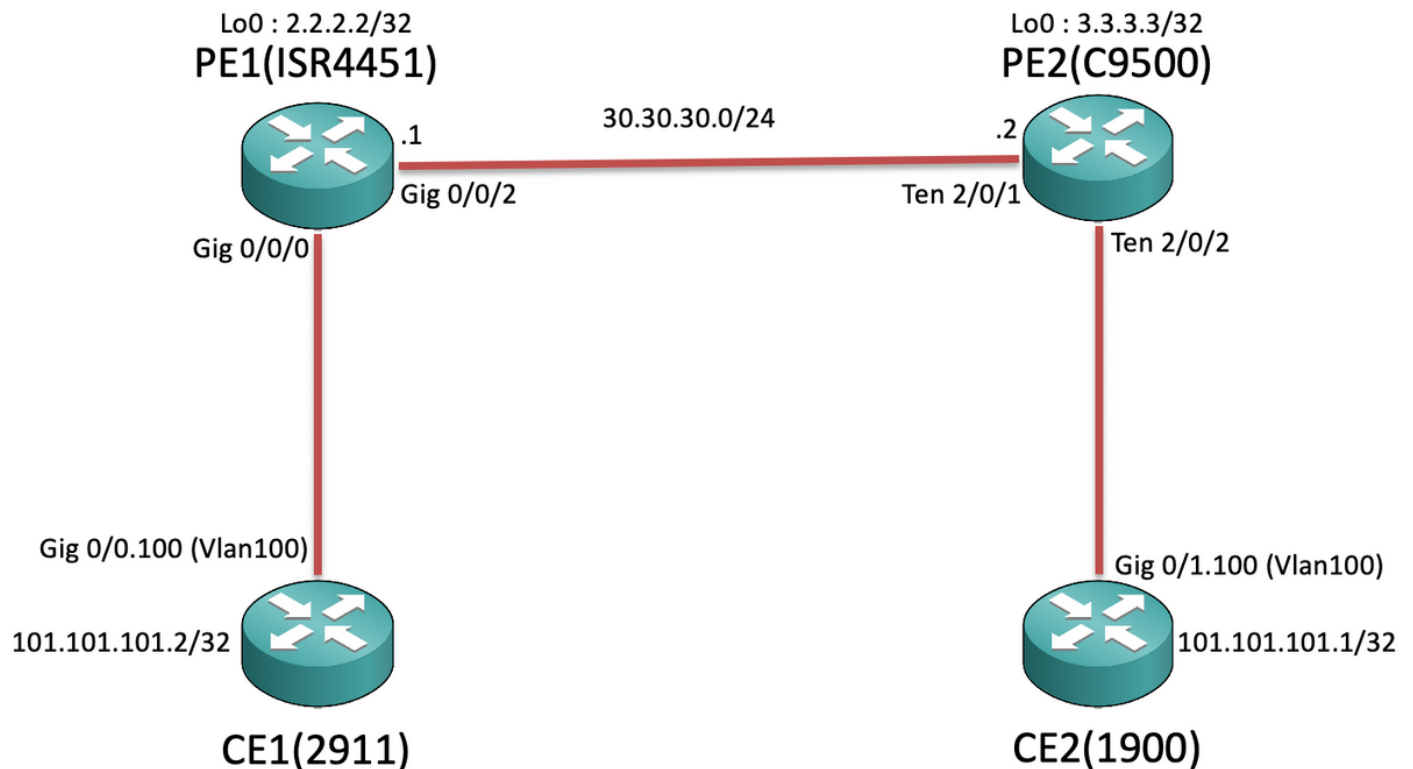


ةمروع دمل VC لي صافت/عاون أو VPLS قاي س مادخت سا ني وكت لا حضوي

ةكبش ل ل يطي طخت ل ا م س ر ل ا



ت ا ن ي و ك ت ل ا

CE1 و CE2 :

<pre> <#root> CE1#sh run Building configuration... Current configuration : 105 bytes ! interface GigabitEthernet0/0 no ip address duplex auto speed auto ! interface GigabitEthernet0/0.100 encapsulation dot1Q 100 ip address 101.101.101.2 255.255.255.0 ! </pre>	<pre> <#root> CE2#sh run Building configuration... Current configuration : 1718 bytes ! interface GigabitEthernet0/1 no ip address duplex auto speed auto ! interface GigabitEthernet0/1.100 encapsulation dot1Q 100 ip address 101.101.101.1 255.255.255.0 ! </pre>
---	--

PE1 و PE2 :

<pre> <#root> </pre>	<pre> <#root> </pre>
----------------------------	----------------------------

<pre> PE1#sh run Building configuration... Current configuration : 5049 bytes ! pseudowire-class VPLS100 encapsulation mpls no control-word ! !2 vfi 100 manual vpn id 100 bridge-domain 100 mtu 9180 neighbor 3.3.3.3 pw-class VPLS100 ! interface Loopback0 ip address 2.2.2.2 255.255.255.255 ! interface GigabitEthernet0/0/0 mtu 9180 no ip address negotiation auto service instance 100 ethernet encapsulation dot1q 100 rewrite ingress tag pop 1 symmetric bridge-domain 100 ! ! interface GigabitEthernet0/0/2 ip address 30.30.30.1 255.255.255.0 negotiation auto mpls ip ! ip route 3.3.3.3 255.255.255.255 30.30.30.2 ! mpls ldp router-id Loopback0 force ! </pre>	<pre> PE2#sh run Building configuration... Current configuration : 10722 bytes ! ip routing ! pseudowire-class VPLS100 encapsulation mpls no control-word ! !2 vfi 100 manual vpn id 100 neighbor 2.2.2.2 pw-class VPLS100 ! interface Loopback0 ip address 3.3.3.3 255.255.255.255 ! interface TenGigabitEthernet2/0/1 no switchport ip address 30.30.30.2 255.255.255.0 mpls ip ! interface TenGigabitEthernet2/0/2 switchport trunk allowed vlan 100 switchport mode trunk ! interface Vlan100 no ip address xconnect vfi 100 ! ip route 2.2.2.2 255.255.255.255 30.30.30.1 ! mpls ldp router-id Loopback0 force ! </pre>
--	---



قفدت ةطقن) EFP ةمدخ تالېثم ىلع لمعت ىتال ASR1000 و ISR4K ةزهجأ ىلع :ةطحال م
 (ةمدخ لىثم) SI نمض "rewrite ingress tag pop 1 symmetric" رمأل نيوكت نم دكأت ،(تنرثيإلإ
 ISR4K/ASR1k نوكي شيحب ،broadcast-domain/ةيعرفال ةكبشال عيسوت ديرن شيحي صخشال
 CE. ةياهن نم اهلاسرا متي ىتال (802.1Q VLAN ةمالع) تامالعال تاذ مزحل لابقستسإ ىلع ارداق

ةحصلال نم ققحتال

كلذل VPLS تحت نآلأ ىتح "Ethernet" ب ينيبال لاصتال Cat9500 ةيساسأل ةمظنأل معدت
 : (يضارتفا وهو) تنرثيإ وه VC عون نم ققحت لوأ

<#root>

```
PE1#show mpls l2transport binding
Destination Address: 3.3.3.3,VC ID: 100
Local Label: 19
Cbit: 0,
```

VC Type: Ethernet

```
, GroupID: n/a
MTU: 9180, Interface Desc: n/a
VCCV: CC Type: RA [2], TTL [3]
CV Type: LSPV [2]
Remote Label: 17
Cbit: 0,
```

VC Type: Ethernet

```
, GroupID: 0
MTU: 9180, Interface Desc: n/a
VCCV: CC Type: RA [2], TTL [3]
CV Type: LSPV [2]
```

<#root>

```
PE2#show mpls l2transport binding
Destination Address: 2.2.2.2,VC ID: 100
Local Label: 17
Cbit: 0,
```

VC Type: Ethernet

```
, GroupID: n/a
MTU: 9180, Interface Desc: n/a
VCCV: CC Type: RA [2], TTL [3]
CV Type: LSPV [2]
Remote Label: 19
Cbit: 0,
```

VC Type: Ethernet

```
, GroupID: 0
MTU: 9180, Interface Desc: n/a
VCCV: CC Type: RA [2], TTL [3]
CV Type: LSPV [2]
```

مهمال نم نكلو VC L2VPN نم اهب ققحتت يتال ةقيرطلل الatham رماوالا ةيقب نوكتيس نال
ةهاولل MTU ميق ليذعت يلع ارداق نوكت نل يلاتلابو، MTU ماظن هب Cat9500 نأ مهفن نأ
"MTU <>" نيوكت يل اجاتحتس، يلاتلابو. ةلحمل اكبشال بناج هجاوت يتال ةيدرفال
لوح ضوافتال متي يتح ISR4K ياساسال ماظنل يلع L2 VFI قاي س نمض حي رص لكشب
يلع اهنوكت مت يتال ماظنل (MTU) لقنلل لصقأال دجال ةدحو يل اذانتسا MTU ميق
Cat9500 لوحمل :

PE2 زارط مداخل :

<#root>

PE2#show system mtu

Global Ethernet MTU is 9180 bytes.

PE1 زارط مداخل :

<#root>

PE1#show mpls l2transport vc detail

Local interface: VFI 100 vfi up

Interworking type is Ethernet

Destination address: 3.3.3.3, VC ID: 100, VC status: up

Output interface: Gi0/0/2, imposed label stack {17}

Preferred path: not configured

Default path: active

Next hop: 30.30.30.2

Create time: 00:02:10, last status change time: 00:02:10

Last label FSM state change time: 00:02:10

Signaling protocol: LDP, peer 3.3.3.3:0 up

Targeted Hello: 2.2.2.2(LDP Id) -> 3.3.3.3, LDP is UP

Graceful restart: not configured and not enabled

Non stop routing: not configured and not enabled

Status TLV support (local/remote) : enabled/supported

LDP route watch : enabled

Label/status state machine : established, LruRru

Last local dataplane status rcvd: No fault

Last BFD dataplane status rcvd: Not sent

Last BFD peer monitor status rcvd: No fault

Last local AC circuit status rcvd: No fault

Last local AC circuit status sent: No fault

Last local PW i/f circ status rcvd: No fault

Last local LDP TLV status sent: No fault

Last remote LDP TLV status rcvd: No fault

Last remote LDP ADJ status rcvd: No fault

MPLS VC labels: local 19, remote 17

Group ID: local n/a, remote 0

MTU: local 9180, remote 9180

Remote interface description:

Sequencing: receive disabled, send disabled

Control Word: Off

SSO Descriptor: 3.3.3.3/100, local label: 19

Dataplane:

SSM segment/switch IDs: 8387/4289 (used), PWID: 4

VC statistics:

transit packet totals: receive 0, send 0

transit byte totals: receive 0, send 0

transit packet drops: receive 0, seq error 0, send 0

PE2 زارط مداخل :

<#root>

PE2#show mpls l2transport vc detail

Local interface: VFI 100 vfi up
 Interworking type is Ethernet
 Destination address: 2.2.2.2, VC ID: 100, VC status: up
 Output interface: Te2/0/1, imposed label stack {19}
 Preferred path: not configured
 Default path: active
 Next hop: 30.30.30.1
 Create time: 01:02:03, last status change time: 00:03:09
 Last label FSM state change time: 00:03:09
 Signaling protocol: LDP, peer 2.2.2.2:0 up
 Targeted Hello: 3.3.3.3(LDP Id) -> 2.2.2.2, LDP is UP
 Graceful restart: not configured and not enabled
 Non stop routing: not configured and not enabled
 Status TLV support (local/remote) : enabled/supported
 LDP route watch : enabled
 Label/status state machine : established, LruRru
 Last local dataplane status rcvd: No fault
 Last BFD dataplane status rcvd: Not sent
 Last BFD peer monitor status rcvd: No fault
 Last local AC circuit status rcvd: No fault
 Last local AC circuit status sent: No fault
 Last local PW i/f circ status rcvd: No fault
 Last local LDP TLV status sent: No fault
 Last remote LDP TLV status rcvd: No fault
 Last remote LDP ADJ status rcvd: No fault
 MPLS VC labels: local 17, remote 19
 Group ID: local n/a, remote 0

MTU: local 9180, remote 9180

Remote interface description:
 Sequencing: receive disabled, send disabled
 Control Word: Off
 SSO Descriptor: 2.2.2.2/100, local label: 17
 Dataplane:
 SSM segment/switch IDs: 12297/8194 (used), PWID: 1
 VC statistics:
 transit packet totals: receive 0, send 0
 transit byte totals: receive 0, send 0
 transit packet drops: receive 0, seq error 0, send 0

CE2 إلى CE1 نم لاصتال تارابتخا ادب لواحن امدنع نال :

CE1#ping 101.101.101.1 source 101.101.101.2
 Type escape sequence to abort.
 Sending 5, 100-byte ICMP Echos to 101.101.101.1, timeout is 2 seconds:
 Packet sent with a source address of 101.101.101.2
 !!!!!
 Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/4 ms

VPLS ربع رمت مزحلأ نأ نم دكأتلل (VC) درومل ةئف فرعم تايئاصحإ صحن امدنع ،كلذ دعب

PE1 زارط مداخل :

<#root>

```
PE1#show mpls l2transport vc detail | sec statistics
VC statistics:
```

```
transit packet totals: receive 5, send 5
```

```
transit byte totals:   receive 660, send 660
```

```
transit packet drops: receive 0, seq error 0, send 0
```

PE2 زارط مداخل

<#root>

```
PE2#show mpls l2transport vc detail | sec statistics
VC statistics:
```

```
transit packet totals: receive 5, send 5
```

```
transit byte totals:   receive 680, send 680
```

```
transit packet drops: receive 0, seq error 0, send 0
```

اهحال صاوا عا طخال فاشك تسا

تاهجوم نيب VPLS VC نيوكت اناثا قفاوتال لكاشم زاربإ وه دن تسمل اذه نم ضرغل ناك
فاشك تسال تاوطخ دجوت ال يلاتلابو PE، دقعك لمعت يتال Cat9500 تال وحمو ISR/ASR
يلاحال تقولا يف اھحال صاوا عا طخال

ةمچرتل هذه ل و ح

ةيلآل ا تاي ن ق ت ل ا ن م ة و م ج م ا د خ ت س ا ب د ن ت س م ل ا ا ذ ه Cisco ت م چ ر ت م ل ا ع ل ا ا ح ن ا ع م ج ي ف ن ي م د خ ت س م ل ل م ع د ي و ت ح م م ي د ق ت ل ة ي ر ش ب ل ا و ا م ك ة ق ي ق د ن و ك ت ن ل ة ي ل آ ة م چ ر ت ل ض ف ا ن ا ة ط ح ا ل م ي ج ر ي . ة ص ا خ ل ا م ه ت غ ل ب Cisco ي ل خ ت . ف ر ت ح م م چ ر ت م ا ه م د ق ي ي ت ل ا ة ي ف ا ر ت ح ا ل ا ة م چ ر ت ل ا ع م ل ا ح ل ا و ه ي ل ا ا م ا د ع و ج ر ل ا ب ي ص و ت و ت ا م چ ر ت ل ا ه ذ ه ة ق د ن ع ا ه ت ي ل و ئ س م Systems (ر ف و ت م ط ب ا ر ل ا) ي ل ص ا ل ا ي ز ي ل ج ن ا ل ا د ن ت س م ل ا