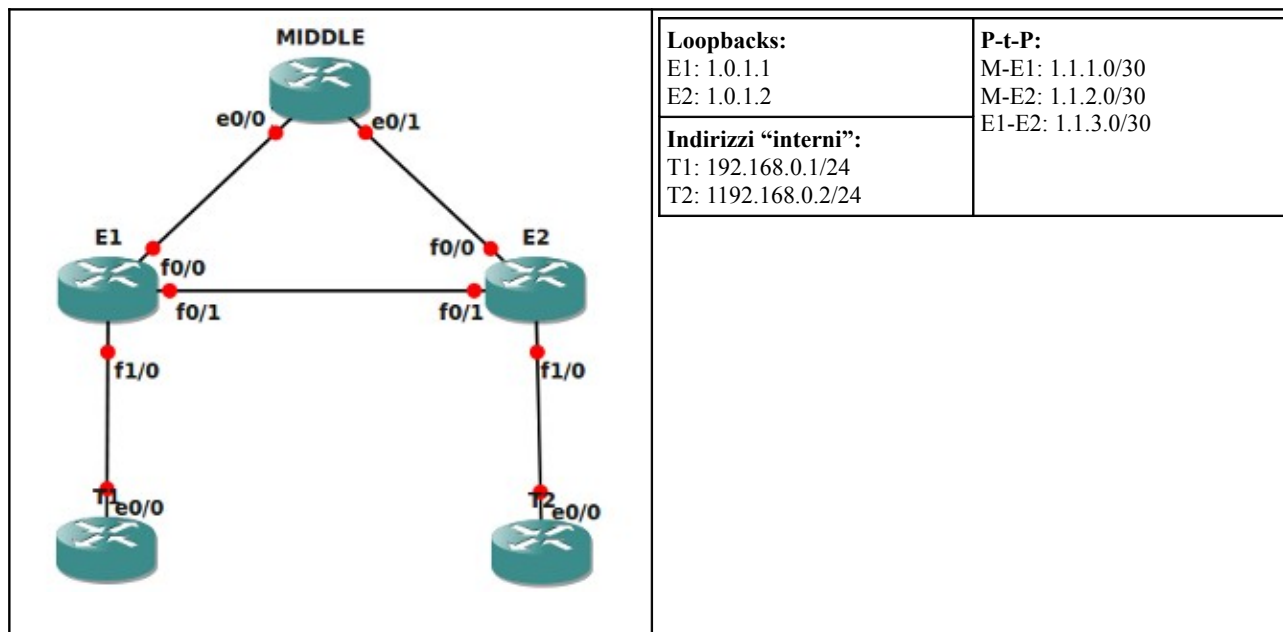# Simulazione pseudowire L2TPv3

La rete E1-MIDDLE-E2 è tutta OSPF area 0, il pseudowire L2TPv3 è realizzato tra le due loopback dei router E. Il router "MIDDLE" simula un collegamento non diretto tra i 2 router che formano il tunnel. La configurazione di "MIDDLE" è banale e non verrà visualizzata: indirizzi IP e OSPF.

Loopbacks:	P-t-P:
E1: 1.0.1.1	M-E1: 1.1.1.0/30
E2: 1.0.1.2	M-E2: 1.1.2.0/30
Indirizzi "interni":	E1-E2: 1.1.3.0/30
T1: 192.168.0.1/24	
T2: 1192.168.0.2/24	

Configurazioni salienti:

E1:

```
l2tp-class l2tpc1
 digest secret 0 aaa123 hash SHA1
 hello 30
 retransmit retries 1000
!
pseudowire-class pwlink
 encapsulation l2tpv3
 protocol l2tpv3 l2tpc1
 ip local interface Loopback0
 ip pmtu
!
interface Loopback0
 ip address 1.0.1.1 255.255.255.255
!
interface FastEthernet0/0
 no shutdown
 ip address 1.1.1.2 255.255.255.252
!
interface FastEthernet0/1
 no shutdown
 ip address 1.1.3.1 255.255.255.252
!
interface FastEthernet1/0
 no shutdown
```

```
 no ip address
 xconnect 1.0.1.2 41 encapsulation l2tpv3 pw-class pwlink
!
router ospf 1
 network 1.0.1.1 0.0.0.0 area 0
 network 1.1.1.0 0.0.0.3 area 0
 network 1.1.3.0 0.0.0.3 area 0
```

E2:

```
l2tp-class l2tpc1
 digest secret 0 aaa123 hash SHA1
 hello 30
 retransmit retries 1000
!
pseudowire-class pwlink
 encapsulation l2tpv3
 protocol l2tpv3 l2tpc1
 ip local interface Loopback0
 ip pmtu
!
interface Loopback0
 ip address 1.0.1.2 255.255.255.255
!
interface FastEthernet0/0
 no shutdown
 ip address 1.1.2.2 255.255.255.252
!
interface FastEthernet0/1
 no shutdown
 ip address 1.1.3.2 255.255.255.252
!
interface FastEthernet1/0
 no shutdown
 no ip address
 xconnect 1.0.1.1 41 encapsulation l2tpv3 pw-class pwlink
!
router ospf 1
 network 1.0.1.2 0.0.0.0 area 0
 network 1.1.2.0 0.0.0.3 area 0
 network 1.1.3.0 0.0.0.3 area 0
```

T1:

```
interface Ethernet0/0
 no shutdown
 ip address 192.168.0.1 255.255.255.0
```

T2:

```
interface Ethernet0/0
 no shutdown
 ip address 192.168.0.2 255.255.255.0
```

Verifica parametri L2TPv3 e X-Connect:

L2TPv3 **E1**

```
E1#show l2tp session

L2TP Session Information Total tunnels 1 sessions 1

LocID       RemID      TunID       Username, Intf/      State  Last Chg Uniq ID
                                   Vcid, Circuit
12074       26466      40384       41, Fa1/0            est    00:17:15 1
E1#show l2tp tu
E1#show l2tp tunnel

L2TP Tunnel Information Total tunnels 1 sessions 1

LocID RemID Remote Name    State  Remote Address  Port  Sessions L2TP Class/
                                                                 VPDN Group
40384 27120 E2             est    1.0.1.2         0     1        l2tpc1
```

X-Connect **E1**

```
E1#show xconnect all
Legend: XC ST=Xconnect State, S1=Segment1 State, S2=Segment2 State
UP=Up, DN=Down, AD=Admin Down, IA=Inactive, NH=No Hardware
XC ST  Segment 1                          S1 Segment 2                          S2
------+--------------------------------+--+--------------------------------+--
UP     ac   Fa1/0(Ethernet)              UP l2tp 1.0.1.2:41                    UP
```

X-Connect **E2**

```
E2#sh xconnect all
Legend: XC ST=Xconnect State, S1=Segment1 State, S2=Segment2 State
UP=Up, DN=Down, AD=Admin Down, IA=Inactive, NH=No Hardware
XC ST  Segment 1                          S1 Segment 2                          S2
------+--------------------------------+--+--------------------------------+--
UP _   ac   Fa1/0(Ethernet)              UP l2tp 1.0.1.1:41                    UP
```

Test pseudowire - Ping **T1-T2**

```
    T1#ping 192.168.0.1

    Type escape sequence to abort.
    Sending 5, 100-byte ICMP Echos to 192.168.0.1, timeout is 2 seconds:
    !!!!!
    Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
    T1#ping 192.168.0.2

    Type escape sequence to abort.
    Sending 5, 100-byte ICMP Echos to 192.168.0.2, timeout is 2 seconds:
    !!!!!
    Success rate is 100 percent (5/5), round-trip min/avg/max = 16/30/40 ms
    T1#
```