

# LAB - VIÉT ACCESS-CONTROL LIST (ACL) POLICY TRONG CISCO SD-WAN

I. Sơ đồ



# II. Yêu cầu kỹ thuật

- Viết 1 chính sách Localized Data Policies: ACL\_BLOCK\_ICMP\_TELNET nhằm mục đích chặn ping từ router R1, R2 đến thiết bị Host-1-1, và Host-1-2 không thể telnet đến các thiết bị router R1, R2 ở Site 2.
- Đẩy cấu hình chính sách Policy xuống các thiết bị vEdge-Site1, vEdge1-Site2, vEdge2-Site2.
- Kiểm tra ping từ router R1, R2 đến thiết bị Host-1-1, và thiết bị Host-1-2 telnet đến router R1, R2 sau khi áp dụng policy.

### III. Các bước thực hiện

#### 3.1. Cấu hình ACLs thông qua vManage và Localized Data Policies

• Tao localized Policy: ACL BLOCK ICMP TELNET

Đầu tiên ta vào giao diện vManage > Configuration > Policies > Localized Policy > Add Policy

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Ở phần Create Groups of Internet, ta chọn phần Data Prefix > New Data Prefix List để tạo các data prefix list như sau:

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Dải ip của thiết bị Host-1-2:

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#### **R1** và **R2**

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Ở phần Configure Access Control Lists > Add Access Control List Policy > Add IPv4 ACL Policy để tạo ACL Policy:

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Localized Policy > Add Policy  Create Groups of Interest  Configure Forwarding Classes/QoS	Configure Access Control Lists	Configure Route Policy      Policy Overview	ĺ
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Add Access Control List Policy      Add Device Access Policy      (Add an Access       Add IPv4 ACL Policy     Add IPv6 ACL Policy     Import Existing       Import Existing     Description     Median	List and configure Match and Actions)	Total Rows: 0 Updated By Last Updated	C \$
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Trong phần Add IPv4 ACL Policy, ta lần lượt cấu hình như sau:

Name: Block\_ICMP\_R1\_R1\_to\_Host-1-1

Description: Block\_ICMP\_R1\_R1\_to\_Host-1-1

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$\equiv$ Cisco SD-WAN	Select Resource Group •		Policies				0 4
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	Access Control List					Access (	Control List
Access Control List	Match Conditions			Actions			
Default Action	Source Data Prefix List:	R1		Drop	Enabled		
	Source: IP						
•	Match Conditions Source Data Prefix List: Source: IP	R2		Actions Drop	Enabled		
		Cancel					·
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#### Sau đó chọn Add ACL Sequence để tạo ACL như sau:

	Match Conditions		Actions	
	Source Data Prefix List:	R1	Drop	Enabled
	Source: IP			
	Destination Data Prefix List:	Host-1-1		
	Destination: IP			
	Protocol:	1		
	ICMP Message			
~				

#### Cấu hình xong tiến hành chọn Save Match And Actions

≡	Match Conditions		Actions	
	Source Data Prefix List:	R2	Drop	Enabled
	Source: IP			
	Destination Data Prefix List:	Host-1-1		
	Destination: IP			
	Protocol:	1		
	ICMP Message			

#### Cấu hình xong tiến hành chọn Save Match And Actions

#### **Ö muc Default Action > Accept**

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≡ Cisco SD-V	VAN 🔿 Select Resource Group•	Policies	$\bigcirc \equiv \odot \bigcirc$
View IPV4 ACL Policy			
Name*	Block_ICMP_R1_R2_to_Host-1-1		
Description*	Block_ICMP_R1_R2_to_Host-1-1		
Access Control List	Default Action	Enabled	<b>^</b>
Default Action			
		Cancel	
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### Sau đó Save Match And Actions > Save ACL Policy

Tiếp theo ta chọn Add IPv4 ACL Policy, ta lần lượt cấu hình như sau:

#### Name: Block\_Telnet\_Host-1-2\_to\_R1\_R2



**ĐT**: (028) 35124257 | **Hotline**: 0933427079 **Email**: vnpro@vnpro.org

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#### Description: Block\_Telnet\_Host-1-2\_to\_R1\_R2

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≡ Cisco SD-WAN	♦ Select Resource Group		Policies		$\bigcirc \equiv \odot \Diamond$
View IPV4 ACL Policy					
Name* Block_	Telnet_Host-1-2_to_R1_R2_1				
Description* Block_	Telnet_Host-1-2_to_R1_R2_1				
	Access Control List				Access Control List
Access Control List					
Default Action	Source Data Prefix List:	Host-1-2	Drop	Enabled	
	Source: IP				
	2		Actions		
	Source Data Prefix List:	Host-1-2	Drop	Enabled	
	v				
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#### Sau đó chọn Add ACL Sequence để tạo ACL như sau:

) =	Match Conditions		Actions	
	Source Data Prefix List:	Host-1-2	Drop	Enabled
	Source: IP			
	Destination Data Prefix List:	R1		
	Destination: IP			
	Destination: Port	23		
	Protocol:	6		
	ICMP Message			
~				

#### Cấu hình xong tiến hành chọn Save Match And Actions

=	Match Conditions		Actions	
	Source Data Prefix List:	Host-1-2	Drop	Enabled
	Source: IP			
	Destination Data Prefix List:	R2		
	Destination: IP			
	Destination: Port	23		
	Protocol:	6		
	ICMP Message			
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#### Cấu hình xong tiến hành chọn Save Match And Actions



#### **Ö muc Default Action > Accept**

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		Policies	$\bigcirc = \bigcirc \downarrow$
View IPV4 ACL Policy			
Name*	Block_Telnet_Host-1-2_to_R1_R2_1		
Description*	Block_Telnet_Host-1-2_to_R1_R2_1		
	Default Action		
** Access Control List	Accept	Enabled	^
Default Action			
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Sau đó Save Match And Actions > Save ACL Policy Ở phần Policy Overview

Policy Name: ACL\_BLOCK\_ICMP\_TELNET Policy Description: ACL\_BLOCK\_ICMP\_TELNET

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E Cisco SD-WA	AN 🚫 Select Resource Group •	Policies	$\bigcirc \equiv \odot \Diamond$
Create G	olicy roups of Interest Configure Forwarding Classe tion for your localized master policy	s/QoS 🥥 Configure Access Control Lists 🥥 Configure	e Route Policy O Policy Overview
Policy Name*	ACL_BLOCK_ICMP_TELNET		
Policy Description*	ACL_BLOCK_ICMP_TELNET		
) Netflow 🗌 Netflow II	Pv6 Application Application IPv6 Cloud Qo How often packet flows are logged (maximum 214748364)	S Cloud QoS Service side Implicit ACL Logging	
NF IPv4 Max Cache Entries	Enter the cache size (range 16 - 2000000)	O	
NF IPv6 Max Cache Entries	Enter the cache size (range 16 - 2000000)	0	

Cuối cùng tiến hành Save Policy

# 3.2. Thêm ACL Policy vào thiết bị và Port.

# Add policy vào thiết bị

Ở giao diện vManage, **Configuration > Templates** (tab Device).

Ta lần lượt chọn lần lượt các **Device Template > Edit** như sau:

Device Template: vEdge\_VPN11\_Ge0/2\_VRRP



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∭ Tools >	Certificates						V	
්රා Maintenance >	Templates				As	of: Jul 06, 2023 04:51	I PM	3
Administration >	Policies	Devices Devices Up t	o Date Nun	mber of Feature Profiles	Updated By	Last Updated On 🦆	Actions	1
J回 Workflows >	Security	NO Gata available						1
- Reports	Network Hierarchy Unified Communications							- 1
C Analytics >	Cloud onRamp for SaaS							- 1
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Create Template ~								_
Template Type Non-Default 🗸						Total Rows: 3	C 49	}
Name Description Type Dev	rice Mode Device Role Resource Group	Feature Templates	Draft Mode	Devices Attached	Updated By	Last Updated		- 1
vEdge vEdge_Site1 Feature vEd	Ige Cloud SDWAN Edge global	16	Disabled	1	admin	06 Jul 2023 2:27		_
vEdge vEdge_VPN11 Feature vEd	ige Cloud SDWAN Edge global	13	Disabled	2	admin	06 Jul 2023 2:27		- 1
vSmar vSmart_Template Feature vSn	nart SDWAN Edge global	9	Disabled	1	admin	06 Jul 2023 2:26	•••	
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Ở mục Additional Templates, ta vào mục Policy và chọn ACL\_BLOCK\_ICMP\_TELNET (đã tạo trước đó)

mPro		CÔNG TY TNHH TƯ VẤN T ĐC: 276 - 278 Ung Văn Khiên ĐT: (028) 35124257   Hotime:	<b>VÀ Dị</b> <b>RUNG T</b> , P.25, Q.1 09334270	CH V FÂM T Binh TI 079 En	<b>U CHU</b> FIN H nanh, Tj nail: vnj	J <b>YÊN</b> QC VN p Hồ Ch pro@vnj
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dae 🙆 Bridge 💌						
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# Sau đó tiến hành Update

Thiết bị vEdge1-Site2, vEdge2-Site2 đã được áp cấu hình Policy xuống thành công.

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Q	Search							Total Rows: 2	g	7 \$
>	Status	Message Done - Push Feature T	Chassis Number 5316bef9-7742-d0c9	VEdge Cloud	Hostname vEdge2_Site2	System IP 4.1.1.1	Site ID	vManage IP		
>	Success	Done - Push Feature T	168a2add-2c4f-fcb1	vEdge Cloud	vEdge1_Site2	3.1.1.1	2	1.1.1.1		

Tương tự cho vEdge-Site1 ở site 1



#### Add Policy vào Port Ge0/2 ở site 2

Ở giao diện vManage, **Configuration > Templates** (tab Feature).

Và Edit các Template của các port sau

vEdge\_VPN11\_Ge0/2\_VRRP

CÔNG TY TNHH TƯ VÁN VÀ DỊCH VỤ CHUYÊN VIỆT TRUNG TÂM TIN HỌC VNPRO

ĐC: 276 - 278 Ung Văn Khiêm, P.25, Q.Bình Thạnh, Tp Hồ Chí Minh

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		Co	nfiguration Groups	Feature Profiles Device	e Templates	re Templates						
Q Search										7		
Add Template												
Template Type No	on-Default 🗸							Total Rows: 18	g	¢		
Name	Description	Туре	Device Model	Device Templates	Resource Group	Devices Attached	Updated By	Last Updated		_		
vEdge_VPN11	vEdge_VPN11_Ge0/2_VR	WAN Edge Inter	vEdge Cloud	1	global	2	admin	06 Jul 2023 2:5	0			
vEdge_VPN512	vEdge_VPN512	WAN Edge VPN	vEdge Cloud	2	global	3	admin	05 Jul 2023 4:1	7 •••			
vSmart_VPN51	vSmart_VPN512_eth1	vSmart Interface	vSmart	1	global	1	admin	05 Jul 2023 4:1	7 •••			
vEdge_VPN512	vEdge_VPN512_eth0	WAN Edge Inter	vEdge Cloud	2	global	3	admin	05 Jul 2023 4:1	7 •••			
vEdge_VPN11	vEdge_VPN11	WAN Edge VPN	vEdge Cloud	2	global	3	admin	05 Jul 2023 4:1	7 •••			
vSmart_VPN512	vSmart_VPN512	vSmart VPN	vSmart	1	global	1	admin	05 Jul 2023 4:1	7 •••			
vEdge_VPN0_G	vEdge_VPN0_Ge0/0_Inte	WAN Edge Inter	vEdge Cloud	2	global	3	admin	05 Jul 2023 4:1	7 •••			
vEdge_VPN0	vEdge_VPN0	WAN Edge VPN	vEdge Cloud	2	global	3	admin	05 Jul 2023 4:1	7 •••			
	vEdge_VPN0_Ge0/1_MPLS	WAN Edge Inter	vEdge Cloud	2	global	3	admin	05 Jul 2023 4:1	7 •••			
vEdge_VPN0_G												

O phân mục ACL/QoS ta edit các thông sô như sau:

V-D-

Block IC	CMP R1	R2 to	Host-1-1	(đã tao ACL	ở trên)
				· ·	,

Configuration Groups Feature Profiles Device Templates Feature Templates   ature Template > VPN Interface Ethernet > vEdge_VPN11_Geo/2_VRRP     ACL/QOS     Shaping Rate (Kbps)   QoS Map   Rewrite Rule   Ingress ACL - IPv4     Image: Configuration Groups     Feature Profiles   Device Templates   Feature Templates   Feature Templates     Feature Templates	
ACL/QOS ACL/QOS Shaping Rate (Kbps) O  C  C  C  C  C  C  C  C  C  C  C  C	
ACL/QOS       Shaping Rate (Kbps)       QoS Map       QoV       Rewrite Rule       Ingress ACL - IPv4	
Shaping Rate (Kbps)     Image: Comparison of the second seco	
Shaping Rate (Kbps)     Image: Comparison of the second seco	
QoS Map     Image: Comparison of the second se	
Rewrite Rule Or Ingress ACL - IPv4 On Off	
Ingress ACL - IPv4	
IPv4 Ingress Access List Block_JCMP_R1_R2_to_Host-1-	
Egress ACL - IPv4	
Ingress ACL - IPv6 On Off	

Sau đó chọn Update > Next để update template xuống hai vEdge:

CÔNG TY TNHH TƯ VÁN VÀ DỊCH VỤ CHUYÊN VIỆT TRUNG TÂM TIN HỌC VNPRO ĐC: 276 - 278 Ung Văn Khiêm, P.25, Q.Bình Thạnh, Tp Hồ Chí Minh DT: (028) 35124257 | Hotline: 0933427079 Email: vnpro@vnpro.org ~ - 0 X plates Cisco 🗄 🗙 🛛 🕂 ditte Co C A Not secure | https://192.168.1.1:8443/#/app/config/template/device/configure/af54c6fe-9221-463a-9d7c-b5354f3164b1 🖻 🖈 🖬 😩 : ← ≡ Cisco SD-WAN Select Resource Group Templates Device Template | vEdge\_VPN11\_Ge0/2\_VRRP Q Search Total Rows: 2 🕋 🛓 S... Chassis Number IPv4 Address(vpn11\_ge0/2\_if\_ipv4\_address) System IP Hostname Group ID(vpn\_if\_vrrp\_grpid) Priority(vpn S316bef9-7742-d0c9-1048-df6288bb4e... 4.1.1.1 vEdge2\_Site2 192.168.1.1/24 100 150 ••• 168a2add-2c4f-fcb1-6139-1d99df86e22e 3.1.1.1 vEdge1\_Site2 192.168.1.1/24 100 120 ....

Next	Cancel	
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Configure Devices	×	
Committing these changes affect the configuration on 2 devices. Are you sure you want to proceed?	_	
Confirm configuration changes on 2 devices.		
OK Cancel		

Sau đó áp dụng cấu hình thành công xuống cho vEdge1-Site2, vEdge2-Site2

nPro						<b>ĐC</b> : 276 - 278 Un <b>ĐT</b> : (028) 351242	g Văn Khiêm, P.25, Q.Binh Thạnh, Tp Hồ C 57   Hotline: 0933427079 Email: vnpro@v:
Configuration - Templates Ci	sco : × +						~ - <b>a</b> ×
→ C ▲ Not secu	re https://192.168.1.1:8443/#	/app/device/status?activity	=push_file_template_	_configuration&pid=push_fi	eature_template_config	uration-d633eb88-38de-	4b2b-870c-3d07 🖻 🚖 🚺 🚨 🗄
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Success	Done - Push Feature T	5316bef9-7742-d0c9	vEdge Cloud	vEdge2_Site2	4.1.1.1	2	1.1.1.1
Success	Done - Push Feature T	168a2add-2c4f-fcb1	vEdge Cloud	vEdge1 Site2	3.1.1.1	2	1.1.1.1
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 vEdge\_VPN12
 vEdge\_VPN vEdge Cloud
 0
 global
 0

 vEdge\_VPN12\_...
 vEdge\_VPN12\_Ge0/3
 WAN Edge VPN
 vEdge Cloud
 0
 global
 0

Device Model

vSmart

vEdge Cloud

Ở phần mục ACL/QoS ta edit các thông số như sau:

Туре

vSmart VPN

OSPF

vSmart Interface vSmart

vEdge\_VPN0\_G... vEdge\_VPN0\_Ge0/1\_MPLS WAN Edge Inter... vEdge Cloud

vEdge\_VPN11\_... vEdge\_VPN11\_Ge0/2 WAN Edge Inter... vEdge Cloud

vEdge\_Site1\_V... vEdge\_Site1\_VPN11\_DH... DHCP Server vEdge Cloud

vEdge\_VPN11\_... vEdge\_VPN11\_Ge0/3 WAN Edge Inter... vEdge Cloud

Name

Description

vSmart\_VPN0 vSmart\_VPN0

vSmart\_VPN0\_... vSmart\_VPN0\_eth0

vEdge\_OSPF vEdge\_OSPF

Device Templates

2

0

Resource Group Devices Attached

global

global

global

global

global

global

global

3

1

0

1

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Updated By

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E Cisco SD-WAN	Select Resource Group			Templa	ates		$\bigcirc$	$\equiv$	0	Q	
	Config	uration Groups	Feature Profiles	Device Templates	Feature Templates						
Feature Template > VPN Interface	Ethernet > vEdge_VPN11_Ge0/3										
											^
V ACL/QOS											
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Shaping Rate (Kops)	0										
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Ingress ACL - IPv4	•	O On	⊖ Off								
IPv4 Ingress Access List		Block Telnet	Host-1-2 to R1 F								
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Egress ACL - IPv4	$\odot$	On On	O Off								
			Cancel	Update							
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Configuration - Templates Cisco 🗄 🗙	+						$\sim$	-	٥	>	×
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E Cisco SD-WAN	Select Resource Group			Templ	ates		$\bigcirc$	=	0	$\wedge$	

Ť					0
Template vEdge_Site1					
2 Search					
					Total Rows: 1
Chassis Number	System IP	Hostname	IPv4 Address(vpn11_ge0/3_if_ipv4_address)	Address Pool(dhcp_address_pool)	Default
0b0f3c75-47c5-5e73-a557-9cf97c754	274 2.1.1.1	vEdge_Site1	192.168.11.254/24	192.168.11.0/24	192.16{ •••
			Next Cancel		



Sau đó áp dụng cấu hình thành công xuống cho vEdge-Site1

110 (	Configu	uration - Templates Cisco	× +						~	· -		0	×
~	$\rightarrow$ (	C 🔺 Not secure	https://192.168.1.1:8443/#	/app/device/status?activity	=push_file_template_con	figuration&pid=push_fea	ture_template_configuration	n-dc8bd6cc-14a8-42dc-a99	17-99a0c Ľ	2 \$			:
=	≡ C	Sisco SD-WAN	⑦ Select Res	ource Group+					$\sim$	≡	?	) (,	7
P	Push Feature Template Configuration   😔 Validation Success										192.168.1.3		200
Т	otal Ta	ask: 1   Success : 1											1
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3	> (	Success	Done - Push Feature T	0b0f3c75-47c5-5e73	vEdge Cloud	vEdge_Site1	2.1.1.1	1	1.1.1.1		Т		
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	Cź	ấu hình T	elnet cho	router R1,	R2								

#### **R1**

username admin password admin





line vty 0 4 transport input telnet login local exit **R2** username admin password admin line vty 0 4 transport input telnet login local exit

# IV. Kiểm tra

#### Kiểm tra Ping

R1, R2 ping sang các thiết bị ở Site 1, Host-1-1 và Host-1-2

```
Rl>ping 192.168.10.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.10.2, timeout is 2 seconds:
UUUUU
Success rate is 0 percent (0/5)
Rl>ping 192.168.11.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.11.2, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 61/66/72 ms
Rl>ping 192.168.10.254
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.10.254, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 52/58/61 ms
Rl>ping 192.168.11.254
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.11.254, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 52/58/61 ms
Rl>ping 192.168.11.254
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.11.254, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 51/55/62 ms
Rl>
```



R2>ping 192.168.10.2 Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 192.168.10.2, timeout is 2 seconds: Success rate is 0 percent (0/5) R2>ping 192.168.11.2 Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 192.168.11.2, timeout is 2 seconds: Success rate is 80 percent (4/5), round-trip min/avg/max = 63/69/71 ms R2>ping 192.168.10.254 Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 192.168.10.254, timeout is 2 seconds: 11111 Success rate is 100 percent (5/5), round-trip min/avg/max = 50/51/56 ms R2>ping 192.168.11.254 Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 192.168.11.254, timeout is 2 seconds: Success rate is 100 percent (5/5), round-trip min/avg/max = 46/57/62 ms 32>

#### Kiểm tra telnet

Trên Host-1-1 ta tiến hành telnet tới R1, R2 Telnet tới thiết bị R1, R2



Trên Host-1-2 ta tiến hành telnet tới R1, R2 Telnet tới thiết bị R1, R2

