	4	LAN		High 💌	C 10M @ 100M	C Half	@ Full	Enable	VLAN1 V	They are LAN, WAN2 or
	5	LAN		High 💌	C 10M @ 100M	C Half	@ Full	Enable	VLAN1 V	DMZ, WAN1.
	6	LAN	Г	High 💌	@ 10M @ 100M	C Half	@ Full	Enable	VLAN1 -	Disable:
	_ 7	LAN		High 💌	@ 10M @ 100M	C Half	@ Full	Enable	VLAN1 -	Check the box, the port w be disabled. It is a per-port
	8	LAN		High 💌	C 10M @ 100M	C Half	@ Full	Enable	VLAN1 -	setting.
	DMZ/Internet	DMZ		and the second second	@ 10M @ 100M	C Half	@ Full	Enable		More
	Internet	WAN			C 10M C 100M	C Half	@ Full	Enable		

·端口ID(1-7)—从下拉列表中选择Priority作为High。

								10/100 8	port VPN Rou	ter RV082	
Port Management	System Summary	Setup	DHCP	System Management	Port Management	Firewall	Protectl	ink VPN	Log Wizard	j Support Logout	
	Port Setup	Port Status									
Basic Per Port Config.										SITEMAP	
	Port ID	Interface	Disable	Priority	Speed	Dup	lex	Auto Neg.	VLAN		
	1	LAN		High 💌	@ 10M @ 100M	C Half	@ Full	Enable	VLAN1 -	Port ID:	
	2	LAN		High 💌	@ 10M @ 100M	G Half	@ Full	Enable	VLAN1 -	They are port 1~8, DMZ/Interpet and Internet	
	3	LAN		High 💌	C 10M @ 100M	C Half	@ Full	Enable	VLAN1 V	and the second s	
	4	LAN		High 💌	C 10M @ 100M	C Half	@ Full	Enable	VLAN1 -	Interface: They are LAN, WAN2 or	
	5	LAN		High 💌	C 10M @ 100M	C Half	@ Full	Enable	VLAN1 -	DMZ, WAN1.	
	6	LAN	Г	High 💌	C 10M C 100M	C Half	@ Full	Enable	VLAN1 -	Disable:	
	_ 7	LAN		High 💌	C 10M @ 100M	C Half	@ Full	Enable	VLAN1 -	Check the box, the port w be disabled. It is a per-po	
	8	LAN		Normal -	C 10M @ 100M	C Half	@ Full	Enable	VLAN8	setting.	
	DMZ/Internet	DMZ			@ 10M @ 100M	C Half	@ Full	Enable		More	
	Internet	WAN			@ 10M @ 100M	C Half	@ Full	Enable			

·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

A Division of Cisco Systems, Inc.	inc.	Firmware Version: 2.0.0.19-tm
Custom	10/100 8-port VPN Rou	uter RV082
Management	System Setup DHCP System Port Firewall ProtectLink VPN Log Wizar Summary Setup DHCP Management Management	rd Support Logout
	Dual-WAN Bandwidth Management SNMP Diagnostic Factory Default Firmware Upgrade More >>	
Bandwidth Management	nt	SITEMAP
Bandwidth	The Maximum Bandwidth provided by ISP	Bandwidth Management refers to the capability
	Interface Upstream Downstream (Kbit/Sec) (Kbit/Sec)	of a network to provide better service to selected
	WAN1 1024 15360	One is Rate Control for minimum bandwidth
Bandwidth Management Type	th Type: © Rate Control C Priority	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
Rate Control	ol Interface: VWAN1 Service: Service Management IP: 192 . 168 . 0 . 26 to 26 Direction: Downstream V Mini. Rate: Kbit/sec Max. Rate: 4096 Kbit/sec Enable: V Update this Application All Traffic [TCP&UDP/1~65535]->192.168.0.26~26(Upstream)=>~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:



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

A Division of Cisco Systems, Inc.							, F	irmware Version:	2.0.0.19-tm
Custom				_		10/100 8-po	ort VPN Router	RV	082
Management	System Summary	Setup DHCP	System Management	Port Management	Firewall ProtectLin	k VPN Log	Wizard	Support	Logout
	Dual-WAN	Bandwidth Manager	ent SNMP	Diagnostic Fact	ory Default Firmware	Upgrade N	lore >>		
Bandwidth Management								SIT	EMAP
Bandwidth			The Maximu	um Bandwidth pro	vided by ISP		B	andwidth Mana efers to the car	agement oabiity
			Interface	Upstream (Kbit/Sec)	Downstream (Kbit/Sec)		0 b	f a network to etter service to	provide selected
			WAN1	1024	15360		0	ine is Rate Con inimum bandw	itrol for idth
Bandwidth Management Type		а () л т т т в с с с	nd maximum ba imt bandwidth) y Service and/ iddress. he other is Prio ervices. oth functionalit ontrol inbound lutbound traffic fore	andwidth) or IP orty for tes can or					
Rate Control		Interfac Servic Directio Mini. Rat Enabl	e: VAN All Traffic e: S P: 192 n: Upstrea e: Up P/1~65535]->192.10	1 c (TCP&UDP/1~65535 ervice Management . 168 . 0 am Kbt/sec Max pdate this Application 88.0.28~26(Upstream	. 26 to 26 k. Rate: 200	Kbë/sec			

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.							, F	irmware Version	: 2.0.0.19-tm
Custom				-		10/100 8-por	t VPN Router	RV	082
Management	System Summary	Setup DHCP	System Management	Port Management	Firewall ProtectLink	VPN Log	Wizard	Support	Logout
	Dual-WAN B	andwidth Managemei	nt SNMP I C	Diagnostic Fact	ory Default Firmware U	ipgrade Mo	ire >>		
Bandwidth Management								SIT	EMAP
Bandwidth			The Maximu	m Bandwidth pro	vided by ISP		B	andwidth Man efers to the ca	agement
			interface	Upstream (Kbit/Sec)	Downstream (Kbit/Sec)		0 6	f a network to etter service t	provide o selected
			WAN1	1024	15360	1	0	ne is Rate Con inimum bandw	ntrol for vidth
Bandwidth Management Type	Type: C Rate Control C Priority								and whom)) ority for ties can i or c.
Rate Control		Interface: Service: IP: Direction: Mini. Rate: Enable: All Traffic [TCP8UDP	✓ WANH All Traffic Se 192 Downstre Image: Construction of the second se	I (TCP&UDP/1~65535 ervice Management . 168 . 0 sam Kbt/sec Ma: date this Application 38.0.26~26(Upstream] . 26 to 26 k. Rate: 4096 eam)≈>~4096Kbil/sec->W/ n)≈>~200Kbil/sec->WAN1	Kbil/sec		<u>191 G</u>	

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。

LINKSYS						Firmware Version: 2.0.0.19-tm		
				10/100	8-port VPN Route	r RV082		
Port Management	System Summary Setup DHCP Port Status	System Port Management Management	Firewall P	rotectLink VPN	Log Wizard	Support Logout		
Port2 Status	Port ID : 2					Users can choose the Port		
Summary	Туре	10Base-T / 100Base-TX		D from pull down menu to see the status of the				
	Interface	LAN				selected port.		
	Link Status	Up		In summary table, it will show the setting for the				
	Port Activity	Port Enabled				port selected by users,		
	Priority	High		such as Type, Interface, Link Status (up or down),				
	Speed Status	100 Mbps				Port Activity(on or off), Priority (High or Normal), Speed Status(10Mbps or 100Mbps), Device Status		
	Duplex Status	Ful						
	Auto negotiation	Enabled				(half or full), Auto		
	VLAN	VLAN1				VLAN (VLAN group).		
						More		
Statistics	Port Receive Packet Count				88593			
	Port Receive Packet Byte Count				18060400			
	Port Transmit Packet Count				01193			
	Port Packet Error Count				0			
						1		

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

	ĥ.			-		10/100	3-port V	PN Router	R	V082		
Port Management	System Summary Setup DHCP	System Management	Port Management	Firewall	ProtectLink	VPN	Log	Wizard	Support	Logout		
	Port Setup Port Status											
	Port ID : 8								SI SI	TEMAP		
Port8 Status								- 1				
Summary	Туре	10Base-T / 1	00Base-TX						Sers can chi D from pull do see the status	oose the Port win menu to s of the		
	Interface	LAN							selected port.			
	Link Status	Up							In summary table, it will show the setting for the			
	Port Activity	Port Enabled							ort selected	by users,		
	Priority	Normal							uch as Type ink Status (u	p or down),		
	Speed Status	100 Mbps							fort Activity(o Priority (High r	in or off), or Normal),		
	Duplex Status	Full							ipeed Status (00Mbos), Du	(10Mbps or plex Status		
	Auto negotiation	Enabled							half or full), A	Auto		
	VLAN	VLANS							/LAN (VLAN	group).		
Statistics	Port Receive Packet Count						313666		tore			
	Port Receive Packet Byte Count					2	15362138					
	Port Transmit Packet Count					-	271066					
	Port Transmit Packet Byte Count					1	33548752	2				
	Port Packet Error Count						(
								_	Des	CO 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	
ONS Name Lookup	Ping
Ping host or IP address :	192.168.0.26 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

步骤 52单击 Ping。

Diagnostic	
ONS Name Lookup	Ping
Ping host or IP address :	192.168.0.26 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

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。

Diagnostic	
ONS Name Lookup	Ping
Ping host or IP address :	The rule art rule Go
Status :	Test Succeeded
Packets :	4/4 transmitted,4/4 received,0 % loss
Round Trip Time :	Minimun = 0.9 ms Maximun = 1.2 ms Average = 1.0 ms

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。

Command Prompt	_ U ×
Z:\>ping www.google.com	-
Pinging www.l.google.com [74.125.87.105] with 32 bytes of data:	
Reply from 74.125.87.105: bytes=32 time=38ms TIL=53 Reply from 74.125.87.105: bytes=32 time=38ms TIL=53 Reply from 74.125.87.105: bytes=32 time=38ms TIL=53 Reply from 74.125.87.105: bytes=32 time=38ms TIL=53 Pipg statistics for 74.125.87.105:	
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 38ms, Maximum = 38ms, Average = 38ms	
Z:\>	

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	
ONS Name Lookup	Ping
Ping host or IP address :	Fig. 128. at 198
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。

请注意:即使是最好的机器翻译,其准确度也不及专业翻译人员的水平。

Cisco Systems, Inc. 对于翻译的准确性不承担任何责任,并建议您总是参考英文原始文档(已提供 链接)。