在RV042、RV042G和RV082 VPN路由器上使用 少量的公共IP來分隔兩個LAN網路

目標

位於一個VLAN(埠1-7中的VLAN1 - 192.168.0.x)中的主機不應與RV082另一個 VLAN(VLAN8 - 192.168.0.26到埠8)中的裝置通訊,同時VLAN1中的主機應比VLAN8中的 客戶端具有更高的網際網路流量優先順序。出於安全原因,此處使用VLAN還用於劃分 RV042、RV042G和RV082 VPN路由器上的LAN。下面列出了此過程中的各個部分:

·基本LAN和WAN設定

·如何新增一對一NAT(私有到公有地址)

·為VLAN上的埠設定優先順序

·管理特定VLAN的頻寬

·如何選擇VLAN的埠狀態

·如何檢查VLAN與

適用裝置

- · RV042
- · RV042G
- · RV082

·任何消費者Linksys路由器

軟體版本

拓撲

VPN路由器對WAN1介面使用一個公有IP,使用一些公有IP來使用一對一NAT,並說明如何將 這些公有IP對映到LAN中的主機。



一對一NAT:

公有地址1 ->192.168.0.1(RV082) 公有地址2 -> 192.168.0.26(客戶路由器) 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

在消費者linksys路由器中:

埠1至7 - VLAN 1 埠8 - VLAN 8

在RV082上使用少量的公共IP分隔兩個LAN網路

基本LAN和WAN設定

本文是就上述拓撲所寫的。

步驟 1.使用網路配置實用程式選擇Setup > Network。Setup頁面隨即開啟:

	10/100 8-port VPN Rou	ter RV082
Setup	System Setup DHCP System Port 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: 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 charoine any of the default
LAN Setting	(MAC Address: 00-27-0d-2d-4e-b4) Device IP Address Subnet Mask 192 188 0 1 255.255.255.0 Image: Comparison of the subnet setting Multiple Subnet Add / Edt Add / Edt Image: Comparison of the subnet setting Image: Comparison of the subnet setting	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
Dual-WAN / DMZ Setting	⑦ Dual WAN ○ DMZ	ISPs (Internet Service Providers) may require these names as identification, and these settings can be obtained
WAN Connection Type	WAN1	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 1500 bytes	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

步驟 2.在LAN Settings欄位中,輸入裝置IP地址為192.168.0.1,輸入子網掩碼為 255.255.255.0。預設情況下,IP地址為192.168.1.1。



步驟 3.在WAN連線型別中,對於WAN1下拉選單,選擇靜態IP。

						10/100	8-port V	PN Route	4 6	RV082
Setup	System Summary Setup Network Password	DHCP System Manageme	Port ent Management & Forwarding	Firewall	ProtectLink	VPN	Log More	Wizard	Support	Logout
Network		Host Name: Domain Name:	linkaya.com	(Require	ed by some IS	iPs) iPs)			The Setup so all of the rout setup function can be used network setti of the setup	reen contains er's basic ns. The device in most ngs without
LAN Setting	192	(MAC Device IP Address . 168 . 0	Address: 00-27-0d-	2d-4e-b4) Subn 255.254	et Mask 5 255.0 💌				values. Some need to enter information in connect to the through an IS Service Provi- broadband (0 modem) carri- Host Name & Enter a host a name for the	or one denation users may additional order to e Internet P (Internet ider) or ISL, cable er. Domain Name: and domain Router: Some
Dual-WAN / DMZ Setting		® (Dual WAN C	DMZ					ISPs (Internet Providers) me these names identification, settings can b	Service by require as and these be obtained
WAN Connection Type	Spec Defau DNS	ify WAN IP Address: Subnet Mask: It Gateway Address: Server (Required) 1: 2: MTU:	WAN1 tatic P	x	bytes				from your ISP cases, leavin blank will wor LAN Setting This is the Ro Address and The default vi 192, 168, 1, 1, 1 and 255, 255, Subnet Mask Moreau	I in most g these fields rk. uter's LAN IP Subnet Mask able is for IP address 255.0 for the

步驟 4.在指定WAN IP地址欄位中,輸入公有地址1。

步驟 5.在子網掩碼欄位中輸入公有地址1的相關子網掩碼。

步驟 6.在Default Gateway Address欄位中,輸入公有地址1的預設網關。

步驟 7.在DNS伺服器(必需)中輸入第一個DNS IP地址。

步驟 8.在2欄位中輸入第二個DNS IP地址。

步驟 9.按一下Save Settings儲存更改。



步驟 10.要檢視所做的更改,請按一下主頁籤中的System Summary,然後檢視在「Network Setting Status」中進行的更改。

從專用IP新增一對一NAT到公共IP

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 Y	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
		ic Placess.
	Delete selected range Add New	
		Cisco Systems
	Save Settings Cancel Changes	all hand has

步驟 11.在Web配置實用程式中,選擇Setup >一對一NAT。One-to-One NAT頁面開啟。

步驟 12.在一對一NAT欄位中,選中Enable。

步驟 13.在Private Address Begin欄位中,輸入192.168.0.100。

步驟 14.在Public Begin Range中,輸入Public Address 1。

步驟 15.將範圍長度輸入1。

步驟 16.按一下Update this Range。

步驟 17.在Private Address Begin中,輸入 192.168.0.101。

步驟 18.在Public Begin Range中,輸入Public Address 2。

步驟 19.將範圍長度輸入1。

步驟 20.按一下Update this Range。

步驟 21.在Private Address Begin中,輸入192.168.0.102。

步驟 22.在Public Begin Range中,輸入Public Address 3。

步驟 23.將範圍長度輸入1。

步驟 24.按一下Update this Range。

步驟 25.在Private Address Begin中,輸入192.168.0.26。

步驟 26.在Public Begin Range中,輸入Public Address 4。

步驟 27.將範圍長度輸入1。

步驟 28.按一下Update this Range。

步驟 29.按一下Save Settings儲存更改。

設定VLAN上埠的優先順序

							10/100 8	port VPN Rou	ter RV082
Port Management	System Summary	Setup	DHCP	System Janagement	Port Management	Firewall Prot	ectLink VPN	Log Wizard	j 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 G	Full 🗹 Enable	VLAN1	Port ID:
	2	LAN		High 💌	@ 10M @ 100M	G Half G	Full 🔽 Enable	VLAN1 -	They are port 1~8, DMZ/Interpet and Internet
	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 G	Full 🔽 Enable	VLAN1 -	DMZ, WAN1.
	6	LAN	Г	High 💌	@ 10M @ 100M	G Half G	Full 🔽 Enable	VLAN1 -	Disable:
	_ 7	LAN		High 💌	@ 10M @ 100M	C Half C	Full 🔽 Enable	VLAN1 -	Check the box, the port will be disabled. It is a per-port
	8	LAN		High 💌	@ 10M @ 100M	C Half G	Full 🔽 Enable	VLAN1 -	setting.
	DMZ/Internet	DMZ		a starter	@ 10M @ 100M	C Half G	Full Full Enable		More
	Internet	WAN			@ 10M @ 100M	C Half G	Full I Enable		

步驟 30.在Web配置實用程式中,選擇Port Management > Port Setup。Basic Per Port Config.頁面隨即開啟:

LINKSYS A Division of Cisco Systems, Inc										Firmware Version: 2.0.0.19-tm
								10/100 8	port VPN Rou	ter RV082
Port Management	System Summary	Setup	DHCP	System Management	Port Management	Firewall	Protect	Link VPN	Log Wizard	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 V	Port ID:
	2	LAN		High 💌	C 10M @ 100M	Half	@ Full	Enable	VLAN1 -	They are port 1~8, DMZ/Internet and Internet.
	3	LAN		High 💌	@ 10M @ 100M	Half	@ Full	Enable	VLAN1 V	sector in the sector is
	4	LAN		High 💌	C 10M @ 100M	C Half	@ Full	Enable	VLAN1 V	Interface: 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	Half	@ Full	Enable	VLAN1 -	Check the box, the port will be disabled. It is a per-port
	8	LAN		High 💌	@ 10M @ 100M	Half	@ Full	Enable	VLAN1 V	setting.
	DMZ/Internet	DMZ		and the second second	@ 10M @ 100M	Half	@ Full	Enable		More
	Internet	WAN			@ 10M @ 100M	Half	@ Full	Enable		
						Sau	ve Settino	18 Canc	el Changes	Cisco Systems attilizadattilizad

·埠ID(1-7) — 從下拉選單中選擇「優先順序」作為高。

								10/100 8	port VPN Rout	er RV082
Port Management	System Summary	Setup	DHCP	System Management	Port Management	Firewall	Protecti	ink VPN	Log Wizard	Support Logout
	Port Setup	Port Status								
Basic Per Port Config.										SITEMAP
	Port ID	Interface	Disable	Priority	Speed	Dup	olex	Auto Neg.	VLAN	
	1	LAN		High 💌	@ 10M @ 100M	Half	@ Full	Enable	VLAN1 V	Port ID:
	2	LAN		High 💌	@ 10M @ 100M	Half	@ Full	Enable	VLAN1 V	They are port 1~8, DMZ/interpet and interpet
	3	LAN		High 💌	@ 10M @ 100M	Half	@ Full	Enable	VLAN1 -	
	4	LAN		High 💌	@ 10M @ 100M	C Half	@ Full	Enable	VLAN1	Interface: They are LAN, WAN2 or
	5	LAN		High 💌	C 10M @ 100M	C Half	G Full	Enable	VLAN1 V	DMZ, WAN1.
	6	LAN	Г	High 🔻	C 10M @ 100M	C Half	@ Full	Enable	VLAN1 ·	Disable:
	_ 7	LAN	Г	High 💌	@ 10M @ 100M	C Half	@ Full	Enable	VLAN1 ·	Check the box, the port w
	8	LAN		Normal -	© 10M @ 100M	C Half	@ Full	Enable	VLAN8	setting.
	DMZ/Internet	DMZ		_	@ 10M @ 100M	Half	@ Full	Enable		More
	Internet	WAN			@ 10M @ 100M	Half	@ Full	Enable	1	
										CISCO SYSTEMS
						Sav	ve Setting	is Canc	el Changes	

·埠ID 8 — 選擇優先順序為Normal,並在VLAN欄位中選擇VLAN8。

步驟 31.按一下Save Settings儲存更改。

VLAN8的頻寬管理

上游設定

A Division of Cisco Systems, Inc.										Firmware Versio	n: 2.0.0.19-tm
Sustam					-		10/10	00 8-port V	PN Router	R	/082
Management	System Summary	Setup	DHCP	System Management	Port Management	Firewall Pro	tectLink VPN	Log	Wizard	Support	Logout
	Dual-WAN	Bandwidth N	lanagemen	t SNMP I	Diagnostic Facto	ory Default Fir	mware Upgrade	More.	>>		
Bandwidth Management										SI	TEMAP
Bandwidth				The Maximu	m Bandwidth prov	vided by ISP				Bandwidth Mar refers to the c	nagement
			h	nterface	Upstream (Kbit/Sec)	Downstr (Kbit/Se	ream ec)			of a network to better service	o provide to selected
				WAN1	1024	15360				One is Rate Co minimum bandy	ntrol for width
Bandwidth Management Type				Туре: ⓒ	Rate Control C	Priority			_	and maximum ((limt bandwidt) by Service and Address. The other is Pr services. Both functiona control inbound Outbound traff More	h) b) lorlP lorty for littles can d or fic.
Rate Control		n M Al Traffic Al Traffic	nterface: Service: IP: Nrection: ini. Rate: Enable: TCP3UDP/ TCP3UDP/	✓ WAN	1 : [TCP&UDP/1~65535 ervice Management . 168 . 0 eam . 168 . 0 Kbit/sec Mass Mass Mass Mass Mass Mass Mass Mass Mass Mass Mass Mass Mass	. 26 to . Rate: 409 	26 Kbil/sec /sec->WAN1 >WAN1				

步驟 32.在Web配置實用程式中,選擇系統管理>頻寬管理。將開啟Bandwidth Management頁面:



步驟 33.在Bandwidth Management欄位中,按一下Rate Control。

A Division of Cisco Systems, Inc.										Firmware Versio	on: 2.0.0.19-tm
Custom								10/100 8-р	ort VPN Route	er R	V082
Management	System Summary	Setup	DHCP	System Management	Port Management	Firewall P	ProtectLink	VPN Lo	g Wizard	Support	Logout
	Dual-WAN	Bandwidth M	anagemen	t SNMP	Diagnostic Fact	ory Default	Firmware Upg	rade	More >>		
Bandwidth Management									- 1	SI SI	TEMAP
Bandwidth				The Maximu	um Bandwidth pro	vided by ISP				Bandwidth Ma	anagement
			1	nterface	Upstream (Kbit/Sec)	Down	stream			of a network better service	to provide to selected
				WAN1	1024	1536	0			One is Rate C minimum band	ic. ontrol for Iwidth
Bandwidth Management Type				Туре: ⓒ	Rate Control	Priority				and maximum (limit bandwid by Service an Address. The other is P services. Both functions control Inbour Outbound traf	bandwidth th) id/or IP triority for alities can id or ffic.
Rate Control		All Traffic [Service: IP: irection: ini. Rate: Enable: TCP&UDP/	✓ WAN All Traffic 192 Upstread ✓ ✓ ✓ ✓ 1~65535]->192.10	1 c [TCP8UDP/1~65533 ervice Management . 168 . 0 am Kbit/sec Ma pdate this Application 68.0.26-28(Upstream	5) • . [26 x. Rate: [n)=>~200Kbit/se	to 26 200 Kbi ec->WAN1	l/sec		1000 500	

步驟 34.在Interface欄位中,檢查interface欄位中的WAN1。

步驟 35.在「服務」下拉選單中,選擇All Traffic[TCP&UDP/1~65535]。

步驟 36.在IP欄位中,在第一個欄位中輸入26,在下一個欄位中輸入26。

步驟 37.在「Direction」下拉選單中,選擇Upstream。

步驟 38.輸入最大值。速率是200 kbit/sec。

步驟 39.在Enable欄位中,勾選Enable。

步驟 40.按一下Update this application。

下游設定



步驟 41.在Interface欄位中,檢查interface欄位中的WAN1。

步驟 42.在「服務」下拉選單中,選擇All Traffic[TCP&UDP/1~65535]。

步驟 43.在IP欄位中,在第一個方塊中輸入26,在下一個方塊中輸入26。

步驟 44.在「Direction」下拉選單中,選擇Downstream。

步驟 45.輸入最大值。速率是4096 Kbit/sec。

步驟 46.在Enable欄位中,勾選Enable。

步驟 47.按一下Update this application。

步驟 48.按一下Save Settings儲存更改。

如何檢查2個VLAN和連線埠的連線埠狀態

VLAN 1-7的埠狀態

步驟 49.從下拉選單中選擇1-7之間的任何埠ID。此時會選擇連線埠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				Link Status (up or down),
	Speed Status	100 Mbps				Port Activity(on or off), Priority (High or Normal),
	Duplex Status	Ful				Speed Status(10Mbps or 100Mbps) Dunley Status
	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

註:在摘要和統計資訊下,驗證以下內容。

·驗證優先順序是高。

·檢驗VLAN是VLAN1。

·在統計資訊欄位中,確認接收的資料包和位元組計數、傳輸的資料包和位元組計數以及錯誤 計數。

VLAN 8的狀態

					10/100	8-port V	PN Router	R	V082
Port Management	System Summary Setup DHCP	System Port Management Management	Firewall	ProtectLink	VPN	Log	Wizard	Support	Logout
	Port Setup Port Status								
	Port ID : 8							SI SI	TEMAP
Port8 Status									
Summary	Туре	10Base-T / 100Base-TX						Sers can ch o from pull do ee the statu:	oose the Port win menu to s of the
	Interface	LAN						elected port.	
	Link Status	Up						summary ta	ble, it will
	Port Activity	Port Enabled						ort selected	by users,
	Priority	Normal						uch as Type ink Status (u	, interface, p or down),
	Speed Status	100 Mbps						ort Activity(o hiority (High)	in or off), or Normal),
	Duplex Status	Full						peed Status 00Mbos), Du	(10Mbps or plex Status
	Auto negotiation	Enabled						half or full), A	uto
	VLAN	VLANS						LAN (VLAN	group).
Statistics	Dard Deceive Decivel Count					343666		lore	
0.00000	Port Receive Packet Byte Count				2	15362136	5		
	Port Transmit Packet Count					271066	8		
	Port Transmit Packet Byte Count				1	33548752	2		
	Port Packet Error Count					(0		
							- 1	te	CO SYSTEMS

步驟 50.從下拉選單中選擇Port ID: 8。

註:特別是選擇埠8以檢視其設定是否正確。

在summary和statistics下,驗證以下內容。進行以下驗證以確認連線埠是否已正確設定:

·驗證優先順序是正常。

·檢驗VLAN是VLAN8。

·在統計資訊欄位中,驗證接收的資料包和位元組計數、傳輸的資料包和位元組計數以及錯誤 計數。

如何檢查VLAN之間的連通性

步驟 51.在Web配置實用程式中,選擇System Management > Diagnostic。Diagnostic頁面隨 即開啟:

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

步驟 52.按一下「Ping」。

Diagnostic	
ONS Name Lookup	e 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

步驟 53.在Ping主機或IP地址欄位中,輸入192.168.0.26,然後點選Go。

註:狀態顯示測試失敗,資料包丟失率為100%。這表示連線到VLAN1(埠1-7)中埠的任何 主機都無法ping通RV082埠8上VLAN 8中的IP 192.168.0.26。

Diagnostic	
ONS Name Lookup	Ping
Ping host or IP address :	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

步驟 54.再次在Ping主機或IP地址欄位中輸入ISP地址,然後單擊Go。

註:狀態顯示測試成功,資料包丟失率為0%。這意味著192.168.0.1(RV082)可以到達ISP。

es Command Prompt	_ D ×
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 ITL=53 Reply from 74.125.87.105: bytes=32 time=38ms ITL=53 Reply from 74.125.87.105: bytes=32 time=38ms ITL=53 Reply from 74.125.87.105: bytes=32 time=38ms ITL=53	
Ping 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:\>	
	-

上圖顯示,RV082上的客戶端可以訪問www.google.com。連線到消費者路由器的LAN並從該 路由器的DHCP獲取IP的主機可以ping並訪問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

使用者路由器的LAN中的主機無法ping通VLAN1中的RV082的私有IP。

關於此翻譯

思科已使用電腦和人工技術翻譯本文件,讓全世界的使用者能夠以自己的語言理解支援內容。請注 意,即使是最佳機器翻譯,也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準 確度概不負責,並建議一律查看原始英文文件(提供連結)。